

Debt to Traders! On Borrowing Heterogeneity and Exporting Activity

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Abstract

Based on a panel of several thousand Indian firms, for the period 1976-77 and 2005-06, this article has examined the impact of debt types on the levels of exporting undertaken. Classification of debt into relational and transactional categories has been used to divide the types of debt firms borrow. The relational debt types, such as bank borrowings, borrowings from financial institutions and foreign borrowings, positively impact the levels of exporting undertaken. The results establish that for Indian firms, where relational borrowings form these types of borrowers are substantial, such borrowings have influenced their engagement in overseas markets.

Key words: Corporate finance; Debt heterogeneity; Exporting; Financing; Indian industry; Liberalization; Relational debt; Transactional debt.

1. Introduction

While financing questions are some of the important issues facing firms engaging in international business activities, little exists in the literature on the corporate finance and exporting relationship. Exporting is a process involving engagement with world markets, and structures of financing have significant impact on the levels of international engagement by altering the incentives available to exploit firms' resources. A recent study (Greenaway, et al, 2007) evaluates export behavior of firms but simply looks at broad financial constraints.

Extremely important issues relate to firms' debt financing. In the corporate finance literature, starting with Myers (1977), a number of pieces have evaluated the choice of borrowers or different types of debt by firms. In the corporate finance literature, starting with Myers (1977), several pieces have evaluated the choice of borrowers or different types of debt by firms. On the role of banks, Bhattacharya and Thakor (1993), Chemmanur and Fulghieri (1994), Fama (1985), Houston and James (1996), Krishnaswami, et. al (1999), Cantillo and Wright (2000) and Denis and Mihov (2003) have made important contributions. At the intersection of the two literatures are important issues relating to the financing of globalization activities.¹

This article reports the results of a study that examines the impacts of different types of debt on the dynamics of exporting behavior by firms in India. Based on a large panel dataset of Indian firms, the relative importance of various types of debt financing, specifically relational debt financing, in impacting the levels of firms' exporting activities is evaluated for a panel of Indian firms for a thirty year time period from 1976-77 to 2005-06. The large overall time span straddles the important recent period in the history of the Indian economy, as the opening up of markets took place with the liberalization of industrial policies in 1991.

¹ The literature (e.g. Denis, et al, 1997; Saunders, et al, 1990) has dealt with the importance of owners, as fund providers, and their impact on firms' strategy but not much has been written on the role of debt providers.

While corporate finance issues are important, in India the nature of institutions that have governed the process of fund raising from banks, and the process of obtaining funds from domestic or overseas locations, has been critical. The institutional characteristics of India have been all-encompassing, idiosyncratic, important in influencing firms' behavior, and have had the ability to engender or retard growth of firms (Marathe, 1989; Srinivasan, 2004). Yet, we know little about these financial sector institutions and what impact they have had on firm behavior in India.

The article unfolds as follows. The next section describes the types of debt that firms raise and the possible impact of the quantum of such debt types on their exporting activities. The section thereafter describes the Indian financial environment. The next section describes the empirical analysis carried out, while the section that follows describes and discusses the results that have been obtained. The final section sums up and concludes the article.

2. Different Types of Debt and their Impact on Export Intensity

Debt is an extremely important source of funds for firms (Corbett and Jenkinson, 1997; Mayer, 1988). Yet, not all debt is alike. Corporate debt is heterogeneous and has been classified as relational and transactional (Aoki and Dinç, 2000; Berger and Udell, 1995; Boot, 2000; Boot and Marinč, 2008). Recent important work in the financial intermediation literature (Bhattacharya, et al, 2004; Boot, 2000) highlights differences between loans from banks and financial institutions that are relational debts, and bonds or securities placed in the primary or secondary debt market that are transactional debts.

Relational debt can positively influence export activities.² Relationship lenders safeguard operational continuity by helping defaulting firms to work through liquidity problems, rather than

² No evidence as to the impact of relational or transactional debt on exporting is available. Evidence shows that relational debt is positively related to corporate growth opportunities in Japan while transactional debt is negatively related (Anderson and Makhija, 1999) and positively to R&D in India and Japan (David, et al. 2008; Majumdar, 2009). Similar findings exist for Germany (Chirinko and

force them into bankruptcy. Relational lenders also closely monitor borrowers to obtain the subjective information needed for such active intervention. Banks are considered insiders (Ivashina, et al. 2009; Rajan, 1992). Relationship lending involves receiving proprietary borrower-specific information, obtained when screening (Allen, 1990) and monitoring (Diamond, 1984) customers.

The information that banks obtain can be used in multiple interactions with the same customer, creating an opportunity to benefit from information received over time to be used for review and support purposes and to encourage capability enhancement activities (Greenbaum and Thakor, 1995). Relational debt also does not require public information disclosure and this limits the possibility of the proprietary knowledge being appropriated by competitors (Bhattacharya and Chiesa, 1995) thus making the undertaking of exporting activities feasible.

The financing options for borrowers include other items with varying degrees of relationships. In the continuum between bank loans and public debt issues are syndicated loans. These involve several financiers per loan. The lead banks have a relationship with the borrower and the relationship intensity of this debt type is between that of a bank loan and a public debt issue (Dennis and Mullineaux, 2000; Sufi, 2007).

Relational lending, while using explicit contract documentation, also involves use of implicit contracts (Baker, et al. 2002; Bull, 1987). The nature of lending relationships between borrower and lender is dynamic, with several repetitions over time, as firms grow and debts are rolled over, and even self-interested lenders or borrowers will be prepared to act in other than their own short-term self interest, since they will anticipate that future compensation for such behavior will be positive.

Elston, 2006). Conversely, evidence for the United States shows that firm with either a single lender or with no public bonds outstanding display a negative relation between growth opportunities and bank debt (Houston and James, 1996), a finding consistent with the holdup of successful borrowers by monopolistic bank creditors (Sharpe, 1990).

