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THE DETERMINANTS OF SMEs CAPITAL STRUCTURE: OVERCOMING SUPPLY CONSTRAINTS

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1. Abstract

This paper studies the most relevant literature on firms' capital structure, in general, and Small and Medium Enterprises, in particular. Evidencing that SMEs' financing needs to evolve with their age, literature notes that failures in this market stem generally from a shortage in capital supply and from the extreme degree of opacity which characterizes young and small corporations. The forthcoming Basel III regulations will strengthen the future banking environment but probably affect even more financing to small businesses. Given that the imperfections of this market are not only present in periods of economic turmoils but also on a structural basis, finding ways to enhance SMEs' transparency, and designing instrument to reduce dependence from bank credit, should be a priority for future actions undertaken by practitioners and regulators. Following the effective examples of the Indian SMEs Rating Agency, of the Korean corporate bonds market and of the growing phenomenon of crowdfunding, this work analyzes their pros and cons as well as their potential to become worldwide industry standards.

2. Traditional capital structure frameworks

The forerunner of capital structure studies is undoubtedly the famous work of Modigliani and Miller (1958), which stated that in perfect and frictionless capital markets firms' choices of financing are irrelevant to firm value. Since their prediction, not consistent with the real imperfect markets, academics evidenced that capital structure choices do matter, and that the interaction of several factors defines combinations of debt and equity that strongly affect the value of the firm. According to the specification of Jensen and Meckling (1976), the T*rade-Off Model* predicts that firms' capital structure is defined by a trade-off between debt's benefits (mainly interests' tax deductibility) and costs (mainly bankruptcy costs). The *Pecking Order Theory*, as described by Myers and Majluf (1984), describes a firm's financing choices as a hierarchy: should the firm not find enough retained funds to finance positive NVP projects, the recourse to external funding may become necessary, in the forms of debt first, and equity at last. The *Market Timing Theory***,** formalized by Baker and Wurgler (2002), observes that managers will use those financial tools that appear to be more economically favorable in the moment they need financing.

These theoretical works have so far received mixed theoretical evidence with the work of Titman and Wessel (1988) paving the way for the subsequent thorough empirical analyses. For example, in their comprehensive work, Frank and Goyal (2009) study the impact of a series of factors that previous theoretical literature deemed critical in the understanding of firms' capital structure. As regards small businesses, they find that the smaller and the less tangible a firm is, the lower the degree of indebtedness one should expect to see. However, Graham and Leary (2011) believe that none of the extant theories has ever been able to explain thoroughly the observable heterogeneities in firms' financing decisions. Even though the most recent literature used other criteria to explain traditional theories' failure (refined fundamental variables' measurement, higher consideration for non-financial stakeholders, more prominent role to capital supply and financial contracting), it is widely agreed that that it may be too costly to frequently optimize capital structure, thus not allowing for the observation of significant shifts in financing decisions. As regards the connection with SMEs, small firms are thought to behave more according to the Pecking Order Theory than to the Trade-Off Model.

3. SMEs financing

Among the unanswered questions in literature, this work looks at the supply side of financing and to financial contracting as drivers of SMEs' funding decisions. Due to their characteristics, SMEs are the most exposed entities to economic fluctuations. To survive the effects of financial turmoils, they shall build a scrupulous knowledge of their financing opportunities. The process through which SMEs get their financing, particularly different from the one used by large businesses, uses tools whose functioning strictly depends on the peculiarities of small firms' structure.

3.1 Sources of Small Business Finance

The fundamental characteristic of small firms in the eyes of financing markets is their high degree of informational opacity. The contracts they stipulate are usually kept private. They seldom access public markets. And most of them do not keep "standard" financial statements. Absent easily accessible data, financial intermediaries find it often impossible to exercise their usual *screening* and

monitoring functions. Thus, due to their lack of transparency, SMEs may encounter difficulties in signaling their quality and hence to build financing relationships.

