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Capital Structures of Small Family Firms in Developing Countries

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Abstract

This study uses firm level survey data to assess whether the capital structure theory is portable to small firms in developing countries and whether family ownership and management play a role in their financing decisions. Using a sample of firms from 24 developing countries from all over the world, our main results show (i) The size of the firm is an important factor in the level of leverage; (ii) Small family firms do not follow the pecking order (iii) The country of incorporation is an important determinant for the debt financing decisions of small family firms; they are sensitive to institutional characteristics, and the macroeconomic environment variables of the country; and (iv) the difference in capital structure choices is related to management styles of small family firms.

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Acknowledgments

1. Introduction

Leverage of small family firms in developing countries is lower than leverage in large family firms. For example, on the basis of a sample of 24 developing countries in our study covering all the main geographical regions of the world, Africa, East Asia and Pacific, South Asia, Latin America and Caribbean, Middle East and North Africa, leverage (as percent of total assets) for small family firms is 31.40% on average, while large family firms leverage 52.50% (see Table1, panel A). That raises the question whether the capital structure choices of small family firms in developing countries are affected by the same factors as that of large firms, bearing in mind that in most developing countries the major obstacle to external finance for small firms is the availability of credit, when institutional development is weak other forms of informal financing, such as short-term debt via supplier credits, or long-term debt via development banks, or trade credits are the available forms of external financing of small firms (Beck et al., 2008, Newman et al., 2012, Du et al., 2015). Economic growth and the stability of the economy become important factors for extending external finance to small firms.

Furthermore, studies such as Anderson, Mansi and Reeb (2003), and Anderson and Reeb (2003) have suggested that financing decisions of family firms are different than those of other types of firms. They explain that the reason for that is based on the characteristics of family firms, such as the firm survival and the family firm's reputation. These characteristics help the firm to build personal and well-informed connections with creditors, which help the family firms to pass these connections to successive generations. In addition to that, family firms can use the owners' wealth as collateral to borrow more (Keasey et al., 2015). Therefore, these personal connections help family firms to have

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higher debt levels than other types of firms. On the other hand, the risk of losing the firm control as well as the fear of losing their reputation due to the application for risky projects cause family firms to have lower debt levels (Anderson and Reeb, 2003). This raises a question how family firms, especially small family firms, in developing countries decide on their capital structure. At the same time the capital structure decisions of firms might be different if they are managed by the family rather than an outside manager due to agency costs between managers and owners (Jensen and Meckling, 1976). Thus, the paper is investigating the following three questions.

- Are the capital structure choices of small firms in developing countries affected by the same factors as those of large firms?
- Does the family ownership of the firm affect the capital structure decisions of small firms in developing countries?
- Does the family management of the firm impact on the capital structure decisions of small firms in developing countries?

Previous research on cross-country comparisons of financing patterns around the world, focused mainly on large listed firms in both developed and developing countries (e.g. Titman and Wessels, 1988; Rajan and Zingales, 1995; Demirguc-Kunt and Maksimovic, 1996, 1999; Booth et al., 2001; Antoniou et al., 2008; De Jong et al., 2008; Fan et al., 212). These studies show that capital structure theories developed for the US firms are portable to other developed countries and to a small group of developing countries. The empirical results in this earlier literature are based on the analysis of listed companies and thus, the largest firms across the countries, which are not representative of firms in the developing world. According to Ayyagari et al. (2007) small and medium enterprises

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(SMEs) constitute 67% on average of the formal employment in the manufacturing sector, and contribute up to almost 50% on average to formal GDP in developing countries. Including informal enterprises, the estimates increase to 95% of employment and 70% of GDP (Keskin et al., 2008). SMEs play an important role in sustaining global and regional economic recovery by promoting economic growth, employment and poverty alleviation in a country. It is difficult to calculate the contribution of family firms to GDP due to the different definitions of family ownership and control used in the various data bases (Villalonga and Amit, 2020). It is believed however that family firms' contribution to the world economy is expected to be more than half of world GDP and two-thirds of world employment (PwC Family Business Survey, 2021).

In our study, we focus on small family firms which characterize the corporate sector in developing countries much more accurately. In our sample, 77% of small firms are family owned, and the average asset size of small family firms is $3.2m. It should be noted that there have been a few studies on SMEs, which examined the impact of institutional development on the capital structure choices. The countries, however included in those studies are mainly European and do not analyse the impact of family ownership and control on capital structure. For example, Mc Namara et al. (2017) analyse the effect of a country's institutional setting on the SMEs' capital structure decisions for a group of developed European countries.[4] Similarly Joeveer (2013b) examines the relative importance of firm specific factors compared to country factors for a group of developed countries.[5] On the other hand, Joeveer (2013a) analyses the impact on leverage of firm-specific institutional and macroeconomic factors on a sample of stock market-listed and unlisted companies in

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[4] Austria, Belgium, Finland, France, Germany, Greece, Italy, Portugal and the UK.
[5] UK, France, Italy, Germany, Belgium. Finland, Portugal, Spain, Sweden, Switzerland.

Electronic copy available at: https://ssrn.com/abstract=1569472

nine Emerging Eastern European countries.[6] Finally, Demirguc-Kunt et al. (2020) examine how the capital structure of firms, including SMEs, non-listed firms and listed companies, has changed during and after the global financial crisis in 75 countries but their sample of developing countries is not representative of developing countries around the world. Furthermore, the focus of that paper is on the impact of the global financial crisis on the capital structure decisions of firms. None of these studies however has studied the capital structure decisions of small *family* firms.

Previous studies that focus on family SMEs are mainly for developed countries. For instance, Wu et al. (2007) focus on the effect of family ownership and management on equity financing for Canadian SMEs. Burgstaller and Wagner (2014) document the capital structure decisions of family SMEs for Germany. Dieguez-Soto and Lopez-Delgado (2019) analyse the effect of family involvement on private firms' leverage in Spain. For developing countries, the studies are limited. For instance, Muhammad et al. (2021) document the capital structure decisions of family firms for India, Pakistan and Bangladesh. Their family firms included in the sample are listed in the stock exchanges as well as they do not consider the effect of country level factors as we do in this study.

We are contributing to the literature in four ways: First, we are examining *family* owned firms and *family* managed firms in terms of their impact on the capital structure decisions of small firms. Second, in order to arrive at conclusive results, we use data from 24 developing countries with diverse country characteristics covering all regions of the world. Our data base is rich in the information on family ownership and management of small firms. Third, we are focusing on the *family* firms and very small firms in developing

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[6] Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia.

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countries, which have not been the emphasis of previous studies. Small firms in our study employ less than 50 employees, while the analysis of other studies has concentrated on the larger firms, of SMEs. For example, in Mc Namara et al. (2017) SMEs have less than 250 employees; in Demirguc-Kunt et al. (2020) the average employment of SMEs is between 10 to 99 and in Joeveer (2013a) SMEs have less than 250 employees.[7] Finally, by comparing the results of small and large firms, and family firms we are able to assess whether the size, ownership and management of the firm relates to the impact of institutional characteristics, and the economic and financial environment of the country on the capital structure of firms.

Our main results can be summarised as follows. First, our results for small firms in developing countries indicate that corporate financing decisions differ from those found for large companies. Profitability has no bearing in the capital structure decisions of small firms in contrast to large firms. We observe the same relation for small family firms that they do not follow the pecking order. Second, asset tangibility, is significant but negatively related to leverage and thus the capital structure decisions do not follow the trade-off theory predictions either. The firms in our sample, especially the small family firms, are generally financed by short-term debt that might not need collateral. We tested that conjecture by running the estimation for short-term debt and long-term-debt separately and indeed we find tangibility to be positively related to long-term debt but not to short-term debt. Furthermore, the general lack of accessibility of bank-based financing by the firms in developing countries could be due to the biased behaviour of the financial institutions, which might make small firms and small family firms to be less reliant on debt financing.

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[7] We have used the number of employees as our criterion, following previous literature, such as Beck et al. (2008).

Third, the country of incorporation is an important determinant for the debt financing decisions (Booth et al., 2001; Joeveer, 2013a). Looking at the country level characteristics in detail the institutional characteristics, and macroeconomic and financial environment variables impact the financing decisions of small firms and small family firms much more than that of large firms and large family firms.

Fourth, we observe GDP per capita is inversely related to leverage, while it is positively related with long-term debt. Further economic development of the countries might encourage small firms and small family firms to alter their maturities of debt and to prefer long-term debt over short-term debt.

Fifth, we find that the size of the firm is an important factor in the level of leverage a firm hold. As firms become larger, including family managed firms, they increase leverage in their capital structures. Larger companies are usually more diversified and their risk of failure is reduced. As a result, they can have higher leverage, whereas, small firms have lower leverage. Due to the information asymmetries and high inflation in the developing countries, small firms usually face higher interest rate costs. Also, they are financially riskier compared to large firms. As a result of that, debt financing becomes expensive for small companies and thus, they have lower leverage levels. Finally, we find that the characteristics of ownership and management have an effect on the large firms' capital structure decisions in developing countries, but not on the small family firms.

The remainder of paper is organized as follows. Section 2 develops the hypotheses relating to the main factors affecting the capital structure of the firms investigated in our study. Section 3 presents the data and methodology. Section 4 discusses the empirical

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results, detailed analysis with interacting variables and robustness tests, while section 5 concludes the paper.

2. Development of hypotheses

We present the hypotheses related to capital structure decisions in four sections, those related to the firm, those related to economic development, those related to the country institutional characteristics and those related to the financial environment. Over the years there have been many empirical studies as it has already been noted. However, in this section emphasis will be given to the results of recent cross-country studies, which are more relevant to this paper, that is studies related to SMEs, family firms and family managed firms in both developed and developing economies.

2.1 Capital Structure decisions and firm characteristics

We start with the hypotheses related to the firm, which are based on the three major theories of capital structure, The Agency Theory Framework, the Static Trade-Off Theory and the Pecking Order Hypothesis, all of which aim to explain the firm's choice between debt and equity. Agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers, and debt holders (Jensen and Meckling, 1976). In the case of the agency conflict between the managers and the owners, debt financing is the preferred choice by the owners to overcome the management's overinvestment behaviour (Grossman and Hart, 1980; Jensen, 1986) since capital structure decisions of managers are likely to be taken to maximize their wealth, rather than for benefiting firm value. But managers are more likely to favour lower debt due to its disciplinary power. In the case of small firms and family firms, since their ownership structure is more concentrated and generally, the

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owners are also the managers of the firm, the conflict of interest between shareholders and managers is likely to be less.

The second agency conflict is between lenders and owners. Due to the information opacity of small firms, agency conflicts between owners and lenders may be particularly severe (Ang, 1992); therefore, it is expected for small firms to have lower levels of debt. But for the family firms, their characteristics, such as the firm survival and the family firm's reputation help them to build personal and well-informed connections with lenders (Anderson et al., 2003). Due to this relation, family firms are likely to have higher levels of debt. In terms of the management of the firm, firms with outside managers are more likely to have a better monitoring mechanism than firms with owner-manager; since, outside managers have less incentive to manipulate the financial information provided by the firm (Wu et al., 2007). In this case, one might expect firms with outside managers to have a lower cost of debt financing than firms with owner-manager (see Anderson et al., 2003).

Trade-off theory (Scott, 1977) argues that a firm's optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing. Higher profitability decreases the expected costs of distress and lets firms increase their tax benefits by raising leverage. Firms would prefer debt over equity until the point where the probability of financial distress starts to be important. Harris and Raviv (1990) and Stulz (1988) propose that the debt levels preferred by managers are higher than the optimal one since higher levels of debt can boost their equity voting power and prevent any takeover threats.

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Pecking Order Theory, (Myers and Majluf, 1984), states that capital structure is driven by a firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all fails, with equity. Small firms generally do not have access to equity markets so they are more likely to rely on debt financing provided by banks when the internal financing is not adequate. Family firms also follow the same order as small firms but with different reasoning. Family firms are less likely to share the firm control with others; that's why, they prefer internal funds first, and if the funds are inadequate then they prefer debt over equity.

There is also supply side constraints for the firms to satisfy their demand for debt. Since small firms due to their opaqueness have information asymmetry, adverse selection and monitoring problems, suppliers of capital are not willing to provide funding to them. This can also be true for the family firms. In family firms, there is a problem of redundant employment for family members and relatives (Sharma et al., 1997) and family management entrenchment problem (Anderson and Reeb, 2003) which might discourage lenders to provide funding.

