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THE MINI-BOND MARKET IN ITALY: DO SMALL FIRMS RAISE CAPITAL TO INCREASE INVESTMENTS OR TO REFINANCE DEBT?

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ABSTRACT

This study evaluates and analyzes the employment of the capital raised by Italian SMEs through the issue of a new financial instrument known as “mini-bond”. Introduced in the Italian market in 2012 to support small companies’ capital requirements with an alternative financing choice, its characteristics are similar to the common bonds issued by large companies, but it is not accessible to retail investors. The analysis is focused on the mini-bond market in Italy and on the principal features of the issuer companies and of the mini-bond itself, such as maturity, repayment terms, options and coupon. In particular, the research ends up confirming a positive trend of growth both before and after the issue, even if the financial indicators do not show a univocal trend. Furthermore, considering a sample of 48 Italian SMEs that issued at least one mini-bond in the 2012-2015 period, the analysis provides an innovative model which allows to identify the principal choices of employment of the capital raised and how the issue impacted on the company’s financial requirements. In particular, the study addresses the following questions: how much of the collected capital was invested in new projects/assets? How much of the collected capital was employed to restructure the existing financial debt? How much of the company’s capital requirements was covered with the mini-bond? What could determine these decisions? The results obtained applying the model on the considered sample suggest that the two principal reasons that lead the small companies to a mini-bond issue are the investments in new assets, with a particular focus on intangible assets, and the debt restructuring needs. These results seem to be coherent with the original purposes that determined the introduction of the mini-bond also for small enterprises. The regression analysis identifies which are the

principal company features that determined the choice of financing through a mini-bond issue and offers an interpretation of the elements that proved to be more significant, such as the cash and the financial leverage of the year preceding the issue, the presence of a rating or of a put option and the age of the company.

EXECUTIVE SUMMARY

The last Great Recession strongly impacted on the Italian economical system and had consequences which are particularly unfavourable for small and medium enterprises (SMEs). The rise of a "credit crunch" phenomenon created a lack of financing sources for many Italian companies, that were forced to turn to alternative financing options, which anyway are not suitable in most of the cases. To solve this situation, the Italian Government introduced in 2012 a new financial instrument, called "mini-bond", with features similar to the classical corporate bond but characterised by the fiscal deductibility and by the accessibility to professional investors only. The study, trying to identify the main opportunities that make this new financing alternative a viable one for SMEs, analyses its characteristics and the four "Decreto Legge" that determined the born of the mini-bond market. At the same time, it is useful to observe the principal information about the issuers and the issues, looking for possible trends both inside the group of companies that collected capital through this new source and across the different issues operated from the 2012. Aiming at offering a new and more detailed analysis of the issuers, the study includes the development of an innovative model which allows to understand the companies' choices of employment of the capital raised. Furthermore, a regression analysis allows to understand which are the principal characteristics of each issuer and issue that determined the choice of employment of the capital raised to reduce the existing debt or if they collected further financial debt. Similar considerations are also developed on the company's requirements coverage offered by the mini-bond capital, with the aim of identifying the real utility of the whole operation for the Italian SMEs.

According to the presented scheme, the first Chapter is dedicated to the analysis of the economic environment and the opportunities and the threats that characterised it after the Great Recession. In particular, a relevant issue is represented by the risk of credit crunch, which is actually defined in different ways. Bernanke and Lown (1991) described the credit crunch as a "significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest rate and the quality of the potential borrowers", while according to the Council of Economic Advisors (1991) it is "a situation in which the supply of credit is restricted below the range usually identified with the prevailing market interest rates and the profitability of investment projects".

At the same time, modern economic theories provide a further analysis, suggesting that the credit rationing phenomenon is accelerated by the presence of information asymmetries between the borrower and the lender. A relevant contribution to these theories is represented by the model of Stiglitz and Weiss, which looked at moral hazard and adverse selection as main motivations behind the occurrence of credit crunch. To understand exhaustively the causes and implications of the credit crunch in Italy, it is necessary to observe and analyse the economic situation of Italian SMEs, which represent the backbone of the national economy, generating the 81% of the overall employment and the 73% of the added value (ISTAT, 2010). Furthermore, the percentage of short-term bank debt in the Italian firms' financial structure is 40% (Visco, 2013) and the issue is even more critical looking at the Italian SMEs, whose leverage, the debt to equity ratio, is higher than European average, because of a scarce capitalization and a significant usage of bank debt as primary, and often unique, source of financing of entrepreneurial activity. The bank debt for Italian SMEs accounts for the 70% of the overall debts. In this context, the credit crunch emphasized the structural criticalities of the Italian SMEs by affecting their weaknesses in the financial structure. Starting from 2008, the credit offer shrank as a consequence of the disturbances at which banks' Balance Sheets were exposed. The constraints on the banks' Balance Sheets and the instability of the macroeconomic scenario pushed intermediaries to concentrate the access to bank

loans towards less risky firms; the same did not happen for several SMEs characterised by high levels of indebtedness. For this reason, nowadays, such anomalous picture may constitute a unique opportunity for SMEs which have begun to move toward unconventional funding channels, less based upon bank loans, and aimed at leveraging more direct financing modalities which combine both equity and debt. Modigliani and Miller (1958) developed a model aimed at demonstrating that an optimal level of indebtedness in relation to equity does not exist, but the progressive removal of their hypotheses demonstrates how the choice of financial means a firm utilises to finance its activities play a crucial role. The first alternative to the bank debt which is present on the financing market is the equity and self-financing. The advantages of using equity capital are the stability, the remuneration flexibility, the management flexibility and the absence of warranties; on the other hand, the disadvantages are the cost and the tax base. Another option is represented by the choice of going public. Italy is an anomalous market if compared with the other European countries; only a circumscribed circle of entrepreneurs opts for listing, whereas SMEs tend to be constrained to the traditional debt channel. A third choice is represented by Private Equity and Venture Capital, but even though they are valid alternatives to Stock Exchange as a source of funds, in Italy it is a financing channel chronically underdeveloped. Contemporarily, a possible further option is represented by the Business Angels, which are private individuals such as consultants, managers, entrepreneurs who, in the light of their high net worth, choose to invest their financial resources becoming as a matter of fact, shareholders or at least business partners. Despite of its potentiality, it is unlikely that the figure of Business Angel is able to fully substitute the traditional financing options a SME relies on. Crowdfunding represents one of the most modern alternatives to the bank debt, due to its innovativeness. It consists in a process of collection of funds to realise a particular project by involving a great number of micro-investors, but it is not so much developed in Italy as other European countries, mainly because of cultural issues. The last “unconventional” sources of financing for Italian SMEs are the corporate bonds, which are a debt instrument into which a firm falls, towards investors subscribing

them and thus, they are independent of the business profitability. In this way, the debt capital is only partially subject to business risk. During the financial crisis, Italian firms increased the recourse to the bond market, but it remained a prerogative of large companies. In fact, for SMEs the bearing of costs and taxation the corporate bond entails is onerous, in contrast with the bank debt whose passive interests are deductible.

To solve such a situation, from 2012 the Italian Government promulgated a series of "Decreti Legge" aimed at stimulating the SMEs' corporate bond market through the creation of a new financial instrument called "mini-bond".

The second Chapter is, therefore, dedicated to the description of the laws that introduced the mini-bond in Italy and of instrument itself. The definition of mini-bond applied here limits the analysis to those financial instruments which satisfy all the following requisites: the issuer is a limited company or a cooperative company which is resident in Italy or runs the majority of its operations in Italy; the issuer is not a bank or an insurance company (in general, a financial company) or it is not part of a banking group subjected to the surveillance of Banca d'Italia; the issuer is not a vehicle created with the aim of sustaining an acquisition or a securitization; the issue is characterised by a maximum value of € 500 million (considering the cumulated amount in the case of different issues in the same period); the title is not listed on a regulated Stock market which is open to retail investors.

The first decree was the D.L. 83 of the 22nd June 2012, also known as "Decreto Sviluppo" and it was followed by the "Decreto Sviluppo Bis", the "Decreto Destinazione Italia" and the "Decreto Competitività". There were two principal aims: the facilitation of the access to the alternative credit channel for the issuers and the creation of a reference market for mini-bonds. The main advantage introduced with the D.L. 83/2012 is the deductibility from the firm income of the passive interests paid on mini-bonds. se

Besides the main character who is the issuer company, it is possible to identify different kinds of actors whose role has become fundamental, such as the advisor, who technically is the figure that collaborates and offers support to the company in

the crucial moments of a company, as the issue of bonds, when specialized competences and technical and complex operations are required. Another fundamental actor is the arranger, which plays the role of financial coordinator of the issue process and represents also the interface with investors and Borsa Italiana for the structuring of the operation and the placement of the titles on the market. A third important role is played by the Legal Agency, which has to check the respect of the limits determined by the current normative, the accuracy of the applied procedures, the implementation of the contracts between the two parties and the bond Regulation. In many cases, issuers choose to collaborate also with a Rating Agency. Although ratings are not mandatory for a mini-bond issue, they are often requested by issuer companies to provide the market a further informative signal, but is not so rare that the investors themselves are the applicants. In this last case, ratings are defined as "unsolicited". For what regards mini-bonds in Italy, the two leading agencies are Cerved Rating Agency and Crif Rating Agency. The last three actors which participate directly in the mini-bond issue are the investors, of course, the Registrar Agent and the Custodian Bank. The role of the actors is fundamental also for the placement of the mini-bond on the official Italian dedicated market. The ExtraMOT PRO market was born in the February of 2013 as a professional segment of the ExtraMOT market of Borsa Italiana on which it is possible to place project bonds, bonds, financial promissory notes and participatory instruments. It is not a MiFID Directive regulated market, but a multilateral trading facility which is active with an electronic trading platform, with automatic settlement procedures and eligible for all the banking financial operations to the ECB. There are many different compliances to be fulfilled for the listing on the ExtraMOT PRO segment. Between them, the first is represented by the publication of the Admission Document, which is preferred rather than the Informative Prospectus when the total value of the bond is lower than € 200 million. Another compliance is the publication of the last two Balance Sheets and the creation of a section dedicated to the investors on the company's website, generally called "Investors Relations" or "Investor Relator", on which the issuer must publish also the Informative Prospectus or the Admission Document. Furthermore, the

company has to obtain the dematerialization of the titles with the help of an authorized entity, as the Monte Titoli, and to require the attribution of the ISIN code from Banca d'Italia. At the same time, it should compile on a headed sheet the admission request, basing on the form provided by Borsa Italiana, with the sign of the company's attorney.

Chapter 2 also includes a benchmark with the principal financial European markets (United Kingdom, France, Spain, Germany and Norway). Although mini-bonds are typically Italian financial instruments, they are comparable with many other European titles, such as the British bonds which are listed on the Order book for Retail Bonds (ORB), whose principal difference is the accessibility also for retail investors. In France, instead, there are two segments (B and C) of the regulated market Euronext and the Alternext, which is a multilateral trading system, dedicated to the SMEs' bond issues. A similar non-regulated market, which is dedicated to the debt titles of SMEs, is also present in Spain and it is called "Mercado Alternativo de Renta Fija" (MARF). Similarly to the ExtraMOT PRO, the MARF is accessible only to professional investors. In Germany there are many different lists that are specialised for SMEs debt titles: Primämarkt in Düsseldorf (which is split in three different segment according to the reference spread), Mittlestandbörse Deutschland in Hamburg-Hannover and M:access Bond in Müchen. In Stuttgart, there is a further non-regulated market which is composed by several segments. One of them is dedicated to the mini-bonds and it is known as Bondm. In Germany, mini-bonds has had a trouble history, with many different defaults: on 164 issues, at the end of 2016, there has been 34 cases of failure, 8 cases of debt restructuring and 13 cases of insolvency. For this reason, the financial instruments called Schuldscheindarlehen (SSD) is often taken in consideration as a possible alternative. Finally, in Norway, since 2005 there is the possibility to intervene on the Nordic ABM, a non-regulated market dedicated to the trading of bonds and financial promissory notes with a maximum duration of 12 months.

The third Chapter offers a deep analysis of the mini-bond market in Italy, which counts 350 issues to which correspond an amount of € 14,619.247 million, and a

number of issuers amounting to 258 in the period between 2012 and September 2017.

In particular, the analysis is focused on the issuer and issue dimensions. For the former, the details which are taken in consideration are the ATECO sector, the dimension both of the company in terms of turnover and of the issue, the geographical distribution and the declared reasons of the mini-bond issue. The analysis offers also a comparison between issuers of the first nine months of 2016 and of 2017, showing a significant stability of the market in the last two years. An interesting information is represented by the almost perfect distribution of the issuer companies between big and SMEs companies. Furthermore, a performance analysis is applied on the issuer companies both before and after the issue. The considered elements are: the financial expenses on EBITDA ratio; the main financial and performance indexes (ROE, ROA, EBITDA to Sales ratio, Quick Ratio and Leverage ratio); the compounded annual growth rate (CAGR). At least for the major part of the companies, the performance analysis underlines a good growth before the issue supported by a strong sustainability in the following years and an increase of all the most relevant indexes.

For what regards the analysis of the issues, the study takes in consideration other elements, such as the issue period, the dimension of the issuer and the issue, the listing on the ExtraMOT PRO market, the maturity and the reimbursement strategy, the paid coupons and the presence of a rating. At the same time, it is interesting to look for possible trends about options, which are very common for the mini-bond issues, and covenants and warranties, whose presence is still not so much spread, due to the risky characteristics of the mini-bond instrument.

The fourth Chapter is dedicated to the analysis of the employment of the capital collected through mini-bonds by the issuer companies. The study includes the development of an innovative model that is based on the reclassification of the consolidated Balance Sheet of the issuer companies and the comparison of the results between two years. All the data have been collected on the AIDA platform or, as alternative ways, on the companies' official website or on the Telemaco platform.

Furthermore, the considered data are those of the year before the issue and those of the following years which are available at the moment (0 and +1 for 2015 issuers, +2 for 2014 issuers and +3 for 2013 issuers). To make all the cash flows comparable, all the data are reported as a percentage computed as the item value on the mini-bond amount and the variation are always computed as the difference between the indicated year and the year -1.

The element in which the Balance Sheets are reclassified are: Financial Fixed Assets (FA), Intangible Assets (IA) and Tangible Assets (TA); Cash item (C); Operating Working Capital (OWC); Financial Debts excluding the mini-bond amount (FD); Mini-bond (MB); Equity capital (E). Moreover, the model analyses the percentage of coverage of Requirements (REQ), which is computed as the value of the mini-bond divided by the company's requirements. In turn, the requirements are defined as the sum of the positive variation of the items classified in the Assets plus the negative variations classified in the Sources.

The analysis has been conducted on a sample composed by 48 SMEs that issued a mini-bond from 2013 to 2015, excluding the financial companies, with a coverage ratio on the total number of issuers in the same period of 81.4%. The results of the model are significant and offer many different interpretations about the employment of the capital raised. Investments in Intangible and Tangible Assets were predictable: one of the most common reasons for the issue is the internal growth, which generally consists in an improvement of the assets of the company, such as machineries and lands or patents. The surprising result is represented by the Tangible Assets' variation, whose value is lower than what expected, especially taking in consideration the median. A possible explanation is the fact that companies resort to mini-bonds to invest in assets whose return is not so certain, as Intangible assets are, and this could be also one of the reasons of the typical higher risk of mini-bonds if compared with bank loans. At the same time, it was not predictable such a relevant impact of the investments in Financial Assets, that demonstrate a particular attention of the issuers towards the securities or other financial investment, probably with the aim to counterbalance the risk of some other investments with financial operations.