Such relationships become self-enforcing (Sigouin, 2003), with possibilities of reneging receding as both borrowers and lenders view the benefits of adherence to outweigh the returns from opportunism (Albuquerque and Hopenhayn, 2004). Thus, a long-term view of strategic activity is engendered and relational lenders will support potentially risky export activities, while firms will also engage in these activities so as to acquire and retain competitive advantages.

Because relational debt holders are likely to be more informed through monitoring and screening, and private debt is usually senior to public debt (Bhattacharya, et al, 2004), it will be safety-based debt relative to transactional or arm's-length debt. Undertaking export activities is risky and difficult. Yet, internationalization of firms' activities can be preferred by lenders because exposure to other markets reduces risks associated with conducting domestic operations. Internationalization yields superior performance (Agmon and Lessard, 1977). Hence, lenders would advance funds to firms with international activities so that high returns generate interest cover.

On the other hand, there are potential risks due to the uncertainties involved in dealing with overseas markets for firms from a hitherto closed economy such as India. In Western economies too, despite its importance, exporting is a relatively rare activity. In the United States, four percent of firms engage in exporting activities (Bernard, et al, 2007), and similar patterns are noted in France (Eaton, et al, 2004). A second issue relates to managing complexity. With exporting activity, greater complexity confronts managers, arising from cultural diversity (Gomez-Mejia and Palich, 1997), and customer, competitor and regulatory variety. These complexities make exporting risky and difficult.

The superior information allows relational lenders to evaluate operations effectively and ensure that firms' property rights are not compromised by excessively risky ventures and neither is the value of the debt. In addition to representation on supervisory boards, banks can influence voting power. Consolidated power, and long-term relations, combine to provide banks with the potential to influence firms substantially (Chirinko and Elston, 2006). These entities can exercise

'voice' (Hirschman, 1970) if necessary. Of course, if they are unhappy with a firm's performance, they can always 'exit' a lending relationship. As this 'exit' approach can have severe repercussions on the borrowing firms, it is better for firms to be efficient and pro-active in exporting. Thus:

Hypothesis 1: Relational lenders will prefer lending to export intensive firms and the higher the proportion of relational borrowing the higher will be the level of firms' exports.

The contractual constraints of transactional debt can be inappropriate for exporting activities. Public debt and bond issues are hands-off transactions with few interactions between financiers and borrowers (Berlin and Mester, 1992). Collateral is effective only if the asset base of a firm undertaking risky overseas activities can be monitored (Rajan and Winton, 1995). This task is one that transaction lenders cannot perform adequately. Thus, transactional lenders will try to limit the extent of non-verifiable assets held as overseas receivables that cannot be appropriately valued.

Also, transaction oriented lending banking focuses on a single transaction with a customer, relating to one bond or public security issue. Thus, transaction lending is arms-length finance focusing on a particular transaction rather than an information-rich and interaction-intensive relationship with a customer (Boot and Thakor, 2000). The lack of continuing interactions will make transactional lenders specify constraints on discretionary activities such as exporting since repetitive interactions that generate confidence are not forthcoming. Thereby, such lenders can limit their exposures to firms' engagement in potentially risky activities.

Transactional lenders rely on public information or expend significant resources to obtain privately held information. Unlike banks and financial intermediaries, who may appoint board representatives to monitor these firms, these lenders do not have the same governance mechanisms with the firms they lend to. Arm's-length debt is associated with higher information costs and less possibilities of monitoring than debt held by financial intermediaries.

While transactional lenders may sometimes prefer lending to export oriented firms as these will be profitable, their abilities to influence such firms' exporting activities are limited. They will rely on public information or expend significant resources to obtain private information about the firm. Unlike banks and financial institutions, that can appoint representatives on the board of directors of firms, transactional lenders cannot access similar corporate governance and control mechanisms.

These constraints limit lenders' ability to influence potential activities. Transactional debt is associated with higher information costs and less possibilities of monitoring than relational debt. Such lenders can only display '*loyalty*.' This implies that firms with a reliance on transactional debt will face less monitoring pressures and insignificant lender influences. Hence, different categories of lenders will have differing capacities to monitor borrowers.

Take, as an example, fixed deposit holders, who, theoretically, have an incentive to monitor but do not have any meaningful capacity to either monitor or intervene in the affairs of the companies for a number of reasons. Fixed deposits in Indian companies are similar to bank CDs. There are thousands of depositors in each company, each with a small deposit. Thus, the share of any one fixed deposit holder is trivial in the overall debt of firms. They have no voting rights; many are not financially sophisticated and have access to no more information than contained in company annual reports. These reports appear once a year, and are late. Unlike shareholders, fixed deposit holders are not mailed a copy of these reports. Their access to facts is limited. Also, unlike shares or bonds, fixed deposits cannot be traded or transferred in a secondary market. The typical fixed deposit holder copes with low monitoring ability by holding small amounts of deposits in multiple companies. Given the choice between buying companies' shares and placing a fixed deposit with a firm, risk-averse investors who want steady income invest in fixed deposits. Thus, they choose potentially highly profitable firms and diversify their risk by placing fixed deposits with many companies. Hence, it is expected that:

Hypothesis 2: The impact of transactional debt on the relative export intensity of borrowing firms will be insignificant.

3. The Institutional Context in India

3.1 The Financial Sector in India

The Indian capital market dates back to the colonial period with the establishment of the first stock market in India in Bombay in 1857. During the colonial period, many Indian firms tried to popularize debentures as a source of financing successfully (Roy, 2000). After independence, in line with the Indian government's policies on industrial and financial sector development, there was strict control on the pricing and new issues of capital, including corporate bonds. This was done via the office of the *Controller of Capital Issues*, a unit in the *Department of Economic Affairs* of the *Ministry of Finance*. The *Controller of Capital Issues* controlled the quantity and price of both debt and equity that companies could issue (Marathe, 1989).

In spite of the freeing up of firms' market entry decisions, and encouragement given to foreign firms to invest in India, the financial sector was closed to certain far-reaching and possibly radical changes for some time. In 1991, the pricing of new capital issues, for public subscription, was freed along with a relaxation of the restrictions on firms to approach the capital market for funds. Nevertheless, this change was academic since the level of equity firms raised from the primary initial public offering (IPO) capital market was very low. In 1992, the government allowed Indian firms with good track records to issue debentures in foreign capital markets.