The most prominent theoretical work in SMEs literature, by Berger and Udell (1998), points out that SMEs financing decisions depend mainly on their sector of activity and growth cycle. SMEs have financing needs and preferences that evolve as the firm grows and becomes more transparent. For the majority of small businesses, different capital structures may be optimal at a certain stage of the cycle, but less in others. Most SMEs have their financing needs guaranteed by personal finances of the owners or by other "insiders". The first projects of a young startup will likely be financed by a mix of *insider finance* and *angel financing*: with the former the authors refer to equity funding provided by the funders or by their families or friends; instead, "angels" are usually defined as wealthy individuals that invest huge amount of money in exchange of a part of the company's stock. At this point, the business idea may still be at an embryonic stage, and the company's assets mainly intangible. Later on, as a business plan is developed and the product tested, intermediated forms of equity financing take over to expand the company's scale, mainly in the form of *private equity* and *venture capital*; in the meanwhile, the firm will also heavily rely on *trade credit*, i.e. delays of payments, in the settlement of deals with suppliers. In addition to private equity, SMEs external funding is provided by private debt suppliers, rather than by public markets.

As the firm grows, SMEs become more tangible and increase their ability to pledge their possessions as collateral, so eventually manage to access external debt financing (in the forms of, mainly, lines of credit, short-term loans, credit cards, leasing and factoring). Nevertheless, previous studies have demonstrated that the amount of external debt financing is much more relevant for small firms than it could be expected under the "tangibility" hypothesis. Indeed, in the moment entrepreneurs use their personal belongings to guarantee firm's loans, part of "external" financing becomes somehow "internal", and personal relationships between local bank branches and individual entrepreneurs become more valuable than physical collateral. Moreover, the fact that growing small firms tend to obtain external equity before external debt seems to be evidence against the traditional Pecking Order

Theory. Berger and Udell (2003) explain it with the existence of a significant moral hazard problem for SMEs: external debt suppliers will never finance small entrepreneurs unless risk can be shared among several individuals.

In absence of tools to increase SMEs transparency, banks cannot trust their alleged quality and may be obliged to increase the cost to obtain financing. However, small firms intermediaries have a series of instruments to reduce this problem. As verified by Berger and Udell (2003), these include, in detail: a) the use of tangible *collateral* and *personal guarantees*; b) the application of strict *debt covenants* and shorter *maturities* for younger and riskier firms; c) the use of *loan commitments (i.e. lines of credit)* to cover short-term needs and be activated over time under strict conditions; d) the refinement of day-by-day contact between borrower and supplier (r*elationship lending*) to create a wide database of information. However, these instruments might eventually become counterproductive if the firm has no tangible assets to pledge as collateral, if the contracts designed are too strict, if a single banking relationship leads to exploitation or if the institution has supply shortages.

3.2 Constraints to SMEs bank financing

The phenomenon of SMEs being subject to financial constraints is at the core of the most up-to-date literature. In perfect capital markets, investment decisions should only depend on the quality of the projects to be financed. Instead, , even without business-related reasons, many SMEs face disproportionate costs of borrowing which cut them off from the external debt financing channel.

The ability and willingness of SMEs' lenders to supply debt financing is mostly affected by small firms' informational opacity. Academics have identified several factors influencing the supply of credit to SMEs; among them, as described by Hackbarth et al. (2006), the most relevant factor is represented by the impact of *Macroeconomic Factors*. Enterprises should avoid adjusting their capital structure during recessions, but do it rapidly during booms, to benefit from more accommodating conditions. SMEs, however, have limited ability to modify their capital structure at will, but rather depend on suppliers' ability to provide funding. Hence, real and financial shocks, as well as changes in regulatory frameworks, are likely to wield their strongest impact over small firms. The transmission mechanism

of monetary policy, which is triggered in reaction to any economic shock, operates to a large extent through the banking channel.. As a response to worsening macroeconomic conditions, distressed banks reduce their risk exposure by drastically cutting their supply of credit to small firms, riskier that bigger enterprises, to rebuild their balance sheets and comply to regulatory provisions.