Furthermore, the growth of the Cash item is aligned with the expectations: the choice of preserving a part of the liquidity as a sort of "umbrella" in case of unforeseen events is a positive behaviour of the firm management and it may also be considered a good reserve for investments in opportunities that arise in the short-term. The positive trend that characterises the Equity capital variation can be interpretable as a spread decision of retaining the earnings at the end of the accounting year. Increases in share capital seem to be not coherent with the need of external financing. The last variation which is taken in consideration is the difference between Financial Debts on the mini-bond amount, that allows to understand if the company chose to refund the debt or to raise further debt from financial institutions. The 2013 and 2014 issuers followed a similar path, refunding the existing debt in the year 0 and +1 and raising new financial debt starting from the year +2. At the same time, the 2015 issuers took totally different decisions raising new financial debts, beside the mini-bond issue, to have an extra-liquidity and invest in differentiated projects. Analysing the Requirements coverage, in the year of the issue, generally, the mini-bond has been utilised to finance the 57.76% of the activities of the company, with this percentage that decreases to 47.53% in the year +1 and even to 39.03% in the year +2. A possible interpretation of these results is obtainable taking in consideration the fact that in the years after the issue, companies met new opportunities of financing, as shown previously, with internal funds or through debt capital.

The purpose of the fifth Chapter is to perform an empirical analysis to evaluate if the mini-bond issue is somehow correlated to firm intrinsic variables or dependant on the issue's characteristics. In detail, the aim of the analysis is to verify if the increase or decrease of the financial debt (Model_01), once the firm issued the mini-bond, or the percentage of financial needs' coverage through the mini-bond issue (Model_02) are somehow correlated to intrinsic peculiarities of the issuer and of the issue. Concerning the independent or explanatory variables, both the models use the followings: material assets, cash, growth, industry, age, listed / non-listed, leverage,

reimbursement, option, maturity, rating. Consistently with the purposes of the analysis, the regressors describe both the issuer and issue's features.

As it was foreseeable, the highest levels of significance are found in the [-1; 0] period both for Model_01 and Model_02. In details, the most correlated explanatory variables are the cash, the leverage, the age, the option and the rating for what regards the variation of the financial debt, while only the cash seems to have a strong effect on the percentage of firm requirements.

The sixth and last Chapter is dedicated to some reflections and conclusions that could be extracted by the whole study work, considering both the current market situation and the results that the Model offers. The constant growth of the market since 2012 demonstrates the efficacy and the utility of the mini-bond introduction in Italy as a relevant alternative for the companies' financing, independently from their dimension. It is also interesting to observe the principal choices of employment of the capital raised, which show the wide range of possibilities that the mini-bond instrument offers to SMEs. At the end, the identification of the most relevant and significant peculiarities of the issuer and the issue allows to understand what are the fundamental reasons that lead the companies to choose mini-bond as their financing source.

1. CONTEXT ANALYSIS

The Great Recession made the actual risk of credit crunch emerge at a worldwide level. Even though literature does not provide a univocal definition of credit crunch, such term is broadly used to designate a series of phenomena entailing a decline of the credit supply. The implications of a credit crunch in Italy were even more severe than in other European countries because of the peculiarities of the Italian entrepreneurial fabric, based upon small and medium enterprises (SMEs) too much dependent on the short-term bank debt. The Italian Government implemented important legislative modifications with the aim to facilitate the access to capital market in favour of SMEs, through the instrument of mini-bond, which actually starting from its introduction in 2012 turned out to be an interesting alternative for the Italian entrepreneurs. Before dealing with a deep analysis of the mini-bond market subject of the next chapter, it is essential to recall the causes which led to propose such an instrument as alternative to the traditional financing channels. In addition to such foreword, the chapter aims at providing an overview of the modalities to which a firm can resort to satisfy its financial needs, with a focus on the Italian panorama, still too much backward when compared to other developed countries. The chapter is structured as follows: Section 1.1 describes the credit crunch as a precondition to understand the development of the alternative finance. Then Section 1.2 focuses on the characteristic traits of Italian SMEs, based upon a strong dependency on bank debt, which gives clarification on why the credit crunch

had a harsh impact on the Italian entrepreneurial fabric. Finally, starting from a brief illustration of the firm's financial structure and the main theoretical contribution by Modigliani and Miller, Section 1.3 aims at describing all the alternatives of financing on both equity and debt side.

1.1 Credit Crunch

The beginning of the financial crisis in US can be traced back to 2007 and it led the economies all over the world to tackle the most oppressive economic recession ever happened since the second post-war. The Great Recession caused the actual risk of credit crunch at a worldwide level, defined as a *"significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest rate and the quality of potential borrowers"* (Bernanke and Lown, 1991). Some authors state that the blast of economic downturn directly affected the loans' dynamic, which progressively weakened the credit system in all developed countries; such declines may be ascribable to a series of exogenous factors: decrease of financial needs due to contraction in investments, drop of consumptions, weakness of the real estate market and worsening of bank clientele's solvency (Panetta and Signoretti, 2010). The critical conjuncture of such phenomena prevents to understand if the credit market slowdown is attributable to a downfall in the demand curve or rather to a contraction banks' credit supply. Nonetheless, the drop of resources allocated for sources of financing causes heavy consequences on the real economy since the lack of financing leads firms to scale down their investment plans and circumscribe the families' consumption, amplifying the negative effect of shocks on the production activity.

In the economic system, banks have a crucial role: through their function of capital management and savings allocation, credit institutions are the primary source of external financing for entrepreneurial activity, in Italy as well as in the other countries, even where capital markets are more organized and developed (Signorini, 2012).

Literature does not provide a univocal definition of credit crunch; however, such term is broadly used to designate a series of phenomena concerning decline of credit supply due to the implementation of monetary policies, a credit scarcity from the supply standpoint, meaning a rationalization of bank loans. According to the Council of Economic Advisors (1991), credit crunch is "*a situation in which the supply of credit is restricted below the range usually identified with prevailing market interest rates and the profitability of investment projects*". In other words, credit crunch specifically refers to a widespread reduction, ceteris paribus, in the supply of credit, both for unviable and viable firms (Costa and Margani, 2008). From a macroeconomic perspective, when a credit crunch occurs, the relationship between credit availability and interest rate is mainly affected in two distinct forms:

I. a leftward shift of credit supply curve, maintaining constant the real interest rate;
II. rationing of credit supply, independently of the applied interest rate.

The I. scenario is strictly aligned to the definition provided by Bernanke and Lown (1991), according to whom it would imply a sudden decrease in the availability of credit, independent of a rise of real interest rate or potential borrowers' credit quality. The authors alight on how the causes of credit shrinkage can be ascribable to both demand and supply trend; in particular, the former plays a decisively influencing role in the credit crunch since the worsening of firms' Balance Sheets, implicating a substantial uncertainty around the creditworthiness of potential borrowers, is the main reason behind the structural weakening leading to a funds demand drop. Costa and Margani (2009) analyse how the credit crunch may entail several significant phenomena, among which:

i. a downfall of bank loans granted to small and medium enterprises (SMEs);
ii. an increase of loans request's refusal rate;
iii. a collapse of loans grant's growth rate;
iv. a reduction of loans' payback time;

v. an increase of real interest rate;
vi. an increasing spread between loan interest rate and the risk-free rate;
vii. a drop of credit lines.

Concerning the II. scenario, according to Owens and Schreft (1993) the phenomenon consists of a *"a period of sharply increased non-price credit rationing".* The authors, in order to point out the meaning of credit crunch, do not rely on the contraction in lending but on the microeconomic principle of a shortage: if at a current market price, the demand for a good exceeds the supply, then a shortage occurs. The available supply will be rationed to meet the demand in excess, but by some means other than price. Despite their divergences, Bernanke-Lown and Owens-Schreft analysis agree on attributing the major part of the credit contraction to a decline in credit demand and both find little support for the explanation that more severe bank examination practices account for the contraction in loan supply.

Modern economic theories provide a further analysis concerning the causes triggering a credit crunch; according to such studies the credit rationing is accelerated by information asymmetries between borrower and lender, in addition to market failures. Stiglitz and Weiss (1981) look at moral hazard and adverse selection as main motivations behind the occurrence of credit crunch. The former occurs when the borrower chooses to undertake risky projects at higher interest rates, whereas the latter occurs when borrowers' risk-free investments are not profitable at higher interest rates. Therefore, lenders should ponder their expectations to make profits on a financial project since on the one hand high interest rates increase the potential profitability, on the other hand they may generate such phenomena of moral hazard and adverse selection which may decrease the expected return in financing the borrower.

To better understand how market imperfections can cause a credit rationing, it may useful to recall the Stigliz and Weiss' model (1981).

It defines the credit rationing as a situation in which there is "*an excess demand for credit higher than the credit supply, at the current interest rate*".

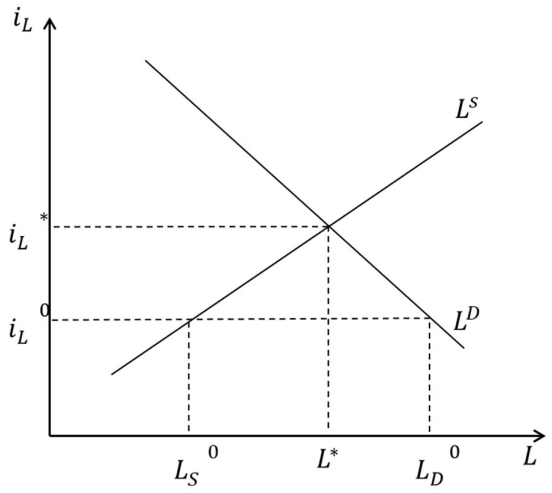
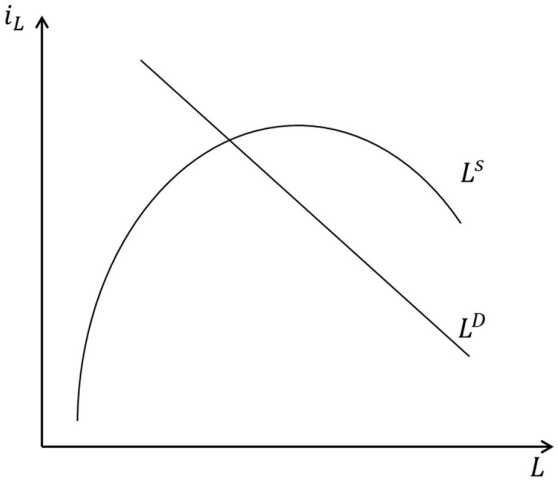


Figure 1.1: money supply and money demand equilibrium

Actually, it is possible to identify three types of credit rationing:

i. Dynamic Rationing: a change in the interest rate determines a temporary disequilibrium that works out in time;
ii. Persistent Rationing: a change in the interest rate, caused by exogenous factors, determines a persistent disequilibrium, which doesn't work out in time, and create the ideal environment for "usury loans";



iii. Figure 1.2: money supply and money demand equilibrium

iv. Equilibrium Rationing: there is still an excess of demand but the equilibrium rationing is due to lenders' behaviour which is affected by asymmetric information.

The third type of credit rationing (Equilibrium Rationing) is the one analysed by Stiglitz and Weiss in 1981.

It is necessary to take some assumptions about borrowers and lenders.

Assumptions about the borrowers:

a. there is an elevated number of firms;
b. firms have the possibility to invest in many projects whose cost is 1;
c. firms do not have internal funds, so they need a loan to raise the capital to invest in projects;
d. the stock market does not exist, then there are Standard Debt Contracts between firms and banks that determine a repayment of (1+i);
e. the borrower is risk-neutral;
f. there are limited liabilities and no collateral, hence if the firm fails, everything is given to the bank;
g. the return on investment is defined as:
    - X with probability P;
    - 0 with probability (1-P).

Assumptions about the lenders:

a. lenders are in perfect competition;
b. funds from households are abundant so banks can provide credit when they are willing;
c. there are no reserves and no bonds;
d. i_D is the interest rate on deposits and it ensures in the long-run a zero profit, then $i_D = i_L$.

Taking in consideration all these assumptions it is possible to affirm that:

i. the expected value of the return is: $E(R) = u = PX$

ii. the value of variance is positive and:

$$\sigma^2 = E(R^2) - [E(R)]^2 = PX^2 - (PX)^2 = X^2P(1-P)$$

iii. the firm's profit is: $\pi(X, i) = \max[X - (1+i), 0]$

This means that the investment is successful if:

$$X > (1+i)$$

since the firm's profit would be:

$$\pi = X - (1+i)$$

and the bank's profit would be:

$$\varphi = (1+i)$$

Then, always considering that $E(R) = PX$, it is possible to define also that:

i. the expected value of the firm's profit is: $E(\pi) = P[X - (1+i)]$

ii. the expected value of the bank's profit is: $E(\varphi) = P(1+i)$

Stiglitz and Weiss took in consideration two different cases: the first one is the Adverse Selection case, while the second one is the Moral Hazard case.

Starting from the adverse selection case, the first hypothesis to take in consideration is the presence of many different kinds of projects and each of them is characterised by its own risk parameter (θ), then:

i. the probability of success is $P = P(\theta)$ with $\frac{dP}{d\theta} < 0$;

ii. the return of successful projects is $X = X(\theta)$ with $\frac{dX}{d\theta} > 0$.

For simplicity, it is possible to assume that there are only two projects (called respectively "r" and "s") with:

$$\theta_r > \theta_s$$

$$P_r < P_s$$

$$X_r > X_s$$

There is asymmetric information between the borrower and the lender because the borrower knows more on his own risk than the lender who cannot distinguish between risky and safe projects.

The Mean Preserving Spread Assumption (MPS) ensures that $E(R)_r = E(R)_s$ but the variance is different, then:

$$E(R)_i = P(\theta_i) \cdot X(\theta_i) = constant$$

$$\sigma^2{}_i = X(\theta_i)^2 \cdot P(\theta_i) \cdot [1 - P(\theta_i)] = \sigma^2(\theta)$$

For example, let's assume that the probability and the return of success are defined as:

$$P(\theta) = \frac{\bar{P}}{\theta}$$

$$X(\theta) = \bar{X}\theta$$

with $0 < \frac{\bar{P}}{\theta} < 1$ and $\theta > \bar{P}$.

Since the expected returns for the two projects are the equal, they both are computable as:

$$E(R) = \bar{P} \cdot \bar{X} = \left(\frac{\bar{P}}{\theta} \cdot \bar{X} \cdot \theta\right)$$

while the variances, the expected firm's profit and the expected bank's profit that are respectively:

$$\sigma^2{}_i = (\bar{X}\theta)^2 \cdot \frac{\bar{P}}{\theta} \cdot \left(1 - \frac{\bar{P}}{\theta}\right) = \bar{X}^2\bar{P}(\theta - \bar{P}) > 0$$

$$E(\pi) = \frac{\bar{P}}{\theta}[\bar{X}\theta - (1 + i)] = \bar{P}\bar{X} - \frac{\bar{P}}{\theta}(1 + i)$$

$$E(\varphi) = \frac{\bar{P}}{\theta}(1 + i)$$

The population is distributed as:

i. γ elements that choose the safe project (with $0<\gamma<1$);
ii. $(1-\gamma)$ elements that choose the risky projects.

The bank knows the value of γ, which is at the same time independent from the interest rate.

There are two scenarios:

i. both firms with risky and safe projects ask for a loan, then the expected value of the bank's profit is computable as:

$$E(\varphi) = \gamma \frac{\bar{P}}{\theta_s}(1+i) + (1-\gamma)\frac{\bar{P}}{\theta_r}(1+i) = \left(\gamma \frac{\bar{P}}{\theta_s} + (1-\gamma)\frac{\bar{P}}{\theta_r}\right)(1+i)$$

But it is possible to define:

$$\hat{P} = \left(\gamma \frac{\bar{P}}{\theta_s} + (1-\gamma)\frac{\bar{P}}{\theta_r}\right)$$

Then:

$$E(\varphi) = \hat{P}(1+i)$$

ii. only firms with risky projects ask for a loan. In this scenario, the expected value of the bank's profit becomes:

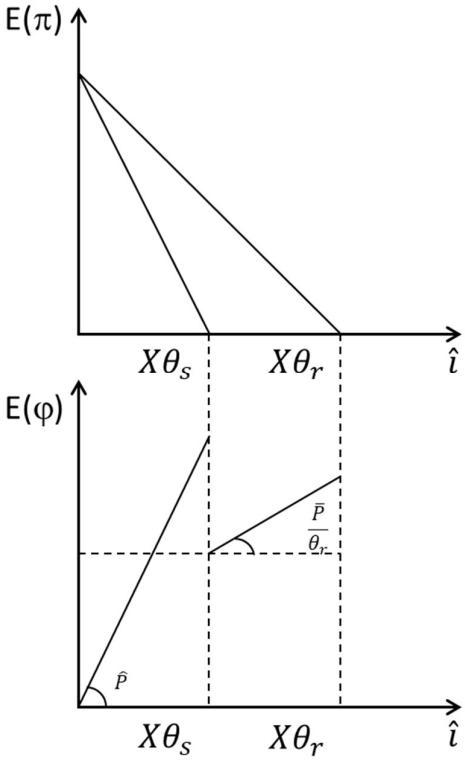
$$E(\varphi) = \frac{\bar{P}}{\theta_r}(1+i)$$

Comparing the two scenarios, it is possible to notice that:

$$\hat{P} > \frac{\bar{P}}{\theta_r}$$

For simplicity, it is possible to define $(1+i) = \hat{\imath}$.

