Journal of Business Research 102 (2019) 56–73

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

The impact of exporting on financial debt choices of SMEs

Elisabeth Maes[a], Nico Dewaelheyns[b,*], Catherine Fuss[c], Cynthia Van Hulle[a]

[a] KU Leuven, Faculty of Economics and Business, Department of Accountancy, Finance and Insurance, Naamsestraat 69, 3000 Leuven, Belgium
[b] KU Leuven, Faculty of Economics and Business, Department of Financial Management, Korte Nieuwstraat 33, 2000 Antwerp, Belgium
[c] National Bank of Belgium, Economics and Research Department, Berlaimontlaan 14, 1000 Brussels, Belgium

ARTICLE INFO

JEL classifications:
F10
F14
F42
G3
G32

Keywords:
SME
Financing policy
Export
Collateral
Working capital

ABSTRACT

Using detailed financial and exporting data from Belgian small and medium-sized enterprises (SMEs) between 1998 and 2013, we find that exporters have to finance relatively more working capital than their nonexporting peers and that they resolve this financing need by carrying more short-term financial debt. In addition, while controlling for working capital needs, we find that the positive association between pledgeable short-term assets and short-term debt financing is more pronounced for exporters. In particular, we show that the linkage between pledgeable short-term assets and short-term debt financing is stronger for export-intensive firms and firms that serve distant and risky export destinations.

1. Introduction

Over the past decades, considerable effort has been devoted to enhancing our understanding of the complexity of corporate financing decisions. To date, studies on corporate capital structure and debt maturity choices have mainly focused on firm characteristics and industry determinants (De Jong, Kabir, & Nguyen, 2008; Titman & Wessels, 1988), as well as on the influence of the national culture, legislation and other country characteristics (Demirgüç-Kunt & Maksimovic, 1999; Fan, Titman, & Twite, 2012). Studies investigating the relationship between internationalization and corporate financing policy, however, are much more limited and are mostly confined to large, stock exchange quoted firms. One of the main insights of this literature is that multinational corporations (MNCs) have lower long-term debt ratios and higher short-term debt ratios than those of comparable domestic corporations (DCs) (Burgman, 1996; Doukas & Pantzalis, 2003; Fatemi, 1988). This leverage differential between MNCs and DCs is explained by the fact that the positive effect of geographic sales diversification on long-term debt financing is offset by the increased risk stemming from exchange rate exposure and unforeseen political events. Furthermore, due to their operational complexity, MNCs are more informationally opaque, which increases the agency costs of debt. To mitigate the problems associated with a riskier borrower profile and agency conflicts, loan maturities are shortened (Barclay & Smith, 1995; Myers, 1977). Building on these studies, the aim of this article is to advance the current literature by empirically investigating the impact of exporting on the corporate financing decisions of another important class of exporters, viz., small and medium-sized enterprises (SMEs). Since SMEs cannot substitute short-term and long-term debt financing as easily as large companies - due to difficulties in obtaining long-term debt financing from financial institutions (Ortiz-Molina & Penas, 2008) - the mechanism through which export activities affect SME financing policies may very well be different from what is demonstrated in the MNC literature. According to the World Trade Organization (WTO), access to financial resources to support export activities is a key concern for SMEs since, besides the one-time upfront sunk costs (e.g., costs related to compliance with foreign market regulations and preparatory market research), exporting requires substantial ongoing investment in working capital, as export activities considerably lengthen the cash conversion cycle of the firm (e.g., through longer shipment periods and the administrative burden associated with trading internationally) (WTO, 2016). Hence, understanding how exporting SMEs cope with these financing needs may yield useful insights for exporters, banks and policy makers.

* Corresponding author.
E-mail addresses: elisabeth.maes@kuleuven.be (E. Maes), nico.dewaelheyns@kuleuven.be (N. Dewaelheyns), catherine.fuss@nbb.be (C. Fuss), cynthia.vanhulle@kuleuven.be (C. Van Hulle).

https://doi.org/10.1016/j.jbusres.2019.05.008
Received 28 August 2017; Received in revised form 1 May 2019; Accepted 6 May 2019
Available online 21 May 2019

This article contributes to the existing research in several ways. This study is the first to investigate in depth the relationship between internationalization and corporate financial decision-making in an SME setting. In spite of the importance of private, smaller-sized businesses to economic growth and development, the extant literature on internationalization and financing policy is confined to large, traded firms. Since smaller-sized private firms and large traded firms differ substantially with respect to their bank relationships and access to financing, the available empirical evidence on MNC financing policies may, however, not be generalizable to an SME setting. Similarly, the work of Ahn, Amiti, and Weinstein (2011) considers global trade flows and does not rely on firm-specific data on international trading behavior. As such, it reports on flows that include multinationals and SMEs, but not on flows of these classes of firms separately. Limitations in the availability of data on import and export flows at the firm-level explain the lack of research on private SMEs. This study, however, draws on a large-scale database comprising detailed information on the international trading behavior of Belgian firms, including SMEs. In particular, the foreign trade database of the National Bank of Belgium (NBB) records both export and import flows of Belgian firms by country of destination and origin.[1] The international trade data is merged with key financial and ownership information. Under Belgian Accounting Law, both large publicly quoted corporations and small unlisted firms are required to publish detailed financial statements, thus ensuring the wide coverage of this database. Moreover, since our dataset consists of SMEs that, because of their size, confine their international activity to exporting (importing) activities and, contrary to large firms, do not often engage in foreign direct investment (FDI) activities, our sample avoids the problems created by the interactions between FDI, international trade and corporate financing decisions.

We show that exporters have significantly higher financial leverage than comparable nonexporting firms, stemming from a higher use of short-term financial debt within exporting firms. As such, contrary to the literature on the corporate financing decisions of large multinationals, we find no evidence in support of a trade-off mechanism between debt maturities in a setting of exporting SMEs. Exporters' higher reliance on short-term financial debt is a direct result of the nature of their business models: international trade transactions increase the cash conversion cycle, and hence the working capital needs, of the firm. In addition to having a higher need for working capital financing, it also seems that exporters are better able to access short-term debt financing than their nonexporting peers, on the basis of the short-term assets available to secure such working capital loans. In particular, we show that the linkage between short-term assets (i.e., working capital) that can be used as securitization and short-term financial debt is stronger for exporters. Since the challenges and opportunities associated with exporting vary considerably across export destinations, we also explore how export (destination) characteristics, such as political risk, exchange exposure, and cultural and geographic distance between the home market and the export destinations, affect SME financing policies. We show that the positive association between short-term assets and short-term financial debt is more pronounced for firms that show high export commitment and that serve distant and risky export destinations. Overall, our findings underline the importance of the availability of pledgeable short-terms assets for exporters to obtain financing to support their activities.

The remainder of this paper is organized as follows: the next section provides a brief overview of the current literature on the effects of internationalization on (large firm) financial decision-making and evaluates to what extent these insights may carry over to exporting SMEs, while taking into account the specific nature of SMEs and the risks and opportunities associated with international trade. Section 3 describes the sample selection process, followed by descriptive statistics and univariate tests in Section 4. Sections 5 and 6 report the results of the multivariate tests and robustness checks. Finally, Section 7 offers concluding remarks and directions for future research.

2. Financing of SME export activities

Within the field of the static trade-off theory, a significant body of research has examined the impact of internationalization on the financing decisions of listed firms and the factors that may explain the capital structure differential between domestic corporations (DCs) and multinational corporations (MNCs). The empirical evidence shows that MNCs have lower long-term debt ratios than those of comparable DCs (Burgman, 1996; Chen, Cheng, He, & Kim, 1997; Fatemi, 1988). In addition, Fatemi (1988) and Doukas and Pantzalis (2003) find that MNCs exhibit higher short-term debt ratios than those of DCs. The prevailing view in the literature on MNC capital structures is that any of the positive effects from geographic sales diversification on (long-term) leverage and debt maturity are offset by increases in risk and agency problems. As such, the empirical evidence points towards the existence of a trade-off mechanism between long-term and short-term debt financing for MNCs, as follows: loan maturities are shortened to mitigate the problems associated with the MNCs' riskier borrower profile.

Although scholars agree that the principles underlying the capital structure and debt maturity choice of large traded firms, to a large extent, apply to small and private businesses (Degryse, de Goeij, & Kappert, 2012; Michaelas, Chittenden, & Poutziouris, 1999; Van der Wijst & Thurik, 1993), the specific nature of smaller-sized private firms and the risks and opportunities associated with international trade suggest that the impact of certain capital structure determinants may be different in a setting of exporting SMEs. Since smaller-sized private firms differ markedly from large firms regarding their bank relationships and access to external credit, and since they cannot substitute short-term and long-term debt financing as easily as large companies can, the available empirical evidence on the financing policies of large MNCs may not be generalizable to our setting of private, smaller-sized exporters.

Access to (external) financing to support firm growth is of importance to all firms and, in particular, to firms selling abroad. Due to longer shipment periods and the administrative burden associated with cross-border transactions (Hummels & Schaur, 2013), the time lapse between landing the sales contract and collecting payment from the buyer is considerably longer in international sales transactions. As such, the prefinancing of these orders causes exporters to be particularly reliant on working capital financing compared to nonexporting firms (Ahn et al., 2011). Furthermore, conventional wisdom suggests that long-term assets (e.g., PPE) ought to be financed with long-term funds (e.g., long-term debt), while short-term funds (e.g., lines of credit, trade credit) are to be used to finance short-term assets (e.g., receivables, inventory) (Chung, 1993). On the basis of the above arguments, we therefore propose the following hypothesis:

H1. Exporters carry relatively more short-term financial debt than their nonexporting peers.

Apart from having a higher need for working capital financing, exporters may also have enhanced access to short-term debt financing, owing to the availability and the nature of a large pool of pledgeable short-term assets. In fact, there are a number of channels through which export activities may intensify the positive association between short-term debt financing and short-term assets. *First*, it is demonstrated in the prior literature that the availability of pledgeable assets is of greater

[1] Considering its position as a trade-oriented open European economy, Belgium represents an interesting research setting since approximately 85% of the Belgian GDP originates from exports of goods and services (Belgian Foreign Trade Agency, 2015). In addition, Belgian SMEs account for approximately two thirds of total employment, 57.6% of value added (European Commission, 2013 SBA Fact Sheet) and, according to the Federation of Enterprises in Belgium, approximately 50% of exports.

importance to SMEs with a risky and opaquer borrower profile (Berger & Udell, 1995, 2006; Boot, Thakor, & Udell, 1991). Since cross-border transactions are generally considered to be riskier in nature, the collateral channel (i.e., the relationship between short-term assets that may serve as collateral and leverage) might be stronger for exporting firms. *Second*, because of the riskiness of international trade transactions and the pressure of such transactions on working capital needs, exporters are much more reliant on trade finance instruments, such as letters of credit (L/C[2]) and trade credit insurance, than are domestic players (Ahn et al., 2011). By using such instruments, exporters can mitigate the risks associated with international sales and, in turn, improve on their capacity for short-term borrowing (Ferrando & Mulier, 2013; Grath, 2011; Jones, 2010).[3] In particular, the use of such instruments may increase the creditors' confidence in the working capital components (i.e., accounts receivable and inventories) as pledgeable assets, while the close monitoring by the creditor of the sales transaction under a letter of credit may reduce information asymmetries and agency costs of debt between the lender and the exporter/borrower. As a result, the higher usage of trade finance instruments in cross-border transactions may lead to a stronger linkage between short-term debt financing and short-term assets for exporters. Finally, risk reduction through serving multiple geographic regions and the perceived higher borrower quality of exporters may also increase the collateral value of their assets. Since entering foreign markets entails a number of challenges, so that only the largest and most productive firms can enter export markets (Bernard & Jensen, 1999; Greenaway, Guariglia, & Kneller, 2007), the simple act of conducting export activities might be considered as a signal of borrower quality, widening the exporter's borrowing capacity on the basis of the available pledgeable assets. We therefore hypothesize the following:

H2a. The relationship between short-term pledgeable assets and short-term financial debt is stronger for exporters than it is for their nonexporting peers.

On the other hand, since geographic sales diversification may reduce the exporters' operating risk, creditors may request fewer assets from the exporter/borrower to secure working capital loans. Similarly, if exporting functions as a signal of borrower quality, there may be less need for collateral to secure exporters' loans. These arguments would imply a weaker association between short-term pledgeable assets and short-term debt financing for this type of firm, leading to the following hypothesis:

H2b. The relationship between short-term pledgeable assets and short-term financial debt is weaker for exporters than it is for their nonexporting peers.

It is not improbable that the linkage between short-term assets and short-term debt varies by the level of export commitment and exposure to various export risks as well. Considering export risks first, it can be argued that cross-border transactions are riskier due to exposure to unforeseen political events, adverse currency movements and geographic and cultural barriers between the exporter and the foreign buyer. Moreover, to secure financing for their operations, the higher riskiness of the export transactions to distant and risky destinations may pressure SMEs to use trade finance instruments even more intensively. Furthermore, in line with the reasoning for hypothesis H2a, it is also possible that exporting to distant countries adds to geographic sales diversification, increasing the quality of the pledgeable assets and, hence, improving the exporters' capacity to borrow. We therefore propose the following hypothesis:

H3a. The relationship between short-term pledgeable assets and short-term financial debt is stronger for firms with higher export commitment and exposure to export risks.