4. Factors affecting the supply side of capital structure

In classic capital structure literature, demand seems to be the only variable influencing changes in firms' capital structure. Nevertheless, whenever a financial turmoil imposes constraints over the ability of financial intermediaries to lend capital, the supply side of financing gains a fundamental role. As described by Faulkender and Petersen (2005), if a firm's bank suffers an external shock to its capital, independent from demand, this shock is likely to reverse its effects also on the financing firm. SMEs tend to establish a direct connection with a single banking entity, and cannot easily move to public debt markets because of informational opacity. Hence, a shock to the banking system will have an even more severe impact on their financing than a shock on the public bond market. Even though SME banking is considered one of the sectors with the highest growth perspectives, there are some strong constraints hampering the willingness of banks to access this market.

The recent financial turmoil wiped off the value of banks' balance sheets and caused the liquidation of many credit institutions. Those that survived, did so at the expense of severe post-crisis distress due to weakened capital, reduced confidence and tougher capital requirements. All these reasons hampered banks' willingness to lend money to smaller and riskier businesses, and increased their operational costs in the process of restoring confidence and complying with the provisions of Basel III. Through the traditional channels, firms ended up paying more-for-less given that, to counterbalance their constraints, banks raised lending interest rates and fees, and reduced the supply of capital. When banks step back and stop supplying credit, there is less information in the market and this leads to higher costs for borrowers.

4.1 The road to Basel III

By raising capital requirements for banking institutions, the new regulatory framework of Basel III aims at strengthening the financial stability of the economy

and at restoring the confidence of all economic actors. In the short-term, the new stringent requirement will mostly affect the smallest financial institutions, whose business is strictly bound to small and medium enterprises. But how did we get to this point? Developed in 1992, the rules of Basel I were designed with the objective of requiring banks to keep sufficient capital to absorb eventual losses without causing systemic problems and, furthermore, to create global regulatory standards. Basel II, released in 2004, dealt with a wide array of regulatory and supervisory issues that its forerunner left unresolved, including accounting standards, liquidity requirements and risk management criteria. With its three famous pillars, these rules aimed to help banks absorb unexpected losses such as those that normally occur during a financial crisis. The recent financial turmoil, however, evidenced the severe drawbacks of Basel II. Academics and institutions underlined that the most important shortcomings of that legislation were in the areas of the definition of capital buffers (quantitatively and qualitatively), of risk computation and definition, on the treatment of securitization and on the pro-cyclicality of capital requirements.

4.2 The New Basel accord

The new Basel III rules aim at resolving the previously cited drawbacks, mainly by raising capital requirement ratios and by designing instruments to contrast the pro-cyclicality of Basel II provisions. According to Blundell-Wignall and Atkinson (2010), four are the targets that the new rules aim at reaching: 1) *Raising the quality, consistency and transparency of the capital base* by reforming the criteria for the definition of capital requirements; 2) *Enhancing risk coverage*, trying to capture both on- and off-balance sheet risks, to remove pro-cyclicality connected to volatility-based risk inputs, to penalize increased counterparty risk and to promote “good” risk taking; 3) *Introducing a target leverage ratio*, with the intention to avoid excessive leverage and subsequent excessive deleverage in crisis situations; 4) *Attenuating the cyclicality of capital requirements* by using forward-looking metrics (stressing expected losses rather than incurred) and by promoting the accumulation of extra “capital buffers” over those requested by law. However, academics note that risk assessment is still particularly simplified, and that the imposition of a leverage ratio will not stop the phenomenon under which banks profit from some sort of “regulatory arbitrage” to elude the risk-weighting system and expand their leverage

at will, as they did in the recent financial crisis. However, the implementation timeline for the new rules is voluntarily loose, to avoid posing excessive weight on the economy: banks will have until 2019 to fine-tune their balance sheets to the stricter requirements. However, at least in the short-term, the most leveraged and small banks, thus the ones with lower capital ratios, may be forced to reduce their lending activity, which is likely to worsen financing conditions for startups and SMEs. Due to their size and scarce resources, in relation to bigger companies, SMEs are those that suffer the most from the costs of stricter regulations.