It is important to remember that $E(\pi) = \bar{P}\bar{X} - \frac{\bar{P}}{\theta}(1+i)$, then if θ increases, also $E(\pi)$ does the same, while if $(1+i)$ increases, $E(\pi)$ does decrease.



It is possible to conclude that:

if $\hat{\imath} < \bar{X}\theta_s$ both the types of firm ask for a loan and the expected bank's profit is: $E(\varphi) = \hat{P}(1+i)$;

if $\bar{X}\theta_s < \hat{\imath} < \bar{X}\theta_r$ only risky firms ask for a loan and the expected bank's profit is: $E(\varphi) = \frac{\bar{P}}{\theta_r}(1+i)$;

if $\hat{\imath} > \bar{X}\theta_r$ nobody asks for a loan and the expected bank's profit is $E(\varphi) = 0$.

In correspondence of $\bar{X}\theta_s$ the bank faces the phenomenon of Adverse Selection, since only the risky firms ask for a loan.

Figure 1.3: graphical explanation of Adverse Selection case

For an infinite number of projects, the result is:

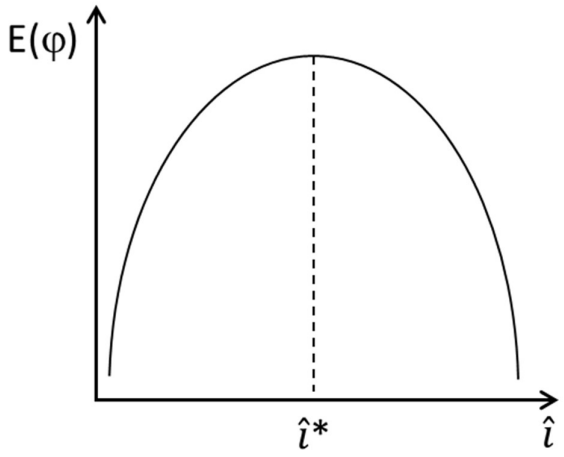


Figure 1.4: correlation between bank's profit and interest rate

Instead, taking in consideration the moral hazard case, as in the previous case, each firm can choose between a safe and a risky project, but there the MPS assumption is here released. This means that**:**

$$E(R)_s > E(R)_r$$

$$P_s X_s > P_r X_r$$

$$P_s > P_r$$

$$X_s < X_r$$

Then, if firm chooses the safe project:

$$E(\pi)_s = P_s X_s - P_s(1+i)$$

$$E(\varphi) = P_s(1+i)$$

While, if firm chooses the risky project:

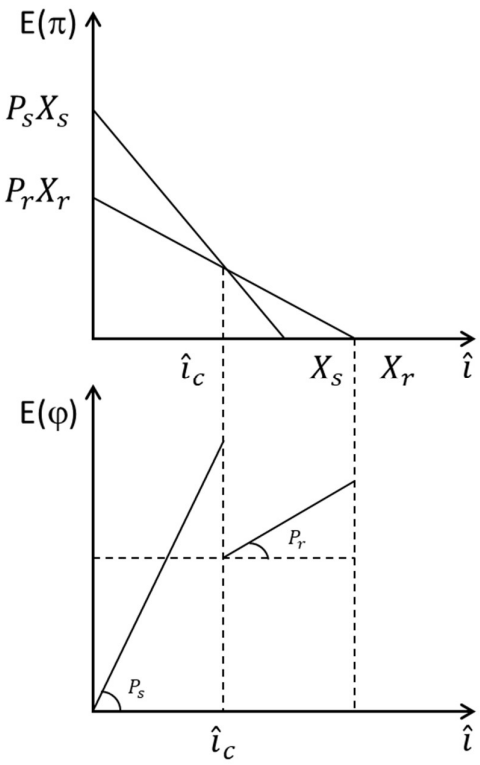
$$E(\pi)_r = P_r X_r - P_r(1+i)$$

$$E(\varphi) = P_r(1+i)$$

For simplicity, comparing $E(\pi)_s$ and $E(\pi)_r$ it is possible to define the Critical Interest Rate as:

$$\hat{\imath}_c = \frac{P_s X_s - P_r X_r}{P_s - P_r}$$

It is possible to observe that:



if $\hat{\imath} < \hat{\imath}_c$ firms will choose the safe project;

if $\hat{\imath} > \hat{\imath}_c$ firms will choose the risky project.

Then, this is an adverse incentive because there is a fall in the return.
For this reason, this could be defined as a Moral Hazard Situation.

Figure 1.5: graphical explanation of Moral Hazard case

Stiglitz and Weiss affirm that the Credit Supply is an increasing function of the expected revenues of a bank:

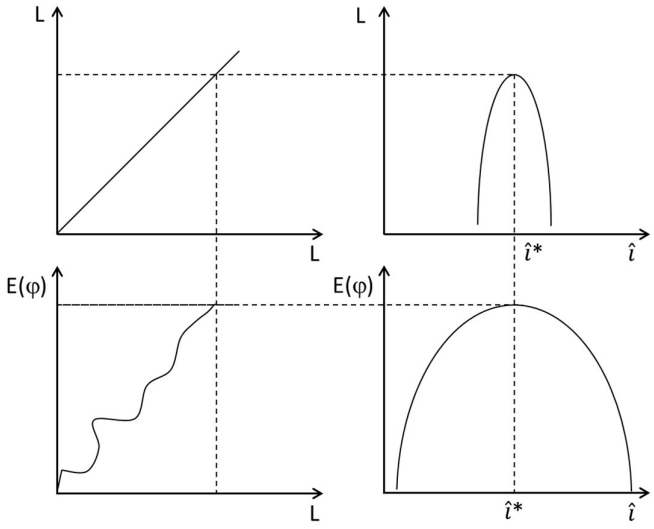


Figure 1.6: determination of Credit Supply curve

In fact, for what regards the supply of loan:

$$\frac{dL}{d\hat{\imath}} > 0 \qquad \forall \hat{\imath} < \hat{\imath}^*$$
$$\frac{dL}{d\hat{\imath}} < 0 \qquad \forall \hat{\imath} > \hat{\imath}^*$$

Then, $\hat{\imath}^*$ is the value of interest rate that maximizes $E(\varphi)$.
Taking in consideration the Representative Agent Assumption, it is possible to affirm that if all the banks are the same, the aggregated supply curve is also the same.
Contemporary, the model says that the Credit Demand is a decreasing function of $\hat{\imath}$.
Credit Rationing can happen under all these assumptions, according to Stiglitz and Weiss.

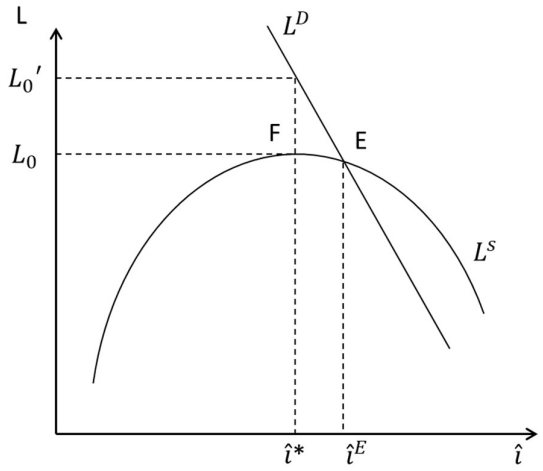


Figure 1.7: credit supply and credit demand equilibrium with credit rationing

Usually, the equilibrium should be in (E), but banks prefer to maximize their return, so they apply $\hat{\imath}^*$. Then, banks will provide L_0 loans, but demand will be L_0' loans.
The rationed quantity is computed as:

$$Z = L_0' - L_0$$

There is asymmetric information, so banks will not provide loans to firm in Z, although their projects are good and they are willing to pay higher interest rates.

Costa e Margani (2009) define three forms through which credit rationing takes place:

i. pure rationing, when borrowers are denied any form of credit;
ii. divergent views rationing, when borrowers would like to borrow at prevailing rate on the market, since they do not feel their loans present a risky credit condition, but the lenders do not agree and deny the loan or impose too demanding constraints in terms of collaterals, guarantees or applied interest rate;
iii. sector rationing, when lenders apply credit restrictions which are aimed at preventing certain borrowers' categories from granting loans, since lenders are not capable of distinguishing between good and bad credit and opt for making no loans at all.

The definition of credit crunch allows to understand the crucial role that a bank plays in developing the economic system as primary credit source for the enterprises. Therefore, for such motivations, the reduction of loans can generate critical implications on the real economy. The decrease and the denial of funds can induce firms to circumscribe their investment projects, causing an arrest of the economic circle, while households will be subject to a drop in consumptions, triggering a vicious cycle which negatively involves both production activity and employment rate.

1.2 Italian SMEs

This paragraph is aimed at dealing with the credit crunch dynamics and its effects on the SMEs in Italy. To understand exhaustively the causes and the implications of the credit crunch in Italy, it is necessary to synthetically stress the scenario and categories of firms in the Italian economic system. The analysis emphasises the role of small and medium enterprises (SMEs) in the national industrial panorama both in quantitative terms, meaning the number of SMEs, and qualitative terms, meaning the features differentiating the Italian SMEs with respect to European competitors. The European

Commission classifies a firm according to the following criteria:

i. large enterprise: the number of employees is more than 250 or the annual revenue is larger than € 50 million and the assets' value is larger than € 43 million;
ii. medium enterprise: the number of employees is less than 250, the annual revenue is not larger than € 50 million or the assets' value is not larger than € 43 million;
iii. small enterprise: the number of employees is less than 50, the annual revenue or the assets' value is lower than € 10 million;

SMEs are the backbone of Italian economy: there are over 4,4 million of extra-agricultural enterprises and the 99.9% of such amount is made up of SMEs. Furthermore, SMEs generate the 81% of the overall employment and the 73% of the added value (ISTAT, 2010).

The financial structure characterising the Italian SMEs shows peculiarities which make it different if compared to the European context. They can be synthetized in the followings:

i. low level of capitalization;
ii. strong dependency upon the bank channel;
iii. short-term indebtedness;
iv. low level of investments.

The set of such features together with the modalities of the bank-firm relationship, parcelled out on several banks, make the SMEs financial model structurally weak, unfitted for bearing the long-term development and high-tech firms, and strongly dependent on the economic cycle. Therefore, the system tends to enlarge and ration the credit offering, respectively during the positive and negative cyclic phases, through an increase of the cost of debt according to the risk. Specific and structural factors such as the Sovereign Debt crisis and the Italian bank-centric system contribute to determine the final effects. In this picture, a shift toward a circuit of

capital market and innovative source of financing seems to be unavoidable and, at the same time, it is necessary a process of requalification of the bank credit. Further details can be helpful to clarify the inadequacy of the Italian system. Looking at the entrepreneurial system as a whole, the empirical evidence demonstrates that level of capitalization is low: the debt to equity ratio increases 42% to 48%, from 2007 al 2012, whereas the increase is 27% al 34% and 39% to 42%, respectively for France and Germany (Panetta, 2014); a non-negligible discrepancy capable of affecting the financial expenses and thus on EBIT (Earning Before Interests and Taxes) and the debt sustainability. The bank debt weight on the overall debt is 66,5%, too much when compared to the UE average (50%) and USA (30%); this result shows the substantial lack of alternative financing channels (Gobbi, 2013)**.** The percentage of short-term bank debt in the Italian firms' financial structure is 40%, in contrast with Germany and France where the same debt component is 18% (Visco, 2013). The issue is even more critical looking at the Italian SMEs, whose leverage, the debt to equity ratio, is higher than European average, because of a scarce capitalization and a significant usage of bank debt as primary, and often unique, source of financing of entrepreneurial activity. Such allocation of financial resources is the result of a national culture which combines the recourse of bank debt channel with a scarce trust towards the capitals market. The bank debt for the Italian SMEs accounts for the 70% of the overall debts, one of the highest value in comparison with the other European countries where such percentage is almost 50%. The component of bank debt in relation to the overall indebtedness of an Italian SME is even more highlighted if compared with Anglo-Saxon countries such as UK and USA where the model of public company is more common. The result of such an approach to debt channels is that Italian SMEs are characterised by a leverage, meaning the ratio between financial debts and equity, higher than the European average. The issue of equilibrium and reinforcement of the Italian firms' financial structure entails a strengthening of the equity capital, the development of alternative debt instruments and a drastic reduction and requalification of the bank debt. Furthermore, since the over-indebtedness is an issue mainly belonging to SMEs, it is suitable the

development of procedures which encourage and facilitate the firm growth: such a process needs a change of view by the Italian entrepreneurship which founds the corporate governance on a family ownership rather than on external mangers whose entrance into the firm is not well-accepted. The implication of such a financial structure generates an added complexity in managing the financial resources, since the bank debt has features implying a particular structural management, whose non-functioning may determine severe criticalities within the firm dynamics and sometimes put the firm financial stability at risk, in particular when dealing with short-medium term debt.

The credit crunch has emphasized the structural criticalities of the Italian SMEs by affecting their weaknesses in the financial structure. In fact, the credit crisis affected the Italian panorama more than other European countries due to the peculiar modalities of financing and the financial structure characterising the Italian industry. Thus, the credit crunch exacerbated a formerly frail context. First of all, the firms' fragilities have implications for bank institutions through an increase of the riskiness gravitating toward the bank's profitability and Balance Sheet; as a result, to circumscribe the risk of losses banks limit their loans. The percentage of rationed firms is constantly increasing: the access to bank credit is hard especially for SMEs which cannot rely on alternative financial means, and are too much dependent on the short-term bank debt. In Italy, the close relationship between firms and banks reflects the structural characteristic of the economy: the fragmentation of the entrepreneurial fabric into a large amount of small and medium enterprises which are not capable of directly accessing the capital market. Before the financial crisis, the financing model based upon the bank credit, even though not exempt from criticalities, allowed firms to increase their level of indebtedness, despite of the weak profitability because of advantageous conditions of access to credit due to an increasing competiveness that small intermediaries performed towards large banks. Starting from 2008, the credit offer shrank as a consequence of the disturbances at which banks' Balance Sheets were exposed. Such disturbances were transmitted to the entrepreneurial system through a more severe selection of loan applicants,

increasing the percentage of rationed firms. The constraints on the banks' Balance Sheets and the instability of the macroeconomic scenario pushed intermediaries to concentrate the access to bank loans towards less risky firms; the same did not happen for several SMEs characterised by high levels of indebtedness, despite of a growth in terms of revenue and profitability, and a certain capability in penetrating foreign markets (Dell'Aversano and Lopes, 2014).

1.3 Financing alternatives

As a result of the financial crisis, Italian banks came across an increase of their cost of capital related to medium-long term investments and acted as last resort underwriters of the Italian Government bonds. Furthermore, the deep economic downturn increased the riskiness of banks' assets and losses on loans negatively impacted on the bank capital. To tackle such circumstances, the banking system performed a credit crunch on the economy and in particular, as mentioned above, on the SMEs' requests of funds. Paradoxically, such anomalous picture may constitute a unique opportunity for SMEs which have begun to move toward unconventional funding channels, less based upon bank loans, and aimed at leveraging more direct financing modalities which combine both equity and debt. The access to equity market would allow firms to be better capitalised and make them more attractive even in intermediaries or institutional investors' eyes. The development of a corporate bond market would not be beneficial only to firms as alternative source of financing, but it would allow banks to offer novel services such as the placement of bond instruments on the market, realising new resources to small enterprises which are more dependent upon the bank loan, or for which the access to the equity market is not that much facilitated. Before examining in depth all the options, both on the equity and debt side, it is necessary to recall the firm financial structure and how the choices of financing impact on the firm itself.