Alternatively, since trading with faraway export destinations may add to sales diversification and lead to a reduction in operating risks, creditors may request less collateral to secure working capital loans. Simultaneously, this type of export behavior may also signal high borrower quality, thereby reducing the need for collateral. As a result, the availability of pledgeable assets might be less important for this type of exporter when applying for working capital loans. On the basis of these arguments, we propose the following hypothesis:

H3a. The relationship between short-term pledgeable assets and short-term financial debt is weaker for firms with higher export commitment and exposure to export risks.

3. Sample selection and variable definitions

3.1. Sample selection

The dataset consists of private Belgian SMEs filing unconsolidated complete financial statements[4] between 1998 and 2013. In line with the European Commission Recommendation (Art. 2.1 recommendation 2003/361/EC), SMEs are defined as firms having fewer than 250 employees (in FTE) and as either having a maximum sale of 50 million euros or a balance sheet total of < 43 million euros. Our dataset combines firm-level information from several databases. The financial information is obtained from the annual accounts database from the Central Balance Sheet Office of the National Bank of Belgium (NBB). The financial data are subsequently merged with a highly confidential database from the NBB, which covers detailed information on the international trading behavior of Belgian firms. This foreign trade database comprises export and import flows by country of destination and country of origin above a certain threshold. Until 2006, firms had to report their intra-EU trade through the Intrastat inquiry if their export flows surpassed 250,000 euros per year. As of 2006, a reporting threshold of one million euros per year applies to intra-EU trade transactions. Data on extra-EU trade is collected by customs agents if the transaction has a value of at least 1000 euros or has a weight of one metric ton or more. Based on time-varying ownership information from Bel-First (Bureau van Dijk EP), firms conducting foreign direct investment activities (ownership ≥10%) are excluded, as these firms may enjoy financing options that may be unavailable to domestic firms and to firms that confine their international activities to exporting. For similar reasons, listed firms are not included. Following customary practice, nonprofit organizations, services providers (e.g., financial institutions), firm-years with zero sales, or extremely high levels of

[2] An L/C is a contractual agreement by the importer's bank on behalf of the foreign buyer that payment will be made by the bank to the exporter upon the complying presentation of the documents as stipulated in the L/C (Grath, 2011). The L/C protects the exporter from non-payment by replacing the creditworthiness of the buyer with that of the bank issuing the letter.

[3] To the best of our knowledge, (firm-level) data on trade finance is not available, except for the International Trade Register of the International Chamber of Commerce (ICC) (ICC, 2015). However, this trade register only contains information on a limited number of trade finance instruments that were purchased at one of the participating banks, and as such, it does not contain an overview of all (export) transactions by client firms, nor does it contain information about the use of credit insurance provided by specialized insurers.

[4] Under Belgian Accounting Law, companies are bound to file complete (unconsolidated) accounts if they meet at least two of the following criteria: their total assets exceed 3.65 million euros; their operating revenue exceeds 7.3 million euros; or they have > 50 full time equivalent employees. Companies with > 100 full time equivalent employees always have to file complete accounts. All other firms may file abbreviated statements, which contain less detailed information. For instance, only firms filing complete annual accounts provide detailed information on items that are relevant to our research question (e.g., turnover data).

leverage (> 100% of total assets) and absolute total assets growth rates exceeding 100% are also discarded. We define the sector of activity on the basis of the main NACE industry code. Finally, as exporting firms are not a random subsample of the firm population (Bernard & Jensen, 1999), we control for sample selection bias by matching each exporter with a comparable nonexporter, using propensity score matching (PSM) techniques. The resulting matched sample consists of 6841 SMEs and comprises 37,795 firm-year observations, of which 28,552 (75.5%) belong to the subsample of exporters. Table A.1 in the appendix provides an overview of the different steps of the selection procedure.

3.2. Variables

3.2.1. Dependent variables

Export activities may affect corporate financing policies in two ways. First, export activities could affect the levels of long-term and short-term debt financing. Second, these activities may alter the mix of long-term and short-term debt financing. Accordingly, we measure *total leverage* as total financial debt over total assets (TOT), *long-term leverage* as long-term financial debt over total assets (LT), and *short-term leverage* as short-term financial debt over total assets (ST) (Demirgüç-Kunt & Maksimovic, 1999; Doukas & Pantzalis, 2003; Michaelas et al., 1999). *Debt maturity* is defined as long-term financial debt over total financial debt (Barclay & Smith, 1995; Fan et al., 2012).[5]

3.2.2. Test variables

Since the risks and opportunities associated with international trade vary considerably across export destinations, we define several firm-level measures for the scale and scope of export activities conducted by the firm. *Export Status* is a dummy variable that equals unity if foreign sales are reported for a particular firm-year observation. If not, the observation belongs to the subsample of nonexporting firms. *Export Intensity* is defined as the ratio of export sales to total sales (Bianchi & Wickramasekera, 2016; Cavusgil, 1984). To measure *Export Diversity*, we define six regional markets that are homogenous in terms of economic development, political condition and geography, as follows: 1) Belgium; 2) the neighboring countries of Belgium, including the UK; 3) other EU countries; 4) non-EU countries, geographically located within Europe; 5) Canada and the US; and 6) all other countries (De De Clercq, Sapienza, & Crijns, 2005). Following Hirsch and Lev (1971), we define our entropy measure of export diversity as the negative sum of the products of the percentage of sales generated in each regional market *k* and the natural logarithm of that percentage (i.e., export diversity $= -\Sigma X_k * \ln(X_k)$, where X_k is the fraction of total sales generated in region k). Thus, exporters generating an equal fraction of their sales in all of the six regional markets will have the highest score on the export diversity measure, while exporters serving a single region have zero export diversity. As an alternative rougher measure of export diversity, we use the natural logarithm of the *No. of Export Destination Countries*. Next, we proxy export distance in terms of the *Cultural and Geographic Distance* between the Belgian home market and the export destinations. To measure national culture, we use data from the World Values Survey (WVS) and follow the approach of Ahern, Daminelli, and Fracassi (2012) to construct a country-level cultural index. After rescaling the original survey answers to values between zero and one, a composite country-specific cultural distance index is constructed yearly on the basis of the squared deviations of each export destination country from Belgium along the following three dimensions of national culture: trust, individualism and hierarchy (Morosini, Shane, & Singh, 1998). The cultural distance at the level of the firm thus equals the sum of the weighted country-level cultural distance indices, where the weights equal the proportion of sales generated in each country to total sales. The geographic distance is measured as the weighted average of the great circle distance (in km) between the most populous cities of Belgium and the export destination countries (Coval & Moskowitz, 1999). The geographic distances between cities are taken from CEPII. Thus, exporters generating a larger fraction of their sales in markets that are geographically and culturally distant from Belgium will have higher scores on the geographic and cultural indices. To measure *Political Risk*, we employ the country-specific Worldwide Governance Indicators (Kaufmann, Kraay, & Mastruzzi, 2011). We consider four time-varying political risk dimensions, namely, government effectiveness, regulatory quality, rule of law, and control of corruption, with higher scores assigned to politically stable economies. For ease of interpretation, we rescale the political risk scores so that higher scores indicate higher political risk. The average correlation between each possible pair of these political dimensions is approximately 90%, which would raise concerns regarding multicollinearity when regressing the leverage and debt maturity on the different legality measures simultaneously. We therefore summarize these political risk measures into a single country-specific index through principal components analysis, applied on a yearly basis (Berkowitz, Pistor, & Richard, 2003). The resulting index is the first principal component, which summarizes, on average, 84.7% of the total variance. To construct an overall measure of exposure to political risk at the firm-level, we take the sum of the weighted country-level political risk indices, where the weights equal the proportion of sales generated in the respective countries to total sales (Chkir & Cosset, 2001). As a result, exporters with a larger fraction of their sales originating in politically unstable economies should have a higher score on this measure. Finally, *Exchange Exposure* is defined as a function of the correlations of the national currencies of the export countries, for all currency combinations (Markowitz, 1952). The portfolio weights are defined as the difference between export flows directed towards and import flows originating from a particular country, scaled by total sales minus the cost of goods sold. Thus, firms exporting largely to foreign countries whose national currencies are strongly positively correlated among each other will have higher exchange exposure. The monthly exchange rates are collected from Thomson Reuters DataStream.

3.2.3. Control variables

Following the literature on capital structure, several firm-specific characteristics are selected as control variables. *Size* equals the natural logarithm of total assets (Degryse et al., 2012; Titman & Wessels, 1988). Larger firms are typically more diversified and thus less volatile, resulting in a higher borrowing capacity under the trade-off theory. *Growth* is defined as the average annual change in sales over the three preceding years (Dewaelheyns & Van Hulle, 2012). Growth opportunities are difficult to collateralize and do not generate current taxable income, suggesting a negative association between growth and leverage. Myers (1977), by contrast, contends that managers underinvest if interest payments are high. Shortening loan maturities could, however, overcome this underinvestment problem. As such, growth opportunities and short-term leverage are expected to show a positive correlation. SME studies, however, generally find evidence in favor of a positive association between growth opportunities and (long-term) leverage. Degryse et al. (2012) report a positive effect of growth on long-term leverage, while Sogorb-Mira (2005) reports a stronger positive (negative) effect on long-term (short-term) debt. *Profitability* equals earnings before interests and taxes (EBIT) scaled by total assets (Sogorb-Mira, 2005). Following the free cash flow theory of Jensen (1986), debt and profitability are positively related. High leverage forces managers to use profits to make interest payments and reimburse loans, preventing them from investing in suboptimal projects. The trade-off theory also predicts a positive association between leverage and profitability; i.e., profitable firms have a higher borrowing capacity. The

[5] An alternative definition for debt maturity that is often used in the literature – especially if data on public debt instruments is also included – is the average number of years until the debt matures (e.g., Stohs & Mauer, 1996). Unfortunately, we do not have loan-specific information available in our dataset, so we are not able to include this type of variable in the analysis.

empirical studies generally find that profits are used to pay down debt; however, this supports the existence of a pecking order of financing sources. Van der Wijst and Thurik (1993) and Sogorb-Mira (2005) find that SMEs use profits to pay down short-term debt first. *Volatility* is defined as the standard deviation of EBIT scaled by total assets over the three preceding years (Dewaelheyns & Van Hulle, 2012). Following the static trade-off theory, a firm's optimal debt level is a decreasing function of the volatility of its earnings (Titman & Wessels, 1988). *LT Collateral* measures the availability of long-term pledgeable assets and equals the ratio of tangible fixed assets to total assets (Degryse et al., 2012; Van der Wijst & Thurik, 1993). Firms that have high levels of tangible fixed assets should have higher borrowing capacities. Additionally, in accordance with the maturity matching principle, long-term asset tangibility should be especially important for long-term leverage, as tangible fixed assets may also require more long-term financing. *ST Collateral* measures the availability of short-term pledgeable assets and is defined as the ratio of inventories and accounts receivable minus accounts payable to total assets.[6] In line with the maturity matching principle, we expect this variable to be positively (negatively) associated with short-term leverage (debt maturity). As access to internal capital markets may influence the debt policy (Dewaelheyns & Van Hulle, 2012), a *Group* dummy is included that equals unity if the firm is part of a business group, and zero if the firm is a standalone. A firm is considered to be an affiliate if at least 50% of the firm's shares or votes are, indirectly or directly, held by another firm. Finally, *year* and *industry* dummies (2-digit level) are added to control for macroeconomic shocks and industry heterogeneity. All continuous variables are Winsorized at the 1%-level to reduce the influence of outliers. A detailed overview of the definition of all the variables used in the subsequent analyses is provided in Table A.2 in the appendix.

4. Descriptive statistics and univariate tests

Table 1 presents the descriptive statistics for the full matched sample, and for the subsamples of exporters and matched nonexporters separately. In addition, it compares the average and median values of a range of firm characteristics of exporters and matched nonexporting firms using Student's *t*-tests (equality of means) and Wilcoxon rank sum z-tests (equality of medians). Although these univariate tests do not control for firm differences between exporters and nonexporters, they do provide preliminary insights into the effect of exporting on corporate financing policies. The average SME has a long-term financial debt ratio of 7.3% and a short-term financial debt ratio of 10.3%, which is in line with earlier studies covering the capital structure of Belgian firms (De Jong et al., 2008; Demirgüç-Kunt & Maksimovic, 1999). For the average exporter (nonexporter), these ratios equal 7.2% (7.8%) and 11.0% (8.5%), respectively. Table 1 further shows that exporters have significantly higher leverage than that of comparable nonexporting firms; this result is driven by a higher use of short-term financial debt by exporters. We find only weak statistical evidence that exporters and nonexporters differ in their reliance on long-term debt financing. As a result, exporters and nonexporters differ substantially in their loan maturities; the average portion of long-term debt in total debt of an exporter equals 38.5%, while for a nonexporter 43.3% of total financial debt is long-term in nature.