In the post-1991 period, there was a strong growth in the bond market with the introduction of many new and innovative types of bonds (Sen and Vaidya, 1997; Thorat, 2002). The issuance of bonds and fixed deposits became an important mechanism for raising external funds for many Indian firms during this period, with the share of capital market-based debt instruments in total funds increasing from 17.3 per cent in the period 1985-86 to 1990-91 to 22.3 per cent in the period 1991-92 to 2000-01 (Reserve Bank of India, 2005).

In India, firms borrow using several instruments. There are, of course, the commercial banks. These are the primary sources of corporate borrowings. Term-lending institutions are the main borrowing source for long term purposes. Borrowings from this category of lender are called institutional borrowings. An important form of borrowing is debentures which are long-term corporate bonds that in some cases are convertible to shares after a specific lock-in period. Then there is the traditional short-term commercial paper as well fixed deposits, which are short to medium unsecured debt that firms raise principally from individuals.

There is an important distinction between commercial bank borrowings and borrowing from financial institutions, or development finance companies as they have often been called, because of the nature of regulations that banks are subject to and the control over interest rates that banks have had to face. Financial institutions, as such, unlike commercial banks, have not accepted deposits from the public, as the source of their own funds, and their funds for lending purposes have, typically, come from the government via budgetary allocations and government might itself have raised the money for these allocations via the issuance of debt using treasury bills as instruments.

This distinction between debt from banks and debt from non-bank financial institution applies in the developed economies (James, 1987; Johnson, 1997; Carey, Post, and Sharpe, 1998) as well as in India. In the Indian case, the so-called non-bank debt is provided by government financial institutions. Because financial institutions are not deposit-taking bodies, they have not been subject to the monetary policy norms of the *Reserve Bank of India*, and their reporting requirements have followed the norms and regulations established for the corporate sector rather than those for the banking sector. These features have permitted financial institutions to advance a greater quantum of loans relative to their capital.

With respect to institutional borrowing, as mentioned these are provided by term-lending institutions and are long-term loans secured on assets. Term-lending institutions were established, de-

novo, by the government after independence. The *Industrial Finance Corporation of India (IFCI)* was set up in 1948, and the *Industrial Development Bank of India (IDBI)* in 1964. These are the two major suppliers of long-term loans to Indian industry. A quasi private-sector financial institution, the *Industrial Credit and Investment Corporation of India (ICICI)*, was established in 1955. Eventually, the government holdings in this financial institution were over eighty percent through a variety of indirect means. In addition, every state in India has a *State Financial Corporation* or a *State Industrial Investment Corporation* to provide funds.

The institutional debt market has accounted for a substantial portion of industrial finances in India (Bidani, et al. 1998; Majumdar and Sen, 2007) with levels of average corporate debt being at least double the levels of corporate equity, and in some cases substantially more than this level, but fundamental changes happened within the debt market only in 2000-01. The change was the abandonment of consortium financing for long-term loans, which had continued actively from 1969 after the commercial banks were first nationalized by the government.

After 1964, with the establishment of the *Industrial Development Bank of India*, the primary coordination role in the provision of industrial finance for development was given to this institution, and the three institutions, the *Industrial Development Bank of India*, the *Industrial Finance Corporation of India* and the *Industrial Credit and Investment Corporation of India*, subscribed to all loans over a certain minimum sum in the ratio of fifty, twenty five and twenty five percent of the total loan amount respectively (Arora, 1992).

The practice of consortium financing slowed down in the mid-1990s while firms sought funds from overseas as well as from the use of other financing instruments. Also the *Industrial Credit and Investment Corporation of India* had converted itself into a scheduled commercial bank, interested in providing short-term loans for working capital, housing and automobiles, albeit with still a large minority market presence in the provision of long-term industrial development loans. Later the *Industrial Development Bank of India* also converted itself into a scheduled commercial bank, albeit with a small

presence in commercial loans and a larger presence in its primary area of long-term lending to industry (Reserve Bank of India, 2005).

4. Analysis

4.1 Data

To test the impact of firms' debt varieties on exporting patterns, data drawn from the *Reserve Bank of India* database on financial accounts of non-government public limited companies have been used. The choice of the data has been driven by two important factors. First, since the analysis spanned fifteen years, it has been imperative to select a database with good and consistent coverage of firms over this entire period.

The *Reserve Bank of India* database is an elaborate and consistent database on Indian companies maintained by the *Reserve Bank of India* since the financial year 1950–51 onwards, based on the balance sheets, profit and loss accounts and annual reports of the companies. Aggregates based on these accounts have been used for the compilation of national accounts. They have also been used for estimating the growth and performance of the real sector. The data relate to companies that are public limited, according to the Companies Act, 1956, and some of these may be listed on stock exchanges. The *Reserve Bank of India* also collects similar data on private limited companies, as defined in the Companies Act, 1956, but these data are never released to outsiders.

The overall data set comprises a pooled cross-section, where a different sample of companies is included each year. The data are widely perceived to have representative coverage of most sub-segments of the Indian corporate sector. The *Reserve Bank of India* public limited company data represents 85 per cent of the paid-up capital of 86 3-digit industries (Feinberg and Majumdar, 2001). The consistent coverage over a long period has contributed to database quality. Additionally, the data are standardized into a common format across companies and time to maintain consistency.

While the data are proprietary, the *Reserve Bank of India* database has been used for empirical work related to policy on the Indian corporate sector by various government bodies that report on policy matters. It was important that the coverage be not only representative of the population in each year, but was consistent over the period of time covered. Second, it was necessary to use a database taking adequate care of changes in accounting norms over this period.

To construct the panel data on an unbalanced number of firms for the period 1976-77 to 2005-06 were used. Between 1,600 and 3,000 companies are surveyed each year. However, while the *Reserve Bank of India* has systematically collected data on large public limited firms, its coverage of the smaller public limited companies is somewhat sporadic and sketchy. Entries and exits in and out of the sample are the smaller firms that may not submit data rather than actual entries and exits. At the maximum for any year of the series, there were 2,131 firms in the sample. The total number of firm-year observations over the thirty years was 55,618.