1.3.1 Firm financial structure

The enterprise value is the combination of two components: debt and equity. If the

main management's purpose is to maximise the enterprise value, then the debt to equity ratio which maximises the value should be chosen. However, Modigliani and Miller state that the choice between debt and equity to finance a certain level of investment does not impact on the enterprise value, thus an optimal level of indebtedness in relation to equity does not exist. The Modigliani and Miller's theorem belongs to a category of statements known as "invariance propositions" which demonstrate the irrelevance of a choice which apparently may appear crucial such as the decision upon the capital structure. With regard to such a result, the purpose does not consist in demonstrating that the specific choice of financing is irrelevant, but rather the aim is to analyse the hypothesis behind. The proposition I by Modigliani and Miller concerns the irrelevance of indebtedness degree; it states that the level of debt and its structure do not affect the enterprise value if the following hypothesis hold:

i. there are no corporate taxes;
ii. the default of a firm does not entail any bankruptcy cost or reputational cost for its mangers;
iii. financial markets are perfect, meaning that there is no competition or information asymmetry.

The theorem sates that enterprise value is equal to the discounted value of the cash flow, where the discount rate is the expected return related to firms belonging to the same risk class, and thus it is equal for all the firms. In other words, the enterprise value depends upon the discount rate and cash flows, but it is completely independent from the liabilities a firm utilises to carry out its activities. Furthermore, the theorem implies that the firm's average cost of capital is not affected by the debt amount and structure and it is equal to the return expected by investors for firms sharing the same risk class. Actually, starting from 1958, when Modigliani and Miller published their first studies, to nowadays the overall progress of corporate finance' studies can be described as the sequential or simultaneous removal of the hypothesis mentioned above.

The hypothesis related to the absence of corporate taxes was the first to be removed by Modigliani and Miller who recognised the preferential treatment of debt in the US fiscal system. Therefore, an optimal financial structure would have required a higher debt to equity ratio than what actually observed. The reason is that levered firms generate an extra aggregate cash flow due to tax savings, for its shareholders and debt holders and thus, new value is created. Indeed, cash flow distributed to debt holders is tax-deductible, whereas cash flow distributed to equity holders is not. Many other authors carried out several studies aimed at finding out a cost capable of offsetting the fiscal benefits associated with debt; they identified such cost in the financial distress by taking off the second hypothesis. The debt puts pressure on the firm since the interests' payment and the principal reimbursement are formal duties. If such a commitment was not fulfilled, the firm would risk running up against the financial distress or maybe the default if it was not able to reverse the process. The integration between fiscal benefits and bankruptcy costs can be explained as follows: on the one hand, an increase of indebtedness would boost the enterprise value, as a result of the corresponding fiscal advantages, on the other the financial distress' costs decrease the enterprise value due to an increase of the probability of default. As a consequence, under suitable assumptions, the two opposite factors may determine an optimum: a leverage which would maximise the value by evening out the marginal gain of the fiscal saving and the marginal cost related to the increased likelihood of default. However, since the financial distress' cost cannot be precisely quantified, the theory concerning corporate finance does not provide a formula to generalize the target level of indebtedness.

Finally, the removal of the third hypothesis led to a wave of progresses within the corporate finance theory. The form friction on which authors focused is the one related to information asymmetry, that is, the adverse selection and the moral hazard between external investors and internal managers. When the firm is indebted, the market imperfections may generate conflicts of interest between firm and investor. Such conflicts are named agency costs and may be exacerbated in the event of financial distress. Three possible opportunistic strategies which an entrepreneur may

undertake against debt holders are here illustrated:

i. incentive to take on high risks: the more the financial distress threatens, the more a firm tends to carry out hazardous choices;
ii. incentive to underinvest: when a firm is close to default, its equity holders tend to deem that a new investment would be detrimental to themselves and beneficial to the debt holders only;
iii. incentive to "milking the property": equity holders may opt for implementing a strategy aimed at distrusting extra-dividends in the event of financial distress, by subtracting recourses addressed to bondholders.

Literature clarified the financial instruments' incentive properties that firms can issue to collect funds through which financing their investments. For example, in the context of innovative firms which rely on venture capital, many authors demonstrated that the convertible debts have desirable characteristics (Casamatta 2003, Cornelli e Yosha 2003, Schmidt 2003), whereas others have underlined the need of financial contracts with sophisticated clauses concerning the allocation of rights of ownership between financers and entrepreneurs throughout all the possible circumstances (Kaplan and Stromberg, 2003). In general, such literature explains why the allocation of rights of ownership, which would be useless in the scenario outlined by Modigliani and Miller, on the contrary is crucial for the incentive structure to firms and their functioning. Apart from the incentive properties related to the diverse financial instruments, the firm financial structure can act as vehicle of information, since it can disclose privileged information about the profitability of the firm's investment opportunities; as an example, the number of shares retained by an entrepreneur can signal the credibility of the firm investment strategy (Leland e Pyle, 1977). Similarly, the Myers and Majiluf's model shows how the issue of shares may be negatively perceived by the market, since, by owning privileged information, managers tend to sell their own shares when the market overvalues them. According to the same criterion, the policy of dividends' distribution is not irrelevant because it is a credible signal of firm profitability.

As a conclusion, the progressive removal of Modigliani and Miller's hypothesis demonstrates how the choice of financial means a firm utilises to finance its activities play a crucial role. At this juncture, the purpose is to illustrate what are the financing options that firms have at their disposal, and their status in the Italian scenario. On the one hand, cultural factors circumscribed the options Italian firms have to collect financial resources; on the other, the credit crunch and economic conjuncture led Italian entrepreneurs to identify innovative sources of financing, on the other.

1.3.2 Equity and self-financing

Equity capital represents the personal investment of the owner (or owners) in a business and is called risk capital because these investors take on the risk of losing their funds if the business does not succeed. The advantages associated to such internal source of financing are the following:

i. stability, the risk capital "belongs" to the firm, thus this latter can rely on its availability for an unlimited duration;
ii. remuneration flexibility, owners can autonomously decide the suitable timing and amount in distributing dividends, without any contractual constraints;
iii. management flexibility, it does not require a punctual remuneration, allowing the firm a certain degree of freedom in the investment's choices;
iv. no warranty, the issue of risk capital does not require any collateral.

The advantages concern:

i. the cost, since it is sensitive to the firm risk, equity capital entails a larger remuneration if compared to the debt capital and thus it has got a larger cost
ii. the tax base: the dividends distributed to shareholders cannot be deducted, contrary to debt interests which are deductible from the levies weighting on the firm.

Self-financing is the capability of a firm to cover its financial needs without resorting to debt capital or other "external" sources of financing. In other words, the firm is

capable of meeting its financial needs by reinvesting its profits. Self-financing is usually utilised with reference to financial resources which do not come from the contribution of third parties in the form of borrowings, but from the firm operations, by virtue of the non-distributed profits. Thus, it is a modality of "internal" financing, an internal financial policy based upon the reinvestment of the earnings to cover the financial needs due to the implementation of projects and investments to support the growth of the firm. From a business economics standpoint, the concept of self-financing can be ascribed to a couple points of view, which actually are two ways, strictly interconnect to each other, to analyse such phenomenon of self-financing: the economic perspective and the financial perspective.

1.3.2.1 Self-financing as financial phenomenon

In such usage, self-financing is intended as the capability of the firm to satisfy its financial needs through the retention of the profits without relying on "external" funds such as debt capital. The elements which concur to the formation of self-financing in its financial usage are:

i. profit retention, which is the main component of self-financing allowing to allocate resources, generated by the firm operations, to finance investments, thanks to the funds deriving from the non-distributed profits;
ii. provisions for risk and charges, which can be looked as source of self-financing, since the provisions to set aside to cover hypothetical losses or liabilities may be temporarily utilised to bear the growth up until the occurrence of the event generating the losses for which such provisions have been put to one side;
iii. amortisations, which is the last component of the self-financing as financial phenomenon. It is a means to recover the invested capital, a source to finance the asset; it allows the firm to generate a certain liquidity due to the insertion, in the profit and loss account, of non-monetary costs opposed to monetary revenues deriving from sales.

1.3.2.2 Self-financing as equity phenomenon

Such usage of self-financing is essentially correlated to the equity. Indeed, it is intended as an increase of capital due to a process of earnings retention and thus, dependent on the difference between the profits achieved and the ones distributed in a certain time horizon. The process of earnings retention/distribution is a phenomenon aimed at achieving a twofold goal: on the one hand, the objective is to remunerate the shareholders to make the firm attractive in their eyes and appealing in the financial market; on the other, the purpose is to encourage the growth and development of the firm through a process of "internal" financing.

Ultimately, Italian firms and especially SMEs have levels of capitalizations significantly lower than the European average. Such circumstance is ascribable to multiple endogenous and exogenous factors; without any doubts, the taxation has got a non-negligible impact on the Italian entrepreneur's choices in terms of financing, who prefers to opt for the deductible bank debt, rather than researching alternative sources of funds which are less convenient from a fiscal standpoint. In Italy, the fiscal pressure reaches peaks close to 50%; an exception in the European context, especially if compared to Germany or Spain where the tax weight is respectively 25,8% and 25,6%.

Furthermore, the effects the credit crunch has generated on the economy and its consequences on the capital markets have contributed to exacerbate the current condition related to the choice of sources of funds. The weak economic conjuncture has triggered a vicious circle between banks and firms, in which the credit crunch and the consequent drop of bank loans have highlighted the cultural undercapitalisation in the Italian entrepreneurial fabric, as well as the excessive dependency from the bank channel, where the financial resources are only dispended to those firms showing a suitable level of capitalisation in compliance with the stringent norms imposed by Basel II and Basel III. Therefore, it is necessary to analyse all the other sources of financing which are progressively and unavoidably increasing their weight in the financial structure of a firm and which represent an alternative option to the equity capital.

1.3.3 Going public

Firms in their phase of constitution can choose the features of their legal form and structure in order to reflect the business characteristics and guarantee an alignment between the allocation of the firm's financial resources and the achievement of its goals. Listing on the Stock Exchange is a decision which takes a strategic relevance for a firm: it is not simply a channel of financing, an opportunity to access novel financial means; going public entails a process of reorganization of the ownership structure, of alteration of firm's relationship with stakeholders, both internal like managers or employees and external like suppliers and customers. When a firm lists its shares, it opens to the public, becomes "public", meaning that all the activities of the firm have an interest for a series of entities. Several firms in a certain stage of their life-cycle have to face the decision of going public, pushed by the need to identify novel sources of funds to finance their growth, without impacting on the debt component of their financial structure. Going public entails a multiplicity of benefits capable of enhancing the operating performances of a firm in the long-medium term, however it requires considerable monetary and non-monetary efforts, since it implies a radical organizational and operational change consistently with the requirements imposed by the Authority responsible for managing the market. Moreover, listed firms undergo a strict supervision by the market authority and must guarantee a continuous flow of information and justify eventual misalignments between the actual results and the expected ones. For this reason, the management is required to evaluate all the pros and cons which listing entails and all the implications the status of listed firm implies on its management.

With reference to the needs of the issuer, listing is intended as a response to the desire for collecting new capital for financing relevant entrepreneurial projects, however it can be useful to diversify the sources of funds aimed at circumscribing the firm dependency from debt capital and enlarging the base of capital collection, by ensuring the fragmentation of the ownership among the investors in order not to put the pre-existing model of corporate governance at risk. Listing may even increase the

prestige of the firm, allowing it to enjoy positive repercussions in terms of reputation and bargaining power; and it may enhance the firm's credit standing with the purpose to decrease the cost of capital and, above all, the debt because of both the direct effect connected to the lower financial leverage when the firm issues new shares on the market and the indirect effect leading the firm to enhance its efficiency since the market regulation calls for norms of corporate governance and transparency toward the public, which positive affect the organization and the information system of the firm. Another intangible but non-negligible consequence associated to listing is the availability of a further instrument of motivation and incentive for managers and employees.

As a result of what illustrated, listing entails a series of potential benefits in the form of enhanced efficiency, improved transparency and diversification of the sources of financing since the firm accesses the financial market for collecting new funds. Nevertheless, going public entails diverse duties and potentially critical aspects a firm should take into account. First of all, the bearing of costs associated to the admission on the Stock Exchange. For an Italian firm, such costs comprise: consortium costs, legal expenses, Borsa Italiana and CONSOB fees. The amount of such costs is variable and depends upon a series of factors among which the placement size, the sector in which the firm operates and the size of the firm itself. Furthermore, if on the one hand listing calls for organizational, managerial and informative changes which may enhance the firm efficiency; on the other, the firm may not be capable of succeeding in performing such radical changes. In addition, it is necessary not to neglect that a listed firm is continuously subject to investors' evaluation and other external entities which induce the firm to focus on short-term performances. As a result, the management may be tempted to undertake actions which put the achievement of immediate satisfying economic performances before the development of long term strategy.

What is sure is that, listing entails an alteration of the firm's ownership structure and a consequent dispersion of the existing shareholding; for such reason, shareholders are reluctant to the going public option. Italy looks an anomalous market if compared

with the other European countries; only a circumscribed circle of entrepreneurs opts for listing, they are those who run large firms, characterised by high capitalisation, whereas SMEs tend to be constrained to the traditional debt channel which however, how described at the very beginning of the chapter is not anymore a that much accessible channel of financing. The motivations behind such a scenario are ascribable to the unique peculiarities of Italy both from an economic-financial and socio-cultural standpoint. Several academic studies are aimed to investigate this Italian anomaly. For example, an analysis conducted by Borsa Italiana illustrates how the number of listed firms is below the actual potential in relation to the European panorama. In 2010, the domestic firms listed on the Italian Stock Exchange represent less than the half of the listed firms in Germany, one third of the French ones and almost one tenth of UK ones. Concerning the weight of the listed firms on the overall economy, in 2010 the domestic listed firms produced the 21% of the national revenue and generated the 7% of national employment. In 2009, the contribution of listed firms on the Italian GDP is 8%, whereas the quota of GDP attributable to listed firms in the biggest European economies France, UK and Germany is much larger. Even a classification based upon the firm size shows how the Italian context is an exemption with respect to the European countries: large firms prevail to the detriment of SMEs. Once again, the reasons behind are due to the intrinsic feature of the Italian entrepreneurial context which sees a dense fabric of SMEs that are not able to bear the cost associated to listing and a cultural factor: the genetic tendency of Italian entrepreneurs to resort to the bank channel as primary source of financing and the innate hesitancy to open their ownership to external investors and disclose information on their Balance Sheets. Therefore, if from one point of view Italian entrepreneurship is reluctant to list its firms for the logics illustrated above, the credit crunch has prevented Italian SMEs from accessing to the funds through the bank channel; the intuitive result is that small and medium entrepreneurs are compelled to rely on innovative sources of financing.

1.3.4 Private Equity and Venture Capital

Firms needing financial means to run their operations may resort to capital markets and raise funds through specialised operators. There are suitable financial institutions to foster new ventures entering the market or incumbent firms needing for funds to further increase their business. Private Equity and venture capital operations belong to such sphere. Private Equity is an operation to support firms consisting of a financing modality which combines a service of monitoring and management with a financial operation. Private Equity also refers to an organization designated to perform the aforementioned activities of supplying funds on the one hand, and providing a service on the other, in a suitably combined manner. Strictly speaking, it is the supply of funds in mainly non-listed firms performed by specialised investors with the aim to achieve a return in a long-term time horizon. In US, Private Equity comprises venture capital and buyout operations; in the European usage, it is related to all these operations implemented in each phase of the firm life-cycle, following the primordial stage, whereas venture capital concerns the financing of the firm at the very beginning of its pathway. Therefore, venture capital is a modality of financing pointed towards new firms; it is characterised by potentially significant returns, but risky. This financial intervention entails the subscription of a number of shares or capital investment into the firm allowing the venture capitalist to take control of the business. In other words, venture capital is a composite operation of investment and financing, aimed at supporting the launch and development of firms characterised by considerable growth potential. In the light of what stated above, venture capital is a subcategory of the Private Equity market, a source of funds characterised by its peculiarities, the plurality of investors involved and the typology of firm: three-fourth of Private Equity investments are addressed to family-owned SMEs (AIFI, 2012).