With respect to firm size, we find that exporters are significantly larger than nonexporting firms. In addition, exporters show a higher earnings volatility compared to nonexporters. Furthermore, exporters have fewer long-term assets. In line with expectations, exporters have more short-term assets (i.e., accounts receivable and inventory, net of accounts payable) on their balance sheets than those of nonexporters. The average (median) SME is profitable, and exporters are more profitable than their nonexporting peers. Exporters and nonexporting firms do not seem to differ in terms of their growth in sales. For the average exporter, the export intensity equals 0.272, which implies that, on average, 27.2% of total sales are sales to foreign markets. An exporter serves approximately 7 countries, but this number varies greatly across exporters. Export diversity, which is bounded between 0 (no diversification) and 1.791 (perfect diversification), equals 0.496, on average, indicating that Belgian SMEs export to a relatively limited number of different geographic regions. For illustration purposes, Fig. A.1 in the appendix illustrates the importance in trade volume of the various destinations to which Belgian goods were exported between 1998 and 2013. Table A.3 in the appendix presents the Pearson correlations between the continuous variables for the full matched sample of firms. Table A.4 in the appendix reports on the univariate statistics of the full unmatched sample and the unmatched subsamples of exporters and non-exporting firms. A comparison with Table 1 suggests that the matching has, to a large extent, reduced the differences between exporters and nonexporters, especially on the matching dimensions. As there remain statistically significant differences in some of the matching dimensions, however, it should be noted that the propensity score matching does not fully remove all differences between export and nonexpert firms, which is a limitation of our approach. To further reduce concerns about endogeneity, we also include tests from difference-in-difference analyses in Section 6.

5. Multivariate analysis

5.1. Methodology and baseline regression

As univariate tests cannot be conclusive, this section explores the debt financing choices of exporters and their comparable nonexporters in more detail using multivariate techniques. The different measures of leverage (TOT, LT, ST) and debt maturity (MAT) are regressed on the one-period lags of a set of firm characteristics, as shown in Eq. (1):

$$Y_{i,t} = \alpha + \beta_1 X_{i,t-1} + \gamma_1 Export_{i,t-1} + \eta_j + \tau_t + \varepsilon_{i,t} \quad (1)$$

Vector $X_{i,\ t-1}$ contains the firm-specific characteristics of debt financing choices (i.e., firm size, sales growth, group affiliation, asset tangibility, earnings volatility and profitability). All the regressions include year (τ_t)and industry dummies (at 2-digit level, η_j) to control for macroeconomic shocks and industry heterogeneity. In the baseline regression, our first coefficient of interest belongs to the export dummy variable ($Export_{i,\ t-1}$), which captures differences in the financing policy of exporters and their nonexporting peers. Later, we will look at other export dimensions.

We apply propensity score matching to reduce endogeneity concerns with respect to these export variables. At each point in time, we match each exporter with a nonexporting firm on the basis of a range of (one-period lagged) firm characteristics, including total factor productivity (TFP), firm size (total assets), firm age, group affiliation, sales growth and profitability. Matching occurs within sectors, as the impact of various variables on the decision to export might differ across sectors (Javalgi, White, & Lee, 2000). Therefore, at each point in time and within each sector, a nonexporting firm, which is closest in terms of its propensity score to an exporting firm (using a caliper value of 0.01), is selected as a match for the former, using the nearest-neighbor matching method. The one-to-one matching is performed with replacement so that a nonexporting firm can be the matching partner of several exporters in a particular year. Since a nonexporter can serve as a match multiple times in a single year, and since exporters and nonexporters

[6] Since trade credit may act as a substitute source of financing for bank credit (Carbo-Valverde, Rodríguez-Fernández, & Udell, 2016; Garcia-Appendini & Montoriol-Garriga, 2013), we use the ratio of inventories and accounts receivable to total assets and the ratio of inventories to total assets as alternative definitions for our ST Collateral variable. The results are highly qualitatively similar. These results are not included in the paper but are available from the authors upon request.

Table 1
Descriptive statistics for the full sample and by export status.

	Full				Exporters				Nonexporters				Equality of means		Equality of medians	
	N	Mean	Median	Sd	N	Mean	Median	Sd	N	Mean	Median	Sd	*t*-test	p-value	z-test	p-value
TOT	37,795	0.178	0.123	0.187	28,552	0.183	0.133	0.188	9243	0.164	0.093	0.185	−8.712	0.000	−10.114	0.000
LT	37,795	0.073	0.013	0.111	28,552	0.072	0.013	0.108	9243	0.078	0.011	0.121	4.742	0.000	−0.694	0.487
ST	37,795	0.104	0.041	0.135	28,552	0.110	0.046	0.139	9243	0.085	0.029	0.119	−16.014	0.000	−13.898	0.000
MAT	28,008	0.396	0.377	0.329	21,492	0.385	0.353	0.328	6516	0.433	0.455	0.330	10.402	0.000	9.831	0.000
Size	37,795	15.843	15.812	0.787	28,552	15.909	15.882	0.778	9243	15.639	15.624	0.778	−28.962	0.000	−28.099	0.000
Age	37,795	3.138	3.219	0.625	28,552	3.144	3.219	0.626	9243	3.122	3.219	0.620	−2.868	0.004	−2.678	0.007
Volatility	37,772	0.041	0.029	0.040	28,552	0.041	0.030	0.039	9240	0.038	0.026	0.040	−7.056	0.000	−11.382	0.000
LT collateral	37,795	0.196	0.155	0.169	28,552	0.190	0.152	0.161	9243	0.214	0.163	0.192	11.771	0.000	5.393	0.000
ST collateral	37,631	0.291	0.287	0.217	28,463	0.308	0.304	0.210	9168	0.238	0.225	0.231	−26.985	0.000	−26.680	0.000
Profitability	37,795	0.068	0.050	0.103	28,552	0.069	0.052	0.105	9243	0.065	0.047	0.097	−3.043	0.002	−4.494	0.000
TFP	37,795	11.359	11.320	0.545	28,552	11.384	11.355	0.549	9243	11.281	11.220	0.525	−15.812	0.000	−17.948	0.000
Growth	37,795	0.039	0.033	0.153	28,552	0.040	0.033	0.151	9243	0.038	0.032	0.159	−1.223	0.221	−0.708	0.479
Export intensity	37,795	0.206	0.049	0.284	28,552	0.272	0.139	0.298	9243	0.000	0.000	0.000				
Political risk	37,751	0.240	0.036	0.407	28,508	0.318	0.107	0.442	9243	0.000	0.000	0.000				
Cultural distance	36,229	0.063	0.010	0.104	26,986	0.085	0.032	0.113	9243	0.000	0.000	0.000				
Geographic distance	37,761	1.231	0.283	1.746	28,518	1.630	0.792	1.840	9243	0.000	0.000	0.000				
Export diversity	37,795	0.374	0.205	0.427	28,552	0.496	0.425	0.426	9243	0.000	0.000	0.000				
No. of destinations	37,795	1.520	1.609	1.182	28,552	2.013	1.946	0.927	9243	0.000	0.000	0.000				
Exchange exposure	26,833	0.016	0.002	0.043	23,026	0.018	0.003	0.046	3807	0.005	0.000	0.023				

Note: The descriptive statistics of the full matched sample and the subsamples of exporters and matched nonexporting firms are presented. All continuous variables have been Winsorized at the top and bottom 1% to reduce the influence of outliers. The *t*-test statistics and corresponding p-values (equality of means) and the z-test statistics and corresponding p-values (equality of medians) have been added.

differ substantially in size and industry affiliation prior to matching, the size of the subsample of nonexporters is reduced considerably after matching. To further alleviate endogeneity concerns with respect to our export variables, in Section 6.2, we will supplement our analysis with two settings using a difference-in-difference (DID) methodology. Following Heckman, Ichimura, Smith, and Todd (1998), the conditional DID can be argued to be a highly effective tool in controlling for selection on both observable and unobservable dimensions by combining the advantages of propensity score matching techniques and the DID-estimator.

5.2. Base line regression: results

The pooled OLS regression coefficients of the different leverage and maturity equations on the full matched sample of both exporters and nonexporters and on the subsamples of exporters and matched non-exporting firms are depicted in Table 2. The reported standard errors are in parentheses and are robust to firm-level clustering (Petersen, 2009).[7]

While controlling for firm and industry characteristics and macro-economic shocks, we find a positive and statistically significant association between the export status and short-term debt ratios, and this association is in support of hypothesis H1. Furthermore, the export status does not seem to affect long-term debt ratios. Consequently, this finding starkly contrasts with the MNC literature (Burgman, 1996; Chen et al., 1997; Doukas & Pantzalis, 2003) since we do not find statistical evidence in favor of a trade-off mechanism between long-term and short-term debt for exporting firms.

Turning to the control variables, we find that the relationships with the leverage and maturity measures are highly qualitatively similar for the full matched sample and for the subsamples of exporters and non-exporters and that they are in line with the (SME) literature. Looking first at the main variables of interest, we find a positive association between long-term assets and both short-term and long-term debt. Short-term assets (i.e., working capital) are positively (negatively) associated with short-term leverage (debt maturity), and this seems to be the case especially for exporters. To further evaluate this linkage, we add an interaction term between the variables Export and ST Collateral. The coefficient estimates of this interaction model on the full, matched sample are depicted under the column heading *Full (interaction)*. In support of hypothesis H2a, we find that the interaction term between these variables is significantly positively (negatively) associated with total and short-term debt levels (debt maturity). This finding suggests that the financing policy of exporters is highly sensitive to changes in the availability of short-term pledgeable assets. These results are not only statistically significant but are economically meaningful as well. For instance, for an exporter with a median level of ST Collateral, the total effect of Export and Export × ST Collateral equals 1.14% for TOT. In other words, ceteris paribus, the total financial leverage ratio for such an exporter is higher by an amount that equals 7.0% of the average total leverage ratio of a non-exporting firm (12.3% of the median). For ST, this effect equals 1.51%; i.e., the short-term financial leverage ratio for an exporting firm with a median level of ST Collateral is, ceteris paribus, higher by an amount that equals 17.8% of the average short-term financial leverage ratio of a non-exporting firm (52.1% of the median), which is quite substantial. Furthermore, consistent with the trade-off theory, volatility is negatively related to both short-term and long-term leverage. Cash flow volatility increases bankruptcy risk and, therefore, reduces the optimal level of debt. In line with Diamond (1991) and Ortiz-Molina and Penas (2008), we also find that a riskier borrower profile results in shorter loan maturities. By contrast, profitability is negatively related to both short-term and long-term debt ratios, and this relation is in line with pecking order behavior. Firms also seem to use internally generated funds to pay down short-term debt first, resulting in longer maturities for profitable firms (Sogorb-Mira, 2005; Van der Wijst & Thurik, 1993). In line with expectations and the trade-off theory, we find a positive association between firm size and leverage. Larger firms carry higher leverage because they are generally more diversified and have more collateral available. Average sales growth, proxying growth opportunities, is positively related with both leverage and maturity. It seems that firms with high growth opportunities are more likely to raise more debt than firms with fewer growth

[7] Given that our dependent variables are bounded between zero and one, we additionally ran pooled Tobit regressions for the total, long-term and short-term debt levels. For debt maturity, we ran a Fractional Response model. The results remain qualitatively unchanged.

Table 2
Leverage ratios for exporting and nonexporting firms – Export status.