4.3 The Small Business Act

The European Commission recently developed further measures aimed at facilitating SME's access to capital markets with the so-called "Small Business Act". Among its several sections, this piece of regulation gives interesting insights also in the area of financial structure, guiding future regulatory changes towards the simplification and facilitation of mechanisms to access capital. With the support of Member States, the Commission created an environment through which European SMEs will 1) benefit from strengthened loan guarantee schemes; 2) have easier access to EU funds; 3) increase their informational transparency and 4) enjoy a higher intellectual property protection. Each State will establish lighter bureaucratic procedures, reducing the steps required to access EU funds and facilitating the dialogue between firms and authorities. In particular, whenever a new rule might be able to pose a disproportionate burden on SMEs' ability to obtain financing, each company may require to: i) be exempted from certain obligations; ii) temporarily reduce tax payments or fees; iii) receive direct financial aid to cover high fixed costs; iv) benefit from simplified reporting obligations. With the help of these rules, there seems to exist some legislative margin (at least in Europe) to design flexible measures aimed at sustaining SMEs financial survival.

4.4 Current lending situation

SMEs largely depend on bank services. As described by Beck et al. (2005), this is due to the fact that they cannot rely on sufficient internal funds and that they cannot access public capital markets, as well as to the absence of qualified financial staff. To describe the current status of bank lending, I analyzed the most recent ECB Bank

Lending Surveys (BLS). In the beginning of the year, most of European banks were in an ongoing process of capital reinforcement, as a response to the imminent introduction of the Basel III capital requirements. Surveyed banks pointed at the weak European economic outlook and the sovereign debt crisis as the main reasons for the net tightening of credit standards. As a result, on average banks had increased margins, fees and collateral requirements and reduced the size of their loans. In the latest survey (April 2012), respondents indicated that credit standards kept on tightening, but at a slower pace. While this highlights that the banking industry is still suffering, the slowing trend represents good news. Even though it is projected for 2012 that this process will likely affect more large than small corporations, the picture for SMEs is definitely rough. Indeed, the "Survey on the access to finance of SMEs in the Euro area", published in April 2012, describes a quite difficult situation for SMEs, which reported a deterioration in turnover, profits and loans' availability.

5. Enhancing SMEs liquidity

Studying ways to foster SMEs' access to funding implies that either current instruments are not qualitatively and quantitatively sufficient, or that, if existent, they are not adequate to help small firms overcome their financing constraints. If the traditional financing framework seems to hold in "normal conditions", empirical evidence (in terms of high failure rate of SMEs during periods of crisis) confirms there exists a gap which can be filled by the introduction of a set of new tools. This *financing gap* can be closed if both governments and private institutions, in accordance with extant legislations, design specific actions to be deployed, in a joint effort, to enhance SMEs' market liquidity. Taketa and Udell (2007), which introduced the concept of "lending channels", hypothesized that a financial shock may lead to the closure of certain channels in favor of the development of others. It is therefore tantalizing to believe that the contraction of the banking channel imposed by the recent crisis and by Basel III left the door opened for the development of new sectors. The most compelling challenge for regulators and governments is to increase the transparency of small businesses: it would be the key to enhance financial institutions' ability to scrutinize them and establish lending relationships.

5.1 The role of Governments

The recent regulatory changes, and the actions undertaken to develop the market for SMEs finance indicate that Governments clearly recognized the importance of supporting the small businesses sector. The most recent reforms aim at decreasing legal and regulatory burdens for SMEs, either by reducing accounting requirements, or by de-formalizing processes or, at last, by exempting banks from certain capital requirements whenever SMEs represent a big share of their portfolios. Direct intervention with the provision of goods, services or explicit funding, is also a course of action that many Governments have recently started taking into account. In addition to that, among the most valid observations, it is worth to underline that governmental actions should a) support SMEs with a carefully *focused approach* (improving market efficiency and to paving the way for the entrance of private lenders); b) *increase awareness and literacy* among small entrepreneurs about the wide range of available financing opportunities; c) be driven by a principle of *risk sharing*, in order to avoid overexposing public finances to excessively risky operations; d) provide *education about financial statement preparation* to small entrepreneurs; e) promote the creation of *credit information infrastructures*. Still, what is missing is the translation of these good proposals into concrete actions able to create an environment in which SMEs' opacity is reduced, and in which SMEs can choose their financing sources without stumbling on supply constraints.