We develop our hypotheses regarding known firm characteristics that can explain capital structure decisions below: [8]

Asset tangibility. The type of assets that a firm has determines the cost of financial distress. So the higher the tangible assets, the more willing lenders should be to supply loans, and leverage should be higher according to the trade-off theory (Scott, 1977; Harris and Raviv, 1990). Bank financing requires some kind of collateral represented in physical assets to mitigate the risks of information asymmetries between lender and borrower and limit the

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[8] The firm level variables included in this study are limited by the availability of data.

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costs of any detailed monitoring or extra risk tolerance by debt holders for unsecured positions (Storey, 1994; Berger and Udell, 1995). Collateral becomes vital to reassure lenders when information asymmetry exists. Therefore, both theories, trade-off and pecking order, expect a positive association between asset tangibility and leverage. In the case of small and family firms, this relation can be uncertain. On the one hand, since small and family firms are seen as opaque and in the owner-managed firms, managers have more information about the prospects of the company than investors, or debtors, collateral provides a guarantee (Stiglitz and Weiss, 1981; Chan and Kanatas, 1985; Hanley and Crook, 2005). On the other hand, the private collaterals put up by owners of small and especially family firms are not included in the firms' fixed asset (Hall et al., 2004). This can also be seen in the case of family firms, as soft information, such as reputation and management quality, trust and closeness of relationships, and private collaterals, are not included in the firms' fixed assets (Ramalho and da Silvia, 2009).

The empirical literature provides mixed results for the association for SMEs for both developed and developing economies. The cross-country studies, such as Demirguc-Kunt et al. (2020) for various countries, including both developed and developing find a positive association, while Joeveer (2013a), who examines a group of Eastern Emerging European countries finds a negative association. On the other hand, Joeveer (2013b), and Mc Namara et al. (2017) examine a group of developed European countries and find a positive association between tangibility and leverage for SMEs.

For family firms, Dieguez-Soto and Lopez-Delgado (2019) find a positive association between asset tangibility and leverage by examining private firms in Spain. Burgstaller and Wagner (2015), who investigate capital structure decisions of family SMEs

in Austria, find insignificant association while their findings for nonfamily firms are according to the theories.

Hypothesis 1a: According to the trade-off and pecking order theories, we expect a positive relation between asset tangibility and leverage for small firms in developing countries.

Hypothesis 1b: We expect a positive relation between asset tangibility and leverage for small family firms in developing countries.

Hypothesis 1c: We expect a positive relation between asset tangibility and leverage for small family managed firms in developing countries.

Profitability. The pecking order theory predicts a negative relation between profitability and leverage. Firms prefer first internal financing (retained earnings), then debt and they choose equity as a last resort (Myers, 1984). This suggests that the more profitable firms have higher retained earnings and less need for debt financing. On the other hand, trade-off theory predicts a positive association due to increased tax benefits of higher leverage. The tax shields benefits from using leverage tend to be much lower for small firms due to lower tax rates. Therefore, we expect, small and family firms in our sample to follow more likely leverage decisions following pecking order theory predictions. The small family managed firms and family firms do not prefer external sources to finance their firms because they do not want to share the control of the firm with other shareholders (Holmes and Kent, 1991; Hamilton and Fox, 1998). The findings in the empirical literature are in accordance with the pecking order theory for SMEs in both developed, and developing economies. They all find a negative association. The previous findings for

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family firms also support the pecking order theory (Ampenberger et al., 2013; Burgstaller and Wagner, 2015; Dieguez-Soto and Lopez-Delgado, 2019).

Hypothesis 2a: In accordance with the pecking order theory, we expect a negative relation between profitability and leverage for small firms in developing countries.

Hypothesis 2b: We expect a negative relation between profitability and leverage for small family firms in developing countries.

Hypothesis 2c: We expect a negative relation between profitability and leverage for small family managed firms in developing countries.

2.2 Capital structure decisions and economic policy

Capital structure theories do not differentiate firms' capital structure decisions between developing and developed countries with regard to the economic, institutional and financial environment factors. But the difference between developed and developing countries due to the economic, institutional and financial environment factors cause firms to shape their leverage decisions accordingly (Booth et al., 2001, Fan et al., 2010). Therefore, economic, institutional and financial environment factors have an indirect effect on the financing choice of the firms. For instance, corporate bond markets and organized securities markets are not either developed, or exist in the developing countries, which leaves the firms in developing countries with only the bank financing option. The below section explains each factor that we include by considering the effect found in empirical literature.

The financing decision of a firm does not only depend on the firms' conditions but also on the economic environment in which the firms operate. This is especially true for small firms in developing countries where economic stability is important in determining the availability of external financing to them. The country in which a firm is located

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explains capital structure choices (Fan et al., 2012). Joeveer (2013a) concludes that the country-specific factors are the main factors that have an effect on leverage choices of small unlisted firms. We argue that the growth and stability of the economic environment is especially important for small and family firms in developing countries. As developing countries become richer they provide more funding opportunities to firms and external financing becomes available to small firms. External financing in developing countries is scarce compared to developed countries due to unstable macroeconomic policies. Therefore, government's decisions on the fiscal and monetary policies have a direct impact on the economic environment of the country in terms of providing external financing and stability and thus on the capital structure decisions of firms.

On the whole, the economic development of a country affects the capital structure decisions of firms (Rajan and Zingales, 1995; Booth et al., 2001; Demirguc-Kunt and Maksimovic, 1996, 1999; De Jong et al., 2008; Joeveer, 2013a; Mc Namara et al., 2017; Demirguc-Kunt et al., 2020). One common measure of the economic development level of a country is per capita income. It is a broad indicator which describes the level of wealth in a country over time. Although Demirguc-Kunt et al. (2020) find a positive but insignificant relation for SMEs in both developed and developing economies, Muhammad et al. (2021) obtain negative association for family firms in developing countries. Similarly, the growth rate of the economy is a measure of the growth opportunities available to firms in the economy. On an individual firm level, the growth rate is a proxy for the investment opportunity set faced by firms (Smith and Watts, 1992) and its effect on the optimal financing of projects (Myers, 1977). Therefore, we expect economic growth to be related positively with leverage. On the other hand, high growth in developing countries may

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encourage firms to list and issue equity (Glen and Pinto, 1994). Also finance theory proposes that for growth options, firms should not prefer debt financing but should prefer equity financing (Demirguc-Kunt and Maksimovic, 1996). But small firms are not usually listed on the stock exchange and have limited access to external financing; therefore, increased investment opportunities in a country lead them to access debt financing. Joeveer (2013a, b) support this positive association for SMEs in both developing and developed countries, respectively. No result is available for family ownership, especially for small firms.

Hypothesis 3a: We expect the income level and the economic growth rate in an economy to be positively related to the leverage choices of small firms in developing countries.

Hypothesis 3b: We expect the income level and the economic growth rate in an economy to be positively related to the leverage choices of small family firms in developing countries.

Hypothesis 3c: We expect the income level and the economic growth rate in an economy to be positively related to the leverage choices of small family managed firms in developing countries.

In developing countries, governments use monetary policy to stabilize the economy and control the rate of inflation. However, governments in developing countries resort often to monetisation of their fiscal deficit due to the limited options at their disposal to fund their expenditures, which results in high inflation. Firms are inclined to use more debt financing in an inflationary environment because increases in inflation lead to a higher value of tax deductions on debt given the tax deductibility of nominal interest payments

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(Taggart, 1985; Frank and Goyal, 2008). Thus, the trade-off theory supports a positive relation between inflation and debt. An inflation-induced increase in nominal interest rates increases the tax advantage of debt financing. But the previous studies (Joeveer, 2013a, b) find a negative association between rate of inflation and leverage for SMEs in both developing and developed countries. No result is available for family ownership, especially for small firms.

Hypothesis 4a: We expect a positive relation between the rate of inflation and interest rates, and leverage for small firms in developing countries.

Hypothesis 4b: We expect a positive relation between the rate of inflation and interest rates, and leverage for small family firms in developing countries.

Hypothesis 4c: We expect a positive relation between rate of inflation and interest rates, and leverage for small family managed firms in developing countries.

2.3 Capital structure decisions and country institutional characteristics

We first look at the impact of corruption on the leverage decisions of firms. Better governed countries provide better investor protection and therefore, equity financing is expected to be used by the firms much more. However, corruption is a problem in less developed countries so equity financing is expected to be used less in these countries due to the threat of investor rights' expropriation by managers, or public officials (Fan et al., 2012). Therefore, debt financing is expected to be used more in less developed countries with lower levels of corruption. Better governance lowers the agency problems and transaction costs (Ciocchini et al., 2003) and therefore, the cost of borrowing decreases. Fan et al. (2012) and Joeveer (2013b) also supports the positive relation between low levels of

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corruption and leverage. No result is available for family ownership, especially for small firms.

Hypothesis 5a: We expect a positive relation between better governance and leverage for small firms in developing countries.

Hypothesis 5b: We expect a positive relation between better governance and leverage for small family firms in developing countries.

Hypothesis 5c: We expect a positive relation between better governance and leverage for small family managed firms in developing countries.

The legal system a country belongs to is another factor that has an impact on the external financing decisions of firms. We use La Porta et al. (1997) to determine the legal system of a country as being either common, or civil law. Countries with common law legal systems offer better protection to shareholders than the civil law legal system. Therefore, firms in common law countries can use more equity financing and less leverage (Demirguc-Kunt and Maksimovic, 1998; La Porta et al., 2002). By using common law as a dummy variable, Fan et al. (2012) find a negative relation between leverage and legal system. But for developing economies they find a positive but insignificant relation. Demirguc-Kunt and Maksimovic (1999) find a negative relation between leverage and common law for both small and large firms. No result is available for family ownership, especially for small firms. In our study, we use a dummy for civil law legal system, so we expect to find a positive relation between leverage and civil law.

Hypothesis 6a: We expect a positive relation between countries with civil law legal system and leverage for small firms in developing countries.

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Hypothesis 6b: We expect a positive relation between countries with civil law legal system and leverage for small family firms in developing countries.

Hypothesis 6c: We expect a positive relation between countries with civil law legal system and leverage for small family managed firms in developing countries.

2.4 Capital structure decisions and the financial environment

For the development of the financial system, we use three proxies: deposit money bank assets to central bank assets, stock market dummy and stock market turnover. The ratio of deposit bank assets to central bank assets indicates the size of the commercial banks compared to that of the central bank in the country. A country can be said to be financially developed when the commercial banks play a larger role than central banks in the banking system and as a result more funds are available to the private sector (Beck et al., 2009). Joeveer (2013a) finds a positive relation for unlisted firms. Mc Namara et al. (2017) use the deposits per GDP[9] as a proxy to analyse the effect and find a positive relation for European SMEs. No result is available for family ownership, especially for small firms.

Hypothesis 7a: We expect positive relation between the ratio of deposit money bank assets to central banks assets and leverage for small firms in developing countries.

Hypothesis 7b: We expect positive relation between the ratio of deposit money bank assets to central banks assets and leverage for small family firms in developing countries.

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[9] Deposits per GPD is defined as the ratio of the total value of demand, time and saving deposits at domestic banks to GDP.

Hypothesis 7c: We expect positive relation between the ratio of deposit money bank assets to central banks assets and leverage for small family managed firms in developing countries.

Stock market is another type of financial institution which supplies funds to firms, and helps raise the amount of investment available in a country. Not all of the countries in our sample have a stock market, or a stock market, which is active. Therefore, we use a dummy variable to proxy the presence of a stock market in a country. Since the existence of an active stock market supplies more funds into the financial system, we expect a positive relation between the stock market dummy and leverage.

Hypothesis 8a: We expect positive relation between the existence of a stock market and leverage for small firms in developing countries.

Hypothesis 8b: We expect positive relation between the existence of a stock market and leverage for small family firms in developing countries.

Hypothesis 8c: We expect positive relation between the existence of a stock market and leverage for small family managed firms in developing countries.

Stock market turnover shows how liquid, or active a stock market in relation to its size is (Beck et al., 2009). In a liquid stock market, trading is easier and liquidity lowers risk. More information is available for investors in the stock markets with high turnover due to the easier external monitoring of firms. Firms use more equity financing and less bank lending to raise capital when stock market turnover is high (Demirguc-Kunt and Levine, 1996). Demirguc-Kunt et al. (2020) find a positive but insignificant relation

between stock market turnover and SMEs leverage during the financial crisis. No result is available for family ownership, especially for small firms.