From a theoretical point of view, Private Equity investments can be classified into four classes, by adopting a categorization based upon the motivations behind the need for such modality of financing. They are the followings:

i. early stage financing, meaning operations aimed at supporting the launch of

new businesses and further divisible into three typology of financing dependent on the stage of the firm in its early phase: seed financing, where investors supply funds when the technical validity of the firm's output is not yet demonstrated; start-up financing where supplied funds aspire to finance the beginning of production activity; first stage financing when the production is on its way, however the commercial validity of the output is not yet verified;

ii. expansion capital, investments aimed to endorse the developments of already established and consolidated firms, through capital increase with the purpose of taking the minority shareholding; such a typology of financing determines a strengthening of the firm from a dual perspective: a financial stabilization due to the supply of resources, and a strategic reinforcement. This latter is ascribable to the presence of an institutional investor: the share of ownership implies the identification of strategic common goals, the joint definition of a business plan aimed at outlining the growth and development guidelines of the firm and the discussion among the associates about the criticalities of strategic and financial nature. Additionally, expansion financing can provide novel opportunities of growth through mergers, acquisitions; at the same time, it makes the firm open toward a managerial cultural and less dependent on the single entrepreneur. Finally, expansion financing contributes to build a better relationship between financial system and firm, with a further option of financing not only because of the material resources the investor supplies, but even the signalling role the external investors take on and the improvement in terms of information transparency and corporate governance;

iii. replacement capital, namely minor interventions aimed to support the change of the ownership structure, meaning the substitution of those shareholders who are not anymore intentioned to financially encourage the development of the firms and its projects;

iv. buyout, relevant financial operations with the aim to take over the ownership, favouring the intergenerational transition or the passage from a family

ownership to a managerial one. There are several typologies of buyout operations, the most common are: management buyout when the management is internal to the firm and management buy when external. When such an intervention of taking over is achieved by using substantial borrowed funds, it is called leveraged buyout.

In Italy, the development of a real sector of professional operators specialised in risk capital investment activities dates back to mid-80s, when nine private financial firms grouped to create a trade association, AIFI (Associazione Italiana delle Finanziarie di Investimento), nowadays Italian association of Private Equity and venture capital.
Over the years, the number of operators and their technical profile has been subject to an outstanding evolution in relation to the alterations in the financial domestic context and the regulatory picture regulating the juridical entities utilised to perform investment activities into the risk capital. The development of Private Equity was rapid starting from the nineties and a fast process of growth is still in progress. While at the very beginning, between the 1986 and 1996, a circumscribed and stable number of operators performed risk capital investment activities, an intense increase in the Private Equity sector is visible between the 1997 and 2001. This sudden growth is attributable to the spread of innovative technologies, which attracted financial resources favouring the entrance of new operators in the panorama of Italian Private Equity. At a later time, in 2005, after a period of partial stability, a renewed vivacity in the early stage segment spurred a further development of the sector. In the recent years, the Italian Private Equity showed a relevant growth even if such financial channel is less developed than other countries. The crisis entailed a significant contraction of the financial flows and a clear worsening in the profitability of the subsidiary companies, potential targets of Private Equity operations. Indeed, even though Private Equity funds are not subject to distresses due to economic downturns which generate a depreciation of the assets' value, the potential lowering of the assets' value expose the funds' underwriters to the risk of losses. Thus, even Private Equity funds are going through a critical phase, which compels the sector to tackle non-negligible strategic and reputational risks. Nonetheless, in 2013 the new

investments in the Italian Private Equity amounts to € 3,4 billion together with a collection of capital of € 600 million and an overall number of operations in the amount of 368. The buyout operations represent the market segment to which investors allocated the of resources: € 2,152 million and a corresponding number of 50 deals; the expansion segment collected € 914 million as a result of 138 operations; replacement investments are the least hefty with a capital collection in the amount of € 218 million.

Despite of such statistics, even though the Private Equity is a valid alternative to Stock Exchange as a source of funds, in Italy it is a financing channel chronically underdeveloped. The comparison with the other European powers is helpful to point out the scarce development of the Private Equity in Italy. By looking at both the number of operations and the corresponding collected capital by the Italian Private Equity funds, the Italian gap in relation to the European competitions seems to be unbridgeable: the amount of deals performed by Germany, France or UK is out of reach for the Italian financial system, too much anchored to the traditional bank channel the credit crunch put to the test. In the light of what stated, Private Equity and venture capital may constitute a growth opportunity for the Italian entrepreneurial fabric; however, the challenge is to create a loyalty relationship from both the operators, who have to trust in the Italian entrepreneurship and the Italian entrepreneurs. who should develop a certain propensity towards new economic scenarios and alternative sources of funds supply.

1.3.5 Business Angels

As illustrated in the previous paragraphs, Italian SMEs face severe criticalities in approaching the risk capital market to individuate alternative sources of funds to foster the firm growth and development. Evidently, such issue emerges at the very beginning of the business' life-cycle to a greater extent, since the entrepreneur is not capable of clarifying the potentialities of its business project and, in the other hand, he is not able to satisfy the investors' needs in terms of guarantees they require to safeguard their investment into the firm. For this purpose, new professional figures

of investors developed: the Business Angels, defined as informal providers of funds, who supply their own capital by subscribing a minority shareholding of the firm, their own competencies and skills, their personal experience as managers and their network of relationship to encourage innovative businesses, typically with a considerable technological potential. Business Angels are private individuals such as consultants, managers, entrepreneurs who in the light of their high net worth, choose to invest their financial resources becoming as a matter of fact, shareholders or at least business partners of the firm they invest in. Therefore, Business Angels contribute to the business development in a twofold manner, depending upon the intensity of their involvement into the firm:

i. financial Business Angels, who invest risk capital without being involved into the management of the firm, turning out to be mere financial supporters of the business initiative; in such a case, the Business Angel's intervention is aimed at supplying the necessary funds to guarantee the business advancement without interfering with its management;
ii. industrial Business Angels, who, in addition to their financial contribution to the firm, actively join the management of the firm by making available their intangible resources: know-how, managerial experience and competences for achieving a successful development of the business. In this circumstance, the Business Angels' involvement is even more explicit by holding the office in some business function such as Finance, Accounting and Control, Marketing etc.

Broadly, Business Angels represent a further alternative source of financing, with reference to the traditional bank channel, risk capital investors and Stock Exchange, whose intervention takes place when the other financial operators are not willing to finance innovative start-ups.

The main advantages related to the recourse of such informal investors are the following:

i. the average amount (€ 50,000 to € 500,000) invested into the firm is usually

lower than the funds a venture capitalist supplies and thus, more suitable for innovative SMEs;

ii. the financial involvement of the Business Angel is at the very beginning of the firm life-cycle, in its phase of lunch or development, always more often overlooked by traditional financial operators;

iii. are deemed value-added investors, inasmuch they supply financial resources, technical and managerial competences;

iv. carry out a leverage effect, making the firm more attractive in comparison with the traditional financial channels;

v. finance high-innovative business, characterised by significant uncertainty and instability, which the banking industry may be reluctant to financially support.

Business Angels are a category of investors developed in US, which progressively succeeded in UK, where the entrepreneurial culture is almost comparable to the American system, and in the Netherlands where there is an advanced network of Business Angels. In 1996, the European Economic Community (EEC) organized the first convention of Business Angels' European system, giving a sudden impulse to the development of this category of investors in other European countries such as Germany, France, Belgium and Italy. In 1999, the European Business Angels Network (EBAN) was established, which the Italian Business Angels Network (IBAN) adhered to. IBAN deals with the arrangement of territorial networks called Business Angel Networks (BAN), local structured entities facilitating the match between Business Angels and entrepreneurs looking for risk capital. Although in Italy the IBAN was established in 1999, informal financing already existed, in particular in the traditional sectors of the economy, even though, being informal, eluded the academic definitions. Furthermore, the attitude of discretion characterising the figure of Business Angels makes the analysis hard. In 2012, a report by Venture Capital Monitor (VeM) estimates the amount of investments carried out by Business Angels up to € 30 million, which summed up to € 50 million supplied by venture capitalist, generate a financial flow of € 80 million towards 125 Italian firms in the early stages of their life-cycle. The IBAN average investment is constantly increased over time, reaching

an amount of € 300,000 per deal, whereas the corresponding value of venture capital operations is € 800,000. For what concerns the Business Angels' shareholding is 20% on average; whereas with reference to venture capital, such amount is around 30%. In terms of firm size, Business Angels focus on smaller operation compared to venture capitalists; indeed, for this latter, the firm target exhibits a revenue of € 1 million and a number of employees in the amount of 7. The targets for IBAN are firms characterised by a turnover of € 100,000 and an employment of 3 units.

Thus, Business Angels are a typology of investors which is coming upon a certain success, especially because of the foresight of some Italian managers who can rely on their experience, their fieldwork to identify an opportunity in a project. Therefore, these informal investors supply their own funds and their specialist knowledge and take the traditional financial channels' place, such as banks, in contributing to provide necessary resources to ensure the development of the entrepreneurial fabric. However, despite of the potentiality of this financing alternative, it is unlikely that the figure of Business Angel is able to substitute in full the traditional financing options a SME relies on, to finance its activities because of the Italian entrepreneurial culture which sees the bank debt as primary source of funds.

1.3.6 Crowdfunding

Crowdfunding is an innovative modality of financing. In general terms, it is a process consisting in collecting funds for realizing a particular project by involving a great number of micro-investors. The channel which better spread such typology of financing is the web, which facilitates the collection of funds in the amount of tens of euros. Crowdfunding takes the inspiration from the need to finance initiatives of various nature such as humanitarian tragedies, musical projects or election campaigns. The technological evolution of the last decades, and the development of new interaction platforms such as social networks shifted this phenomenon into the corporate finance sphere. As a result, US and Europe as well were obliged to introduce specific norms to regulate rights and obligations of funds' beneficiaries and donors. In Italy, crowdfunding is not so much developed as other European countries,

mainly because of cultural issues involving both the entrepreneurs, who prefer relying on traditional financing channels, and micro-investors for whom the attitude to utilise Internet as purchasing instrument or financial and economic operations is still an exception. As an example, the percentage of people that habitually purchases online is 65,5% in UK, 50,5% in Germany, 51,1% in France and 20,1% in Italy.

The models of crowdfunding can be classified into the following categories:

i. donation-based, it is a modality of crowdfunding which does not involve any remuneration for the investor; as a consequence, it is generally aimed at funding projects of solidarity, culture or patronage;
ii. donation-based; it is a variant of crowdfunding which remunerate the donator through a non-monetary compensation;
iii. royalty-based; it is a model of crowdfunding which remunerate the investor through a monetary compensation consisting of a share of the products or profits associated to the investment, but without any right of ownership or reimbursement;
iv. crowd-investing; it is variant of crowdfunding for which the financing acts as an investment to which is associated a remuneration in the form of equity, lending or others such as invoice trading.

In line with the aim of this chapter, crowd-investing is the modality of crowdfunding which is worthwhile to analyse more in-depth. The development of crowd-investing is very recent phenomenon. Even though non-existent up until 2012, in 2015 the collection of capital ascribable to such source of financing is $ 28 billion. One of the crucial factors leading the boost in usage of crowd-investing was the financial crisis, which compelled several firms to search for alternative sources. As previously illustrated, it entails a remuneration, mainly in the form of equity or debt; the former case is known as equity crowdfunding, the latter as lending crowdfunding.

Equity crowdfunding consists in collecting capital through the subscription of titles of a firm's ownership via web. In 2015, such industry determined the collection of $ 2.56 billion addressed to start-ups, at a global level. In Europe, the landmark country is

surely UK, where the main platform collected over £ 170 million. In Italy, the equity crowdfunding was introduced in 2012, and both innovative SMEs and start-ups can access. In June 2016, there were 19 authorised platforms and 48 campaigns (19 successful, 17 failed and 12 still in progress). The average target is almost € 317,000 to which corresponds a shareholding of 22,7%, whereas the collected amount is € 5.6 million, too low compared to the potentiality of this market and to the other main European countries.

Lending crowdfunding is a subset of crowd-investing, through which investors lend money via web to physical individuals or firms, in return of an interest and the reimbursement of capital. At a global level, in 2015 the lending platforms collected over $ 25 billion; the market leader is US. In Italy, in 2016 there were 4 active platforms and corresponding amount of collected resources is € 28.3 million.

1.3.7 Debt capital

As previously illustrated, in Italy the recourse of debt capital is the primary choice of financing for the Italian entrepreneurial system which traditionally puts the debt channel first to find out the necessary funds for the implementation of its activities.

The debt capital exhibits characteristic traits in comparison with the equity capital; indeed, by acquiring debt instruments, the investor becomes a financer of the firm or the entity which issued them and it has got the right to receive a remuneration in the form of interest, according to the issue regulation; and, at maturity, the principal reimbursement. Debt instruments differentiate from equity instruments such as shares since, whereas the latter allows the shareholder to participate to the firm management and bestows dividends subordinated to the profitability of the firm itself, the former gives to the instrument holder a right of credit which must be satisfied anyway, at the planned maturity regardless of the profits the firm generates. Actually, debt capital comprises financial debt and commercial debt; this latter concerns the debts the suppliers allow to the firm, namely a payment deferment whereas the former refers to bank debt, loans and bonds. It is easily understandable the diverse nature of a firm debt capital: a financial nature for the financial debt,

which is the debt component discussed in this context, and an operating nature for the commercial debt. At this juncture, the purpose is to analyse the debt structure and to offer an overview of the Italian scenario in terms of usage as financing modality, already partially discussed at the beginning of this chapter where the topic of credit crunch has been discoursed. Then, it will be introduced the corporate bond, the instrument of alternative finance closer to mini-bond, core topic of this dissertation, which will be deeply investigated in the next chapter.

1.3.8 Bank debt

Up to the nineties, the Italian banking system exhibited a pronounced number of specialised public banks. Afterwards, a radical change process led to an alteration of the institutional picture and the sector industrial structure which determined a transition from public banks to private ones. The number of players drastically decreased, the mergers and acquisitions (M&A) caused a radical concentration and development of banks with respect to the remainder of the Italian productive system. The primary immediate consequence of such a transformation is that, the Italian system is bank-centric. To fully realize the weight that banks have on the Italian economic system, it is illuminating a survey the Business Week drew up in 1999, although still present. By looking at a ranking based upon the market value of the first thousand worldwide firms, there are 14 Italian banks out of 31 (45,2%) Italian firms ranked.

UK, which shows a GDP comparable with the Italian one, is present with 91 firms whose which 18 are banks (19,8%); even France, which apart from GDP shows also an ownership structure similar to the Italian one, has got 6 banks out of 43 firms (14%).

A bank-centric system sees the bank channel as primary source of financing and actually the short-term bank credit is the favoured source of funds by the Italian entrepreneurship. The short-term bank debt is intended as a financing whose contractual deadlines do not exceed 18 months and it is classifiable in:

i. direct lending, through which the bank bears a certain and immediate

disbursement in favour of its client who represents the unique legal entity responsible for the reimbursement of the amount and at the stipulated deadline;

ii. self-liquidating loan, for which the financial means to reimburse the loan come from a third party, generally bank client's debtor.