	Full				Exporters				Nonexporters				Full (interaction)			
	TOT	LT	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT
Group	−0.006	−0.007***	0.001	−0.035***	−0.004	−0.006**	0.001	−0.033***	−0.011	−0.013***	0.001	−0.046***	−0.006	−0.007***	0.000	−0.035***
	(0.004)	(0.002)	(0.003)	(0.008)	(0.005)	(0.002)	(0.004)	(0.009)	(0.007)	(0.005)	(0.005)	(0.016)	(0.004)	(0.002)	(0.003)	(0.008)
Volatility	−0.455***	−0.196***	−0.259***	−0.424***	−0.450***	−0.182***	−0.269***	−0.385***	−0.465***	−0.249***	−0.209***	−0.613***	−0.453***	−0.196***	−0.258***	−0.427***
	(0.040)	(0.023)	(0.031)	(0.100)	(0.044)	(0.026)	(0.034)	(0.111)	(0.077)	(0.046)	(0.055)	(0.203)	(0.040)	(0.023)	(0.031)	(0.100)
Profitability	−0.369***	−0.083***	−0.281***	0.263***	−0.375***	−0.080***	−0.290***	0.289***	−0.346***	−0.095***	−0.250***	0.144	−0.370***	−0.083***	−0.282***	0.265***
	(0.016)	(0.009)	(0.012)	(0.045)	(0.017)	(0.009)	(0.013)	(0.047)	(0.033)	(0.021)	(0.022)	(0.106)	(0.016)	(0.009)	(0.012)	(0.044)
LT collateral	0.435***	0.277***	0.156***	0.460***	0.434***	0.272***	0.160***	0.454***	0.446***	0.296***	0.148***	0.496***	0.434***	0.277***	0.155***	0.462***
	(0.015)	(0.011)	(0.011)	(0.031)	(0.017)	(0.012)	(0.013)	(0.036)	(0.026)	(0.019)	(0.018)	(0.050)	(0.015)	(0.011)	(0.011)	(0.031)
ST collateral	0.206***	0.016***	0.188***	−0.219***	0.229***	0.015**	0.211***	−0.261***	0.137***	0.020**	0.117***	−0.065	0.140***	0.017*	0.122***	−0.079**
	(0.010)	(0.005)	(0.008)	(0.022)	(0.012)	(0.006)	(0.010)	(0.025)	(0.017)	(0.009)	(0.013)	(0.040)	(0.016)	(0.009)	(0.013)	(0.037)
Size	0.024***	0.008***	0.014***	0.007	0.022***	0.006***	0.015***	0.002	0.030***	0.017***	0.012***	0.028**	0.024***	0.008***	0.015***	0.007
	(0.003)	(0.002)	(0.002)	(0.007)	(0.003)	(0.002)	(0.003)	(0.007)	(0.006)	(0.004)	(0.004)	(0.014)	(0.003)	(0.002)	(0.002)	(0.007)
Growth	0.066***	0.033***	0.034***	0.074***	0.065***	0.030***	0.035***	0.071***	0.076***	0.046***	0.030*	0.086*	0.067***	0.033***	0.034***	0.072***
	(0.010)	(0.006)	(0.007)	(0.020)	(0.010)	(0.006)	(0.008)	(0.022)	(0.022)	(0.015)	(0.016)	(0.046)	(0.010)	(0.006)	(0.007)	(0.020)
Export status	0.007	−0.004	0.011***	−0.005									−0.015**	−0.003	−0.011***	0.044***
	(0.005)	(0.003)	(0.003)	(0.010)									(0.006)	(0.004)	(0.004)	(0.015)
Export status * ST collateral													0.087***	−0.002	0.086***	−0.178***
													(0.019)	(0.010)	(0.015)	(0.040)
Constant	−0.326***	−0.110***	−0.200***	0.264**	−0.307***	−0.082***	−0.209***	0.342***	−0.399***	−0.247***	−0.133*	−0.103	−0.313***	−0.111***	−0.187***	0.230**
	(0.047)	(0.027)	(0.037)	(0.108)	(0.052)	(0.029)	(0.042)	(0.118)	(0.096)	(0.064)	(0.068)	(0.225)	(0.047)	(0.027)	(0.037)	(0.108)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,938	26,938	26,938	19,830	21,723	21,723	21,723	16,133	5215	5215	5215	3697	26,938	26,938	26,938	19,830
No. of firms	5270	5270	5270	4475	4380	4380	4380	3732	1966	1966	1966	1517	5270	5270	5270	4475
F	64.502	34.909	37.380	21.924	55.901	29.327	33.732	18.580	21.292	13.573	15.519	7.837	63.247	34.234	36.829	21.674
Adjusted R^2	0.250	0.220	0.171	0.122	0.250	0.213	0.179	0.123	0.271	0.254	0.138	0.126	0.252	0.220	0.174	0.124

Note: This table contains the results for pooled OLS regressions of the determinants of financial leverage for the full matched sample and for the subsamples of exporters and matched nonexporting firms separately. The dependent variables are TOT (total financial debt/total assets), LT (long-term financial debt/total assets), ST (short-term financial debt/total assets) and MAT (long-term financial debt/total financial debt). All independent variables are one-period lagged. Industry and year dummies have been included in all regressions. The (unreported) coefficients are available upon request. All continuous variables have been Winsorized at the 1%-level. The robust standard errors (clustered at firm-level) are reported in parentheses.

* Denotes significance at 10%.

** Denotes significance at 5%.

*** Denotes significance at 1%.

opportunities; this outcome is commensurate with earlier evidence on SMEs (Degryse et al., 2012; Michaelas et al., 1999; Sogorb-Mira, 2005). In line with the internal capital markets argument, we find that group affiliation negatively affects long-term leverage and debt maturity.

5.3. Export dimensions and financial debt choices: results

The insights provided by the subsample analysis prompt us to additionally look into other interaction effects between export status and some control variables to test whether their impacts differ between exporters and nonexporters (results available upon request). We find that the negative association between earnings volatility and short-term debt levels is more important for exporting firms than it is for nonexporters, indicating that the debt financing of the former is more vulnerable to circumstances that increase their riskiness (e.g., economic shocks). In the same vein, we also find that the (negative) impact of profitability on capital structure and debt maturity differs substantially between exporters and matched nonexporting firms. It turns out that the (short-term) debt position and debt maturity of exporters is most sensitive to shocks in profitability. Since (access to) short-term debt financing is essential for the ongoing funding of the working capital needs of the exporting firm, it does not come as a surprise that internally generated resources are an important tool to repay debt in a timely manner and to keep debt levels under control.

To assess the implications of the scale and scope of export activities for debt financing choices, we subsequently run regressions of the different measures of leverage and debt maturity on the same set of control variables employed earlier and variables measuring export commitment and exposure to export risks (Table 3, Models 1 to 8). The full sample of exporters and matched nonexporting firms is again employed. Given the high levels of correlation between the export (destination) characteristics, these variables were included separately into the leverage and maturity equations. Again, all models contain industry and year dummies. The relationships between the control variables and our measures of leverage and maturity are as expected and are qualitatively similar to the earlier findings.

Model 1 in Table 3 presents the coefficient estimates of the leverage and debt maturity equations containing export intensity. To evaluate whether the impact of the availability of short-term assets on the financing policy depends upon the level of export commitment, we also include an interaction term between the two proxies. We find that both the direct effect of short-term assets and the interaction effect on total and short-term debt are significantly positive. As such, the availability of (pledgeable) short-term assets is a more important driver of short-term financing for firms that show a higher commitment towards export activities. In addition, export intensity seems to be of importance only to the corporate financing decisions of firms with substantial levels of short-term assets. Finally, it is interesting to note that the interaction terms indicate that export-intensive firms that have more short-term collateral also have higher total leverage, and this indication is in line with the trade-off theory; i.e., the availability of collateral reduces information asymmetries and allows firms to borrow more.

Model 2 (and 3) presents the coefficient estimates of the leverage and debt maturity equations containing export diversity (and its square) and an interaction term between our entropy measure of export diversity (and its square) and short-term assets. Again, we find that the positive (negative) effect of short-term assets on total and short-term debt (debt maturity) is more pronounced for firms that export to diverse geographical regions. However, since the coefficient belonging to the interaction term between short-term assets and the square term of export diversity is negative and significant, the marginal impact of export diversity on short-term debt ratios through the availability of short-term assets is decreasing in the level of export diversity.

Model 4 contains the coefficient estimates of the leverage and debt maturity equations containing the natural logarithm of the number of export destinations and an interaction term between that variable and short-term assets. Similar to the models including export intensity and diversity, we find that the interaction term is significantly positively (negatively) related to total and short-term debt ratios (debt maturity), while the direct effect of short-term assets is also significantly positively (negatively) related to total and short-term leverage (debt maturity). As such, the positive (negative) effect of short-term assets on short-term debt (debt maturity) is more pronounced for firms that serve a higher number of export markets. Again, in line with the trade-off theory, the interaction term in the total debt equations indicates that firms that have more short-term collateral available also have higher total leverage.[8]

Models 5 (and 6) present the coefficient estimates of the leverage and debt maturity equations containing our measure for cultural (and geographic) distance and an interaction term between cultural (geographic) distance and short-term assets. We find that the positive effect of short-term assets on short-term debt is more pronounced for firms that serve export markets that are distant to them from a cultural and geographic point of view. Again, the direct effects of cultural and geographic distance are mostly insignificant, which implies that distance matters only to firms with substantial levels of short-term assets.

Model 7 presents the coefficient estimates of the leverage and debt maturity equations containing our measure for political risk and an interaction term between political risk and short-term assets. We find that the positive effect of short-term assets on the total and short-term debt is more pronounced for firms that export to politically unstable countries.

Finally, Model 8 presents the coefficient estimates of the leverage and debt maturity equations containing our measure for exchange rate exposure and an interaction term between exchange rate exposure and short-term assets. Again, we find that short-term assets have a more pronounced positive (negative) impact on the total and short-term debt ratios (debt maturity) of firms that experience high exposure to currency fluctuations.

Overall, we find that the linkage between short-term assets and short-term debt is more pronounced for export-intensive firms and for firms exporting to destinations that are distant to them from a cultural, geographic and economic perspective, which supports hypothesis H3a.[9,10]

6. Robustness checks

6.1. Sample composition

Our results are robust to a wide variety of changes in sample

[8] As an alternative measure for export diversity, we constructed the variable *No. of Geographical Regions*, which counts the number of geographic regions a firm exports to. For the construction of this new measure of diversification, we distinguish between the same regions as we did for the construction of our variable *Export diversity,* as follows: 1) Belgium's neighboring countries; 2) other countries within the European Union; 3) North America and Canada; 4) other European countries, not within the European Union; 5) all other countries, not yet incorporated in the previous four regions. A higher score on this variable is an indication of a higher degree of geographic diversification. Using this proxy for diversification results in similar findings. Firms that export to a range of geographically disperse regions borrow proportionately more on the basis of the available pledgeable short-term assets. These results are not reported but are available from the authors.

[9] We also added interaction terms between our export variables and our measure for the availability of long-term pledgeable assets, LT Collateral. As expected, the coefficients of these interaction terms are mostly insignificant.

[10] Due to the persistent nature of the export status, a firm fixed effects approach is not feasible in the equations containing this dummy indicator. For our specifications containing continuous measures for the scale and scope of export activities, however, a firm fixed effects approach is possible. Using firm fixed effects rather than industry fixed effects results in qualitatively similar findings. These results are not reported but are available from the authors.

Table 3
Leverage ratios for exporting and nonexporting firms.

	Model 1				Model 2				Model 3	
	TOT	LT	ST	MAT	TOT	LT	ST	MAT	TOT	LT
Group	−0.005	−0.007***	0.001	−0.036***	−0.005	−0.007***	0.001	−0.036***	−0.006	−0.007***
	−0.004	−0.002	−0.003	−0.008	−0.004	−0.002	−0.003	−0.008	−0.004	−0.002
Volatility	−0.469***	−0.199***	−0.270***	−0.404***	−0.470***	−0.202***	−0.269***	−0.409***	−0.474***	−0.202***
	−0.04	−0.023	−0.03	−0.101	−0.04	−0.024	−0.03	−0.101	−0.04	−0.024
Profitability	−0.371***	−0.083***	−0.283***	0.266***	−0.371***	−0.083***	−0.282***	0.267***	−0.369***	−0.083***
	−0.016	−0.009	−0.012	−0.045	−0.016	−0.009	−0.012	−0.045	−0.016	−0.009
LT collateral	0.435***	0.277***	0.156***	0.459***	0.435***	0.277***	0.156***	0.459***	0.435***	0.277***
	−0.015	−0.011	−0.011	−0.031	−0.015	−0.011	−0.011	−0.031	−0.015	−0.011
Size	0.023***	0.008***	0.013***	0.008	0.022***	0.008***	0.013***	0.008	0.022***	0.008***
	−0.003	−0.002	−0.002	−0.007	−0.003	−0.002	−0.002	−0.007	−0.003	−0.002
Growth	0.066***	0.033***	0.033***	0.075***	0.066***	0.033***	0.034***	0.073***	0.066***	0.033***
	−0.009	−0.006	−0.007	−0.02	−0.009	−0.005	−0.007	−0.02	−0.009	−0.006
ST collateral	0.189***	0.015**	0.172***	−0.195***	0.179***	0.018***	0.159***	−0.162***	0.168***	0.023***
	−0.012	−0.006	−0.009	−0.026	−0.012	−0.006	−0.01	−0.028	−0.013	−0.007
Export intensity	0.007	0	0.007	0.007						
	−0.012	−0.008	−0.009	−0.028						
Export intensity * ST collateral	0.082**	−0.001	0.080***	−0.108						
	−0.036	−0.019	−0.03	−0.072						
Export diversity					0.004	0.006	−0.001	0.031	0.027	0.017
					−0.009	−0.006	−0.006	−0.02	−0.023	−0.015
Export diversity * ST collateral					0.067***	−0.011	0.075***	−0.143***	0.156**	−0.057
					−0.023	−0.013	−0.02	−0.05	−0.067	−0.037
Export diversity sq									−0.02	−0.011
									−0.019	−0.013
Export diversity sq. * ST collateral									−0.075	0.042
									−0.055	−0.034
No. of destinations										
No. of destinations * ST collateral										
Constant	−0.300***	−0.109***	−0.176***	0.240**	−0.289***	−0.107***	−0.167***	0.229**	−0.290***	−0.108***
	−0.047	−0.027	−0.037	−0.108	−0.047	−0.027	−0.037	−0.108	−0.047	−0.027
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,938	26,938	26,938	19,830	26,938	26,938	26,938	19,830	26,938	26,938
No. of firms	5270	5270	5270	4475	5270	5270	5270	4475	5270	5270
F	63.545	34.238	36.82	21.76	63.888	34.452	37.011	21.923	61.889	33.161
Adjusted R^2	0.253	0.22	0.174	0.122	0.254	0.22	0.176	0.123	0.255	0.22

	Model 3		Model 4				Model 5				Model 6
	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT	TOT
Group	0.001	−0.036***	−0.006	−0.007***	0.001	−0.035***	−0.007*	−0.008***	0	−0.035***	−0.005
	−0.003	−0.008	−0.004	−0.002	−0.003	−0.008	−0.004	−0.002	−0.003	−0.008	−0.004
Volatility	−0.273***	−0.403***	−0.461***	−0.197***	−0.265***	−0.413***	−0.458***	−0.199***	−0.259***	−0.410***	−0.469***
	−0.03	−0.101	−0.04	−0.023	−0.03	−0.101	−0.04	−0.024	−0.031	−0.101	−0.04
Profitability	−0.281***	0.265***	−0.372***	−0.083***	−0.284***	0.270***	−0.370***	−0.083***	−0.282***	0.268***	−0.371***
	−0.012	−0.045	−0.016	−0.009	−0.012	−0.044	−0.016	−0.009	−0.012	−0.045	−0.016
LT collateral	0.156***	0.459***	0.435***	0.277***	0.156***	0.461***	0.431***	0.276***	0.154***	0.460***	0.435***
	−0.011	−0.031	−0.015	−0.011	−0.011	−0.031	−0.015	−0.011	−0.011	−0.031	−0.015