The *Reserve Bank of India* database included several diversified firms. However, profits and other financial characteristics for the different business units of these firms were not separately recorded in the data base. State owned enterprises and privately held limited companies were excluded from the sample. The effect of the business cycle and institutional factors such as credit availability, impact of fiscal policy and fluctuations in interest and exchange rates would be similar for public limited firms in the private sector.

4.2 Variables

Keeping in mind the difficulty of obtaining exports data especially for the smaller firms every effort was made to obtain the exports data from all of the firms to be included in the database. The dependent variable was the firms' ratio of exports to total sales (*Exports*). This is a standard measure in the entire literature. The primary explanatory variables used have been the different types of debt. The *Reserve Bank of India* database has a rich and detailed break-up of firms' total borrowings into

multiple categories. This has enabled an identification of very specific debt types and permitted an assessment of the impact of each on exports patterns.

Based on the literature (Anderson and Makhija, 1999; David, et al. 2008; Boot and Marinč, 2008) the various types of debt that firms have held have been identified. The relational debt types are debts that firms have obtained from commercial banks (*Bank Debt*), funds obtained from specific government bodies (*Government Funds*), funds obtained from foreign borrowing sources (*Foreign Funds*), funds obtained from financial institutions (*Institutional Funds*), inter-corporate borrowings (*Corporate Borrowings*), long-term debentures raised (*Debentures*), and deferred payments to various sources (*Deferred Payments*). The transactional debt items have been short term commercial paper raised (*Commercial Paper*) and short term fixed deposits raised from the public (*Deposits*). The base case is other miscellaneous debt.

Another important variable was firm size. This variable (*Size*), following standard practice, was measured as the log of sales. The questions of firms' size, import predilections as well as past performance, as firm related factors, are important in exporting and international business literatures (Bonaccorsi, 1992; Caves, 1996; Wakelin, 1998).

Theoretically, the size of a firm affects exporting behavior in many ways. Key features of a large firm are the ability to exploit economies of scale in production and administrative activities, the formalization of procedures, ability to spend on research and bear risks. These characteristics allow larger firms to enjoy a larger export to total sales ratio relative to smaller firms (Auquier, 1980; Glesjer, et. al. 1980). In the data, there is not the ability to measure a firm's market-power. This is a limitation, and one cannot control for market-structure factors that drive economic behavior. The size variable reflects the ability of firms to acquire domestic market power, and if firms have such power they may prefer to sell easily at home rather than face tougher markets abroad. The use of size as a control proxies for market-power, although imperfectly.

Based on the literatures,³ a number of firm characteristics can influence exporting behavior. Therefore, controls for such factors were included. These variables were: the net fixed assets ratio and firms' imports. The first was the ratio of fixed assets to the firm's total assets, used to measure capital intensity (*Capital Intensity*) of the firms. In the context of a labor-rich country such as India exports are likely to have embodied substantial human capital inputs rather than physical capital inputs, if one took note of the *Heckscher-Ohlin* (Heckscher, 1950; Ohlin, 1933) reasoning. The level of firms' imports (*Imports*) was the ratio of imports to sales as a measure of openness of firms to engage in overseas activities.

An additional control variable used has been the annual rate of net domestic capital formation (*Capital Formation*) in the Indian economy expressed as a function of net domestic product at factor cost computed in current prices. As the rate of net domestic capital formation increases within an economy, there are general knowledge enhancements and spillovers (Henderson and Cockburn, 1996) and these can positively impact on firms' exporting.

Second, the relative exchange rate has been controlled for since it denotes the attractiveness and strength, or otherwise, of a country's economy to the outside world. A depreciation of the home currency can make exports from a country much cheaper and spur firms' exporting. This effect was captured by the use of a time-variant variable, the real exchange rate of the Indian rupee to the United States dollar (*Exchange Rate*) for each of the years studied.

5. Results and Discussion

5.1 Descriptive Statistics

The descriptive statistics for the various variables, by each year, are given in tables 1 and 2.

***** Insert Tables 1 and 2 Here *****

³ Examples are Bleaney and Wakelin (2002), Braunerhjelm (1996), Caves and Barton (1990), Schlegelmilch and Crook (1988), Sutton (1998) and Vernon (1966).

The average exporting ratio has risen substantially over the period. The initial low average export rate, at less than 5 percent of sales, by Indian firms might have been a cause for concern, since Indian firms now do compete in the global market with firms from Japan and South Korea where average export spending rates, this is as a whole, have been substantial.

The average export levels, by the firms, in fact have risen sharply over the thirty years. The trend is one of rise in average export levels for all of the firms per year, though it must be kept in mind that this is an unbalanced panel data set with industry heterogeneity. Nevertheless, a polynomial trend will show that the spending rate is increasing in time. Thus, Indian firms, on average, now do relatively greater exporting than they used to, and what has been done has shown an increasing decreasing trend. The trend is shown in figure 1.

***** Insert Figure 1 Here *****

The bank funds variable shows that firms obtain more than half of their borrowed funds from commercial banks, while government agency and foreign sources are small. Financial institutions are the next largest source of funds followed by corporations lending to each other. Comparatively, among the relational debt types, debentures and deferred payments are lesser sources of borrowings. The transactional debt types account for just a small proportion of borrowings, but of these deposits from the public is a relatively important source compared to commercial paper.

Table 2 provides details of the means for the control variables and of interest are two variables highlighting the process of economic growth taking place in India. The imports ratio is rising, denoting that Indian firms have steadily increased their outward orientation, and the ratio of net domestic capital formation has risen, denoting that substantial investment in national capacity building is taking place in India. No variable strongly correlates with another as the appendix shows.

5.2 Results of Dynamic Panel Data Estimation

A panel data analysis has been carried out, given that the data-set consist of several thousand firms over a fifteen-year period. Details are provided in the appendix. The results of the regression are given in table 3. These are based on the dynamic panel data estimates which are extremely stringent composite estimates that incorporate estimation in levels as well as first differences, and this procedure effectively strips out random stochastic effects as well as those emanating from unobserved items or from firm heterogeneity.