Long-term bank financing is instead characterised by a contractual deadline longer than 18 months. Differently from short-term bank debt, this typology is called purpose credit due to the need for strong relationship between the loan and the investment intended to be financed. The categories of debt belonging to the long-term sphere are:

i. loans, namely a bank agreement consisting in supplying an amount of money in favour of the beneficiary, who is committed to reimburse such amount according to a repayment scheduling plan which establishes the periodicity and instalment to pay;
ii. financial leasing, an agreement between a leading company or lessor and the lessee, through which the former allows the latter to utilise a good for certain time horizon and the chance to acquire the good itself at the of such period at a price stipulated in advance. In other words, the lessor transfers the property of a good he/she owns for temporary usage for an agreed payment.

Over the years, even though the relationship between banks and firms decreased its fragmentation, the system is still affected by a phenomenon for which the Italian entrepreneurs rely on multiple financial institutions. The most representative Italian credit institutions carried out an analysis to try to understand what are the variables responsible for such an entrepreneurial behaviour. The features of financing depend upon an evaluation of a firm's investment projects; as a consequence, an issue of information asymmetry emerges, indeed the tendency of financiers to disburse funds to borrowers will be highly correlated to the information quality the firm is willing to disclose and the relationship it establishes with the bank.

One of the bank intermediaries' advantages is the capability of selecting the best projects, meaning projects with the best risk-return, and the possibility of monitoring the actions undertaken by debtors. The classic theory state that, since the collection of information to evaluate the project quality is initially costly, the relationship protracted over time turns out to be advantageous for both the involved parties. Indeed, the intermediary can gradually amortise the initial cost, by relying on a long-lasting relationship with the debtor, and this latter can have confidence in a customized relationship, more careful towards the firm issues and a cost of financing less burdensome in the long-term. However, the individual relationship between borrower and lender may lead to hold-up issues, namely the firm's dependency on bank. A firm would need much time to find out investors or financiers inclined to support its activities and thus, an interruption in the relationship with an intermediary would put the firm through a liquidity risk, therefore the bank may opportunistically benefit from its almost-monopoly position. Another likely event which may promote an efficient allocation of resources is the opposite scenario, in which the firm opportunistically behave to the detriment of the lender. A bank exposed to a firm's forthcoming default would be constrained to dispense credit to avoid its bankruptcy hoping that the borrower will be able to turn a profit in the long run. Both examples are scenarios which may lead to an enlargement of the previously described situation, for which firms tend to count on multiple banks to get the needed funds to run their activities; the former would attempt to interact with various lenders to elude the hold-up problem, whereas the latter would seek to establish relationships with a plurality of borrowers for achieving risk-hedging purposes.

As highlighted at the beginning of this chapter, the level of indebtedness of Italian SMEs is much higher than the other countries in Europe, especially for what concerns SMEs. One paper drawn up by Bank of Italy in 2012 states that the reliance on bank debt is more than 70% among SMEs whereas it is less significant among large enterprises which however represent the 0,3% of the Italian entrepreneurial fabric. A heavily taxation on firm profits encourages the advantages associated to the debt

usage, in comparison with other sources of funds, since the passive interests are deductible. In Italy, an oppressive tax burden allows firms to benefit from a deductibility effect to a greater extent than elsewhere: such Italian peculiarity substantially clarifies the motivations behind the leverage gap Italy has got when compared to the other European countries. The interest rate banks apply on loans, although decreased with respect to the Sovereign Debt crisis years, is higher among SMEs than large ones; the disparity seems not to depend upon the firm's intrinsic riskiness. By disaggregating firms into classes of risk based on the Cebi-score computed by Cerved, the interest rate spread between small firms and other ones is rather broad for vulnerable firms and very high for healthy firms. Being equal the size, healthy firms precisely are more penalized by the costs for accessing to credit than risky firms, since they do not attain a real recognition of their financial solidity and robustness, in opposition to what happens for larger enterprises.

Therefore, the Italian context sees the recourse to debt capital as primary source of financing, especially for those firms which belong to the SME dimensional category. The commonly utilised typology of debt is the short-term variant, capable of ensuring the survival of several entities otherwise subject to liquidity crisis (Salza, 2012). The bank-centric Italian system is grounded in a strong relationship between bank and firm which usually develops at a local level and it is rooted into the direct relationship between entrepreneur and bank branch. Furthermore, it is ascertained that firms lean contemporaneously on diverse credit institutions: some researches carried out Banca Finanza demonstrate that the average number of banks on which firms rely is larger than three. Surely, the economic conjuncture caused by the financial crisis and the consequent credit crunch creates problems in a credit system which mainly rotates around bank debt; the progressive Italian spread increase in comparison with its European competitors due to the Sovereign Debt crisis and the resulting growth of Italian banks' interest rates puts the credit system in Italy at risk and compelled Italian entrepreneurs to seek alternative finance instruments to guarantee the survival and development of their business. In addition, it is worth recalling that the introduction of additional restrictive standards for the banks, required by Basel III,

aimed at reinforcing the banks' capital requirements to ward off further financial crisis, but which make bank's criteria to dispense loans in favour of firms harsher. However, to prevent a worsening of credit crunch, Basel III calls for the insertion of an adjustment coefficient with the purpose to decrease the banks' necessary regulatory capital, in the event that they lend to firms. In other words, such expedient would spur banks to supply funds to SMEs, avoiding that these loans are subject to the implementation of more severe capital requirements in compliance with Basel III.

1.3.9 Corporate bond

Firms intending to satisfy their financial needs can resort to the bond market to get borrowings from investors for financing new entrepreneurial initiatives or feeding growth need, as an alternative to the traditional bank channel. Over the years, the corporate bond market attracted numerous investors looking for more tempting instruments capable of ensuring a return larger than what guaranteed by government bonds.

Corporate bonds are a debt instrument into which a firm fall, towards investors subscribing them and thus, they are independent of the business profitability. Therefore, the issuer is constrained to reimburse the principal at the maturity and pay a corresponding coupon whether or not the firm is able to generate profit, in contrast with shares illustrated in the equity section of this chapter. Another diversity with reference to shares is that debt capital is only partially subject to business risk; indeed, in the event of relevant losses leading the firm to undertake the business closure procedure, first the firm proceeds to repay creditors and then, with the residual financial means it reimburses the shareholders who hold the equity capital.

The characteristic elements of a corporate bond are the followings:

i. coupons. Periodically, in correspondence with the date of payment, a percentage of the par value of the bond is paid to creditors; the frequency of payment is normally annual, biannual or quarterly. If the bond does not pay a coupon is a zero-coupon bond and the return is ascribable to the difference between the principal received at the expiration date and the initial

disbursement.

The coupon can be fixed, meaning that its constant or not constant rate is predetermined, or floating, meaning that the rate is computed as the sum of a reference rate such as the interbank rates Euribor or Libor, and a spread;

ii. maturity. It is the moment in which the bond expires. Generally, bonds pay back the principal (mostly the par value of the sing bond) at the final maturity, but there are also bonds paying back the principal during their life similarly to bank mortgages. Maturity can be as short as some months, or as long as a century. Typically, corporate bonds mature in some years;

iii. reimbursement modality. It can be bullet, when the principal is paid back at maturity or amortising when it is reimbursed through constant or variable amounts over the bond's life;

iv. seniority. It refers to the priority of repayment in the event of default of the issuer. Each security, either debt or equity, that a company issues has a specific seniority. For example, debt has a major seniority than equity; however, different classes of bonds can have different seniority. Higher seniority corresponds a lower return. Bonds are generally subordinated with respect to bank debt. Furthermore, a bond can be secured if it has got a warranty consisting in the possibility for the creditor to have a compensation in the event of default; or unsecured if it does not have a warranty;

v. currency. The issuers may raise debt in currencies other than the Euro; in such a case, the currency risk also arises, meaning that the return will change depending on the fluctuation of the exchange rate. Firms may raise capital in foreign currency to achieve a twofold purpose: risk diversification related to interest rates and offsetting effect in relation to the currency risk of assets and liabilities;

vi. call and put option. A callable bond is a debt instrument allowing the issuer to retain the privilege, but not the obligation, of redeeming the bond at call dates, before the bond reaches its date of maturity. Putable bond is analogous to a callable bond, with the difference that the former case the investor has

got the right to exercise the option. Clearly, the option will be exercised when convenient for the issuer, in the case of callable bonds, or to the investor, in the case of putable bonds;

vii. convertibility. A convertible bond is a bond with the peculiarity to give the holder the right to convert the instrument into a specified number of shares of the issuing firm's common stock, or other securities; the conversion is exercised when convenient.

For what concerns expiration dates, even though certain corporate bonds have got clauses of early redemption, the majority belongs to the following time intervals: short-term bonds, with a maturity up until 5 years; medium-term bonds, with a maturity in between 5 and 12 years; long-term bonds, with a maturity longer than 12 years. Furthermore, corporate bonds share some fundamental features, among which there are:

i. diversification: corporate bonds offer the opportunity to invest into diverse economic sectors. Within the corporate bond panorama there is a broad heterogeneity in terms of risk and return. Corporate bonds can increase the portfolio diversification of its fixed income component made up government bonds and other debt instruments;

ii. fixed income: corporate bonds can potentially generate a stable income. The majority of such instruments pay fixed coupon with a biannual periodicity. Zero-coupon bonds are an exception since, instead of paying an interest, they are issued at a discount and the entire par value is reimbursed at the maturity. Another exception is floating rate coupon bonds, whose interests depend upon the trend of currency markets and interbank rates;

iii. liquidity: listed corporate bonds are usually more liquid than other typologies of financial instruments and can be sold in every moment prior to the maturity in an active and liquid secondary market;

iv. rating: a synthetic measure of solvency capability; ratings are issued by independent agencies and can be attributed to a single bond or to a firm, in

the short-run or long-run. The 'big-three' most famous agencies are Moody's, Standard & Poor's and Fitch. The rating is basically built on accounting data, mainly debt and liquidity, and qualitative assessment. The main parameters are: probability of default: the higher this measure, the higher is the return on capital required; recovery rate: the percentage of outstanding debts that are received by creditors in case of default.

During the financial crisis, Italian firms increased the recourse to the bond market. Starting from 2009, the amount of issued corporate bonds is € 30 billion per year, with peaks exceeding € 35 billion during the Sovereign Debt crisis and the consequent credit crunch. Although the bond market both in terms of issues and corresponding value is lower when compared to other countries, such an evolution highlights a relevant improvement with respect to the pre-crisis period (2005-2007), during which the value of issued corporate bonds was on yearly average € 19 billion. The bonds placement allowed firms to decrease their dependency from bank debt channel: among the main 250 Italian industrial groups, the 80 groups which starting from 2009 issued corporate bonds have decreased of one third their bank indebtedness, in opposition to the increase by 12% for the other groups (Panetta, 2014). However, the positive dynamic of bond issues hides heterogeneous trends depending on the diverse categories of firm in terms of size. Indeed, the increase of issues is ascribable to a handful of large enterprises, whereas SMEs have reduced the amount of issues; even the number of SMEs which, for the first time, opts for the bond market to be financed is progressively decreased, whereas the one related to larger firms has remained constant. The gap among the firms' size classes reflects the criticalities SMEs meet in issuing bonds with a low corresponding value and thus, scarcely liquid and in turning to institutional investors; furthermore, such discrepancy feels the effect of difficulties in fully evaluating the solvency of SMEs. Therefore, even for such financial instruments is visible a congenital complexity of usage by those firms which do not belong to the larger size class, which however represent the majority of the Italian entrepreneurial fabric, how reminded several times in this context. For SMEs is onerous the bearing of costs and taxation the corporate bond entails, in contrast

with the bank debt whose passive interests are deductible. To solve such a situation, in 2013 the Italian Government promulgated a law aimed at stimulated the SMEs' corporate bond market through a recalibration of the required parameters and the introduction of fiscal benefit in relation to the usage of such financial instrument, the so-called mini-bond.

To sum up, in the last years the financial crisis put the survival of Italian firms to the test and highlighted the vulnerability of SMEs, bringing to light the limitations of their financial means, normally based on the bank debt as primary source of funds. Furthermore, it has been well-known that the worsening of the financial crisis complicated the access to bank credit. Therefore, firms resorted to alternative financing modalities to satisfy their financial needs both on the equity and debt side. In such a context, the Italian legislator has recently intervened to incentivize the usage of unconventional financing channels, as an alternative of bank funds. The purpose is to allow non-listed firms to rely on new instruments to finance their activities and to encourage the involvement of institutional and professional investors into the SME system. Such ambition was achieved through a lessening of the fiscal hurdles related to the issue of corporate bonds by non-listed firms. Thus, the Italian Government led by Mario Monti implemented important legislative modifications with the aim to facilitate the access to the capital market in favour of SMEs, which are the bedrock of the Italian economy, in order to generate a new dynamic impulse to the Italian entrepreneurship, bent by the financial crisis. The next chapter is precisely aimed at illustrating the characteristic traits of this innovative financial instrument by providing a picture of the actors involved in the issue process and carrying out a deep analysis of the Italian mini-bond market.

2. THE ITALIAN MINI-BONDS

This chapter aims at introducing the principal characteristics of the mini-bonds and the financial situation of the Italian market. In particular, the applied definition of mini-bonds limits the analysis to those financial instruments which satisfy all the following requisites:

i. the issuer is a limited company or a cooperative company which is resident in Italy or runs the majority of its operations in Italy;
ii. the issuer is not a bank or an insurance company (in general, a financial company) or it is not part of a banking group subjected to the surveillance of Banca d'Italia;
iii. the issuer is not a vehicle created with the aim to sustain an acquisition or a securitization;
iv. the issue is characterized by a maximum value of 500 million € (considering the cumulated amount in the case of different issues in the same period);
v. the title is not listed on a regulated Stock market which is open to retail investors.

2.1 A New Law

In 2012 and 2013, during the Sovereign Debt crisis, the Government led by President Monti issued four different decrees in order to improve the usage of the credit channels alternative to the bank financing for the non-listed companies, especially the SMEs which hadn't had the possibility of turning to this kind of resources until that moment.

The first decree was the D.L. 83 of the 22nd June 2012, also known as "Decreto Sviluppo", and it was followed by some integrations and modifications introduced with the D.L. 179 of the 18th October 2012 ("Decreto Sviluppo Bis"), with the D.L. 145 of the 23rd December 2013 ("Decreto Destinazione Italia") and with the D.L. 91 of the 24th June 2014 ("Decreto Competitività"). They all were converted in laws few months after their declarations.

The main innovations that the two decrees brought to the Italian credit market are:

i. the removal of any limit related to the ratio between debt and capital owned through bonds for non-listed companies;
ii. the introduction of a specific discipline for the issuing of bonds and similar financial instruments by non-listed companies that include provisions of participation and subordination;
iii. alignment of the fiscal regime applied on non-listed companies' bonds to the one, more favourable, applied on listed companies' and introduction of tax benefit for investments on those instruments;
iv. the modification of the Law 130/1999, to include mini-bonds in the assets that are object of securitization;
v. the possibility for the insurance company to invest the assets eligible for covering the technical reserves in mini-bonds and in shares of common funds that invest in mini-bonds;
vi. the possibility for banks to structure covered bonds with mini-bonds as collateral;
vii. the extension of the special privilege on non-fixed assets determined by the article 46 of TUB also to mini-bonds;
viii. the introduction of fiscal facilitations for collaterals that are eligible to sustain the mini-bonds issuing.

There were two aims: on the one hand, the law wants to facilitate the access to an alternative credit channel for the issuers, and on the other hand, the modifications

that regard insurance companies, common funds and securitization aim at creating a reference market for mini-bonds, making this kind of instruments more attractive for possible investors.

For what regards the subjects, the law excludes only banks and micro-enterprises, those with less than 10 employees and with a total amount of Balance Sheet or turnover that is less than € 2 million. At the same time, the Srl companies have the possibility to issue mini-bonds only if it is considered in their statutes and with the prerogative that only professional investors can subscribe them.

One of the main innovations is the removal of the limit related to the amount of capital collected through bonds. Before the "Decreto Sviluppo", this amount had a roof of the double of the share capital, of the legal reserves and of the available reserves in the last Balance Sheet. This limitation could be bypassed only if the exceeding bonds were subscribed by monitored investors or if the issuer company was listed on the market.