(*continued on next page*)

Table 3 (*continued*)

	Model 3		Model 4				Model 5				Model 6
	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT	TOT
Size	0.013***	0.008	0.022***	0.008***	0.013***	0.008	0.023***	0.008***	0.014***	0.006	0.023***
	−0.002	−0.006	−0.003	−0.002	−0.002	−0.007	−0.003	−0.002	−0.002	−0.007	−0.003
Growth	0.034***	0.073***	0.067***	0.033***	0.034***	0.072***	0.070***	0.035***	0.035***	0.074***	0.066***
	−0.007	−0.02	−0.009	−0.006	−0.007	−0.02	−0.01	−0.006	−0.007	−0.021	−0.009
ST collateral	0.144***	−0.130***	0.151***	0.020**	0.130***	−0.103***	0.203***	0.018***	0.182***	−0.197***	0.189***
	−0.011	−0.03	−0.015	−0.008	−0.012	−0.034	−0.011	−0.006	−0.009	−0.024	−0.012
Export intensity							0.053*	0.031*	0.022	0.08	
							−0.028	−0.018	−0.02	−0.069	
Export intensity * ST collateral							0.053	−0.066	0.116*	−0.344*	
							−0.081	−0.043	−0.07	−0.181	
Export diversity	0.011	0.05									0.001
	−0.016	−0.054									−0.002
Export diversity * ST collateral	0.207***	−0.417***									0.014**
	−0.056	−0.144									−0.006
Export diversity sq	−0.01	−0.019									
	−0.014	−0.046									
Export diversity sq. * ST collateral	−0.114**	0.241*									
	−0.046	−0.131									
No. of destinations			−0.005*	0	−0.005**	0.019***					
			−0.003	−0.002	−0.002	−0.007					
No. of destinations * ST collateral			0.035***	−0.003	0.036***	−0.072***					
			−0.008	−0.004	−0.007	−0.017					
Constant	−0.167***	0.228**	−0.287***	−0.114***	−0.157***	0.209*	−0.306***	−0.102***	−0.189***	0.258**	−0.301***
	−0.037	−0.108	−0.048	−0.028	−0.037	−0.109	−0.047	−0.027	−0.037	−0.109	−0.047
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,938	19,830	26,938	26,938	26,938	19,830	25,932	25,932	25,932	19,104	26,919
No. of firms	5270	4475	5270	5270	5270	4475	5209	5209	5209	4412	5270
F	36.258	21.9	63.898	34.629	37.338	22.1	62.231	33.471	36.272	21.147	63.402
Adjusted R^2	0.18	0.125	0.253	0.22	0.176	0.124	0.251	0.22	0.171	0.123	0.252

	[illegible]			[illegible]				[illegible]			
	LT	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT
Group	−0.007***	0.001	−0.036***	−0.006	−0.008***	0.001	−0.036***	−0.003	−0.006**	0.002	−0.032***
	−0.002	−0.003	−0.008	−0.004	−0.002	−0.003	−0.008	−0.004	−0.002	−0.003	−0.009
Volatility	−0.199***	−0.270***	−0.406***	−0.460***	−0.197***	−0.263***	−0.413***	−0.469***	−0.192***	−0.276***	−0.440***
	−0.024	−0.03	−0.101	−0.04	−0.024	−0.03	−0.102	−0.045	−0.027	−0.034	−0.115
Profitability	−0.083***	−0.283***	0.265***	−0.369***	−0.083***	−0.281***	0.263***	−0.352***	−0.077***	−0.269***	0.292***
	−0.009	−0.012	−0.045	−0.016	−0.009	−0.012	−0.045	−0.018	−0.01	−0.014	−0.051
LT collateral	0.277***	0.156***	0.459***	0.435***	0.277***	0.156***	0.458***	0.443***	0.274***	0.167***	0.457***
	−0.011	−0.011	−0.031	−0.015	−0.011	−0.011	−0.031	−0.017	−0.012	−0.012	−0.035
Size	0.008***	0.014***	0.008	0.023***	0.008***	0.014***	0.007	0.019***	0.008***	0.010***	0.013*
	−0.002	−0.002	−0.007	−0.003	−0.002	−0.002	−0.007	−0.003	−0.002	−0.003	−0.008
Growth	0.033***	0.033***	0.075***	0.066***	0.034***	0.033***	0.075***	0.055***	0.029***	0.027***	0.074***
	−0.006	−0.007	−0.02	−0.009	−0.006	−0.007	−0.02	−0.011	−0.006	−0.008	−0.023
ST collateral	0.014**	0.174***	−0.200***	0.193***	0.013**	0.179***	−0.207***	0.180***	0.015**	0.165***	−0.206***
	−0.006	−0.01	−0.026	−0.011	−0.006	−0.009	−0.025	−0.012	−0.006	−0.009	−0.027
Export intensity											
Export intensity * ST collateral											

(*continued on next page*)

Table 3 (*continued*)

	Model 6			Model 7				Model 8			
	LT	ST	MAT	TOT	LT	ST	MAT	TOT	LT	ST	MAT
Export diversity	0	0.001	0.001								
	−0.001	−0.001	−0.005								
Export diversity * ST collateral	0.001	0.012**	−0.015								
	−0.003	−0.005	−0.012								
Export diversity sq				−0.007	−0.006	0	0.004				
				−0.008	−0.005	−0.006	−0.02				
Export diversity sq. * ST collateral				0.061***	0.012	0.047**	−0.05				
				−0.024	−0.014	−0.019	−0.053				
No. of destinations								−0.02	0.031	−0.055	0.044
								−0.09	−0.065	−0.055	−0.199
No. of destinations * ST collateral								1.041***	−0.041	1.047***	−0.855**
								−0.2	−0.126	−0.155	−0.371
Constant	−0.109***	−0.177***	0.242**	−0.311***	−0.110***	−0.185***	0.251**	−0.244***	−0.109***	−0.120***	0.153
	−0.027	−0.037	−0.108	−0.047	−0.027	−0.037	−0.108	−0.054	−0.031	−0.041	−0.126
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	26,919	26,919	19,818	26,908	26,908	26,908	19,804	19,634	19,634	19,634	14,391
No. of firms	5270	5270	4475	5270	5270	5270	4475	4391	4391	4391	3702
F	34.163	36.702	21.605	63	34.127	36.584	21.502	52.911	26.778	34.065	18.153
Adjusted R^2	0.22	0.174	0.121	0.251	0.22	0.172	0.122	0.252	0.211	0.185	0.123

Note: This table contains the results for the pooled OLS regressions of the determinants of financial leverage for the full matched sample of exporters and nonexporters. The dependent variables are TOT (total financial debt/total assets), LT (long-term financial debt/total assets), ST (short-term financial debt/total assets) and MAT (long-term financial debt/total financial debt). All continuous variables have been Winsorized at the 1%-level. All independent variables are one-period lagged. Industry (2-digit level) and year dummies have been included in all regressions. The (unreported) coefficients are available upon request. The robust standard errors (clustered at firm-level) are reported in parentheses.

* Denotes significance at 10%.

** Denotes significance at 5%.

*** Denotes significance at 1%.

specification. For instance, firms that are part of a business group generally have better access to both internal and external capital markets than that of their standalone peers (Dewaelheyns & Van Hulle, 2012). As a robustness check, we therefore confine our analysis to standalone firms. This results in qualitatively similar findings.

The international trade database only concerns trades in goods. Cross-border service provisions are not registered, which may result in the misclassification of exporting service providers as nonexporting firms in our dataset. In addition, goods represent the majority of export flows, but they are often exported by intermediate traders (e.g., wholesalers and retailers), while trade intermediation is known to be more prevalent in export markets with high sunk entry costs, a weak contracting environment, high risk of expropriation and that are geographically and culturally distant from the home market (Bernard, Grazzi, & Tomasi, 2015). In addition, these trade intermediaries are smaller on average (Bernard, Jensen, Redding, & Schott, 2010), have less collateral and may consequently face substantial difficulties in accessing external financing. We, therefore, repeat the analysis for manufacturing firms only. The results are robust.

Until 2006, firms had to report their intra-EU trade through the Intrastat inquiry if their export flows surpassed 250,000 euros per year. As of 2006, a reporting threshold of one million euros applies to intra-EU trade transactions. To correct for this inconsistency in the reporting of intra-EU trade flows during the research period, we repeat our analysis after imposing a constant reporting threshold of one million euros on intra-EU export flows, while keeping the definition of the EU constant over the research period (EU27). The results are again robust.

Finally, we apply a number of alternative matching procedures. As a robustness check, we match each exporting firm with a nonexporting firm active in the same sector (2-digit level) and that is of comparable size (in terms of total assets, and a maximum deviation of 30% is allowed) to control for self-selection bias. Our findings remain qualitatively unchanged. A drawback of this bivariate matching procedure, however, is that the export variable might still capture other characteristics since nonexporters and exporters differ on many other, both observable and unobservable, dimensions. Repeating the analysis on the initial, unmatched dataset of exporters and nonexporters does not alter the main conclusions of our analysis either, indicating that the matching procedure does not affect our results to a large extent (results available upon request).

6.2. Difference-in-difference analyses

To deepen our understanding of the causal impact of export dynamics on SME financing policies and to minimize concerns about reverse causality, we supplement our analysis by taking a closer look at two specific settings using a difference-in-difference (DID) methodology. As mentioned above, the conditional DID controls for selection on both observable and unobservable dimensions by combining the advantages of propensity score matching (PSM) techniques and the DID-estimator.

6.2.1. Export entry

Access to finance may be both a determinant and an outcome of internationalization. Prior studies have shown that financial resources are an important driver of export participation and that a lack of such resources may constitute an important impediment to the success of the international strategy of the firm (Bellone, Musso, Nesta, & Schiavo, 2010; Chaney, 2016; Fauceglia, 2015; Greenaway et al., 2007; Minetti & Zhu, 2011). By applying a difference-in-difference methodology, we aim to minimize any remaining concern that reverse causality is driving our results.

The impact of export entry on corporate financing policy y_i can be modeled as $y^1_{i,t+1}$ - $y^0_{i,t+1}$, where $y^1_{i,t+1}$ measures the postexport entry leverage or debt maturity of the export entrant i at time $t + 1$ and the counterfactual $y^0_{i,t+1}$ stands for the postentry leverage or debt maturity of the entrant i at time $t + 1$ should it not have decided to start exporting at time t. The counterfactual situation is unobservable by definition, meaning that a valid control group must be identified to measure this variable. To study the causal impact of export entry on debt financing choices, we, therefore, construct two samples. The first sample contains all firms that start exporting during the research period. Export entrants are firms that did not report export sales in the two years preceding entry into export markets but do report export sales in the two years following export entry (Pär & Nan, 2004). When a firm enters export markets more than once during the research horizon, only the first entry is included. 530 firms entered export markets during the sample period. The control sample of nonexporters contains all firms that did not report export sales between 1996 and 2010.

Randomly assigning continuous nonexporters to export entrants would not be appropriate since they are likely to differ considerably with respect to some pre-export entry characteristics, causing potential sample selection bias. Therefore, at each point in time t and for each firm i that enters foreign markets, a nonexporter k is selected as a matching partner, who is similar with respect to a range of pre-export entry firm characteristics. The propensity score technique (Rosenbaum & Rubin, 1983 and 1985) allows various pre-entry dimensions to be reduced into a single propensity score, the latter being the basis for matching. These scores, which model the probability of export entry, are identified using a Probit model. $P_{l,\ t-1}$ denotes the predicted probability at *t-1* that firm l (i.e., both firms i and k) will enter export markets at time t. The probability of export market entry is modeled as a function of pre-export entry total factor productivity, group affiliation, firm size (total assets), firm age, sales growth, profitability, and short-term and long-term debt ratios. After calculating the propensity scores, we match each export entrant with its closest nonexporting firm in terms of their propensity scores, using nearest-neighbor matching.

A DID estimator on the matched export entrants and continuous nonexporters is then employed to examine the causal effect of export entry on the corporate financing policy. The DID regression model on the matched sample is specified as follows:

$$\begin{aligned} Y_{i,t} = {} & \alpha + \beta_1 X_{i,t-1} + \beta_2 \text{Post}_{i,t} + \beta_3 \text{Export Entrant}_i + \beta_4 \text{Post}_{i,t} \\ & * \text{Export Entrant}_i + \eta_j + \tau_t + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where *Export Entrant*$_i$ is a dummy variable that equals unity for all export entrants and zero for all continuous nonexporters. This variable controls for any permanent differences between export entrants and nonexporters. *Post*$_{i,t}$ is a dummy variable equal to one in the postexport entry period and controls for common trends between export entrants and their matched nonexporters. $X_{i,t-1}$ represents a vector of lagged control variables (earnings volatility, group affiliation, profitability, firm size, sales growth and both short-term and long-term asset tangibility). The inclusion of time-varying firm characteristics ensures that the DID estimates are unaffected by shocks in these determinants. The coefficient of interest belongs to the interaction term between the *Export Entrant* and *Post* dummies (β_4), as it indicates the impact of export entry on the financing policy. Time (τ_t) and industry (η_j) or firm fixed effects (η_i) are also added.