Prior studies in the literature have stressed the importance of the Arellano and Bond (1991) and Arellano and Bover (1995) dynamic panel estimation techniques in addressing endogeneity, unobserved effects, and direction of causality. At this point, it is one of the most rigorous techniques available to tease out relationships between variables in a panel data framework and establish statistical causality. See Arellano (2003) and Baltagi (2008) for more details.

***** Insert Table 3 Here *****

Model (A) in table 3 are the results of the estimation with the financial variables, plus size, included. The primary issue is the impact of debt heterogeneity, of the debt that firms raise in India, categorized as relational debt and transactional debt, on their export patterns. The estimation results of the impact of debt types yield extremely interesting results. Of the relational debt types, bank debt and foreign debt has a positive and significant impact on firms' exporting. The estimate for bank debt is significant (t statistic 2.40; $p < 0.05$) while that for foreign debt is also significant (t statistic 2.78; $p < 0.05$). The estimate for institutional borrowings is also positive and significant (t statistic 1.96; $p < 0.05$), while the estimates for the other debt types are insignificant, though they are positive. Of the relational debt types, three of the seven debt types evaluated have positively and significantly impacted exports, highlighting the important role that such lending relationships play in India.

The estimates for the two transactional debt types evaluated are negative and one of them is insignificant. The estimate for commercial paper, a new category of financial instrument that Indian

firms have taken to after liberalization, is negative and significant (t statistic 2.43; $p < 0.05$), and this suggests that the arms-length lenders, to the extent that they can do so which perhaps is not substantial, try to influence borrowers to engage in business activities in India's growing domestic market where the likely returns can be equally great and the process of engagement not so risky.

When additional controls, such as capital intensity, imports, capital formation and exchange rates, are included in the regressions, the results, given as model (B) estimates, for the different debt types stay consistent and do not change. The coefficient estimates for the debt types and the standard errors are almost identical to those derived in model (A). Again, three out of seven relational debt types have a positive and significant impact on firms' exporting while the estimate for the one transactional debt type remains negative and significant.

5.3. Discussion

The analysis decomposes firms' borrowings into different categories, permitting assessment of the impact of different lenders of funds on exporting behavior, and generates very interesting implications. The distinguishing feature of the different lending categories is the nature of motivations associated with each. The results show that financial assistance to firms based on relational attributes helps firms engage in overseas activities, and of the relational debt types, banks, financial institutions and foreign lenders have an important positive and significant influence on such firm' exporting activities. Banks, in general, do provide debt to traders. That is their primary business activity. In addition, many banks have prospered because of the provision of global trade finance. There will have been a history of lending to firms that trade overseas, and positive past outcomes will motivate banks to engage in higher levels of lending.

As such, the relative extent of bank debt, as well as the relational nature of banking relationships, permits banks to monitor the details of firms' engagement in overseas activities and motivate them to undertake those projects that have the possibly best performance outcomes.

Hence, the relationship between bank borrowings and export intensity is positive. While no prior evidence on the lending and exporting relationship exists in the literature, this finding is consistent with others in the literature finding a positive impact that lenders might have on firms' strategies.

In general, important lenders positively influence firms' actions that will yield better performance outcomes, at possibly lower levels of risk. In respect of overseas trade, though risks may be entailed Indian banks, financial institutions and foreign lenders may have the requisite size to stomach these risks, based on a history of lending relationships with firms, and can even help the firms obviate some of them. These qualities may not be visible or noted in other types of relational lenders, and transactional lenders will be risk averse and typically make one-off lending decisions to specific firms.

Arm's-length lenders, such as commercial paper and fixed deposit holders, have limited abilities to influence firms' exporting activities. They are prey to collective action and information asymmetry problems, and do not have recourse to board memberships. Thus, the capacity to monitor is low relative to banks and financial institutions. In addition, there is no secondary market for corporate debt in India (Sharma and Sinha, 2006). A firm will have thousands of fixed deposit holders but one or two major bankers who have lent large sums. Thus, arm's-length lenders are powerless. They may lend to better performing firms, but cannot influence outcomes materially.

The results reveal interesting and important variations across the range of debt suppliers in India, their lending preferences and their ability to influence outcomes. Each category of lender has different incentives, arising from the nature of the debt type as well as from institutional considerations. These lead to variations in the possible use of 'voice' that can influence firms' behavior along certain trajectories. In addition, the variations in monitoring capacities among the lenders present within the economy have an important role in influencing patterns of firm behavior and outcomes. The presence of institutions that provide the monitoring facilities, or have historically

been prominent, has an important role to play in firms' securing of finance and the impact that these providers of finance can have subsequently.

An issue to be addressed, once more facts are available, is the nation of origin of firms' lenders. Augmenting the analysis with lender identity and nationality, across the various lending categories, makes the analysis more complex but also more useful as the globalization of product markets is accompanied by the globalization of financial markets. In view of these developments, the evaluation of foreign and domestic lenders' preferences for lending to various types of firms requires a re-specification of extant theories that can handle these evolving contingencies.

A second phenomenon in India is firms' energetic engagement in the entrepreneurship process particularly after the 1991 reforms (Majumdar, 2007). A key characteristic noted for the enterprising class is a recovery of self-confidence and a willingness to explore overseas markets comprehensively. This has meant an explosion of entrepreneurship, both within India as well as the establishment of overseas ventures by Indian entrepreneurs, and has led to a boom in fund-raising and investment activities (Das, 2002). The corporate financing decisions of the entrepreneurial class, especially with regard to their overseas ventures, are important strategic issues to be evaluated.

There are clearly divergences in approach between relational and transactional lenders, and the importance of relational lenders is now recognized and acknowledged in a growing literature (Boot and Marinč, 2008; Ivashina, et al. 2009). This article adds to that literature using Indian firms' exporting behavior as a context. In addition, this article creates an entirely new literature, in the separate genre of corporate finance and exports, within the international business area by examining the nature of debt heterogeneity and its impact on firms' international activities.