With the modifications of the article 2412, fifth paragraph, of the "Codice Civile" it is permitted to companies that are different from banks and micro-enterprises to issue mini-bonds for an amount that is also more than the double of the share capital but those companies, although they are not necessarily listed on a stock market, have to trade mini-bonds on a regulated market or on a multilateral trading system or to include the right of acquiring or subscribing shares of the company itself. This difference with the past law is fundamental for those companies that have a relatively small share capital but that enjoy the possession of particular brands or in consideration of their production or commercial activities. Since they were particularly attractive for some classes of investors, it was not possible for them to collect high amount of capital through credit instruments as bonds.

In this way, small enterprises have the possibility to benefit from a financing instrument that permits to collect capital sufficient to ambitious development projects, with less requirements than a bank loan and much more margin of decision and action.

At the same time, also investors are protected thanks to the fact that the rules of regulated markets require a higher level of transparency and ensure the opportunity to assume "*informed risks*". In particular, Borsa Italiana created in 2013 a new segment in ExtraMOT market that is called ExtraMOT PRO and is referred in particular to the trading of mini-bonds, accepting only professional investors, as suggested by the name.

Another critical issue related to the bond market before the introduction of the new legislation was a strongly unfavourable fiscal regime for the non-listed companies compared with the ones applied on listed companies and on bank loans. The "Decreto Sviluppo" intervened also in this field to make mini-bonds a more attractive market both for issuers, reducing the tax burden and improving the efficiency of the issue, and for investors, reinforcing their interest about these financial instruments.

The new law equated the fiscal regime applied on private debt market to the bank loans' one, under the condition that mini-bonds are traded on a regulated market or a multilateral trading system. In particular, the main advantage introduced with the D.L. 83/2012 is the fact that the passive interests paid on mini-bonds become entirely deductible from the firm income, as it was before only for big enterprises. Mini-bonds, in fact, do not have to submit the article 3, paragraph 115, of the Law 549/1995, that commands the impossibility of deduction of the passive interests for an amount which is higher than the double of the official target rate *TUR*, determined by the ECB for listed bonds and similar instruments, or the *TUR* augmented of 2/3 for non-listed bonds. Considering the low level of the *TUR* (<1%), before this modification, it was definitively inefficient from a fiscal point of view for the companies to resort to bonds, since the largest part of the interests was not deductible, making the recourse to the bank loans the best option.

The deductibility of the passive interests of mini-bonds is applicable, according the "Decreto Sviluppo", under two conditions:

I. the debt instruments have to be traded on a regulated market or in a multilateral trading system of States that are members of the European Union

or that subscribed to the Agreement on the European Economic Area (EEA) included in the *white list*;

II. in the case of non-listed mini-bonds, investors should be qualified according to the article 100 of TUF and they should not own more than the 2% of the issuer company's share capital, also through trust companies or inserted person. Moreover, the actual beneficiary of the financial incomes should be resident in Italy or in a State that grants the free exchange of information.

As a consequence, only the article 96 of *TUIR* is applied on mini-bond issues and it permits the deductibility of the passive interests in each tax period until the active interests and the related financial incomes are reached. The exceeding part is deductible as maximum as the 30% of the gross operative income.

For what concerns the regime applied on investors, the "Decreto Sviluppo" extended to the non-listed companies the withholding tax on interests and financial incomes. The article 3, paragraph 1, of the D.L. 66/2014 increased the amount of retention from 20% to 26%.

So, the main innovation is the introduction of the exemption from retentions against Italian institutional investors and the exemption of the retention of 26% on interests and financial incomes paid to abroad investors that are resident in States that exchange information with the Italian Treasury and are included in the *white list*.

Furthermore, the "Decreto Destinazione Italia" extended the exemption from the retention of 26% also on interests and financial incomes that are paid to collective institutions that invest in transferable assets whose shares are owned exclusively by investors qualified according to the article 100 of *TUF* and whose capital is mainly invested in those bonds and debt titles. This modification was taken in order to build a specific reference market for mini-bonds and recently many funds dedicated to the collection of capital to invest in SME have been created.

2.2 The Actors

Beside the principal character who is the Issuer Company, it is possible to identify different kinds of actors, whose role has become fundamental.

In fact, the Issuer could need for support about financing or legal matters, or about activities which are preparatory for the issue, or about the placement of the titles on the market. At the same time, investors play a very important role, being the final "clients" of the process. Finally, it is not rare that providers of more specific kinds of support (for example, depository banks or independent rating societies) intervene in the process.

The list could also include all those actors that contribute to the efficiency of the market, as public entities or specialized informative internet portals.

2.2.1 The Advisor

Technically, the advisor is the figure that collaborate and offer support to the company in the crucial moments of a company, as the issue of bonds, when specialized competences and technical and complex operations are requested.

In particular, the advisor can offer consultation about the timing of the issue, the value of the titles, the maturity and the possible coupon rate to associate and, sometimes, it can manage the relationships with institutional entities for the placement and listing of the bonds, such as the arranger, Borsa Italiana or investment funds.

The first step is the pre-screening phase, in which the advisor has to control if the company and the issue are coherent with the current normative and, in particular the attention will be focused on:

i. the respect of the dimensional factors, in terms of number of employees and turnover;
ii. congruity of the legal status;
iii. availability of the last Balance Sheet inspected by an independent entity.

At this moment, the advisor analyses the cost-benefit ratio for the company, considering the interests and the targets of the client. It could be extremely useful to build up a Business Plan to clarify and determine concretely the objectives of future investments. Furthermore, the verification of the sustainability of the whole operation for the company is fundamental and it can be applied through a future Financial Statement analysis, comparing the cash flows related to the financing service with the operational cash flow forecasted in the Business Plan. Moreover, it is necessary to check the company in qualitative terms, caring about the experience of the management, the existence of an efficient monitoring system and the motivations for the issue.

The advisor intervenes also in the creation of the *information memorandum*, which is a document dedicated in particular to investors and rating societies and includes information about:

i. the reference market;
ii. the operative structure;
iii. the historical data;
iv. the development plans.

This information is extremely useful in the valuation of the appeal of the issue and it is transmitted to investors to capture their interest.

Furthermore, the advisor has to assist the company also during the phase of dematerialization of the titles and submitting the ISIN request, and its role becomes fundamental during the structuring of the whole debt operation, when a good level of communication between bank and advisor is important for a balanced choice of the element to be collocated on market and a satisfying conclusion.

Finally, the advisor, sometimes in collaboration with a legal office, manages to write the Admission Document or the Informative Prospectus, which will be shared with Borsa Italiana or directly to the investors.

2.2.2 The Arranger

The *arranger* assumes the role of financial coordinator of the issue process and represents also the interface with investors or Borsa Italiana for the structuring of the operation and the placement of the titles on the market. Basing on the information produced by the company and the advisor, the arranger contacts the investors and presents the *Information Memorandum* and the opportunity of investment. Thanks to the information collected during this process, the arranger and the company are able to discuss and define precisely the characteristics of the bonds, with a particular attention to the entity of the coupon rate and other details that impact on the expected remuneration.

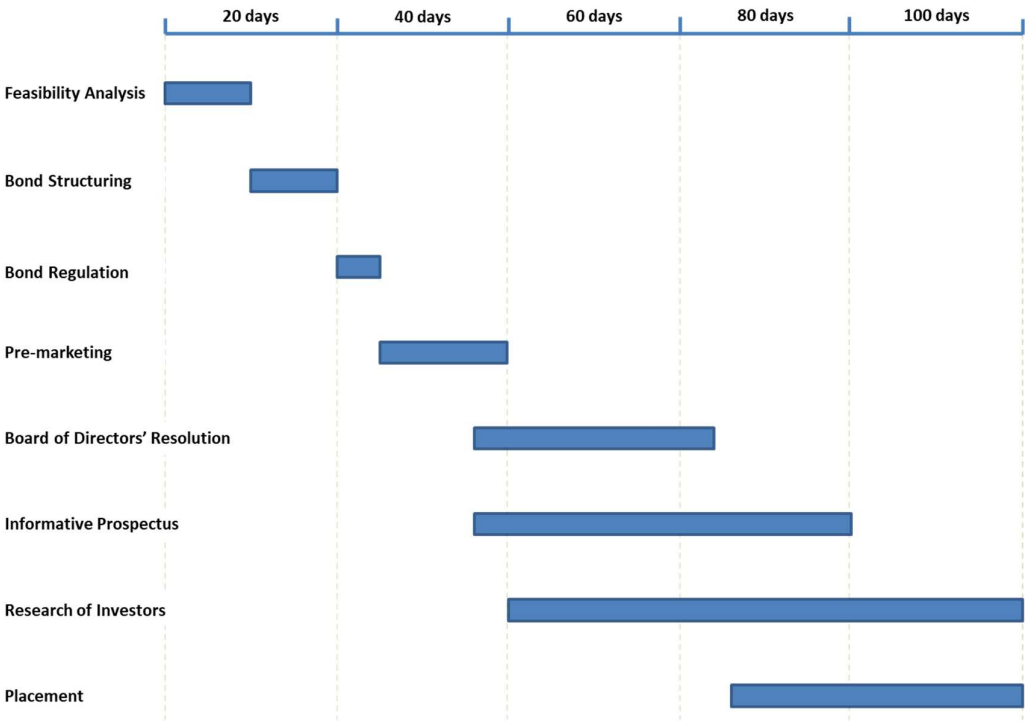
In the merit of the credit analysis, the arranger pays close attention to some indicators, such as the Debt/Equity ratio, the Debt/EBITDA ratio, the Interest Cover ratio and Debt Service Cover ratio, whose reference value can differ basing on the assumed target and the investment choices of the involved actors.

Since, generally, the value of the whole operation is relevant if compared with the current equity of the companies, the arranger will carry out a detailed analysis of the presented Business Plan, considering all those factors that are considered as fundamental to understand the possibilities of a success. In particular, it will be necessary to take in consideration the historical data and the historical performances of the company, from which it is possible to analyse the reliability of the Plan, and the coherence of the industrial plan and the cash need.

Once all these steps are overcome, the arranger develops the structuring of the issue, supporting the issuer company in preparing:

i. the due diligence, in collaboration with the rating society;
ii. the definition of the amortising plan, coherent with the cash flows and the programmed investments and related to the choice between a bullet or amortised repayment;
iii. the improvement of supplementary extra-remunerations as warrants or call/put options.

Figure 2.1: mini-bond placement timetable. SOURCE: Camera di Commercio di Milano



At this point, the company and the arranger start preparing the regulation of the bond, that implicates the revision based on the market standards requested by investors.

They have also to determine the minimum denomination of the titles, the seniority of the issue and the placement window period.

Finally, the arranger turns to the external environment developing also a market analysis with the aim of creating a benchmark for the sector in which the company operates and promoting a sort of marketing operation with one-to-one or road-show presentations to attract possible investors and ensure a satisfactory level of collected capital.

At the end of all these steps, the bonds are ready to be placed on market.

2.2.3 The Legal Agencies

Legal Consultants cover a role which is at the same time fundamental and extremely delicate, since they have to check the respect of the limits determined by the current normative, the accuracy of the applied procedures and the implementation of the contracts between the two parties and the bond Regulation.

They should identify the best choices to safeguard the investors offering a good level of protection and guarantee and, above all, they should avoid any kind of reasonable notification directed to the issuer company.

Furthermore, Legal Consultants can act under the request of investors, which could be interested in a legal due diligence to verify the actual situation of the issuer company.

2.2.4 The Rating Company

The rating generally is a judgment of the company's capability to fulfil its own financial commitments. In this way, the credit rating could be used to determine the risk of insolvency for many different agents, as Sovereign Debts or public financial instruments, single companies or groups of companies, bonds and structured financial titles.

In 2009, the European Regulation CE 1060 intervened to modify the legal environment in which Rating Agencies operate, trying to strongly reduce the conflict of interest and to ensure a high quality of credit ratings and a good level of transparency. These actions were necessary also considering all the failures of the rating system that came to light during the last Great Recession and that were partially responsible of the weakness of the whole economic environment.

In EU, only the authorized Agencies can publish ratings and they are all regulated and controlled by the ESMA, European Securities and Markets Authority, which imposed to all the Agencies interested in operating in the EU to be registered as CRA (Credit Rating Agencies). The registration is a long and complex procedure, in which the Agencies must respect high organizational and governance standards with the aim at

guaranteeing the integrity, the objectiveness and the transparency of the rating process.

There are many different active Rating Agencies in the European system, but the most important ones are the "three sisters": Standard & Poor's, Moody's and Fitch. They emit judgments on all the five classes recognized by the ESMA, which are non-financial companies, financial companies, insurance companies, Sovereign Debts and public finance and structured finance. At the same time, there is a lot of smaller Rating Agencies that are focused on national dimensions and often this is the case of the ones that take in consideration mini-bonds.

Although ratings are not mandatory for a mini-bond issue, they are often requested by issuer companies to provide the market with a further informative signal, but it is not so rare that the investors themselves are the applicants. In this last case, they are called "unsolicited ratings". Furthermore, ratings could be published or they could remain a private informative asset, distinguishing between "disclosed" and "undisclosed" ratings.

For what regards mini-bonds in Italy, the two leading Agencies are Cerved Rating Agency and Crif Rating Agency, which constantly monitor the issuer companies and adjust their opinion on the company itself and on the placed bonds.

With the new interest coming from private debt funds, which stared in 2015, the rating trend has become stronger since this kind of investors often requires detailed information such as ratings, although sometimes the same funds develop an internal rating system.

2.2.5 The Investors

The normative determines that only "professional" investors can access to the mini-bond market, which means that this segment is referred to those who have the necessary experience, the knowledge and the competences to understand and value in a proper way the risks that they are going to undertake.

It is important to underline that the different laws have never refused the access to the market to physical individuals, at least for mini-bonds issued by S.p.A. companies.

At the same time, for what regards Srl companies, the investment is limited to "monitored" agents, who will be accounted jointly about the bonds if it is sold to other kinds of subjects.

The most common investors are represented by the OICR ("Organismi di Investimento Collettivo del Risparmio"), which are open-end and closed-end funds, speculative funds and pension funds. Moreover, banks, insurance companies, SIM, social security funds, regional financial companies and foundations often trade on the mini-bond market, thanks to the high flexibility of these instruments that guarantees a good level of adaptability to all the different types of investors.

2.2.6 The Registrar Agents and the Custodian Banks

In the mini-bonds market there are also two further kinds of agents: the Registrar Agent and the Custodian Banks.

The former is not necessarily represented by a bank and offers an assistance role for the companies in all the bond dematerialisation procedures, with as counterpart Monte Titoli, or during the attribution of the ISIN code, in collaboration with Banca d'Italia. These are quite standardised processes, but companies often delegate the development to outsourcing specialised institutions to minimize costs and time to market.

At the same time, Custodian Banks represent an important agent in the mini-bond market, since they safeguard the titles in the moment in which they should be dematerialized, which is a mandatory process if the mini-bonds are going to be placed on the Stock Exchange (ExtraMOT PRO market).

2.3 The ExtraMOT PRO Market

The ExtraMOT PRO market was born in the February of 2013 as professional segment of the ExtraMOT market of Borsa Italiana on which it is possible to place project bonds, bonds, financial promissory notes e participatory instruments.

It is not a MIFID Directive regulated market, but a multilateral trading facility which is active with an electronic trading platform, with automatic settlement procedures

and eligible for all the banking financial operations to the European Central Bank. Considering these characteristics, the market is accessible only for institutional operators.

On the other side, ExtraMOT PRO is open to the issues of capital companies, cooperatives, insurance companies, public entities and their subsidiaries and it is permitted to them to periodically communicate with investors in a transparent and standardised way.

The cost of admission for each instrument is relatively small (€ 2,500 una tantum) and it is independent from the duration of the bonds. Furthermore, it can decrease in cases of dual listing (contemporary listing on other markets) to only € 500 and some figures, as the listing partner and the liquidity provider, are not mandatory as it is on other segments.