Table 4 presents the coefficient estimates for the DID analysis on the matched sample of export entrants and continuous nonexporters. Under both pooled OLS (first four columns) and firm fixed effects (next four columns), we find that the coefficient of the interaction term between the dummies *Post* and *Export Entrant* is positive and significant, indicating that the average short-term financial debt ratio increases significantly following export entry. The coefficients belonging to this interaction term in our total and long-term debt equation are not significant.

6.2.2. A shock to political risk

To model the impact of a shock to political risk on the financing policy of exporters, we construct two samples. The first sample consists

Table 4
Export entry.

	Pooled OLS				Firm FE			
	TOT	LT	ST	MAT	TOT	LT	ST	MAT
Post	0.010	0.009*	0.001	0.029	0.009	0.007	0.002	−0.022
	(0.009)	(0.005)	(0.007)	(0.025)	(0.008)	(0.005)	(0.007)	(0.025)
Export entrant	−0.020	0.005	−0.025**	0.036				
	(0.015)	(0.010)	(0.012)	(0.039)				
Post ∗ export entrant	0.015	−0.003	0.018**	−0.034	0.008	−0.004	0.012*	−0.028
	(0.011)	(0.007)	(0.009)	(0.031)	(0.008)	(0.006)	(0.007)	(0.024)
Group	0.001	0.001	−0.001	−0.029	0.012	0.008	0.004	0.023
	(0.011)	(0.007)	(0.009)	(0.026)	(0.008)	(0.006)	(0.005)	(0.026)
Volatility	−0.351***	−0.137**	−0.214***	−0.212	0.015	0.033	−0.017	0.066
	(0.079)	(0.054)	(0.058)	(0.374)	(0.048)	(0.035)	(0.040)	(0.286)
Profitability	−0.279***	−0.055**	−0.224***	0.288**	−0.105**	−0.030	−0.075*	0.054
	(0.039)	(0.023)	(0.030)	(0.131)	(0.050)	(0.026)	(0.044)	(0.138)
LT collateral	0.448***	0.296***	0.152***	0.495***	0.299***	0.185***	0.114**	0.281*
	(0.042)	(0.032)	(0.028)	(0.080)	(0.063)	(0.046)	(0.048)	(0.154)
ST collateral	0.169***	0.021	0.148***	−0.209***	0.037	−0.029*	0.065*	−0.031
	(0.026)	(0.013)	(0.021)	(0.061)	(0.044)	(0.016)	(0.037)	(0.072)
Size	0.036***	0.017***	0.019***	0.005	0.072	0.036***	0.036**	0.048
	(0.008)	(0.005)	(0.007)	(0.018)	(0.018)	(0.010)	(0.014)	(0.048)
Growth	−0.001***	−0.000**	−0.001***	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)
Constant	−0.572***	−0.277***	−0.294***	0.322	−0.983	−0.497***	−0.487**	−0.412
	(0.129)	(0.088)	(0.106)	(0.302)	(0.284)	(0.162)	(0.221)	(0.776)
Time FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	No	No	No	No
Observations	2153	2153	2153	1500	2153	2153	2153	1500
No. of firms	622	622	622	494	622	622	622	494
F	19.788	14.302	7.760	6.623	6.014	14.389	1.246	1.134
Adjusted R^2	0.286	0.227	0.173	0.114	0.105	0.077	0.047	0.018

Note: This table analyzes the impact of entry into export markets on financial leverage in a difference-in-difference (DID) setup on a propensity score matched sample of export entrants and continuous nonexporters. The dependent variables of the DID specifications are TOT (total financial debt/total assets), LT (long-term financial debt/total assets), ST (short-term financial debt/total assets) and MAT (long-term financial debt/total financial debt). Post is a dummy variable that equals one in the period following export market entry. Export Entrant is a dummy variable that equals one when the firm entered export markets during the sample period and zero when the firm is a continuous nonexporter. The interaction term between both dummy variables is of main interest, as it captures the causal impact of export entry on financial leverage and debt maturity. Industry or firm fixed effects and year dummies have been included in all regressions. The (unreported) coefficients are available upon request. All continuous variables have been Winsorized at the top and bottom 1% to reduce the influence of outliers. Robust standard errors (clustered at firm-level) are reported in parentheses.

* Denotes significance at 10%.
** Denotes significance at 5%.
*** Denotes significance at 1%.

of all firms that exported to the six main Arab countries involved in the Arab Spring[11] both prior to and after its outbreak (2009–2013). The second sample consists of all firms that reported export activities during this period but that were not engaged in trading with these six countries. Since firms exporting to Arab Spring countries and those that do not may differ substantially on a range of observable and unobservable characteristics, we again apply a propensity score matching procedure. For each firm *i* that exports to at least one of the six Arab Spring countries, a non-Arab Spring country exporter *j* is selected, who is similar with respect to a range of observable firm characteristics (from 2010). As before, we include total factor productivity, group affiliation, firm size (total assets), firm age, sales growth, profitability, and short-term and long-term debt ratios in the Probit equation, and we again apply a nearest-neighbor matching procedure.

We employ the following DID setup on the matched sample of Arab and non-Arab Spring country exporters during the period from 2009 to 2012:

$$Y_{i,t} = \alpha + \beta_1 X_{i,t-1} + \beta_2 Post_t + \beta_3 Arab\ Spring\ Country\ Exporter_i + \beta_4 Post_t * ST\ Collateral_{i,t} + \beta_5 Post_t * Arab\ Spring\ Country\ Exporter_i + \beta_6 Arab\ Spring\ Country\ Exporter_i * ST\ Collateral_{i,t} + \beta_7 Post_t * Arab\ Spring\ Country\ Exporter_i * ST\ Collateral_{i,t} + \eta_j + \varepsilon_{i,t} \quad (3)$$

where *Arab Spring Country Exporter*$_i$ is a dummy variable that equals unity for all exporters that conduct trade with at least one of the six Arab Spring countries in the 2009–2013 period and equals zero for exporters that did not trade with Arab Spring countries during this period. *Post*$_t$ is a dummy variable that equals one after the start of the Arab Spring (i.e., as of January 2011 until end of 2012). $X_{i,t-1}$ represents the usual vector of lagged determinants of the corporate capital structure. The coefficient of interest belongs to the interaction term between the dummies *Arab Spring Country Exporter* and *Post*, and the continuous variable *ST Collateral* (β_7), as it reflects the impact of a change in the political climate on the relationship between pledgeable short-term assets and the financing policy for Arab Spring country exporters. Industry (η_j) or firm fixed effects (η_i) are also added to control for unobserved industry or firm heterogeneity. Table 5 summarizes the DID coefficient estimates. In line with expectations, we find that the coefficients of the interaction terms between the dummies *Post* and *Arab Spring Country Exporter* and the *ST Collateral* variable are positive and statistically significant for the short-term debt equations. Again, the

[11] The Arab Spring was named after a long series of demonstrations, protests and civil wars in the Arab world that began in December 2010 in Tunisia but spread throughout many other Arab countries in the months after. Initially, the largest protests and demonstrations took place in Tunisia, Egypt, Libya, Yemen, Syria and Bahrain.

Table 5
A shock to political risk.

	Pooled OLS				Firm FE			
	TOT	LT	ST	MAT	TOT	LT	ST	MAT
Post	−0.003	−0.003	−0.001	0.178	−0.008	−0.008	−0.002	0.013
	(0.031)	(0.017)	(0.021)	(0.119)	(0.021)	(0.011)	(0.016)	(0.052)
ST collateral	0.122	−0.093*	0.202	−0.038	−0.002	−0.093*	0.080	−0.188
	(0.158)	(0.049)	(0.130)	(0.387)	(0.074)	(0.048)	(0.067)	(0.328)
Post * ST collateral	0.028	0.026	0.015	−0.496	−0.013	0.017	−0.017	−0.145
	(0.094)	(0.039)	(0.070)	(0.355)	(0.042)	(0.026)	(0.026)	(0.188)
Arab spring country exporter	−0.039	−0.026	−0.015	0.121				
	(0.060)	(0.036)	(0.043)	(0.180)				
Post * Arab spring country exporter	−0.054	0.004	−0.056*	−0.111	−0.054*	−0.012	−0.039*	−0.015
	(0.046)	(0.029)	(0.032)	(0.169)	(0.030)	(0.022)	(0.020)	(0.116)
Arab spring country exporter * ST collateral	0.013	0.087	−0.062	−0.057	−0.209*	−0.017	−0.181**	0.729
	(0.185)	(0.087)	(0.153)	(0.501)	(0.108)	(0.091)	(0.085)	(0.595)
Post * Arab spring country Exp * ST collateral	0.221	−0.012	0.220**	0.062	0.226**	0.055	0.158***	−0.001
	(0.136)	(0.077)	(0.099)	(0.454)	(0.093)	(0.064)	(0.055)	(0.283)
Group	−0.009	−0.003	−0.006	−0.080	−0.023	−0.001	−0.022	0.013
	(0.025)	(0.013)	(0.019)	(0.065)	(0.018)	(0.004)	(0.018)	(0.064)
Volatility	0.138	0.022	0.117	−0.877	0.039	0.225**	−0.187	0.813
	(0.278)	(0.136)	(0.250)	(0.831)	(0.152)	(0.108)	(0.150)	(0.788)
Profitability	−0.383***	−0.130***	−0.253***	0.017	−0.031	−0.027	−0.003	−0.020
	(0.093)	(0.045)	(0.073)	(0.283)	(0.052)	(0.035)	(0.047)	(0.289)
LT collateral	0.434***	0.286***	0.149***	0.285	−0.073	0.125*	−0.199	0.296
	(0.073)	(0.045)	(0.048)	(0.199)	(0.151)	(0.068)	(0.142)	(0.186)
Size	0.004	−0.017*	0.020	−0.027	0.037	0.027	0.010	0.077
	(0.021)	(0.009)	(0.017)	(0.050)	(0.025)	(0.019)	(0.022)	(0.059)
Growth	0.138*	0.068**	0.070	−0.014	−0.019	−0.030*	0.010	−0.252*
	(0.074)	(0.033)	(0.060)	(0.167)	(0.033)	(0.016)	(0.031)	(0.139)
Constant	−0.002	0.312**	−0.311	0.861	−0.383	−0.384	−0.008	−1.001
	(0.354)	(0.155)	(0.289)	(0.818)	(0.415)	(0.321)	(0.361)	(0.940)
Industry FE	Yes	Yes	Yes	Yes	No	No	No	No
Firm FE	No	No	No	No	Yes	Yes	Yes	Yes
Observations	402	402	402	279	402	402	402	279
No. of firms	159	159	159	120	159	159	159	120
F	7.777	5.909	5.867	3.910	1.544	1.557	1.302	1.751
Adjusted R^2	0.277	0.307	0.202	0.117	0.055	0.063	0.060	0.071

Note: This table analyzes the impact of the outbreak of the Arab Spring at the end of 2010 on financial leverage in a difference-in-difference (DID) setup on a propensity score matched sample of Arab Spring country and non-Arab Spring country exporters during the period of 2009–2012. The dependent variables of the DID specifications are TOT (total financial debt/total assets), LT (long-term financial debt/total assets), ST (short-term financial debt/total assets) and MAT (long-term financial debt/total financial debt). Post is a dummy variable that equals one in the period following the outbreak of the revolution. Arab Spring is a dummy variable that equals one when the firm continuously exported to Arab Spring countries during the 2009–2013 period, and zero otherwise. The interaction term between both dummy variables and the continuous variable ST Collateral is of main interest, as it captures the actual impact of a shock to political risk on financial leverage and debt maturity. Industry or firm fixed effects and year dummies have been included in all regressions. The (unreported) coefficients are available upon request. The robust standard errors (clustered at firm-level) are reported in parentheses. All continuous variables have been Winsorized at the top and bottom 1% to reduce the influence of outliers.

* Denotes significance at 10%.
** denotes significance at 5%.
*** denotes significance at 1%.

stronger linkage between short-term debt levels and short-term pledgeable assets for Arab Spring country exporters after the outbreak of the Arab Spring could be attributable to a number of factors, such as a more intense use of trade finance instruments by these exporters to cope with a worsening political climate.

7. Conclusions

The empirical evidence on the impact of multinational status on the financing policies of large listed firms shows that internationalization results in a lower level of long-term debt and a higher level of short-term debt for multinational corporations (MNCs) than that for comparable domestic corporations (DCs) (Burgman, 1996; Doukas & Pantzalis, 2003; Fatemi, 1988). To date, SMEs have not received much research attention in this context, which is largely attributable to limitations in data availability on the export and import flows of smaller-sized, private businesses. Using a confidential dataset, assembled by the National Bank of Belgium, that merges corporate annual accounts and firm-level information on international trade transactions, this paper aims to advance the literature by providing an in-depth analysis of the impact of exporting on the debt financing choices of SMEs.