How financiers influence firms' engagement in overseas markets is an extremely important issue as product markets, markets for services and financial markets have become globalized. Yet, the paucity of attention paid to these issues is surprising. While corporate governance issues are, no

doubt, important as variations in governance systems influence firms' behavior of which one is exporting, the importance of corporate finance has just not been considered in the international business literature. Nevertheless, finance matters very critically for firms engaging in overseas trade activities. The article opens up a completely new line of research to be followed-up by others.

The results, robust to the inclusion of important variables capturing other important effects that influence exporting by firms, and after stripping out time and firm effects, are themselves of considerable overall significance. The impact of relational debt variables has been positive and significant, for at least for three of the seven relational debt types, which are the most important sources of debt for the firms, and highlights the notion of debt heterogeneity. All types of debt are not equal. The different types of debt are not similar in impact, and Indian firms are influenced, in part, by their lenders to engage in exporting activities. Commercial banks are especially important, in general across economies, and specifically in India their impact is positive and significant.

Thus, the specific type of debt that firms borrow is actually shown to positively influence spending on activities associated with globalization, and for a country like India where the quantum of debt financing is high these are important results. The extent of debt financing in India is large and lenders, of which banks are pre-dominant, influence firms' globalization positively. The strategic significance of the finding is important. The presence of the right types of debt in firms' capital structure can have significantly positive consequences, as shown by the results.

6. Conclusion

Based on data for a panel of several thousand Indian firms, evaluated for a period of thirty years, between 1976-77 and 2005-06, this article has examined the impact of debt types on the levels of exporting undertaken by firms. Firms' debt is heterogeneous and recent classifications of debt into relational and transactional categories is used to divide the types of debt Indian firms borrow. The results show that the important relational debt types, such as bank borrowings, borrowings

financial institutions and foreign borrowings, have a positive and significant impact in influencing levels of exporting undertaken by firms in India. The results support the notions whereby relational debt positively influences firms' actions and also establish that for Indian firms, where relational borrowings, especially from banks, are very substantial, such borrowing activities have influenced their engagement in overseas markets, especially in the post-liberalization era.

Appendix: Details of the Estimation Procedure

The type of dynamic panel data (DPD) estimation carried out using a GMM-type estimator has the following general form:

$$y_{it} - y_{it-1} = \alpha + \beta y_{it-1} + X'_{it}\delta + \lambda_t + u_{it} \text{ or equivalently}$$

$$y_{it} = \alpha + \tilde{\beta} y_{it-1} + X'_{it}\delta + \lambda_t + u_{it} \quad i = 1, \dots, N; \quad t = 2, \dots, T \quad (1)$$

where y is the logarithm of the dependent variable, i is an firm, t is a period of time which is a year, $\tilde{\beta}$ is a scalar ($\tilde{\beta} = \beta + 1$), X_0 represents the set of explanatory variables $1 \times K$ and δ is $K \times 1$; λ_t is the time-specific effect; $u_{it} = \mu_i + v_{it}$, where μ_i is the unobservable firm-specific effect and v_{it} is the an error term.

The presence of firm-level heterogeneity in panel data models with lagged dependent variables tend generates biased and inconsistent estimates if the time dimensions of the panel are fixed and not of very substantial length (Nickell, 1981; Judson and Owen, 1999). Thus, a generalized method of moments (GMM) estimator is appropriate. Nevertheless, two problems exist with the dynamic panel regression in (1). First, use of the lagged dependent variable as a regressor leads to autocorrelation; second, firm-specific effects characterize inherent heterogeneity (Baltagi, 2008). As y_{it} is a function of μ_i , thus y_{it-1} would also be a function of μ_i . Hence, y_{it-1} , which is a right-hand side regressor, will be correlated with the error term. This yields biased and inconsistent OLS estimators even if the v_{it} are not serially correlated.

The initial step is to first-difference (1), as suggested in Baltagi (2008), in order to eliminate the individual effects. This procedure yields

$$y_{it} - y_{it-1} = \tilde{\beta} (y_{it-1} - y_{it-2}) + (X'_{it} - X'_{it-1})\delta + (\lambda_t - \lambda_{t-1}) + (v_{it} - v_{it-1}) \quad (2).$$

This method of eliminating firm-specificity, however, introduces another issue. The first-differencing causes the new error term $\Delta v_{it} = v_{it} - v_{it-1}$ to be correlated with the lagged dependent variable, $\Delta y_{it-1} = y_{it-1} - y_{it-2}$. This correlation, combined with the potential endogeneity of the

explanatory variables, leads to the consideration of the use of instrumental variables as suggested by Arellano and Bond (1991), under the assumptions that v_{it} is not serially correlated and with the moment restrictions $E[y_{it-s}\Delta v_{it}] = 0$ for $t = 1, \dots, T$, and $s \geq 2$. For instance, for equation $\Delta y_{i3} = \delta \Delta y_{i2} + \Delta v_{i3}$, the instrument available is y_{i1} ; for $\Delta y_{i4} = \delta \Delta y_{i3} + \Delta v_{i4}$, the instruments available are y_{i1} , y_{i2} , and so on. If the regressors in X_{it} are endogenous, in the sense that $E[X_{it}v_{is}] = 0$ for $s > t$ and $\neq 0$ otherwise, the moment conditions $E[X_{it-s}\Delta v_{it}] = 0$ for $t = 1, \dots, T$, and $s \geq 2$ are available. The estimator that uses those moment conditions is known as the difference estimator (Baltagi, 2008).

This estimator may have shortcomings. For instance, under the difference approach, one the firm specificity is eliminated, it is important to analyze such a relationship in addition to the time-series relationship. Also, when the lagged dependent variable and the explanatory variables are persistently rising over time, lagged values of these variables are weak instruments for the regression equation in differences; these affect the asymptotic and small-sample performance of the difference estimator (Blundell and Bond, 1998).