Hypothesis 9a: We expect a negative relation between stock market turnover and leverage for small firms in developing countries.

Hypothesis 9b: We expect a negative relation between stock market turnover and leverage for small family firms in developing countries.

Hypothesis 9c: We expect a negative relation between stock market turnover and leverage for small family managed firms in developing countries.

3. Data and methodology

3.1 Data

Our main dataset is a firm-level survey data for 10,839 firms from the World Bank Enterprise Survey-Investment Climate Survey conducted for 24 developing countries from 5 regions, which provides information over the period 1999-2002.[10] Appendix A gives the list of firm observation by country. World Bank Enterprise Survey is a major cross-sectional survey conducted for developed and developing countries in various years. It is a firm level survey data which provides a sample of an economy's private sector. The survey is performed by private contractors on behalf of the World Bank. In the survey business owners and top managers are surveyed. Sometimes for the questions related to sales and labour section of the survey, company accounts and human resource managers respond to the questions. The sectors included in the survey are from key manufacturing and service sectors from each region of the world. In each country, companies in the cities or regions

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[10] For some of the countries the span of years goes beyond 2002 due to delays in the collection of data.

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of major economic activity are interviewed. Formal (registered) firms with 5 or more employees are aimed for interview. The interviewed firms in the sample are selected based on the list of eligible firms which is obtained from the country's statistical office.[11]

The Investment Climate Survey provides information about the balance sheet and income statement items such as fixed assets, current assets, total liabilities including short-term and long-term debt and equity-share capital, sales and expenses up to three years. This provides us information on the amount of debt and assets which enables us to estimate our firm level variables as used in the previous literature (see e.g. Rajan and Zingales, 1995; Booth et al., 2001). Demirguc-Kunt et al. (2020) use the ratio of total financial debt to total assets to proxy the leverage. Rajan and Zingales (1995) and Booth et al. (2001) use total liabilities to total assets as we do. We could not include only financial debt as in Demirguc-Kunt et al. (2020) due to the unavailability of the data. The other versions of the survey do not include such accounting information. The data for macroeconomic variables is collected from World Development Indicators and financial environment variables are gathered from the Worldwide Governance Indicators from World Bank and the Financial Development and Structure database (Beck et al., 2009). Legal origin of the countries is from La Porta et al. (1998, 2002).[12]

We have 27,738 observations of which 48(41) % of them is small (medium) firms and 11% are large companies. Countries might use different classifications for SMEs and large firms. In our study, we follow Beck et al. (2008) to classify small firms according to

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[11] Unfortunately, the survey was not updated in recent years. However, the database provides information about the ownership of the firms, that is whether they are family owned firms or not, as well as the management structure of the firms, that is whether they are managed by the owner, or an outside manager. Such information is not available in other data base for several countries.

[12] For definitions of variables and sources of data look at Appendix B.

the number of employees. The firms are categorised as small if they have less than 50 employees, medium if they employ 51 to 500 employees and large if they employ more than 500 employees (see Appendix A).

Looking now at the ownership structure, 77% of small firms are owned by family.[13] Family is defined as when the largest shareholder/owner is an individual or family. The ownership is very different for large firms. Only 48% of the firms in the sample are owned by a family[14]. What is left of the ownership, that is 23% in the case of small firms and 52% in the case of large firms is owned by others, which include domestic and foreign companies, banks, investment funds, the government and government agencies.[15]

Bearing in mind the gaps in our data, the majority of the small(large) family firms in our sample are managed by the family, which corresponds to 97% (93%) and the rest (3%) (%7) is managed by outside managers (see Table 1, Panel A).[16,17,18] In summary, most of the ownership of our small firms is owned by family, while the majority of ownership of large firms is owned by other entities. Furthermore, the majority of the small family firms in our sample are managed by the family, which corresponds to 97% and the

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[13] The observation for small firms which reported ownership structure is 11478. Total number of observations for small family firms is 8841. So 8841/11478=77%.

[14] Total number of observations for large firms which reported ownership structure is 2182. Large family firms are 1045; therefore, 1045/2182=48%.

[15] The ownership data is not available for all the small and large firms in the sample. The results are based on 86% of the small firms and 72% of the large firms in the sample.

[16] The management data for 42% of small firms is not available. The results represent 58% of the small firms in the sample.

[17] We do not have the data for the 81% of the large firms in the sample. The results represent 19% of the large firms.

[18] Total number of observations for small family firms which reported ownership structure is 7791. Small family managed firms have 7574 observations so 7574/7791=97% and for small family firms with outside manager has 217 observations; therefore, 217/7791=3%. Large family firms have 576 observations which reported ownership structure. Large family managed firms have 534 observations, so 534/576=93% and large family firms with outside managers have 42 observations so 42/576=7%.

rest (3%) is managed by outside managers. In the case of large family firms in our sample 93% are managed by the family, while 7% by the outside managers.

There are two distinguishing features in our database: The first, which was described above, is the information of family ownership and management structure for the various categories of firms, albeit not complete, but gives us a general picture, which is not provided in other databases and as a result has not been investigated in relation to capital structure decisions of small firms; and secondly, its coverage for very small enterprises, which has not been used before extensively for the examination of the determinants of capital structure. For example, Rajan and Zingales (1995) use Global Vantage database which contains accounting data for the largest listed companies in the G-7 countries and Booth et al. (2001) use International Financial Corporation (IFC) database, which includes abbreviated balance sheets and income statements for the largest companies in 10 developing countries. As we see from our sample, large companies are not a common feature of developing countries. For example, the average size of the firm in our sample is lower compared to the size of the firms in the study of Booth et al. (2001) and Demirguc-Kunt et al. (2020). We first compare the average sizes of firms in India and Pakistan in the same way as in Booth et al. (2001).[19] The average size of the firms in India and Pakistan in the sample of Booth et al. (2001) is US$98m and 27m, respectively, while in our sample it is US$10m and 1m. On the other hand, the average total assets and sales of SMEs for both developed and developing countries together in Demirguc-Kunt et al. (2020) are $60m and $120m, respectively, while in our sample they are approximately $10m and $4m for the SMEs in developing countries only. We see that the firms in our sample are smaller. On

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[19]These two countries are included in both studies.

the other hand, Beck et al. (2008) focus on the small firms and use World Business Environment Survey (WBES) 1999, which had limited firm level financial information. They investigate flows of external finance as a proportion of investment expenditures. They use the total amount of internal and external resources in a particular year rather than the ratio of external financing to total assets. In contrast, our rich database allows us to investigate whether their capital structure decisions are affected by the same theoretical determinants of capital structures used in developed countries. Mc Namara et al. (2017) and Demirguc-Kunt et al. (2020) use the Amadeus and Orbis databases by Bureau Van Dijk, respectively. Our study differs from those studies because it is based on a more representative group of less developed countries around the world, with diverse country characteristics which will help us arrive at more conclusive results regarding the capital structure decisions of small firms in developing countries.

3.2 Methodology

The basic empirical model is a cross-sectional regression of the firm's leverage against the firm's tangibility of assets and profitability. We have 13,343 observations for small firms over two, or three-year time periods. Since the time period for each firm is different, we have an unbalanced panel. We estimate our model by using panel least squares with period fixed effects and clustered standard errors. We apply the panel data analysis because this gives us the opportunity to analyse our firm level across country and time. We analyse whether country and industry have an effect on the capital structure decisions of firms. For that we use country and industry dummies.[20] It should be noted that it is important to

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[20] We have used the World Bank classification. Details of proportion of firms in each industry are given in Appendix C.

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consider whether a firm is in the manufacturing sector, or the services sector because external financing of the firms is highly influenced by their asset composition (Myers, 1984). Manufacturing firms with tangible assets have a greater chance of obtaining external finance from creditors as compared to SMEs in the service sector with intangible assets. Cressy and Olofsson (1997) also confirm that SMEs in the service sector face higher credit constraints as compared to the manufacturing sector. Thus, the level of information asymmetry of SMEs and lenders has different relative importance for SMEs in the manufacturing and service sectors (Serrasqueiro, 2011). Finally, we include economic and financial environment variables for each country to investigate their impact.

The functional form of our models is as follows:

$$\left. D_{i,j,t} \middle/ V_{i,j,t} \right. = \alpha_t + \sum_{k=1}^{n} \beta_k F_{i,j,k,t} + \sum_{l=1}^{n} \gamma_l E_{i,j,l,t} + \sum_{m}^{n} \varphi_m Ins_{i,j,m,t} + \sum_{p=1}^{n} \delta_p Fin_{i,j,p,t} + \varepsilon_{i,t} \tag{1}$$

$D_{i,j,t}/V_{i,j,t}$ represents the leverage for the ith firm in country j at time t. $F_{i,j,k,t}$ shows the firm level variables, such as asset tangibility and profitability; while $E_{i,j,l,t}$ represents the economic environment variables, such as GDP per capita, economic growth, the inflation rate and the interest rate for the lth macroeconomic variable at time t for country j. $Ins_{i,j,m,t}$ shows the mth institutional variables at time t, such as corruption and civil law legal system for firm i in country j. $Fin_{i,j,p,t}$ shows the financial environment variables, such as, deposit money bank assets to central bank assets, stock market dummy and stock market turnover for the pth financial environment variable at time t, for firm i in country j.

Appendix D reports the correlation coefficient of variables. Since there are some strong correlations among country level variables, we employ a variance inflation factor

(VIF) [21] test to examine the existence of a multicollinearity among the independent variables (Maddala, 1992). Appendix E presents the results for the VIF analysis, suggesting collinearity is not a problem for our analysis.

We apply the Hausman specification test to decide on the use of fixed effects. [22] We use period fixed effects rather than firm-specific fixed effects based on the work by Lemmon et al. (2008). Lemmon et al. (2008) propose that "the majority of variation in leverage in a panel of firms is time invariant" suggesting that variation in capital structures is primarily determined by factors that remain stable over time. As suggested, by controlling the time-series variation (or time variant factors), we capture cross-sectional variation of the determinants. Therefore, we are able to identify the factors that affect the capital structure decisions of firms. We estimate the model using OLS estimators with period fixed effects. Therefore, we also include a time dummy.

We first estimate the equation for both small and large firms by using only firm-level variables including country and industry. Then as model 2 we add the institutional characteristics and the economic and financial environment variables into the regression with industry dummies. In Model 3, in addition to model 2, we include country dummies. The reason why we include both country dummies and country level factor is to examine whether country factors pick up the effect of the country dummies. Since we observe that most of the country characteristics become insignificant, we do not include country

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[21] VIF is an index that calculates how much the variance of an estimated regression coefficient is inflated because of collinearity in the model.

[22] Hausman test is a specification test which is based on the correlations between the regressors and the unobserved or individual effect. This test is important to test the assumption of whether unobserved and observed explanatory variables are correlated. Fixed effect estimator is consistent even when the estimators are correlated with the individual effect. If they are correlated, fixed effect is consistent, but random effect is not. Therefore, we actually test in the null hypothesis that random effects are consistent and efficient, versus alternative hypothesis that random effects are inconsistent (as the fixed effects will be always consistent).

dummies when we repeat the estimations for short term and long term debt and family ownership and management structures in the subsequent sections.

4. Empirical results

4.1 Capital Structures for small family firms in Developing Countries

Table 1 panel A shows comparative means and medians of firm-level variables for small and large firms, small and large family firms and small and large family firms that are either family managed or managed by professional managers outside the family (outside managed). We first look at the dependent variables. We follow Rajan and Zingales (1995), Demirguc-Kunt and Maksimovic (1996) and Booth et al. (2001) and define leverage as total liabilities divided by total assets.[23] The mean(median) leverage for small firms is 30.60%(22.80%) compared to large firms, which is, 50.50%(53.10%). Leverage for small firms is low in our sample compared to large firms. Due to the limited availability of funds in developing countries to finance companies, the available funds are generally allocated to large firms. We observe that also for short-term debt and long-term debt. The mean of short-term debt (long-term debt) is 20.80%(9.60%) for small firms while it is 29.20%(21.40%) for large firms, respectively. Maturity of debt is also longer for large firms compared to small firms.