We document that exporting SMEs carry more financial leverage than that of their nonexporting peers and that this outcome is attributable to a greater use of short-term debt financing within exporting firms. As such, contrary to the literature on corporate financing decisions of large multinationals, we find no evidence in favor of a trade-off mechanism between debt maturities for exporting SMEs. The higher reliance of exporters on short-term debt financing is a direct result of their higher working capital needs; i.e., since international sales transactions take much longer to complete than domestic sales transactions, exporters face considerably longer cash conversion cycles. In line with the maturity matching principle, which states that the maturity of the uses of funds should match the maturity of the sources of funds, exporters resolve their higher need for working capital financing by carrying more short-term debt on their balance sheets. Apart from having a higher need for working capital financing due to the nature of

their business models, exporters also seem better able to access such financing than their nonexporting peers on the basis of the available pledgeable short-term assets. In particular, we show that a stronger linkage between short-term assets and the amount of short-term financial debt exists within exporting firms and that this association is most pronounced for export-intensive firms and firms that serve the more distant and riskier export destinations.

This study provides valuable new insights into the implications of exporting for SME financing decisions to both practitioners and policy makers, who devote substantial effort and resources to facilitate access to finance and to stimulate the export development of SMEs. In particular, our findings suggest that the development and availability of tools and instruments that facilitate the use of assets for collateral purposes at an affordable cost is likely to stimulate SME export activities by widening their access to external credit.

Our results may also clarify how capital constraints may affect SME export behavior. The strong reliance of exporting firms on short-term (asset-backed) funding and bank- or insurer-intermediated trade finance to prefinance their export activities may serve as an explanation for a trade collapse during credit crunches or in periods of low profitability. Negative bank credit shocks are shown to reduce export activities considerably (Ahn et al., 2011; Amiti & Weinstein, 2011; Paravisini, Rappoport, Schnabl, & Wolfenzon, 2015), and especially so for firms active in sectors that exhibit high financial dependence. Therefore, any policy aiming at overcoming the capital constraints faced by (exporting) SMEs and avoiding spillovers from the financial system to the real economy should be highly encouraged. In addition, financial dependence might affect export volumes by limiting the range of potential importers a firm can sell to. Exporters that are highly dependent upon bank or insurer-intermediated trade finance might be able to sell to the most creditworthy foreign customers only, since banks and insurers are likely to provide payment guarantees and credit insurance on receivables for this type of firm only. Financially independent firms, by contrast, which are less reliant upon external funding to finance their export activities, may be able to export to a wider variety of importers. Simultaneously, since such financially independent SMEs do not have to rely upon the credit standing of their importing customers to obtain financing, they are also likely to be in a stronger bargaining position relative to these customers. Overall, future research would benefit from the availability and exploitation of granular information on the use of bank- and insurer-intermediated trade financing by exporting versus nonexporting firms.

Acknowledgements

We received helpful comments and suggestions from two anonymous journal reviewers, Brecht de Groote, Sofie De Prijcker, Matthias Saerens, Weidong Xu, seminar participants at the National Bank of Belgium and at KU Leuven, participants of the 2015 Corporate Finance Day in Ghent, the 2016 3L Finance Research Workshop in Brussels, the 2016 FMA European Conference in Helsinki, the 2016 Annual Conference of the Multinational Finance Society in Stockholm and the 2016 Corporate Finance Day in Antwerp. The authors gratefully acknowledge financial support from the National Bank of Belgium (Project No. 3H130602) and also thank the National Bank of Belgium for the data assistance with the foreign trade database and the annual accounts database from the Central Balance Sheet Office. Further, we thank the Hercules Foundation (Project No. AKUL/11/02) for the financing provided to purchase the Bel-First and Datastream databases used in this paper to gather additional information. The views expressed in this paper are those of the authors and do not necessarily reflect the views of the National Bank of Belgium or any other institution to which the authors are affiliated. All remaining errors are our own.

Appendix A

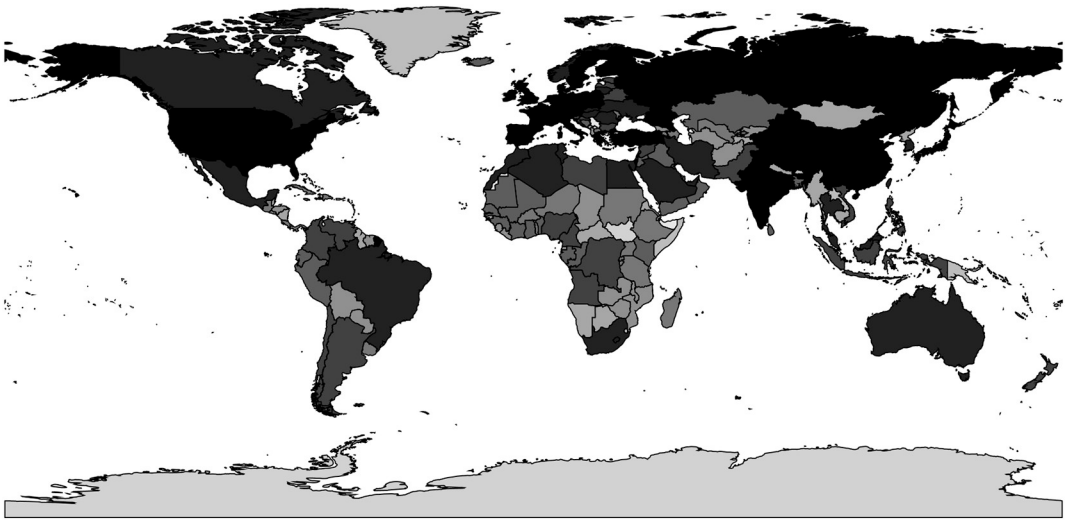

Fig. A.1. Belgian worldwide export destinations (1998–2013).
Note: Different tones of gray are used to visualize the importance of each country as a trading partner during the period from 1998 to 2013; that is, the darker colored the country, the larger its share in Belgian exports.

Table A.1
Sample selection.

Description of the selection step	No. of obs.
Original sample size	188,425
- Dropped observations that do not satisfy the SME definition	13,837
- Dropped observations pertaining to firms that have < 4 years of consecutive data	9914
- Dropped observations pertaining to (previously) listed firms	999
- Dropped observations for which the debt ratio > 100% or the growth in asset sales > 100% or zero sales	12,599
- Dropped observations for which FDI ownership > 10%	20,783
- Dropped observations from financial services, and nonprofit sector	(Not included in the original sample)
- Micro-enterprises (< 10 FTE)	44,682
- Miscellaneous drops (f.i. export intensity > 100%, nondebt tax shields > 100%, missing observations for leverage and loan maturity, …)	11,181
Final unmatched sample size	74,430
- Dropped observations due to matching	36,635
Final matched sample size	37,795

Table A.2
Variables' definition.

Variables	Definition
Dependent variables	
$ST_{i,t}$, $LT_{i,t}$, $TOT_{i,t}$	Short-term, long-term and total financial debt over total assets
$MAT_{i,t}$	Long-term financial debt over total financial debt
Control variables	
$Size_{i,t}$	ln of total assets
$Volatility_{i,t}$	Standard deviation of three-year EBIT over total assets
$Growth_{i,t}$	Average annual change in sales over the three preceding years
$Group_{i,t}$	1 if the firm is controlled by at least 50%, directly or indirectly, by a parent firm, 0 otherwise
$Profitability_{i,t}$	EBIT over total assets
$TFP_{i,t}$	Total factor productivity, based on estimating the production function coefficients using the Levinsohn and Petrin (2003) methodology
$Age_{i,t}$	Years since firm incorporation
LT $Collateral_{i,t}$	Tangible fixed assets over total assets
ST $Collateral_{i,t}$	Inventories and accounts receivable minus accounts payable over total assets
Export characteristics	
Export $Status_{i,t}$	1 if the firm reports export sales, 0 otherwise
Export $Intensity_{i,t}$	Export sales over total sales
Export $Diversity_{i,t}$	The negative sum of the products of the percentage of sales generated in each region k and the ln of that percentage. The six homogenous regions are defined as follows: 1) Belgium; 2) neighboring countries of Belgium; 3) other EU members; 4) non-EU countries, geographically located within Europe; 5) Canada and US and 6) all other countries.
No. of $Destinations_{i,t}$	ln of 1 + number of export destination countries
Political $Risk_{i,t}$	Weighted average of the country-specific political risk indices of the export destination countries from performing a yearly principal components analysis on the following four legality measures from Kaufmann et al. (2011): government effectiveness, regulatory quality, rule of law, and control of corruption. Weights equally the proportion of sales generated in a particular country to total sales.
Cultural $Distance_{i,t}$	A composite single-country cultural distance index is constructed yearly on the basis of the squared deviations of each export destination country from Belgium along the three World Values Survey (WVS) dimensions of national culture (i.e., trust, individualism and hierarchy). The cultural distance at the level of the firm then equals the weighted average of these country-specific indices, where the weights equal the proportion of sales generated in that particular country to total sales.
Geographic $Distance_{i,t}$	Weighted average of the ln of the great-circle distance in km between the most important cities in terms of population of Belgium and the export destination countries. Geographic distances are taken from CEPII. Weights equal the proportion of sales generated in a particular country to total sales.
Exchange $Exposure_{i,t}$	Markowitz (1952) portfolio variance, in which the portfolio assets are the national currencies of the export destination countries and the portfolio weights are defined as the difference between export and import flows directed towards and originating from a particular country, scaled by (total turnover minus costs of goods sold).

Table A.3
Pearson correlation matrix.

	1.	2.	3.	4.	5.	6.	7.	8.
1. TOT	1.00							
2. LT	0.69***	1.00						
3. ST	0.80***	0.12***	1.00					
4. MAT	0.07***	0.66***	−0.48***	1.00				
5. Size	0.10***	0.08***	0.06***	0.04***	1.00			
6. Volatility	−0.14***	−0.11***	−0.11***	−0.05***	−0.18***	1.00		
7. LT collateral	0.36***	0.46***	0.12***	0.32***	0.03***	−0.04***	1.00	
8. ST Collateral	0.13***	−0.10***	0.26***	−0.25***	−0.11***	−0.01	−0.29***	1.00
9. Profitability	−0.24***	−0.14***	−0.22***	0.03***	−0.01***	0.04***	−0.15***	0.06***
10. Growth	0.03***	0.04***	0.01	0.04***	0.11***	−0.05***	0.02***	−0.01
11. Export intensity	0.07***	0.02***	0.07***	−0.02***	0.18***	0.08***	0.06***	0.07***
12. Political risk	0.04***	−0.00	0.05***	−0.03***	0.18***	0.07***	0.02***	0.08***

(*continued on next page*)

Table A.3 (*continued*)

	1.	2.	3.	4.	5.	6.	7.	8.
13. Cultural distance	0.05***	0.02***	0.05***	−0.00	0.13***	0.06***	0.04***	0.05***
14. Geographic distance	0.06***	0.02***	0.07***	−0.02***	0.19***	0.08***	0.05***	0.07***
15. Export diversity	0.08***	0.02***	0.09***	−0.04***	0.21***	0.06***	0.03***	0.11***
16. Exchange Exposure	0.06***	−0.05***	0.12***	−0.10***	0.10***	0.03***	−0.12***	0.07***
17. No. of export dest.	0.07***	−0.01*	0.10***	−0.07***	0.27***	0.04***	−0.04***	0.16***
N	37,795							

	9.	10.	11.	12.	13.	14.	15.	16.	17.
1. TOT									
2. LT									
3. ST									
4. MAT									
5. Size									
6. Volatility									
7. LT collateral									
8. ST Collateral									
9. Profitability	1.00								
10. Growth	0.19***	1.00							
11. Export intensity	0.00	0.01***	1.00						
12. Political risk	0.00	0.02***	0.87***	1.00					
13. Cultural distance	−0.01	0.00	0.75***	0.58***	1.00				
14. Geographic distance	0.01	0.02***	0.99***	0.91***	0.74***	1.00			
15. Export diversity	−0.00	0.01**	0.88***	0.82***	0.70***	0.90***	1.00		
16. Exchange Exposure	−0.06***	0.00	0.25***	0.29***	0.19***	0.27***	0.26***	1.00	
17. No. of export dest.	0.02***	0.02***	0.72***	0.68***	0.55***	0.73***	0.83***	0.22***	1.00
N									

* $p < 0.10$.
** $p < 0.05$.
*** $p < 0.01$.

Table A.4
Descriptive statistics for the full unmatched sample and by export status.