To address these issues, Arellano and Bover (1995) and Blundell and Bond (1998) propose the use of the system estimator, based on asymptotic and small sample properties, to diminish any potential biases in finite samples. This method estimates jointly the regression in differences with the regression in levels. Blundell and Bond (1998) assume $E[\Delta y_{i2}\mu_i] = 0$ that allows to consider the additional moment conditions, $E[u_{it}\Delta y_{i,t-1}] = 0$ for $t = 1, \dots, T$. Next, since the lagged levels are considered as instruments in the first step, then the second step should use only the most recent difference as an instrument (Arellano and Bover, 1995). For instance, for equation $y_{i3} = \delta y_{i2} + u_{i3}$, the instrument available is Δy_{i2} ; for $y_{i4} = \delta y_{i3} + u_{i4}$ the instrument available is Δy_{i3} , and so on.

By introducing the regression in levels, a better estimation is achieved since it does not wipe out the firm-specific relation and nor does it increase the measurement error. Similarly, if X_{it} is treated as endogenous, it is assumed that there is no correlation between the differences on the right

hand side variables and the firm specific effect, $E [\Delta X_{it} \mu_i] = 0$, that allows the moment conditions $E [u_{it} \Delta X_{i,t-l}] = 0$ for $t = 1, \dots, T$, to be available. These conditions permit the use of both lagged Δy_{it} and lagged ΔX_{it} as instruments in the level equations. In summary, the regression in differences uses the same instrumental variables as detailed above and the regression in levels uses as instrumental variables the lagged differences of the respective variables (Arellano, 2003). This two-step GMM system estimator yields consistent and efficient parameters estimates. The system GMM estimator not only improves precision but also reduces finite sample bias (Baltagi, 2008).

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Table 1: Means of the Export Variable and Financial Variables over the Period of Years

<i>Year</i>	<i>Firms</i>	<i>Export Ratio</i>	<i>Bank Funds</i>	<i>Government Funds</i>	<i>Foreign Funds</i>	<i>Institutional Funds</i>	<i>Corporate Funds</i>	<i>Debentures</i>	<i>Deferred Payments</i>	<i>Commercial Paper</i>	<i>Deposits</i>
1976-77	1,719	4.98	58.72	1.08	0.78	9.84	2.24	2.11	3.26	0.00	9.21
1977-78	1,719	4.92	57.08	1.19	0.80	11.84	2.71	1.67	3.17	0.00	9.24
1978-79	1,719	4.07	56.63	1.30	0.67	12.19	2.64	1.58	3.14	0.00	9.67
1979-80	1,719	4.03	58.29	1.27	0.52	11.77	2.65	1.57	2.90	0.00	9.31
1980-81	1,719	3.87	59.61	1.27	0.43	11.77	2.46	1.56	2.95	0.00	9.16
1981-82	1,651	4.26	57.20	1.27	0.37	12.74	2.17	1.60	3.29	0.00	10.45
1982-83	1,651	4.08	54.77	1.59	0.24	15.46	2.70	1.78	3.44	0.00	10.71
1983-84	1,838	3.36	52.10	1.36	0.25	15.66	2.55	2.29	3.94	0.00	11.53
1984-85	1,838	3.81	48.98	1.54	0.28	17.35	3.13	2.78	4.21	0.00	10.58
1985-86	1,942	3.68	49.43	1.87	0.23	16.93	3.10	3.21	4.28	0.00	10.40
1986-87	1,942	3.53	48.38	1.80	0.16	18.62	3.13	4.00	4.24	0.00	9.19
1987-88	1,885	3.75	48.71	1.68	0.13	18.24	3.17	5.21	3.86	0.00	8.99
1988-89	1,885	4.11	47.96	1.57	0.14	20.35	3.57	5.56	3.17	0.00	8.36
1989-90	2,131	4.77	50.64	1.68	0.17	19.89	3.14	5.31	2.78	0.00	7.33
1990-91	2,131	4.72	50.42	1.75	0.15	21.62	3.37	5.19	2.99	0.00	6.47
1991-92	1,802	5.43	50.07	1.80	0.16	22.24	3.38	5.50	2.75	0.00	6.11
1992-93	1,802	5.90	47.49	1.75	0.17	24.52	3.23	6.40	2.74	0.13	6.03
1993-94	1,719	6.59	44.48	2.00	0.40	24.72	3.62	6.37	2.61	0.83	6.86
1994-95	1,719	6.96	45.67	2.41	0.52	22.72	4.01	6.03	2.62	0.34	6.87
1995-96	1,897	7.93	49.09	2.69	0.39	21.93	4.41	5.20	2.23	0.02	5.98
1996-97	1,875	8.23	48.32	3.16	0.43	20.84	4.70	4.93	2.10	0.24	6.20
1997-98	1,801	10.14	47.44	2.81	0.67	20.42	4.94	5.21	2.03	0.56	6.11
1998-99	1,775	10.09	46.75	3.28	0.82	19.12	4.63	5.17	1.81	0.95	7.03
1999-00	1,827	10.46	47.08	3.73	0.95	18.89	5.48	4.69	1.58	0.73	6.23
2000-01	1,821	11.00	47.26	4.14	0.62	17.66	6.16	4.42	1.48	0.58	6.15
2001-02	1,934	12.12	49.94	4.19	0.45	15.74	6.25	3.68	1.27	0.53	5.34
2002-03	1,932	12.39	52.87	4.45	0.37	13.52	6.32	3.09	0.99	0.33	4.95
2003-04	2,111	12.82	54.78	4.68	0.54	10.88	7.10	2.48	1.01	0.33	4.51
2004-05	2,113	13.14	56.72	4.67	0.81	8.86	7.17	2.13	1.12	0.29	4.26
2005-06	2,001	14.02	57.55	4.42	2.21	6.80	7.88	2.19	1.51	0.25	3.49