When we look at the family effect, the leverage for small family firms is slightly higher with 31.40% than the leverage for small firms. The leverage is much higher for large family firms with 52.50%. For the maturity of debt, large family firms have higher short-term debt with 30.30% than small family firms with 22.90%. For short-term debt, the mean for small family firms is 8.40% while it is 22.20% for large family firms.

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[23] In other studies, such as Demirguc-Kunt et al. (2020), they use total debt instead of total liabilities. We do not have total debt in our dataset.

For different management styles of family firms, the leverage for small family managed firms (31.50%) are lower than small family firms with an outside manager (40.60%). Since firms with an outside manager are more likely to have better monitoring mechanism than family managed firms, the leverage for small family firms with an outside manager is more than small family managed firms. But we could not see this difference in the large firms. This might be due to the size effect since small firms are seen as informational opaque. There is a slight difference in leverage between large family managed firms (49.20%) and large firms with an outside manager (52.10%). For short-term debt, it is 31.60% for large family managed firms and 31.20% for large firms with an outside manager, while for long-term debt, the mean is 17.60% for large family managed firms and 20.90% for large firms with an outside manager.

Tangibility is defined as the total assets minus current assets (fixed assets) divided by total assets. On average(median) 48.20%(46.60%) of the small firms' assets are fixed assets which can be used as collateral. So, firms with high asset tangibility should have greater borrowing capacity. The mean of asset tangibility for small family firms is 47% while it is 44% for the large family firms. On the other hand, it is 46.30% for small family managed firms and 40.10% for the small firms with an outside manager while it is 46.40% for large family managed firms and 38.50% for large firms with an outside manger.

Profitability is calculated as earnings before interest and tax[24] divided by total assets. The mean(median) of profitability for small firms in the sample is 32.90%(17.50%) while it is 48.40%(30.80%) for large firms. The mean of profitability for small family firms is 34% and it is 46.50% for large family firms. The profitability for small family managed

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[24] Earnings is calculated as total sales minus the sum of direct raw material costs, consumption of energy, manpower costs, interest charges and financial fees, other costs.

firms is 35.30% while it is 27.80% for small firms with an outside manager. This difference is much higher for the large firms. The mean of profitability for the large family managed firms is 49.80% while it 23.10% for the large firms with an outside manager.

Insert Table 1 about here

Table 1, panel B presents descriptive statistics for the macroeconomic indicators: GDP per capita shows the income per capita level of countries (Beck et al., 2008) and average (median) GDP per capita for our sample is US$1,698(996). The richest country in the sample is Oman with US$8,962 and while the poorest country is Ethiopia with US$121. In the same period, the GDP per capita in the US(UK) is US$34,852(25,359). As can be seen from the figures, there is a great difference in wealth between even the richest country in our sample and the developed countries. The countries in our sample grow faster compared to the developed markets. The average(median) GDP growth rate of a country in our sample is 3.26% (3.07%), while in the US(UK) is 1.75% (2.40%). The fastest growing country in our sample is Cambodia with 8.04% growth rate, while the slowest growing country is Indonesia with 0.15% growth rate.

The inflation rate shows the inflation rate of a country and is measured by the GDP deflator, which is the ratio of GDP in local currency to GDP in constant local currency. Average (median) inflation rate in our sample is 6.95% (6.20%); whereas, the rate is 2.13% (2.41%) in the US(UK). The highest inflation is 30.82% for Honduras and the lowest is -7.04% for Ecuador. Interest rates similar to the inflation rates, are also higher for the countries in our sample as one would expect. The interest rate is depicted by the lending rate of a country. The average (median) interest rate is 21.27% (13.69%), while for the US(UK) the interest rate is 6.21% (4.75%) during our sample period. The highest interest

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rate in our sample is 62.88% for Brazil while the lowest interest rate is 6.18% for Chile. The higher inflation and interest rates cause borrowing to be costly in developing countries and might be one of the reasons for lower leverage ratios in general.

We have also looked at a group of institutional variables. Corruption is scaled from -2.5 to 2.5. Higher values mean better governance. The mean (median) of corruption is -0.30 (-0.42) in our sample. The value of corruption in the U.S. (UK) is 1.75 (2.06). Corruption seems to be a problem for the countries in our sample. None of them are close to the U.S. This corrupt environment increases the costs of external financing. High corruption may be another reason for the low leverage levels of firms in our sample. The most corrupt country in the sample is Indonesia (-1.13), while the least corrupt country is Chile (1.51). The majority of the countries in the sample (60%) embrace a civil law legal system, while 40% are common law countries.

Looking now at the financial variables the mean (median) of deposit money bank assets to central bank assets is 62.15% (75%). For the U.S. (UK), this ratio is 91.21% (98.35%). The most financially developed country is Oman (99.84%) and the least financially developed country is Brazil (0.36%). If the deposit money banks in a country have a larger role in the banking system than central bank, it indicates that the country has higher levels of financial development (Beck et al., 2009). Our sample includes financially developed countries, but if we look at the average, it seems that most of the countries in the sample are not financially developed.

Not all countries in the sample have a stock market. Based on the sample, four of the countries out of the 24 countries in our sample do not have a stock market. Those are

Cambodia, Ethiopia, Guyana[25] and Syria. Two countries, Honduras and Nicaragua, in the sample do not have an active stock market. In total 6 out of 24 countries either do not have a stock market or an active one. This corresponds to 11%[26] of the observations in the sample.

The mean (median) of stock market turnover is 0.97 (0.16). The country with the highest turnover is Pakistan (5.01), while the country with lowest turnover is Guyana (0.0001). In the U.S. (UK), stock market turnover is 1.65 (0.88). Guatemala, India, and Pakistan have higher stock market turnover when compared to the U.S. High turnover is an indicator of low transaction costs (Levine and Zervos, 1998). Therefore, the higher the turnover, the more active and liquid the stock market is. It seems that some of the stock markets in the sample are illiquid.

4.2 Are the determinants of capital structure different for small firms compared to large firms?

In this section, we analyse whether the determinants of capital structure theories are portable to small firms in developing countries. We will investigate small family firms in detail in the next section. In order to do that we compare the estimation results for small and large firms, which are presented in Table 2. Looking first at impact of the firm level characteristics (Table 2, Model1), the coefficient for tangibility is statistically significant at the one percent for both small and large firms but negative indicating that as collateral increases, firms borrow less. According to the trade-off and pecking order theories, as tangibility increases, collateral increases and firms should be able to obtain more debt (see

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[25] The stock market in Guyana opened in 2003.
[26] Total number of observations from those six countries is 3,179 and total number of observations in the sample is 27,738. (3,179/27,738 = 11%)

Rajan and Zingales, 1995; Titman and Wessels, 1988). Our findings contradict the theory. This could be that firms, especially SMEs, in developing countries have less reliance on bank-based financing due to the inaccessibility since institutions providing asset-backed financing are biased towards private sector due to higher levels of information asymmetry which might be the result of the lax accounting standards (Du et al., 2015). Another explanation could be because of the maturity of debt. In the short-term firms use source of financing, which does not require fixed assets as collateral, such as trade credit, and bank overdrafts, whereas in the long-term financing is secured against fixed assets (Newman et al., 2013). In other words, we are capturing more the short-term impact relationship which does not require collateral, while long-term debt financing is secured against financial assets[27]. In order to test that conjecture, we test the results using short-term and long-term debt for small and large firms as presented in Table 2. As expected tangibility for long-term debt becomes positive.

Looking at profitability, we do not find a significant relation with leverage for small firms, while the relation is negative and significant for large firms. The impact of small firms' profitability on leverage is almost zero although large firms follow the pecking order for their leverage decisions. Comparing now the results, which includes firm-level variables with the country effects and industry effects, with those of model 2, which includes instead the macro, institutional and financial variables, we observe that the adjusted R^2 is less in the model 1 in Table 2 implying that there are still country effects, that we have not accounted for. On the other hand, as presented in model 3 in Table 2, we repeat the estimations including both economic, institutional and financial environment

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[27] Short-term debt in small firms is 20.8%, while long-term debt is 9.6%.

variables and both country and industry dummies. We could not include all of the variables due to collinearity so we repeat them by excluding civil law legal system variable. We observe that economic, institutional and financial environment variables become insignificant for the small firms; therefore, as expected, country effects pick up the impacts of economic, institutional and financial environment variables while the effect of firm-level variables stay the same.

We show that economic environment is important in firms' capital structure choices in developing countries. The coefficient for GDP per capita is negative and that is in contrast to our expectations. Since we are capturing more the short-term impact of leverage, small firms in our sample prefer long-term debt financing instead, and indeed we find the relation between GDP per capita and short-term debt to be negative, while it turns positive the for long-term debt. That could be because GDP per capita is a broad indicator for economic development, which is positively correlated with financial development (Svirydzenka, K.,2016). Further development of the countries might encourage small firms to lengthen their debt maturity, possibly due to an increase in the availability of financial products, as well as an increase in the supply of funds. On the other hand, GDP growth rate has a positive coefficient. Debt is usually the preferred financing option for investment opportunities due to the scarcity of equity financing in developing countries; therefore, increases in the growth opportunities available to firms in a country increases the leverage. In countries with relatively higher rate of economic growth, small firms are eager to take higher levels of debt to finance new investment (Joeveer, 2013a).

The coefficient for the inflation rate is positive implying that small firms borrow more as inflation increases, confirming our expectations. (Booth et al., 2001). The impact

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of interest rate on leverage is positive suggesting that firms continue to borrow despite the increases in the cost of interest. This relation is true for the short-term debt but for long-term debt, small firms decrease their long-term borrowing as interest rate increases. Either the small firms continue borrowing short-term because of they need or inflation rates are generally higher for developing countries; therefore, if the managers are able to borrow at the right time, they can lower their cost of borrowing when the current interest rates are lower than the rate of inflation (Frank and Goyal, 2008).

We move on to discuss the impact of country institutional characteristics on small firm leverage. We note the coefficient for corruption is positive, confirming our hypothesis that small firms increase their debt financing in better-governed countries. Since the countries in our sample are relatively poor compared to European countries, corruption is one of the biggest obstacles, making investment and borrowing costly. Therefore, the lower the corruption, the higher the funding small firms are able to find. Additionally, we examine the effect of the legal system on small firm leverage. The coefficient for the civil law dummy is positive implying that firms in the countries with civil law legal systems can borrow more, since countries with civil law legal systems have weaker property and investor rights, firms in those countries prefer debt financing over equity financing. (Demirguc-Kunt and Maksimovic, 1999). Small firms in our sample prefer short-term debt over long-term debt financing since the relation is negative for long-term debt while positive for short-term debt.

Moving on to the financial development variables, we note that the coefficient for deposit money bank assets to central bank assets is positive for leverage in accordance with our expectations. When the deposit money banks play a larger role than the central bank in

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the banking system, that is an indication of financial development (Beck et al., 2009). The developed banking system provides more funds; therefore, the debt financing of small firms increases. The coefficient for the stock market dummy is positive, which confirms our hypothesis that in countries, which have a stock market, small firms have access to more external financing. The stock market is another option for firms to raise funds. Stock markets signify the use of equity markets in raising capital. The existence of a stock market offers better diversification and increased liquidity; therefore, the amount of investments available in a country is expected to increase (Greenwood and Jovanovic, 1990; Obstfeld, 1994). With stock markets, bank loans rise. As Demirguc-Kunt and Levine (1996) conclude that the development level of stock market is highly related with the development of banks. Demirguc-Kunt and Maksimovic (1996) support the view that countries with developing financial systems, stock markets and banks are complements to each other. In that way bank loans can rise in the countries with developing stock markets since further development of the stock market provides opportunities for risk sharing and information collection that enables firms to increase their borrowing. As a result, firms have access to more external funding. The coefficient for stock market turnover is negative for leverage suggesting that as turnover increases, firms prefer equity financing. Since high turnover decreases the transaction costs and raises the liquidity of the market, funding in the stock market becomes cheaper (Levine and Zervos, 1998). Therefore, firms may prefer to borrow less debt and shift their financing choices from debt financing to equity financing. Financial institutions play an important role in supplying available funds to firms. Financially developed countries create more external financing opportunities, while an active and more liquid stock market increases the available funding in the financial system and therefore,

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firms prefer equity financing over the debt financing and firms borrow less. Most of the economic, institutional and financial environment variables are insignificant for large firms, except for the interest rate, the stock market and turnover.