5.2 Rating for SMEs

Faulkender and Petersen (2005) verified empirically that firms with a higher tangibility have a higher chance to obtain a credit rating. Those firms, usually mature, stable and with a wide track record, will have easier access to public debt markets and, thus, will be able to reach a higher degree of indebtedness.

Obtaining a credit rating is usually considered a too expensive and burdensome practice for a SME to be undertaken. However, approaching a rating agency may be represent a viable solution even for small businesses. Surprisingly, nowadays an example of a well-functioning rating system for SMEs can be found only in India. There, a restricted number of agencies built over time relationships with local banks in order to offer significantly lower interest rates on loans to their rated clients. The key aspect of their evaluation method, and which differentiates it to the common

approach used for large corporations, lies in the fact that they use a *turnover-based* fee structure (fees are proportional to the size of the business), and that each firm is evaluated *relatively* to a group of similar-sized companies. While the latter does not represent alone such a breakthrough feature, the combination with the former creates a rating process which does not weigh excessively on the firm's finances (being it proportioned to the dimension of the business), and that fairly evaluates each firm according to the characteristics of the sector it belongs to. Moreover, given that these ratings remain valid just for a year and can be easily renewed upon the payment of an appropriate fee, those SMEs willing to access public markets will have their creditworthiness frequently checked, triggering a mechanism to enhance public transparency. At last, it is worth to note that the Indian Government sponsors SMEs' rating by providing a one-time subsidy to cover all the process' expenses.

If a light evaluative system is set up to assess SMEs' creditworthiness, and if Governments step in to support the process, it is in the best interest of each small firm to obtain a credit rating. Such a system would rely on the combination of one-year financial data and of "soft" data. When sovereign debt crises increase attention over public spending, and with States struggling to provide financial aid to SMEs with their limited resources, Governments can nurture the small businesses environment in a direct and effective manner, employing public finances in a transparent way. In the context of reaching an always better assessment of SMEs' credit risk, as promised by Basel III, the creation of such an institution would definitely represent an effective complement to the traditional approaches. The creation of a database of SMEs ratings would spread information in today's scattered SMEs market, broadening the chance of finding potential investors.

5.3 SMEs Corporate Bonds and the role of Securitization

In the sector of debt financing, it is universally recognized that SMEs tend to rely excessively on bank loans and that one of the main reasons of small businesses' failures lies in the absence of loans availability during crises. The high riskiness and informational opacity of SMEs appear as difficult obstacles to overcome if SMEs have to gain a more complete access to capital markets. Due to the high fixed costs connected to the issuance of public bonds, as well as to the minimum size required

for the offer to be marketable, SMEs have always been considered unsuitable to access this market. The issuance of SMEs' bonds would be labeled as "junk" and appear today, in the light of the recent scandals, highly unattractive to the public of investors. Given that Basel III requirements will increase the burden for banks financing risky SMEs, a well designed access to the bond market appears as a potential way out.

As reported by Park et al. (2008), the Korean Government designed an instrument which contributed to the strong development of the local SMEs environment during the last decade, as a response to the crisis that hit the Asian market in the 90s. The Primary Collateralized Bond Obligation (P-CBO) program (started in 1999) used the instrument of securitization to eliminate liquidity constraints in small businesses financing. Being asset-backed securities, P-CBOs are bonds sold by a Special Purpose Vehicle and whose underlying assets are represented by a pool of SMEs' corporate bonds. Those securities are "elaborated" by the intervention of external "credit enhancers" (banks, insurance companies, credit guarantee funds) and evaluated by an external rating agency, and usually sold in different tranches with different quality. A P-CBO manages to pool together a wide variety of SMEs' bonds, characterized by different riskiness, and therefore reduces the aggregate risk of default. If a single company may have a too high credit risk, a pool of different SMEs diversifies away most of idiosyncratic risk and may eventually become an attractive and remunerative investment in an investor's portfolio.

The reliability of rating agencies, which have the fundamental role of certifying the quality of the issuance, has reduced drastically during the recent financial crisis. Also in this context, a dedicated SMEs Rating Agency may represent the correct lever to re-introduce a securitized instrument in the market. The financial support of Governments (in the payment of part, or the totality, of fixed expenses and origination fees in periods of financial distress) may stimulate the development of the instrument by reassuring investors on its quality. Governments may even directly purchase P-CBOs, as a means of subsidizing at once a pool of diverse SMEs.