Table 2: Means of the Control Variables over the Period of Years

<i>Year</i>	<i>Firms</i>	<i>Size</i>	<i>Capital Intensity</i>	<i>Imports</i>	<i>Capital Formation</i>	<i>Exchange Rate</i>
1976-77	1,719	10.04	34.51	3.86	11.20	9.00
1977-78	1,719	10.13	33.63	3.96	11.80	8.76
1978-79	1,719	10.22	32.65	4.25	15.10	8.21
1979-80	1,719	10.34	32.02	4.39	13.20	8.15
1980-81	1,719	10.45	32.09	4.21	12.90	7.88
1981-82	1,651	10.70	34.10	4.94	12.40	8.69
1982-83	1,651	10.81	34.75	4.58	11.50	9.49
1983-84	1,838	13.09	36.53	5.68	10.80	10.14
1984-85	1,838	13.20	37.06	4.57	12.00	11.37
1985-86	1,942	13.36	38.63	4.58	13.40	12.36
1986-87	1,942	13.46	38.64	5.39	12.40	12.61
1987-88	1,885	13.62	38.77	5.58	14.20	12.96
1988-89	1,885	13.74	37.24	5.84	15.80	13.91
1989-90	2,131	13.87	36.34	6.21	16.50	16.22
1990-91	2,131	14.02	35.72	5.86	18.70	17.50
1991-92	1,802	12.02	36.18	6.63	13.90	22.69
1992-93	1,802	12.16	36.39	7.16	14.90	25.92
1993-94	1,719	12.33	36.44	7.95	14.50	31.44
1994-95	1,719	12.54	35.92	8.34	18.00	31.37
1995-96	1,897	12.71	36.88	9.75	18.60	32.42
1996-97	1,875	12.79	38.23	10.58	16.20	35.43
1997-98	1,801	12.90	40.04	13.43	17.50	36.32
1998-99	1,775	12.98	39.90	12.93	15.50	41.27
1999-00	1,827	12.96	40.46	13.57	18.30	43.06
2000-01	1,821	13.00	40.34	14.85	16.30	44.94
2001-02	1,934	12.94	40.85	15.48	14.30	47.19
2002-03	1,932	12.98	40.29	15.66	16.70	48.37
2003-04	2,111	13.09	39.03	16.44	20.00	45.39
2004-05	2,113	13.18	37.91	16.31	24.30	45.78
2005-06	2,001	13.49	37.04	17.21	27.90	44.82

Table 3: Dynamic Panel Data Regression Estimates for India Firms: 1976-77 to 2005-06

Dependent Variable: Exports to Sales Ratio				
	<i>Model (A)</i>		<i>Model (B)</i>	
	Coefficient (Standard Error)	t Statistic	Coefficient (Standard Error)	t Statistic
Constant	-0.040 (0.703)	0.06	0.085 (0.809)	0.11
Y_t	0.821 (0.030)	26.48***	0.814 (0.030)	26.33***
Y_{t-1}	0.215 (0.030)	6.85***	0.208 (0.030)	6.77***
<i>Bank Funds</i>	0.008 (0.003)	2.40**	0.008 (0.003)	2.42**
<i>Government Funds</i>	-0.005 (0.006)	0.80	-0.005 (0.006)	0.80
<i>Foreign Borrowings</i>	0.072 (0.026)	2.78**	0.072 (0.026)	2.78**
<i>Institutional Funds</i>	0.010 (0.005)	1.96**	0.011 (0.005)	2.17**
<i>Corporate Funds</i>	0.004 (0.007)	0.58	0.004 (0.007)	0.55
<i>Debentures</i>	0.008 (0.007)	1.05	0.007 (0.007)	1.01
<i>Deferred Payments</i>	0.007 (0.008)	0.84	0.007 (0.008)	0.88
<i>Commercial Paper</i>	-0.060 (0.024)	2.43**	-0.060 (0.024)	2.42**
<i>Deposits</i>	-0.002 (0.004)	0.44	-0.002 (0.004)	0.42
<i>Size</i>	-0.054 (0.043)	1.23	-0.078 (0.046)	1.69*
<i>Capital Intensity</i>			-0.007 (0.007)	1.06
<i>Imports</i>			0.004 (0.004)	0.83
<i>Capital Formation</i>			0.026 (0.019)	1.37
<i>Exchange Rate</i>			0.004 (0.013)	0.30
Wald χ^2	1036.70***		1073.65***	
N	39,552		39,552	

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$, one tailed; # total number of firm-year observations is 55,618, and after lagging yield 39,552 firm-year observations.

Appendix: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.000														
2	0.105	1.000													
3	-0.025	-0.159	1.000												
4	0.027	-0.089	-0.007	1.000											
5	-0.009	-0.411	-0.064	-0.026	1.000										
6	-0.023	-0.193	-0.035	-0.008	-0.112	1.000									
7	-0.009	-0.223	-0.044	0.014	-0.017	-0.067	1.000								
8	-0.049	-0.114	-0.037	-0.016	-0.076	-0.049	-0.036	1.000							
9	0.001	-0.050	-0.002	0.007	-0.027	-0.015	0.043	-0.016	1.000						
10	-0.055	-0.189	-0.074	-0.029	-0.137	-0.098	0.024	0.032	0.009	1.000					
11	0.116	-0.099	0.051	0.080	0.181	-0.071	0.343	0.009	0.087	0.057	1.000				
12	-0.028	-0.211	0.033	0.060	0.378	0.009	0.081	0.036	-0.012	-0.102	0.123	1.000			
13	0.138	-0.003	-0.001	0.033	0.055	-0.005	0.048	-0.019	0.032	-0.016	0.157	0.023	1.000		
14	0.151	0.020	0.080	0.057	-0.056	0.091	0.005	-0.080	0.033	-0.120	0.264	0.035	0.097	1.000	
15	0.196	-0.028	0.106	0.042	-0.018	0.106	0.028	-0.104	0.082	-0.125	0.251	0.085	0.100	0.684	1.000

List of variables: 1. *Export Ratio*; 2. *Bank Funds*; 3. *Government Funds*; 4. *Foreign Funds*; 5. *Institutional Funds*; 6. *Corporate Funds*; 7. *Debentures*; 8. *Deferred Payments*; 9. *Commercial Paper*; 10. *Deposits*; 11. *Size*; 12. *Capital Intensity*; 13. *Imports*; 14. *Capital Formation*; 15. *Exchange Rate*.

Figure 1: Export Sales Ratio of Indian Firms Over Time