In summary, we note two differences between the capital structure decisions of small and large firms. First, profitability has no bearing in the capital structure decisions of small firms. Secondly, the macroeconomic, institutional and financial environment variables impact the financing decisions of small firms much more than large firms.

Insert Table 2 about here

Large firms have better access to the capital markets so they can shape their capital structure decisions based on firm level needs as represented by capital structure theories. However small firms are more exposed to shocks, and changes in the local economy and the governments' monetary policies that determine the level of financing available via development banks, or suppliers.

The results suggest that small firms do not follow the pecking order compared to large firms as suggested by previous studies, such as Hall et al. (2004), Nguyen and Ramachandran (2006). It should be noted that our analysis has focused on the small firms of SMEs, which employ less than 50 employees, while the analysis of other studies has concentrated on the larger firms of SMEs. For example, in Mc Namara et al. (2017) SMEs have less than 250 employees; in Demirguc-Kunt et al. (2020) the average employment of SMEs is between 10 to 99 and in Joeveer (2013a) SMEs have less than 250 employees.

4.3 Does the family ownership affect the capital structure decisions of small firms in developing countries?

Previous studies provide mixed results on the determinants of capital structure decisions of family firms. Our aim is to establish whether family ownership has an effect on the leverage decisions of small firms in developing countries. In other words, whether there is a change in our previous analysis, which showed that tangibility has a negative impact, profitability has no impact and economic and financial environment, and institutional factors are the main determinants of capital structure of small firms. So, we are testing whether this will change when the ownership structure is family. We compare the results to Table 2 for small firms and large firms.

Table 3 presents the results for small family and large family firms. The results for small firms are similar to those of the base analysis in Table 2, when we did not take into account the ownership of the firm. Tangibility has a negative impact, and profitability does not impact at all. The results are similar for the short-term and long-term debt. The effect of economic, institutional and financial environment variables is also in line with the base result in Table 2.

Large firms present different results from the base analysis in Table 2. For large family firms, firm-level determinants become insignificant. The reason for this insignificance in tangibility might be due to the soft information, such as reputation and management quality, trust and closeness of relationships, and private collaterals, which can be provided by owners (Ramalho and da Silvia, 2009). Burgstallar and Wagner (2015) also support for this insignificant relation for family firms. But for short-term debt, the relation is negative as in base line analysis and for long-term debt, large family firms follow the theories of capital structure in their choices. As opposed to base line results, profitability becomes insignificant for large family firms. When we look at the country level factors,

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interest rate, corruption, and deposit money bank assets to central bank assets have a positive effect on the leverage decisions of large family firms while turnover has a negative effect. The rest of the variables are similar to the base analysis in Table 2.

Hence, the effect of firm-level determinants for small family firms are in line with the base line results. Firm level determinants become different for large family firms as opposed to the base line results. Therefore, the characteristics of ownership are important for the large firms' capital structure decisions in developing countries.

Insert Table 3 about here

4.4 Does the family management have an effect on the capital structure decisions of small family firms in developing countries?

We examine the effect of family management on the capital structure decisions of small family firms. We investigate whether firms managed by the family take different capital structure decisions as opposed to firms managed by an outside manager. We thus divide the sample of small family firms into two groups those managed by the family and those managed by an outside manager. We apply the same division to the large firms too in order to contrast the results. Table 3 presents the results. First, we could not find any difference between capital structure decisions of small family managed firms and small family firms with an outside manager. But the result shows a difference between short-term and long-term debt. Tangibility becomes insignificant for different maturities of debt while profitability has a negative effect on the long-term debt for small family firms with an outside manager. Second, our results for family managed firms are in line with the results of small firms presented in Table 2. For small family firms with an outside manager, except GDP per capita, the other economic, financial environment variables become insignificant.

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Next, we analyse the effect of management on the large firms' leverage decisions. We observe that the determinants of capital structure show differences between family managed large firms and large family firms with an outside manager. For large family managed firms, firm-level determinants become insignificant while for large family firms with the outside manager, tangibility is insignificant while profitability is significant and inversely related with leverage. For large family managed firms rather than the firm-level determinants, interest rate and deposit money banks assets to central bank assets have an effect on the leverage decisions, unlike the overall base results for large firms in Table 2. Family managed large firms use more debt financing in the countries where the banking systems are developed. On the other hand, for large family firms with an outside manager, only turnover has an inverse effect on the leverage decisions. The rest of the country variables are insignificant.

Therefore, management of family firms affects the capital structure of small firms. Economic, institutional and financial environment factors are important determinants for small family managed firms while they are not that important for small family firms with an outside manager. On the other hand, there is a slight difference for the management of large family firms. Development in the banking system and interest rates increase leverage of large family managed firms while large family firms with an outside manager decrease their leverage when they have profits and when the stock market is liquid and active.

4.5 Detailed analysis with interacting variables

Due to insignificant effect of firm-level variables and to assess different effects for different classes of firms, we interact key variables, such tangibility and profitability with small and large variables. Table 4 presents the results for leverage, short-term debt and long-term

debt with interacting variable tangibility and profitability with small and large. We observe that the interaction variable tangibility*small is negatively related with leverage as in Table 2 but profitability*small is positively related with leverage as opposed to Table 2 which we found positive but insignificant. On the other hand, tangibility*large is positively associated with leverage and the relation between profitability*large and leverage is positive but insignificant. Therefore, collateral increases large firms' borrowing whereas, it decreases small firms' borrowing. Even with the short-term and long-term debt we find tangibility negatively related with leverage for small firms. The reason for that might be due to the soft information provided by smaller firms. Since it is difficult to access finance in developing countries, they might provide personal collaterals to be financed.

Insert Table 4 about here

We repeat the estimations including family into the interacting variables. Table 5 presents the results. We observe that including family does not change the results that are reported in Table 4. Since the majority of the firms in our sample are family owned firms, it is expected to have the similar results.

Insert Table 5 about here

We do the same exercise with family management. Table 6 presents the results. Although the effect of tangibility is the same as the results reported in Table 4 but for profitability, it becomes insignificant both for small family managed and large family managed firms.

Insert Table 6 about here

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Therefore, size matters for the capital structure decisions of firms. Since the majority of the firms in the sample are family firms, the results for family firms are similar to the small and large firms. Family management affects the capital structure decisions.

4.6 Robustness Tests

4.6.1 Robustness test for small and large firms

We do two further tests to check the robustness of our results. At first, we include size variable into our model to see whether size still matters for the small and large firms. Size is measured by taking the natural logarithm of total assets (Joeveer, 2013a). The results are reported in Table 7. We observe that the results are in line with the base line results presented in Table 2 for small and large firms. The effect of size has a positive impact on the leverage of small firms while for large firms we observe a negative effect. As small firms get bigger, they can borrow more. We observe this increase with long-term debt too, but for short-term debt the relation becomes insignificant. On the other hand, the story is different for large firms, since as large firms get bigger, they decrease their leverage.

We repeat the estimation for family ownership. We observe size measured as total assets has a positive effect on the leverage of small family firms. But for large family firms, the size effect becomes insignificant. The remainder variables are in line with the results for large family firms. For different management styles of small and large family firms, size does not have any significant effect on their leverage decisions.

Insert Table 7 about here

4.6.2 Endogeneity concerns and robustness tests for leverage choices

To control for possible endogeneity, we include lagged values of leverage as one of the independent variables in our model. As presented in Table 8, we find the robust results for

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small firms and observe that already indebted firms borrow more. For the large firms, the results change compared to the base line results. Tangibility becomes insignificant even though the effect is the same. Lag value of leverage has a positive effect on the large firms' leverage, indicating already indebted large firms borrow more.

For small family firms, profitability becomes significant and negatively related with leverage. On the other hand, some of the institutional and financial environment variables become insignificant, such as corruption, deposit money bank assets to central bank assets, stock market and turnover. The results are similar to small firms as in Table 3 for firm level variables but some economic, institutional and financial environment variables become insignificant for small family firms, such as GDP/Cap, interest rate, deposit money bank assets to central bank assets and turnover. On the other hand, the profitability becomes negatively related with leverage for large family firms while the rest of the variables become insignificant.

We observe that the impact of firm-level variables does not change while some country-level variables become insignificant for small family managed firms. But for small family firms with an outside manager except lag value of leverage, all of the variables become insignificant. The results are similar to Table 3 for large family managed and large family firms with an outside manager. Leverage has a positive effect on the firms' borrowing both for the firm managed by the family or the outside manager no matter of the firm size.

Insert Table 8 about here

4.6.3 Concerns for lagged effect of country level variables and robustness tests for leverage choices

We also control for the time lag between country level variables and firm outcomes. Table 9 presents the results. The results do not change for small firms, except for profitability which becomes significant and inflation which becomes insignificant. For large firms, the results are similar to Table 2.

The effect of profitability becomes significant for small family firms. The country level variables are in line with the results presented in Table 3, except for inflation which becomes insignificant. The results for large family firms do not change for the firm-level variables. Therefore, when we take time difference for the impact of policy and external environment, we observe that the results do not change.

For small family firms with an outside manager and large family managed firms, the results do not change. But for large family firms with an outside manager, all of the variables become insignificant. Therefore, the time difference for the impact of policy and external environment is not a major concern for our results.

Insert Table 9 about here

Conclusion

The paper has examined the determinants of capital structure decisions of small firms and family firms in developing countries. Previous research has focused mainly on the large listed firms of the US, other developed countries and a small number developing countries. The studies on SMEs are mostly limited to European countries, where the institutional characteristics are similar. In contrast to the earlier studies, our main focus has been on the small firms and family firms in developing countries, which are more representative of the corporate sector in those countries. We use survey data from Enterprise Survey-Investment Climate Survey which covers a broad sample of countries around the world, and provides

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detailed firm financial, ownership and management information, which enables us to test for the capital structure theories as it has been done for the developed countries, as well as investigate the impact of family ownership and management on the corporate financing decisions of small firms.

Our results can be summarised as follows. First, our results for small firms and small family firms in developing countries indicate that their corporate financing decisions differ from those of large companies. Secondly, small family firms in contrast to large firms do not follow either the pecking order, or the trade-off theories. We show the maturity of the debt matters. Increases in tangibility that indicates the availability of collateral increases long-term debt but not short-term debt. The reason for that might be since it is difficult for small firms to access bank financing in developing countries, they might look for some informal sources of financing. We observe the same for small family firms. The reason for that might be due to the private collaterals provided by family members. Thirdly, we find that the size of the firms is an important factor in their level of leverage and larger firms can borrow more. Due to the information asymmetries and high inflation in the developing countries, small family firms usually face higher interest rate costs. Also, they are financially riskier compared to large firms. As a result of that, debt financing becomes expensive for small family owned companies.

Fourthly, looking at the country level characteristics in detail the institutional characteristics together with the macroeconomic and financial environment variables impact the financing decisions of small family firms much more than those of large firms. Fifthly, we study management styles of small family firms and show they are different from those of large family firms. Finally, we observe further economic development of the

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developing countries might motivate small family firms to extend their maturities of debt and prefer long-term debt over short-term debt. The difference for management styles in small family firms is mostly related to the effect of country level variables.

On the whole, our results raise doubts that that the capital structure decisions of small family firms in developing countries are similar to those of large listed firms in developed markets, and bigger SMEs in developing countries. We show that the capital structure theories are portable to developing countries in the case of large firms, otherwise country characteristics are at work for the external financing decisions of small family firms in developing countries. We also confirm that size matters for capital structure decisions. Ownership and management are more important for the capital structure decisions in the case of large firms. We would expect future work to focus on small family firms' other corporate decisions such as investments and their relation to financing decisions.

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Table 1 Descriptive Statistics

The tables present descriptive statistics for firm specific, economic, institutional and financial environment variables. Panel A reports comparative means for different sizes, ownership styles and management styles of small and large firms. The first row presents means and second row reports the medians. Panel B shows the descriptive statistics for overall sample. Small firms are small firms which has less than 50 employees while Large firms are for large firms which have more than 500 employees. Small(large) family firms are small(large) firms which are owned by an owner or family. Small(large) family managed firms are small(large) family firms which are managed by an owner or family. Small(large) family firms with an outside manager are small(large) family firms which are managed by an outside manager. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Stdebt is the ratio of short-term liabilities to total assets. Ltdebt is the ratio of long-term liabilities to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization.