	Full				Exporters				Non-Exporters				Equality of means		Equality of medians	
	N	Mean	Median	Sd	N	Mean	Median	Sd	N	Mean	Median	Sd	*t*-test	*p*-value	z-test	p-value
TOT	74,430	0.183	0.126	0.193	44,569	0.195	0.148	0.193	29,861	0.166	0.092	0.191	−19.648	0.000	−23.424	0.000
LT	74,430	0.081	0.016	0.121	44,569	0.079	0.019	0.116	29,861	0.085	0.012	0.128	6.035	0.000	−4.563	0.000
ST	74,430	0.101	0.041	0.131	44,569	0.114	0.053	0.140	29,861	0.081	0.028	0.114	−34.392	0.000	−30.953	0.000
MAT	55,454	0.415	0.418	0.329	34,506	0.394	0.372	0.329	20,948	0.450	0.491	0.327	19.483	0.000	18.269	0.000
Size	74,430	15.631	15.617	0.900	44,569	15.866	15.819	0.814	29,861	15.281	15.308	0.908	−91.761	0.000	−84.501	0.000
Age	74,242	2.988	3.091	0.763	44,471	3.017	3.135	0.756	29,771	2.944	3.045	0.770	−12.752	0.000	−12.875	0.000
Volatility	63,976	0.044	0.030	0.043	38,791	0.043	0.030	0.042	25,185	0.045	0.030	0.046	5.442	0.000	−0.592	0.554
LT collateral	74,430	0.207	0.159	0.182	44,569	0.195	0.154	0.166	29,861	0.225	0.168	0.203	22.148	0.000	11.305	0.000
ST collateral	73,980	0.269	0.261	0.222	44,426	0.299	0.294	0.211	29,554	0.224	0.207	0.230	−45.255	0.000	−46.140	0.000
Profitability	74,430	0.067	0.050	0.106	44,569	0.067	0.051	0.106	29,861	0.066	0.048	0.106	−1.695	0.090	−4.052	0.000
TFP	73,268	11.293	11.249	0.553	43,982	11.378	11.351	0.560	29,286	11.166	11.114	0.517	−51.876	0.000	−54.020	0.000
Growth	64,907	0.068	0.037	0.234	39,317	0.063	0.037	0.220	25,590	0.075	0.037	0.254	6.038	0.000	2.251	0.024
Export intensity	74,430	0.167	0.003	0.271	44,569	0.279	0.146	0.302	29,861	0.000	0.000	0.000				
Political risk	74,369	0.193	0.006	0.379	44,508	0.322	0.109	0.445	29,861	0.000	0.000	0.000				
Cultural distance	72,027	0.052	0.001	0.100	42,166	0.089	0.036	0.117	29,861	0.000	0.000	0.000				
Geographic distance	74,381	1.001	0.023	1.660	44,520	1.673	0.832	1.866	29,861	0.000	0.000	0.000				
Export diversity	74,430	0.300	0.021	0.412	44,569	0.501	0.435	0.428	29,861	0.000	0.000	0.000				
No. of destinations	74,430	1.201	1.099	1.218	44,569	2.005	1.946	0.929	29,861	0.000	0.000	0.000				
Exchange exposure	39,344	0.016	0.002	0.044	31,243	0.019	0.003	0.048	8101	0.005	0.000	0.022				

Note: The descriptive statistics on the full unmatched sample and the subsamples of exporters and unmatched nonexporting firms are presented. All continuous variables have been Winsorized at the top and bottom 1% to reduce the influence of outliers. The *t*-test statistics and corresponding *p*-values (equality of means) and the z-test statistics and corresponding p-values (equality of medians) have been added.

References

Ahern, K. R., Daminelli, D., & Fracassi, C. (2012). Lost in translation? The effect of cultural values on mergers around the world. *Journal of Financial Economics, 117*(1), 165–189.

Ahn, J., Amiti, M., & Weinstein, D. E. (2011). Trade finance and the great trade collapse. *The American Economic Review, 101*(3), 298–302.

Amiti, M., & Weinstein, D. E. (2011). Exports and financial shocks. *Quarterly Journal of Economics, 126*, 1841–1877.

Barclay, M. J., & Smith, C. W. (1995). The maturity structure of corporate debt. *The Journal of Finance, 50*(2), 609–631.

Bellone, F., Musso, P., Nesta, L., & Schiavo, S. (2010). Financial constraints and firm export behavior. *The World Economy, 33*(3), 347–373.

Berger, A. N., & Udell, G. F. (1995). Relationship lending and lines of credit in small firm finance. *Journal of Business, 68*(3), 351–381.

Berger, A. N., & Udell, G. F. (2006). A more complete conceptual framework for SME finance. *Journal of Banking & Finance, 30*(11), 2945–2966.

Berkowitz, D., Pistor, K., & Richard, J.-F. (2003). Economic development, legality, and the transplant effect. *European Economic Review, 47*(1), 165–195.

Bernard, A. B., Grazzi, M., & Tomasi, C. (2015). Intermediaries in international trade: Products and destinations. *Review of Economics and Statistics, 97*(4), 916–920.
Bernard, A. B., & Jensen, J. B. (1999). Exceptional exporter performance: Cause, effect, or both? *Journal of International Economics, 47*(1), 1–25.
Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2010). Wholesalers and retailers in US trade. *The American Economic Review, 100*(2), 408–413.
Bianchi, C., & Wickramasekera, R. (2016). Antecedents of SME export intensity in a Latin American market. *Journal of Business Research, 69*(10), 4368–4376.
Boot, A., Thakor, A. V., & Udell, G. F. (1991). Secured lending and default risk: Equilibrium analysis, policy implications and empirical results. *The Economic Journal, 101*(406), 458–472.
Burgman, T. A. (1996). An empirical examination of multinational corporate capital structure. *Journal of International Business Studies, 27*(3), 553–570.
Carbo-Valverde, S., Rodríguez-Fernández, F., & Udell, G. F. (2016). Trade credit, the financial crisis, and SME access to finance. *Journal of Money, Credit and Banking, 48*(1), 113–143.
Cavusgil, S. T. (1984). Differences among exporting firms based on their degree of internationalization. *Journal of Business Research, 12*(2), 195–208.
Chaney, T. (2016). Liquidity constrained exporters. *Journal of Economic Dynamics and Control, 72*, 141–154.
Chen, C. J., Cheng, C. A., He, J., & Kim, J. (1997). An investigation of the relationship between international activities and capital structure. *Journal of International Business Studies, 28*(3), 563–577.
Chkir, I. E., & Cosset, J.-C. (2001). Diversification strategy and capital structure of multinational corporations. *Journal of Multinational Financial Management, 11*(1), 17–37.
Chung, K. H. (1993). Asset characteristics and corporate debt policy: An empirical test. *Journal of Business Finance & Accounting, 20*(1), 83–98.
Coval, J. D., & Moskowitz, T. J. (1999). Home bias at home: Local equity preference in domestic portfolios. *The Journal of Finance, 54*(6), 2045–2073.
De Clercq, D., Sapienza, H. J., & Crijns, H. (2005). The internationalization of small and mediumsized firms. *Small Business Economics, 24*(4), 409–419.
De Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm-and country-specific determinants. *Journal of Banking & Finance, 32*(9), 1954–1969.
Degryse, H., de Goeij, P., & Kappert, P. (2012). The impact of firm and industry characteristics on small firms' capital structure. *Small Business Economics, 38*(4), 431–447.
Demirgüç-Kunt, A., & Maksimovic, V. (1999). Institutions, financial markets, and firm debt maturity. *Journal of Financial Economics, 54*(3), 295–336.
Dewaelheyns, N., & Van Hulle, C. (2012). Capital structure adjustments in private business group companies. *Applied Financial Economics, 22*(15), 1275–1288.
Diamond, D. W. (1991). Debt maturity structure and liquidity risk. *The Quarterly Journal of Economics, 106*(3), 709–737.
Doukas, J. A., & Pantzalis, C. (2003). Geographic diversification and agency costs of debt of multinational firms. *Journal of Corporate Finance, 9*(1), 59–92.
Fan, J. P., Titman, S., & Twite, G. (2012). An international comparison of capital structure and debt maturity choices. *Journal of Financial and Quantitative Analysis, 47*(1), 23–56.
Fatemi, A. M. (1988). The effect of international diversification on corporate financing policy. *Journal of Business Research, 16*(1), 17–30.
Fauceglia, D. (2015). Credit constraints, firm exports and financial development: Evidence from developing countries. *The Quarterly Review of Economics and Finance, 55*, 53–66.
Ferrando, A., & Mulier, K. (2013). Do firms use the trade credit channel to manage growth? *Journal of Banking & Finance, 37*(8), 3035–3046.
Garcia-Appendini, E., & Montoriol-Garriga, J. (2013). Firms as liquidity providers: Evidence from the 2007–2008 financial crisis. *Journal of Financial Economics, 109*(1), 272–291.
Grath, A. (2011). *The handbook of international trade and finance: The complete guide to risk management, international payments and currency management, bonds and guarantees, credit insurance and trade finance.* Great Britain: Kogan Page Publishers.
Greenaway, D., Guariglia, A., & Kneller, R. (2007). Financial factors and exporting decisions. *Journal of International Economics, 73*(2), 377–395.
Heckman, J., Ichimura, H., Smith, J., & Todd, P. (1998). Characterizing selection bias using experimental data. *Econometrica, 66*(5), 1017–1098.
Hirsch, S., & Lev, B. (1971). Sales stabilization through export diversification. *The Review of Economics and Statistics, 53*(3), 270–277.
Hummels, D. L., & Schaur, G. (2013). Time as a trade barrier. *The American Economic Review, 103*(7), 2935–2959.
ICC (2015). *Trade register report – Global risks in trade finance.* 1–92.
Javalgi, R. G., White, D. S., & Lee, O. (2000). Firm characteristics influencing export propensity: An empirical investigation by industry type. *Journal of Business Research, 47*(3), 217–228.
Jensen, M. C. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *The American Economic Review, 76*(2), 323–329.
Jones, P. M. (2010). Trade credit insurance. *Primer series on insurance* (pp. 15). Washington, DC: The World Bank.
Kaufmann, D., Kraay, A., & Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues. *Hague Journal on the Rule of Law, 3*(2), 220–246.
Levinsohn, J., & Petrin, A. (2003). Estimating production functions using inputs to control for unobservables. *The Review of Economic Studies, 70*(2), 317–341.
Markowitz, H. (1952). Portfolio selection. *The Journal of Finance, 7*(1), 77–91.
Michaelas, N., Chittenden, F., & Poutziouris, P. (1999). Financial policy and capital structure choice in UK SMEs: Empirical evidence from company panel data. *Small Business Economics, 12*(2), 113–130.
Minetti, R., & Zhu, S. C. (2011). Credit constraints and firm export: Microeconomic evidence from Italy. *Journal of International Economics, 83*(2), 109–125.
Morosini, P., Shane, S., & Singh, H. (1998). National cultural distance and cross-border acquisition performance. *Journal of International Business Studies, 29*(1), 137–158.
Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics, 5*(2), 147–175.
Ortiz-Molina, H., & Penas, M. F. (2008). Lending to small businesses: The role of loan maturity in addressing information problems. *Small Business Economics, 30*(4), 361–383.
Pär, H., & Nan, L. N. (2004). Exports as an indicator on or promoter of successful Swedish manufacturing firms in the 1990s. *Review of World Economics, 140*(3), 415–445.
Paravisini, D., Rappoport, V., Schnabl, P., & Wolfenzon, D. (2015). Dissecting the effect of credit supply on trade: Evidence from matched credit–export data. *The Review of Economic Studies, 82*(1), 333–359.
Petersen, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies, 22*(1), 435–480.
Rosenbaum, P., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika, 70*(1), 41–55.
Rosenbaum, P., & Rubin, D. B. (1985). Constructing a control group using multivariate matched sampling methods that incorporate the propensity score. *The American Statistician, 39*(1), 33–38.
Sogorb-Mira, F. (2005). How SME uniqueness affects capital structure: Evidence from a 1994– 1998 Spanish data panel. *Small Business Economics, 25*(5), 447–457.
Stohs, M. H., & Mauer, D. C. (1996). The determinants of corporate debt maturity structure. *Journal of Business, 69*(3), 279–312.
Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of Finance, 43*(1), 1–19.
Van der Wijst, N., & Thurik, R. (1993). Determinants of small firm debt ratios: An analysis of retail panel data. *Small Business Economics, 5*(1), 55–65.
WTO (2016). *Trade finance and SMEs: Bridging the gaps in provision.* 1–44.

Elisabeth Maes holds a PhD from the University of Leuven (KU Leuven), Belgium. Her doctoral dissertation focuses on corporate finance issues within exporting small and medium-sized enterprises (SMEs). Her main research interests are in capital structure dynamics, financial flexibility, and international trade.

Nico Dewaelheyns holds a PhD from the University of Leuven (KU Leuven), where he is currently Professor of Corporate Finance in the Department of Financial Management and Campus Dean of the Antwerp Campus. His research interests include business group finance, financial distress, bankruptcy reform and corporate governance. He has published work in various finance and business journals, including, for instance, European Financial Management, Small Business Economics, the International Small Business Journal, the Journal of Business Research, and the Journal of Business Finance & Accounting.

Catherine Fuss holds a PhD from the Université libre de Bruxelles (ULB), where she used to teach. She is head of the division Econometric and Modelling at the Economics and Research Department of the National Bank of Belgium. Her research interests focus on microeconomics of firm decisions, including international trade decisions, labour demand, price setting, investment, and financial constraints. Her papers have been published in academic journals such as Journal of Business & Economic Statistics, Oxford Bulletin of Economics and Statistics, Applied Economics, and Labour Economics.

Cynthia Van Hulle holds a PhD from the University of Leuven, where she is Professor of Finance in the Department of Accountancy, Finance and Insurance. Her research is at the intersection of law and finance, and focuses on corporate governance and corporate finance. She has published work in various finance and business journals, including, for instance, the Journal of Finance, the Journal of Banking & Finance, European Financial Management, the Journal of Business Research, the Journal of Corporate Finance, and the Journal of Business Finance & Accounting.