Anyhow, as reported by the European Investment Fund (2011), the securitization market for European SMEs, after years of strong development, has almost

disappeared as a result of the recent financial crisis. Most of the traditional structured product were normally present in this market, but the fact that they practically disappeared after the crisis implies that none of them was actually able to support SMEs' funding in the moment they needed it most. This market will regain volume, and become again a useful tool to support SMEs financing needs, only if investors rebuild their confidence in the instrument itself and in the safety of the market, and if their position is supported by the existence of a sufficiently liquid secondary market.

5.4 Equity and Crowdfunding

As reported by a recent study by Caccavaio, Carmassi, Di Giorgio and Spallone (2012), only 7% of European SMEs accessed equity financing in 2011, and the smallest percentages are reported in those countries where small businesses are more present (as Spain, Italy and Portugal). Listing on a stock market is one of the solutions identified by literature to raise small firms' transparency and visibility in the market. Regulators responded with the creation of ad-hoc stock markets, reducing the high fixed costs and strict listing requirements which always kept SMEs away from going public. Still, except for those countries historically characterized by a strong presence of institutional investors (US and UK), SMEs listing has not yet gained consensus among small entrepreneurs.

The objective of any regulatory change or creation of new instruments is eventually to expand the public of potential investors in small businesses. There is currently a big debate in the US, among practitioners and regulators, about the opportunity of institutionalizing *crowdfunding* as a means for SMEs to raise equity capital. In a period in which banks reduced capital supply to SMEs, crowd-lending from non-bank institutions globally gained increasing attention. Up to today, this tool has been used mainly in the form of donations or, at the most, of debt. In the EU, instead, it is possible to find a few examples (UK above all) of equity crowdfunding. In April 2012, the US Congress approved the so-called "JOBS Act", which reduces the regulatory burden for SMEs in the process of obtaining financing and allows each individual to participate in public capital placements on registered on-line "funding portals", avoiding the rigid requirements on public offerings imposed by the SEC. The benefits of crowdfunding are evident, as well as the risks. At the expense of

being obliged to reveal its innovative business idea, each company can access a potentially immense crowd of investors. On the other hand, being forced to expose the business to the public of investors, small firms have a great tool to reduce their informational opacity. These particular deserving ideas, unfit for the requirements for traditional financing, are then allowed to receive capital directly from future potential customers, which may act as catalyzers to bring in new investors, with the help of word of mouth and social media. Critics say that single investors may be exposed to inadequate investments to their risk profile and knowledge, and that frauds are just behind the corner. While this may be true, well-regulated platforms, with third-party evaluations and a system of quality feedbacks, would guarantee the safety of the operation. The market would eliminate bad ideas, and support the good ones. In the framework of Berger and Udell (1998), this instrument may fit as complement to angel financing in the early stages of a SME's growth cycle.

6. Conclusion

According to a study by the European Commission published in 2007, the share of SMEs in national economies in higher in Spain, Italy, Greece and Portugal than in the rest of Europe. While it would be an interesting research question to understand if the dominant presence of SMEs in an economy is somehow correlated with the causes of a crisis, it is worth to note that these are the countries where the current economic downturn is yielding its strongest effects. Finding ways to support SMEs may be the key to help national economies survive financial turmoils. This study, appreciating the developments in the regulatory settings proposed by the New Basel Accord, and analyzing the most recent literature developments, underlines that there is fertile ground for the creation of new instruments to fill the gap between SMEs financing needs and current capital supply shortages. Establishing a light rating for SMEs as a prerequisite for accessing public funding would dramatically reduce the high informational opacity afflicting those businesses. The development of a market for SMEs corporate bonds, as well as the creation of safe on-line crowdfunding platforms, could definitely widen the portfolio of instruments to access whenever bank loans, still the most widely financing tool used, are not available. At last, Governments may have an important role in supporting SMEs by covering fixed expenses, especially in the hearth of a crisis.

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