Panel A: Comparative means for small and large firms

	Small firms	Small family firms	Small family managed firms	Small family firms with an Outside Manager	Large firms	Large family firms	Large family managed firms	Large family firms with an Outside manager
Leverage	0.306	0.314	0.315	0.406	0.505	0.525	0.492	0.521
	0.228	0.235	0.238	0.342	0.531	0.552	0.528	0.436
Stdebt	0.208	0.229	0.234	0.316	0.292	0.303	0.316	0.312
	0.111	0.133	0.139	0.238	0.256	0.266	0.300	0.323
Ltdebt	0.096	0.084	0.080	0.091	0.214	0.222	0.176	0.209
	0.000	0.000	0.000	0.000	0.159	0.177	0.098	0.208
Tangibility	0.482	0.470	0.463	0.401	0.414	0.440	0.464	0.385
	0.466	0.455	0.447	0.340	0.391	0.429	0.463	0.359
Profitability	0.329	0.340	0.353	0.278	0.484	0.465	0.498	0.231
	0.175	0.177	0.182	0.192	0.308	0.328	0.296	0.239
Observations	13343	8841	7574	217	3022	1045	534	42

Panel B: Descriptive Statistics for all firms

	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
Leverage	0.391	0.377	1.000	0.000	0.297	27738
Stdebt	0.253	0.189	0.999	0.000	0.248	27209
Ltdebt	0.142	0.030	0.997	0.000	0.199	27209
Tangibility	0.452	0.441	1.000	0.000	0.272	27065
Profitability	0.370	0.220	7.393	-4.042	0.711	27041
Small	0.481	0.000	1.000	0.000	0.500	27738
Large	0.109	0.000	1.000	0.000	0.312	27738
GDP/Cap	1698.38	996.06	8961.50	120.84	1569.91	27738
Growth rate	0.033	0.031	0.080	0.001	0.015	27738
Inflation rate	0.069	0.062	0.308	-0.070	0.063	27738
Interest rate	0.213	0.137	0.629	0.062	0.171	27738
Corruption	-0.303	-0.418	1.507	-1.127	0.588	27738
Civil law legal system	0.604	1.000	1.000	0.000	0.489	27738
Dbacba	0.621	0.750	0.998	0.004	0.356	27738
Stockmarket	0.890	1.000	1.000	0.000	0.312	27738
Turnover	0.868	0.118	5.010	0.000	1.326	27738

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Table 2 Leverage and debt maturity for Small and Large Firms

The table presents regression results for the small and large firms. Model 1 present the results only with firm specific variables including both country and industry dummies. Model 2 present the regression results with firm specific, economic, institutional and financial environment variables, including industry dummies. Model 3 reports the results including country dummies in addition to Model 2. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Stdebt is the ratio of short-term liabilities to total assets. Ltdebt is the ratio of long-term liabilities to total assets. Tangibility is measured as fixed assets to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

| | Small | | | | | Large | | | | |
| | Leverage | | | Stdebt | Ltdebt | Leverage | | | Stdebt | Ltdebt |
	Model1	Model2	Model3	Model2	Model2	Model1	Model2	Model3	Model2	Model2
Tangibility	-0.148***	-0.173***	-0.148***	-0.206***	0.024***	-0.120***	-0.114***	-0.119***	-0.200***	0.086***
	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.03	0.03
Profitability	0.002	0.000	0.002	0.002	-0.002	-0.022**	-0.021*	-0.022**	-0.004	-0.018**
	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
GDP/Cap		-0.030***	0.199	-0.035***	0.027***		-0.037	-0.581	-0.054***	0.010
		0.01	0.13	0.01	0.01		0.02	0.38	0.02	0.02
Growth rate		1.956***	-0.656	0.812***	1.528***		0.780	0.079	-0.878	1.541**
		0.37	0.51	0.28	0.25		0.86	1.79	0.73	0.68
Inflation rate		0.199***	-0.029	0.146***	0.067**		0.059	0.085	0.039	-0.001
		0.05	0.03	0.04	0.03		0.12	0.11	0.10	0.10
Interest rate		0.292***	0.142	0.381***	-0.115***		0.285***	0.113	0.386***	-0.095
		0.04	0.11	0.03	0.03		0.11	0.19	0.09	0.08
Corruption		0.113***	-0.033	0.086***	0.005		0.010	-0.01	0.068**	-0.051*
		0.01	0.03	0.01	0.01		0.04	0.07	0.03	0.03
Civil law legal system		0.072***		0.100***	-0.048***		-0.011		0.021	-0.030
		0.01		0.01	0.01		0.03		0.03	0.03
Dbacba		0.221***	0.077	0.203***	0.007		0.087	0.026	0.147***	-0.057
		0.02	0.06	0.02	0.01		0.06	0.22	0.04	0.05
Stockmarket		0.175***	0.021	0.148***	0.033***		0.161***	-0.058**	0.104***	0.044
		0.01	0.01	0.01	0.01		0.05	0.02	0.04	0.04
Turnover		-0.029***	0.001	-0.014***	-0.016***		-0.020**	-0.006	-0.024***	0.003
		0.00	0.00	0.00	0.00		0.01	0.01	0.01	0.01
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummy	Yes	-	Yes	-	-	Yes	-	Yes	-	-
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	12611	12611	12611	12315	12315	2866	2866	2866	2837	2837
Adj. R^2	0.251	0.198	0.251	0.232	0.057	0.058	0.039	0.056	0.075	0.052

Table 3 Leverage and Debt Maturity for Small and Large Family, Family Managed and Managed by Outside Manager Firms

The table presents regression results for different sizes, ownership styles and management styles of small and large firms. See notes to table 6.

	Small Family Firms			Small Family Managed Firms			Small Family Firms with an Outside Manager			Large Family Firms			Large Family Managed Firms			Large Family Firms with an Outside Manager		
	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt
Tangibility	-0.194***	-0.217***	0.022**	-0.177***	-0.197***	0.018**	-0.232*	-0.140	-0.086	-0.052	-0.192***	0.140***	-0.107	-0.189***	0.083	-0.112	-0.198	0.087
	0.02	0.01	0.01	0.02	0.02	0.01	0.12	0.12	0.06	0.06	0.05	0.05	0.08	0.07	0.06	0.47	0.51	0.36
Profitability	0.003	0.004	-0.001	0.006	0.006	-0.001	0.032	0.069	-0.042*	-0.022	-0.007	-0.015	0.001	0.018	-0.017	-0.134***	-0.090*	-0.044
	0.01	0.00	0.00	0.01	0.00	0.00	0.06	0.06	0.03	0.02	0.02	0.01	0.03	0.03	0.01	0.03	0.05	0.03
GDP/Cap	-0.078***	-0.134***	0.058***	-0.189***	-0.304***	0.115***	-0.248*	-0.509***	0.243***	-0.088	-0.077*	-0.013	-0.029	-0.073	0.039	0.509	0.515	-0.005
	0.02	0.01	0.01	0.02	0.02	0.01	0.13	0.10	0.07	0.06	0.05	0.04	0.07	0.06	0.06	0.81	0.88	0.66
Growth rate	-0.977*	-1.189***	0.325	-6.444*	-6.511***	0.222	0.015	-0.840	1.105	-2.150	-1.174	-0.997	-3.057	1.143	-4.205**	-2.865	-2.043	-0.822
	0.54	0.43	0.38	0.70	0.56	0.49	5.34	2.74	4.70	1.51	1.24	1.12	2.36	1.90	1.95	11.09	9.78	8.18
Inflation rate	0.312***	0.191***	0.122***	0.317***	0.252***	0.072***	0.257	0.295	-0.271	-0.054	0.137	-0.188	-0.210	0.237	-0.447*	-0.071	-0.468	0.397
	0.06	0.05	0.04	0.06	0.05	0.04	0.31	0.25	0.20	0.19	0.15	0.15	0.29	0.24	0.26	0.50	0.39	0.53
Interest rate	0.265***	0.478***	-0.204***	0.303***	0.418***	-0.125***	-0.018	0.009	-0.034	0.583***	0.521***	0.067	1.235***	0.138	1.127***	-0.666	-0.819	0.153
	0.05	0.05	0.04	0.09	0.08	0.06	0.63	0.43	0.47	0.18	0.15	0.13	0.33	0.31	0.29	1.44	0.91	1.40
Corruption	0.156***	0.195***	-0.038***	0.276***	0.388***	-0.109***	0.229	0.593***	-0.335***	0.124*	0.133**	-0.007	0.082	0.226***	-0.139*	-0.028	0.073	-0.102
	0.02	0.02	0.01	0.03	0.02	0.02	0.18	0.14	0.13	0.07	0.06	0.05	0.09	0.08	0.07	0.16	0.19	0.12
Civil law legal system	0.135***	0.181***	-0.049***	0.232***	0.336***	-0.104***	0.028	0.146*	-0.140**	-0.006	-0.004	-0.001	-0.071	0.032	-0.102*	0.721	0.452	0.269
	0.02	0.02	0.01	0.02	0.02	0.02	0.11	0.08	0.07	0.05	0.04	0.04	0.06	0.05	0.05	0.94	0.95	0.70
Dbacba	0.275***	0.284***	-0.006	0.363***	0.302***	0.053	-0.007	-0.122	0.057	0.322***	0.243***	0.080	0.736***	0.094	0.652***	0.365	0.338	0.026
	0.03	0.02	0.02	0.05	0.04	0.03	0.30	0.22	0.24	0.09	0.07	0.08	0.13	0.13	0.14	1.30	1.28	1.03
Stockmarket	0.199***	0.189***	0.012	0.272***	0.272***	0.003	0.055	0.042	-0.125	0.022	0.105	-0.084	-0.007	0.031	-0.039	0.100	0.130	-0.030
	0.02	0.01	0.01	0.02	0.01	0.01	0.19	0.16	0.16	0.07	0.07	0.06	0.13	0.11	0.15	0.15	0.16	0.15
Turnover	-0.033***	-0.014***	-0.019***	-0.030***	-0.011***	-0.019***	-0.030	-0.032*	0.005	-0.028*	-0.035***	0.007	-0.057	-0.062***	0.006	-0.098*	-0.080	-0.018
	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.06	0.08	0.06
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	8392	8319	8319	7197	7146	7146	209	202	202	981	980	980	485	484	484	42	42	42
Adj. R^2	0.230	0.275	0.054	0.261	0.322	0.081	0.264	0.474	0.204	0.054	0.109	0.083	0.166	0.219	0.169	0.349	0.230	0.414

Table 4 Capital Structure Choices of Small and Large Firms

The table presents regression results with interacting variables for the small. and large firms. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Ltdebt is the ratio of long-term liabilities to total assets. Stdebt is the ratio of short-term liabilities to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Small is small firms which has less than 50 employees while Large is for large firms which have more than 500 employees. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

	Leverage	Stdebt	Ltdebt
Tangibility	-0.090***	-0.189***	0.094***
	0.01	0.01	0.01
Tangibility*Small	-0.172***	-0.062***	-0.112***
	0.01	0.01	0.01
Tangibiliy*Large	0.109***	0.035**	0.082***
	0.02	0.02	0.02
Profitability	-0.025***	-0.010**	-0.016***
	0.01	0.00	0.00
Profitability*Small	0.016**	0.007	0.010*
	0.01	0.01	0.01
Profitability*Large	0.019	0.009	0.009
	0.01	0.01	0.01
GDP/Cap	-0.050***	-0.050***	0.015***
	0.01	0.01	0.00
Growth rate	3.097***	0.804***	2.574***
	0.25	0.20	0.17
Inflation rate	0.148***	0.155***	0.004
	0.03	0.03	0.02
Interest rate	0.346***	0.433***	-0.105***
	0.03	0.02	0.02
Corruption	0.100***	0.099***	-0.015**
	0.01	0.01	0.01
Civil law legal system	0.084***	0.100***	-0.028***
	0.01	0.01	0.01
Dbacba	0.185***	0.201***	-0.024**
	0.01	0.01	0.01
Stockmarket	0.184***	0.137***	0.055***
	0.01	0.01	0.01
Turnover	-0.026***	-0.014***	-0.013***
	0.00	0.00	0.00
Time dummy	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes
Obs	26385	25901	25901
Adj. R^2	0.195	0.199	0.101

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Table 5 Capital Structure Choices of Small and Large Family Firms

The table presents regression results with interacting variables for the small family and large family firms. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Ltdebt is the ratio of long-term liabilities to total assets. Stdebt is the ratio of short-term liabilities to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Small is small firms which has less than 50 employees while Large is for large firms which have more than 500 employees. Family is family firms which are owned by an owner or family. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

	Leverage	Stdebt	Ltdebt
Tangibility	-0.162***	-0.224***	0.061***
	0.01	0.01	0.01
Tangibility*Small*Family	-0.115***	-0.034***	-0.082***
	0.01	0.01	0.01
Tangibiliy*Large*Family	0.214***	0.058**	0.156***
	0.03	0.02	0.03
Profitability	-0.023***	-0.012***	-0.012***
	0.01	0.00	0.00
Profitability*Small*Family	0.016**	0.011*	0.005
	0.01	0.01	0.01
Profitability*Large*Family	0.008	-0.001	0.010
	0.02	0.02	0.01
GDP/Cap	-0.081***	-0.093***	0.014**
	0.01	0.01	0.01
Growth rate	1.771***	0.666***	1.209***
	0.30	0.25	0.21
Inflation rate	0.288***	0.188***	0.109***
	0.04	0.03	0.03
Interest rate	0.387***	0.501***	-0.113***
	0.03	0.03	0.02
Corruption	0.134***	0.146***	-0.012*
	0.01	0.01	0.01
Civil law legal system	0.117***	0.125***	-0.011
	0.01	0.01	0.01
Dbacba	0.221***	0.227***	-0.008
	0.01	0.01	0.01
Stockmarket	0.174***	0.132***	0.045***
	0.01	0.01	0.01
Turnover	-0.035***	-0.017***	-0.018***
	0.00	0.00	0.00
Time dummy	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes
Obs	21432	21224	21224
Adj. R^2	0.192	0.213	0.057

Table 6 Capital Structure Choices of Small and Large Family Managed Firms

The table presents regression results with interacting variables for the small. and large firms. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Ltdebt is the ratio of long-term liabilities to total assets. Stdebt is the ratio of short-term liabilities to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Small is small firms which has less than 50 employees while Large is for large firms which have more than 500 employees. Family is family firms which are owned by an owner or family. Family managed is family firms which are managed by an owner or family. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

	Leverage	Stdebt	Ltdebt
Tangibility	-0.136***	-0.228***	0.089***
	0.02	0.01	0.01
Tangibility*Small*Family*Family-managed	-0.122***	-0.031***	-0.090***
	0.02	0.01	0.01
Tangibiliy*Large*Family*Family-managed	0.150***	0.054	0.098***
	0.04	0.03	0.03
Profitability	-0.010	-0.001	-0.011**
	0.01	0.01	0.00
Profitability*Small*Family*Family-managed	0.007	0.000	0.008
	0.01	0.01	0.01
Profitability*Large*Family*Family-managed	0.007	0.009	-0.001
	0.03	0.03	0.02
GDP/Cap	-0.154***	-0.254***	0.099***
	0.02	0.01	0.01
Growth rate	-4.087***	-4.619***	0.721**
	0.53	0.43	0.35
Inflation rate	0.329***	0.268***	0.068**
	0.04	0.04	0.03
Interest rate	0.464***	0.462***	0.005
	0.07	0.06	0.05
Corruption	0.185***	0.315***	-0.125***
	0.02	0.02	0.01
Civil law legal system	0.172***	0.255***	-0.084***
	0.02	0.01	0.01
Dbacba	0.346***	0.272***	0.072***
	0.04	0.03	0.02
Stockmarket	0.242***	0.245***	-0.002
	0.02	0.01	0.01
Turnover	-0.040***	-0.020***	-0.019***
	0.00	0.00	0.00
Time dummy	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes
Obs	13501	13407	13407
Adj. R²	0.236	0.304	0.090

Table 7 Robustness Test for Capital Structure Choices with Asset size for Small and Large Firms

The table presents regression results with asset size for different sizes, ownership styles and management styles of small and large firms. See notes to table 6.

	Small Firms			Small Family Firms			Small Family Managed Firms			Small Family Firms with an Outside Manager			Large Firms			Large Family Firms			Large Family Managed Firms			Large Family Firms with an Outside Manager		
	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt	Leverage	Stdebt	Ltdebt
Tangibility	-0.168***	0.024***	0.202***	-0.190***	-0.215***	0.024**	-0.179***	-0.203***	0.022**	-0.221*	-0.141	-0.074	-0.115***	0.086***	0.201***	-0.052	0.192***	0.140***	-0.105	0.189***	0.084	-0.029	-0.325	0.296
	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.12	0.12	0.05	0.03	0.03	0.03	0.06	0.05	0.05	0.08	0.07	0.06	0.60	0.52	0.32
Profitability	0.003	-0.002	0.004	0.005	0.005	0.000	0.005	0.003	0.002	0.031	0.069	-0.041*	-0.025**	-0.019**	-0.006	-0.026	-0.009	-0.017	-0.005	0.018	-0.023	-0.130***	-0.096*	-0.034
	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.06	0.06	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.03	0.01	0.03	0.05	0.03
Log(asset)	0.009***	0.001	0.006***	0.006**	0.002	0.003*	-0.003	-0.013***	0.009***	0.039	-0.003	0.039	-0.008*	-0.002	-0.006	-0.011	-0.006	-0.005	-0.018	-0.001	-0.017**	-0.025	0.039	-0.064
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.03	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.07	0.09	0.05
GDP/Cap	-0.035***	0.026***	0.040***	-0.081***	-0.136***	0.056***	-0.188***	-0.302***	0.113***	-0.211	-0.512***	0.279***	-0.031	0.012	-0.049*	-0.073	-0.069	-0.006	-0.017	-0.073	0.051	0.712	0.202	0.509
	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.13	0.10	0.08	0.03	0.02	0.02	0.06	0.05	0.04	0.08	0.06	0.06	1.20	1.00	0.55
Growth rate	2.141***	1.552***	0.935***	-0.920*	-1.164***	0.360	-6.496***	-6.725***	0.384	1.039	-0.929	2.163	0.611	1.494**	-0.993	-2.109	-1.153	-0.979	-3.235	1.137	-4.380**	-3.959	-0.357	-3.602
	0.36	0.25	0.28	0.54	0.43	0.38	0.71	0.57	0.49	5.14	2.84	4.37	0.86	0.68	0.73	1.51	1.24	1.12	2.47	1.91	1.93	13.07	10.36	7.79
Inflation rate	0.229***	0.072***	0.169***	0.334***	0.201***	0.136***	0.317***	0.253***	0.072*	0.220	0.298	-0.309	0.038	-0.007	0.024	-0.070	0.129	-0.195	-0.177	0.238	-0.414	-0.105	-0.417	0.312
	0.05	0.03	0.04	0.06	0.05	0.04	0.06	0.05	0.04	0.31	0.25	0.21	0.12	0.10	0.10	0.19	0.15	0.15	0.29	0.24	0.26	0.53	0.39	0.52
Interest rate	0.237***	-0.123***	0.343***	0.239***	0.467***	-0.220***	0.287***	0.354***	-0.076	0.221	-0.009	0.184	0.355***	-0.074	0.436***	0.697***	0.583***	0.120	1.244***	0.139	1.138***	-0.731	-0.719	-0.013
	0.04	0.03	0.03	0.05	0.05	0.04	0.09	0.08	0.06	0.62	0.45	0.47	0.12	0.09	0.09	0.19	0.16	0.14	0.34	0.32	0.30	1.60	0.89	1.44
Corruption	0.123***	0.006	0.094***	0.161***	0.198***	-0.035***	0.278***	0.398***	-0.117***	0.194	0.596***	-0.368***	0.003	-0.053*	0.063**	0.107	0.124**	-0.015	0.071	0.226***	-0.149**	-0.123	0.219	-0.342
	0.01	0.01	0.01	0.02	0.02	0.01	0.03	0.02	0.02	0.18	0.15	0.13	0.04	0.03	0.03	0.07	0.06	0.05	0.10	0.08	0.07	0.28	0.35	0.20
Civil law legal system	0.076***	-0.048***	0.104***	0.137***	0.182***	-0.048***	0.233***	0.342***	-0.108***	0.017	0.146*	-0.149**	-0.009	-0.030	0.022	-0.001	-0.001	0.001	-0.053	0.033	-0.084	0.826	0.290	0.536
	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.02	0.11	0.08	0.07	0.03	0.03	0.03	0.05	0.04	0.04	0.06	0.05	0.05	1.12	0.96	0.60
Dbacba	0.192***	0.003	0.183***	0.259***	0.277***	-0.016	0.359***	0.287***	0.065**	0.076	-0.128	0.131	0.125**	-0.046	0.174***	0.386***	0.278***	0.110	0.755***	0.095	0.671***	0.500	0.130	0.370
	0.02	0.01	0.02	0.03	0.02	0.02	0.05	0.04	0.03	0.29	0.23	0.23	0.06	0.05	0.05	0.10	0.08	0.09	0.14	0.13	0.14	1.44	1.36	1.01
Stockmarket	0.181***	0.033***	0.152***	0.197***	0.188***	0.011	0.275***	0.282***	-0.005	0.051	0.040	-0.106	0.155***	0.042	0.100**	0.030	0.109	-0.080	0.020	0.031	-0.013	0.081	0.160	-0.079
	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01	0.19	0.16	0.16	0.05	0.04	0.04	0.07	0.07	0.06	0.13	0.11	0.15	0.20	0.14	0.15
Turnover	-0.030***	-0.016***	0.015***	-0.034***	-0.014***	-0.020***	-0.030***	-0.011***	-0.019***	-0.016	-0.033*	0.019	-0.022**	0.002	0.025***	-0.027*	0.034***	0.008	-0.059***	0.062***	0.005	-0.113	-0.057	-0.055
	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.01	0.02	0.08	0.08	0.06
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs	12611	12315	12315	8392	8319	8319	7197	7146	7146	209	202	202	2866	2837	2837	981	980	980	485	484	484	42	42	42
Adj. R^2	0.200	0.057	0.234	0.231	0.275	0.055	0.261	0.327	0.088	0.281	0.471	0.265	0.042	0.052	0.076	0.058	0.109	0.084	0.171	0.217	0.181	0.326	0.219	0.475

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Table 8 Robustness test for capital structure choices with lagged values of leverage for small and large firms

The table presents regression results with leverage lag variable for different sizes, ownership styles and management styles of small and large firms. Small firms are small firms which has less than 50 employees while Large firms are for large firms which have more than 500 employees. Small(large) family firms are small(large) firms which are owned by an owner or family. Small(large) family managed firms are small(large) family firms which are managed by an owner or family. Small(large) family firms with an outside manager are small(large) family firms which are managed by an outside manager. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Leverage(-1) is the lag of leverage. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Economic environment variables are as follows: GDP/Cap is GDP per capita in US dollars. Growth rate is the GDP growth rate of the country. Inflation rate is the ratio of GDP in local current to GDP in constant local currency. Interest is the lending interest rate of the country. Institutional variables are as follows: Corruption is an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba is measured as the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover is the ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

	Small firms	Small family firms	Small family managed firms	Small family firms with an outside manager	Large firms	Large family firms	Large family managed firms	Large family firms with an outside manager
Leverage(-1)	0.897***	0.893***	0.890***	0.942***	0.874***	0.892***	0.833***	0.624***
	0.01	0.01	0.01	0.03	0.01	0.02	0.04	0.19
Tangibility	-0.018***	-0.019***	-0.015**	-0.041	-0.014	0.033	0.007	-0.208
	0.00	0.01	0.01	0.04	0.01	0.03	0.04	0.23
Profitability	0.001	0.003	0.002	-0.023	-0.007*	-0.018**	-0.007	-0.136**
	0.00	0.00	0.00	0.02	0.00	0.01	0.01	0.04
GDP/Cap	-0.008**	-0.005	-0.021**	-0.023	0.014	0.045	0.065	0.054
	0.00	0.01	0.01	0.07	0.02	0.04	0.06	0.70
Growth rate	0.678***	0.420*	-0.307	-0.580	1.029*	0.589	0.178	5.671
	0.16	0.22	0.37	5.03	0.53	1.39	2.71	23.67
Inflation rate	0.135***	0.173***	0.124***	0.280	0.109	0.012	0.084	0.361
	0.03	0.04	0.05	0.51	0.11	0.21	0.60	1.86
Interest rate	0.054***	0.017	0.020	0.175	0.059	0.026	0.524*	-0.356
	0.02	0.02	0.04	0.60	0.05	0.12	0.31	3.51
Corruption	0.012**	0.015*	0.031**	0.005	-0.021	-0.064	-0.107	-0.241
	0.01	0.01	0.01	0.09	0.02	0.06	0.09	0.27
Civil law legal system	0.015***	0.018***	0.024**	0.063	0.000	-0.026	-0.037	-0.312
	0.00	0.01	0.01	0.05	0.02	0.02	0.03	1.07
Dbacba	0.018**	0.013	0.016	0.090	0.007	0.030	0.304*	-0.525
	0.01	0.01	0.02	0.31	0.03	0.06	0.18	2.44
Stockmarket	0.015**	0.012*	0.018**	0.067	0.062***	0.081	0.133*	-0.047
	0.01	0.01	0.01	0.09	0.02	0.05	0.07	0.32
Turnover	0.000	0.001	0.000	-0.013	0.001	0.001	-0.004	-0.021
	0.00	0.00	0.00	0.03	0.01	0.01	0.02	0.11
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	-	Yes	Yes	Yes	-
Obs	7397	4993	4344	127	1787	612	166	25
Adj. R^2	0.848	0.847	0.843	0.886	0.774	0.766	0.719	0.532

Table 9 Robustness Test for capital structure choices with lag values of country level variables

The table presents regression results with lag values of economic, institutional and financial environment variables for for different sizes, ownership styles and management styles of small and large firms. Small firms are small firms which has less than 50 employees while Large firms are for large firms which have more than 500 employees. Small(large) family firms are small(large) firms which are owned by an owner or family. Small(large) family managed firms are small(large) family firms which are managed by an owner or family. Small(large) family firms with an outside manager are small(large) family firms which are managed by an outside manager. The firm specific variables are as follows: Leverage is the ratio of total liabilities to total assets. Tangibility is measured as fixed assets to total assets. Profitability is the ratio of earnings before interest and tax divided by total assets. Economic environment variables are as follows: GDP/Cap(-1) is the lag of GDP per capita in US dollars. Growth rate(-1) is the lag of GDP growth rate of the country. Inflation rate(-1) is the lag of ratio of GDP in local current to GDP in constant local currency. Interest rate(-1) is the lag of lending interest rate of the country. Institutional variables are as follows: Corruption(-1) is the lag of an index of control of corruption. Civil law legal system is a dummy variable which equals to 1 if the country has civil law legal system; otherwise 0. Financial environment variables are as follows: Dbacba(-1) is measured as the lag of the ratio of deposit money bank assets to deposit money bank assets plus central bank assets. Stockmarket is a dummy variable which equals to 1 if the country has a stock market; otherwise 0. Turnover(-1) is the lag of ratio of the value of total shares traded to market capitalization. Standard errors are in the second row. ***, ** and * indicate level of significance at 1%, 5% and 10%, respectively.

	Small firms	Small family firms	Small family managed firms	Small family firms with an outside manager	Large firms	Large family firms	Large family managed firms	Large family firms with an outside manager
Tangibility	-0.177***	-0.199***	-0.172***	-0.363***	-0.114***	-0.042	-0.108	-0.235
	0.02	0.02	0.02	0.11	0.04	0.07	0.09	0.64
Profitability	0.010*	0.016**	0.019***	0.024	-0.024*	-0.024	0.005	-0.139
	0.01	0.01	0.01	0.07	0.01	0.02	0.03	0.08
GDP/Cap(-1)	-0.031***	-0.070***	-0.182***	-0.225**	-0.045	-0.142*	0.004	0.364
	0.01	0.02	0.02	0.10	0.04	0.08	0.09	1.39
Growth rate(-1)	1.955***	-1.272**	-8.082***	-4.157	1.123	-2.273	-4.199	16.422
	0.42	0.61	0.80	6.42	1.05	1.96	2.79	13.71
Inflation rate(-1)	0.015	0.047	0.025	-0.030	0.145	0.096	-0.289	-0.585
	0.05	0.06	0.06	0.22	0.16	0.23	0.40	0.45
Interest rate(-1)	0.281***	0.244***	0.256**	1.066	0.403***	0.780***	1.940***	3.405
	0.05	0.06	0.11	1.25	0.15	0.25	0.42	2.05
Corruption(-1)	0.096***	0.130***	0.237***	0.111	0.020	0.169*	-0.021	-0.614
	0.01	0.02	0.03	0.17	0.05	0.09	0.11	0.49
Civil law legal system	0.096***	0.140***	0.196***	-0.034	0.004	0.033	-0.081	0.248
	0.02	0.02	0.03	0.13	0.04	0.06	0.07	1.55
Dbacba(-1)	0.195***	0.246***	0.310***	0.473	0.111	0.365***	1.015***	1.358
	0.02	0.03	0.05	0.53	0.07	0.11	0.15	1.55
Stockmarket	0.183***	0.195***	0.246***	0.326	0.207***	0.068	0.036	0.329
	0.02	0.02	0.02	0.24	0.06	0.09	0.13	0.29
Turnover(-1)	-0.013**	-0.015**	-0.018***	-0.318	-0.015	-0.028	-0.024	0.937
	0.00	0.01	0.01	0.40	0.01	0.02	0.03	1.76
Time dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry dummy	Yes	Yes	Yes	-	Yes	Yes	Yes	-
Obs	7397	4993	4344	127	1787	612	308	25
Adj. R^2	0.185	0.218	0.258	0.178	0.041	0.040	0.145	0.098

Appendix A. Firm Observation by Country and Region

This table presents the composition of firm observations for each country and region in the sample. Small reports firms less than 50 employees. Medium employs 51 to 500 employees. while large firms have more than 500 employees. Private are privately held companies and listed are publicly held firms. AFR stands for the African Region. EAP symbolizes the East Asia and Pacific region. while LCR is for the Latin America and Caribbean region. MNA stands for the Middle East and North Africa region and SAR is for the South Asian region.

	Years	*Total*	**Small**	**Medium**	**Large**
AFR		*3.444*	*1.636*	*1.490*	*318*
Ethiopia	1999-2001	1.091	831	195	65
Malawi	2003-2004	233	98	111	24
South Africa	2000-2002	1.370	373	820	177
Tanzania	2000-2002	355	211	131	13
Zambia	1999-2001	395	123	233	39
EAP		*3487*	*1097*	*1588*	*802*
Cambodia	2001-2002	181	164	11	6
Indonesia	2000-2002	1.442	431	568	443
Philippines	2000-2002	1.864	502	1.009	353
LCR		*10.148*	*6.065*	*3.594*	*489*
Brazil	2000-2002	4.232	2.244	1.795	193
Chile	2002-2003	1.793	1.000	663	130
Ecuador	2000-2002	756	437	301	18
El Salvador	2000-2002	676	418	222	36
Guatemala	2000-2002	751	495	218	38
Guyana	2002-2003	273	229	42	2
Honduras	2000-2002	717	497	173	47
Nicaragua	2000-2002	757	618	121	18
Peru	1999-2001	193	127	59	7
MNA		*2.309*	*1.158*	*1.048*	*103*
Morocco	2001-2003	2.006	901	1.002	103
Oman	2000-2002	143	100	43	0
Syria	2000-2002	160	157	3	0
SAR		*8350*	*3387*	*3653*	*1310*
Bangladesh	1999-2001	780	246	426	108
India	1999-2001	3.868	767	2.206	895
Pakistan	1999-2001	2.764	2.094	625	45
Sri Lanka	2001-2003	938	280	396	262
Total		***27.738***	***13.343***	***11.373***	***3.022***

Appendix B. Variable Definitions

Variables	Definition	Data source
Firm level variables		
Leverage	Ratio of total liabilities to total assets	Investment Climate Survey. World Bank
Ltdebt	Ratio of long-term liabilities to total assets	Investment Climate Survey. World Bank
Stdebt	Ratio of short-term liabilities to total assets	Investment Climate Survey. World Bank
Tangibility	Ratio of fixed assets to total assets	Investment Climate Survey. World Bank
Profitability	Ratio of earnings before interest and tax divided by total assets	Investment Climate Survey. World Bank
Small	Dummy variable = 1 if the employees are less than 50	Investment Climate Survey. World Bank
Large	Dummy variable = 1 if the employees are more than 500	Investment Climate Survey. World Bank
Family	Dummy variable = 1 if the firm is owned by an owner or family	Investment Climate Survey, World Bank
Family managed	Dummy variable = 1 if the firm is managed by the owner	Investment Climate Survey, World Bank
Outside manager	Dummy variable = 1 if the firm is not managed by the owner	Investment Climate Survey, World Bank
Economic environment variables		
GDP/Cap	Log of real gross domestic product per capita of the country	World Development Indicators. World Bank
Growth rate	GDP growth rate of the country	World Development Indicators. World Bank
Inflation rate	The ratio of GDP in local currency to GDP in constant local currency.	World Development Indicators. World Bank
Interest rate	The lending interest rate of the country	World Development Indicators. World Bank
Financial environment variables		
Corruption	Index of control of corruption. scale -2.5 to 2.5. Higher values mean better governance.	Worldwide Governance Indicators. World Bank
Civil law legal system	Dummy variable = 1 if the legal origin of a country is based on the civil law.	La Porta et al. (1998)
Dbacba	Ratio of deposit money bank assets to deposit money bank assets plus central bank assets	Financial Development and Structure Dataset. World Bank
Stockmarket	Dummy variable = 1 if a country has a stock market or an active stock market.	Financial Development and Structure Dataset. World Bank
Turnover	Ratio of the value of total shares traded to market capitalization	Financial Development and Structure Dataset. World Bank

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Appendix C. Industry Classification

Industry	Number of Firms
Agroindustry	503
Auto and auto components	986
Beverages	266
Chemicals and pharmaceutics	2646
Construction	63
Electronics	1613
Food	4299
Garments	5445
Hotels and restaurants	19
IT services	526
Leather	1170
Metals and machinery	2182
Mining and quarrying	41
Non-metallic and plastic materials	1037
Other manufacturing	378
Other services	48
Other transport equipment	34
Other unclassified	27
Paper	290
Retail and wholesale trade	14
Sport goods	132
Textiles	3344
Transport	12
Wood and furniture	2626
Total	27701

Appendix D. Correlation Coefficient

Correlation	Leverage	Tangibility	Profitability	Small	Large	GDP/Cap	Growth rate	Inflation rate	Interest rate	Corruption	Civil law legal system	Dbacba	Stockmarket	Turnover
Leverage	1.000													
Tangibility	-0.232	1.000												
Profitability	-0.035	-0.019	1.000											
Small	-0.273	0.104	-0.056	1.000										
Large	0.134	-0.049	0.056	-0.337	1.000									
GDP/Cap	0.088	-0.122	0.006	0.022	-0.084	1.000								
Growth rate	0.071	-0.019	-0.020	-0.107	0.067	-0.516	1.000							
Inflation rate	-0.074	0.047	0.035	0.025	-0.004	0.038	-0.367	1.000						
Interest rate	0.001	0.016	0.082	0.042	-0.083	0.416	-0.449	0.238	1.000					
Corruption	0.135	-0.182	-0.028	-0.018	-0.049	0.693	-0.094	-0.187	0.060	1.000				
Civil law legal system	0.010	-0.053	-0.036	0.127	-0.087	0.490	-0.449	-0.153	0.279	0.211	1.000			
Dbacba	0.072	0.002	-0.049	-0.139	0.118	-0.501	0.431	-0.169	-0.692	-0.446	-0.397	1.000		
Stockmarket	0.209	-0.126	0.051	-0.212	0.072	0.327	-0.131	0.157	0.105	0.187	-0.252	0.029	1.000	
Turnover	-0.082	0.032	0.035	-0.011	0.037	-0.395	0.396	0.217	-0.259	-0.269	-0.632	0.256	0.230	1.000

Appendix E. VIF test

	VIF test
Tangibility	1.17
Profitability	1.02
GDP/Cap	4.90
Growth rate	1.81
Inflation rate	1.29
Interest rate	3.05
Corruption	5.12
Civil law legal system	2.42
Dbacba	3.94
Stockmarket	1.86
Turnover	2.56