The flexibility comes from the admission requirements that are less tightening, compared with the regulation of the MOT market, which is open also to retail investors. This situation determines a higher speed and lower indirect listing costs. Furthermore, the informative and infrastructural context is adapted on the investor's needs. For example, the Informative Prospectus or the Admission Document can be published in English or in Italian, it is possible to assume the domestic accounting principles or the international ones and it is possible to be or not to be supported by a specialist for what regards the liquidity.

The list sponsors the ExtraMOT PROLinK, which is a centralized web platform hosted on the website of Borsa Italiana where investors and companies can meet and have access to all the relevant information.

Recently, in 2016, the segment has introduced a new direct distribution procedure, known as "Procedura OPS", which has been already used since 2012 for the issues of BTP Italia bonds. It gives the permission to the issuer company to place mini-bond on the technological platform of ExtraMOT PRO through an appointed participant operator, accessing directly to a wide network of intermediaries interconnected with the market, which is an aggregator of all the banking distributive networks.

There are many different compliances to be fulfilled for the listing on the ExtraMOT PRO segment: the Admission Document, the Balance Sheet publication, the ISIN code attribution, the Admission Requirement and some other post-listing compliances.

2.3.1 The Admission Document

The issuer companies have the obligation to publish an Informative Prospectus or, as alternative, an Admission Document. The Prospectus should be aligned with the instructions of the "Regolamento Prospetti 809/2004", that defines the information that should be included, the Prospectus model and some other aspects related to the publication and the circulation of the document. Generally, the Prospectus is preferred by the big companies that issue bonds for a value which is higher than € 200 million, while the Admission Document is suggested for issue of a lower value and is written according to the rules communicated on the website of ExtraMOT PRO. In both the cases, the company is invited to send Borsa Italiana a draft of the official document to accelerate the acceptation of the admission request.
The regulation of ExtraMOT PRO determines the presence of some fundamental information inside the Admission Document:

i. individuals responsible for the writing of the document;
ii. the risk factors that influence the issuer company and the financial instrument;
iii. information on the company, its organization structure and the shareholders' composition;
iv. financial information about the assets and the liabilities, financial situation, gains or losses of the previous accounting year or, possibly, the last Balance Sheet;
v. the characteristics of the financial instrument;
vi. admissions to negotiations and trading procedures;

Of course, if the company is already listed on the Stock Exchange, the first four pieces of information are not requested anymore.

In particular, the risk factors taken in consideration are:

i. the risks related to the indebtedness;
ii. those related to the industry and the market in which the company operates;
iii. those related to the covenants inserted in the mini-bond regulation;
iv. those related to possible legal actions against the company;
v. risks related to the group the company belongs to;
vi. those related to the current economic situation;
vii. the liquidity risk in case the investors are not exclusively institutional.

A further important information that the issuer company is supposed to insert in the Admission Document is the investment program in which it is explained how the capital collected thanks to the mini-bond will be used.

2.3.2 The Balance Sheet Publication

The issuer company is requested to publish at least the last two Balance Sheet and, if existing, the Consolidated Financial Statement. In particular, the most recent Financial Statement has to be analysed in a legal revision by an auditing society or by an entity that belongs to the Register, in respect of the normative described in the D.L. 39/2010.

Moreover, the company has to insert on its own website a section dedicated to the investors, generally called “Investors Relations”. On this webpage, it is mandatory to publish the Informative Prospectus or the Admission Document at least the evening before the admission to the trading, which generally is two or three days before the forecasted date of listing on the ExtraMOT PRO.

2.3.3 ISIN Code Attribution

The ISIN code is a universal identifying code that is associated to the titles. The company has to obtain the dematerialization of the titles with the help of an authorized entity, as the Monte Titoli, and to require the attribution of the ISIN code

to Banca d'Italia. These requirements are common also for the mini-bonds that are not listed on the Stock Exchange. The application can be sent in a standard form through Internet to the service of Banca d'Italia that is dedicated to the codification of the financial instruments.

Within 48 hours, the company obtains the access code for the online application FEAT, where it is possible to demand the ISIN code assignment. The company has to attach also the bond Regulation, the memorandum of the administration authority that approved the mini-bond issue and a declaration in which the company accept the role of subscriber performed by the institutional investors.

2.3.4 The Admission Request

The issuer company has to compile on a headed sheet the admission request, basing on the form provided by Borsa Italiana, with the sign of the company's attorney. The document should include a summary of the principal characteristics of the titles, according to the schemes suggested by Borsa Italiana. Furthermore, the Prospectus or the Admission Document should be attached or, as alternative, the company has to indicate where it is possible to find them. At the same time, the document should also individuate an informative referent and of his substitute and the website where the informative is made available.

The appointment of a market maker is discretionary, although sometimes useful.

To be admitted to the trading, there should be the possibility to liquidate the titles on Monte Titoli or on Euroclear/Clearstream. For this reason, during the investigation of Borsa Italiana, immediately after the request of the ISIN code, the company should demand the centralization of the titles.

At the end, the announcement of the occurred admission of the mini-bond to the negotiation is published on ExtraMOT PRO and the trading will start the first working day after this event.

2.3.5 Post-listing Compliances

After the issue of the mini-bond, the issuer company has the oblige to periodically publish on its website:

i. the annual Financial Statements, subject to a legal revision within 6 months after the end of the accounting year;
ii. the new rating value in case of updates;
iii. information about the company that could influence the price of the mini-bond, also known as “price-sensitive” information;
iv. modifications of the issue conditions, considering characteristics or changes in the rights in the hand of subscribers;
v. a technical informative document about the titles, which should include all the information on the coupons’ computation, the potential early repayment and other possible options, that must be communicated also to Borsa Italiana. In case of early repayment, the company must inform the interested parties at least 3 days before the operation.

2.4 The Placement Cost

The analysis of the placement costs is extremely important in the feasibility analysis of the companies, particularly in this economic period in which all the loan interest rates are low. That is the reason why the discussion about the “convenience” of the issue of mini-bonds, compared with the banking loans, is actual and interesting.
As said before, it is important to notice that the issuing costs are deductible from the Italian taxes and the total amount is strongly influenced by the complexity of the issue, by the characteristics of the company and by the necessary efforts for accessing the market.
The principal cost items, in the case of a placement at institutional investors, are:

i. eventual notarial acts, for example the modification of the Statute of the company to include the possibility of bond issues, and the record of the contracts;

ii. the ISIN code request to Banca d'Italia, in case of dematerialization of the titles, and centralization of the titles in the hands of an authorized entity (for example Monte Titoli, which is part of the London Stock Exchange Group); generally, this operation determines an initial cost of € 2,000 and an annual cost of € 1,500; the costs of centralized management of Monte Titoli are published on the website in the service to issuers section;
iii. the certification of the Balance Sheet, whose annual cost is included between € 5,000 and € 15,000 for the SMEs, according to their turnover;
iv. eventual advices offered by a financial advisor, whose costs, according to a survey, is included between the 1% and the 2.5% of the placed capital;
v. the eventual appointment of an arranger for the identification of the investors, whose una-tantum cost is included between the 0.5% and 1.5% of the placed capital;
vi. the advising activities offered by a law firm for the redaction and verification of the documents;
vii. the eventual request of listing on a Stock Exchange;
viii. the management of the Internet website for the Investor relations section;
ix. the eventual issue of a rating, whose cost is included between € 15,000 and € 20,000 for the first year for SMEs, while it decreases of the 40% in the following years; for large companies, the initial cost is around € 40,000.

2.5 Mini-bond in Europe

Although the other Members of the EU do not dispose of an identical financial instrument, it is possible to identify bonds similar to the Italian mini-bonds also in the rest of the world.

2.5.1 United Kingdom

In the United Kingdom, for example, since the 2010, the London Stock Exchange has activated a trading platform per the bonds dedicated to retail investors, also known as Order book for Retail Bonds (ORB). As suggested by the name, it is a list regulated

by the MiFID Directive which is open also to the little investors, differently than ExtraMOT PRO. The admission requisites are the same of the principal Stock Exchange list. The investment denomination is much lower, even £ 100, and it cannot be higher than £ 10,000: for this reason, mini-bonds are considered as a good benchmark. Furthermore, the presence of a market marker is mandatory to ensure an acceptable level of liquidity to the titles.

At the end of 2016, the ORB market accounted 107 issues in its track record, although only 3 were issued in the same year. The ORB's managers estimate that, according to their analyses, the market can be efficient for the issuer companies that need to collect capitals for a value higher than £ 20 million.

Besides the listed mini-bonds, in the United Kingdom there have been some other issues also of non-listed titles. Some of them recorded different problems getting involved also many investors who were attracted by the high previsions of profit. In particular, in 2016 one case has interested the media: the group Providence Financial, which was active in the factoring services for SME, after the issuing of two mini-bonds with coupons of 7.5% and 8.25% through a vehicle company with domicile in Guernesy, was not able to repay the debt to the 825 British investors for an amount of 8 million pounds. Currently the group is under extraordinary administration.

In United Kingdom, it is possible to place mini-bonds directly through the Internet. According to the "Pushing Boundaries: The 2015 UK Alternative Finance Industry Report", published by the Centre for Alternative Finance of the Cambridge University, in 2015 6.2 million pounds have been collected through the placement of mini-bonds on crowdfunding platforms, with a growth rate of 47.6% compared with 2014. The average value of each operation was 880,000 pounds and Crowdcube has been the principal platform, collecting £ 15.4 million until the 2016 during 13 campaigns that attracted more than 3700 investors. Moreover, the exploit was in the first days of 2017 with a record placement of mini-bonds for a value of 10 million pounds issued by BrewDog, an artisan beer producer.

2.5.2 France

In France, the financial markets dedicated to the SMEs' bond issues are three: the segment B and C of the regulated market Euronext and the Alternext, which is a multilateral trading system. These markets address in particular professional investors, more than to retailers and in 2012 they introduced a new option to issue mini-bonds known as "Initial Bond Offering".

The minimum denomination of the mini-bonds is € 100, with a duration that must be included between 5 and 10 years. Moreover, the total amount of the issue should be at least equal to € 5 million on Alternext and € 10 million on Euronext.

The issuer company must respect some requisites for the placement of the titles. First of all, it has to publish an Informative Prospectus certified by a qualified Regulator. If the company is not listed on the Stock Exchange or has a capitalization less than € 100 million, a public rating is necessary. Furthermore, the company should communicate the last three Financial Statements.

For the listing of the titles a sponsor is requested in the pre-listing phase on Alternext, to ensure that the company respects the informative requisites after the placement. The presence of other two actors is required: the advisor and the "avocat". The former has a support role in writing the document and the structuring of the whole operation. The latter is specialised in legal matters. The retail investors are able to invest in these financial instruments through banks and broker during a subscription window whose duration is between 3 and 5 weeks. Once the subscription is finished, the titles are admitted to the listing.

At the end of 2016, 38 bonds were listed on Alternext Paris and 43 bonds similar to mini-bonds were listed on Alternext Brussels. Other 45 titles listed on Marchè Libre, a non-regulated market, can be considered.

In the April 2016, the French Government has promulgated a new normative, known as "Ordonnance 2016-520 du avril 2016 relative aux bons de caisse", that allows the placement of bonds through Internet on crowdfunding platforms and the registration of the investment contracts through the blockchain technology, which is the fundamental base for the operation of the cryptocurrencies, as Bitcoin for example.

This opportunity has immediately interested BNP Paribas Securities Services which has announced the creation of a marketplace based on this technology and open to all the issuer companies.

2.5.3 Spain

In 2013, in Spain a non-regulated market was dedicated to the debt titles of SMEs. It is called “Mercado Alternativo de Renta Fija” (Marf) and it is managed by the “Bolsa y Mercados Espanoles”.

On Marf both bonds and promissory notes are listed, but bonds are dedicated only to professional investors and have a minimum denomination of € 100,000, with the possibility to be issued only by limited companies.

The issuer companies have to satisfy some requisites to be admitted to the lising: they have to be enrolled on the companies Register, to provide the corporate Statute and the approval of the issue, to publish the last two Financial Statements and the risk informative or the solvency informative, both produced by an authorized agency. Furthermore, after the listing, the issuer has to publish also the price sensitive information.

During the issue process, the advisor supports the issuer in respecting the current normative until the maturity of the bond. The rating is not requested, thanks to the information about risk and solvency, and at the same time the in intervention of a liquidity provider is not mandatory on the secondary market.

At the end of December 2016, 76 mini-bonds were listed on Marf and the issuer companies were 29.

2.5.4 Germany

In Germany it is possible to find lists dedicated to the debt of SMEs (Mittlestand) in many financial Stock Exchanges: Entry Standard in Frankfurt, Primämarkt in Düsseldorf (which is split in three different segment according to the reference spread), Mittlestandbörse Deutschland in Hamburg-Hannover and M:access Bond in Müchen. In Stuttgart, there is a further non-regulated market which is composed by

several segments. One of them is dedicated to the mini-bonds and it is known as Bondm. This market was opened in 2010 and allows the trading of debt titles issued by SMEs and offered both to retail and professional investors. The direct subscription on the primary market is allowed without any kind of institutional underwriter also through an electronic channel ("Bondm subscription box") that has to cover at least the 50% of the issue to allow retail investors to have the same opportunity to subscription compared with professionals' one.

The Bondm listed titles have a minimum denomination of € 1,000 and they can be subordinated to other financial liabilities of the issuer if there is a public rating of the issue.

The admission to the Bondm market has some requisites: the publication of an Informative Prospectus approved by a Market Authority, the appointment of a "coach", which is a financial intermediary that supports the company along the operation and guarantees the presence of some informative requisites, and the presence of a Financial Statement in broaden form submitted to a certification.

Il Bondm has a market-making system to assure the liquidity of the mini-bond.

In Germany, mini-bonds has had a trouble history, with many different defaults: on 164 issues, at the end of 2016, there has been 34 cases of failure, 8 cases of debt restructuring and 13 cases of insolvency.

For this reason, the financial instruments called Schuldscheindarlehen (SSD) is often taken in consideration as a possible alternative. The origins of the SSDs go back to the 19th century but in the last few years it has established itself as an important alternative in corporate financing on the capital market alongside syndicated loans and corporate bonds. The SSD is generally understood as being a special form of loan contract pursuant to section 488 et seq. of the German Civil Code (BGB). Similarly to a conventional corporate bond, an SSD is therefore a favourite mid to long-term financial instrument used on a regular basis by many companies. Compared with issue of a corporate bond, this kind of instruments is far less onerous in terms of administrative requirements. Publicity and documentation costs are much lower,

since the Informative Prospectus is not required, and an external rating is not essential.

Unlike mini-bonds, the Schuldscheindarlehen cannot be listed on the Stock Market but instead are traded over the counter (OTC) in the interbank market. The Schuldschein, which is issued through the SSD, thereby serves as a certificate of indebtedness evidencing the underlying loan vis-à-vis the Schuldschein issuer. This Schuldschein must be signed by a legally authorized signatory of the debtor.

The main characteristic of the SSD is that a company collects capital from a limited number of investors, usually German banks, and that the financing is inserted in a note that can be sold to any investor without formal obliges of communication to the debtor. At the same time, the SSD is admitted as a collateral for the refinancing operations by BCE.

Furthermore, this instrument is not valuated as a mark-to-market for the subscriber for accounting purposes, unlike mini-bonds that, even when subscribed in private placement, are subjected to a periodical valuation according to the comparable titles.

Until the publication of the "Decreto Legge n. 3" of 2015, also known as "Investment Compact", the SSD was potentially accessible only for Italian issuers with a foreign financial vehicle. At the moment, the fiscal regime of the interests and of the capital gain for the foreign investors is neutral also for SSDs issued by Italian entities.

Until the September 2017, only few Italian companies, as Telecom Italia and Pirelli, has resorted to Schuldscheindarlehen and always through controlled foreign companies, but now there is the opportunity for Italian SMEs to substitute mini-bonds with this kind of instruments.

2.5.5 Norway

In Norway, since 2005 there is the possibility to intervene on the Nordic ABM, a non-regulated market dedicated to the trading of bonds and commercial papers with a maximum maturity of 12 months.

The list is divided into two different segments: the first one is open only to professional investors and dedicated to titles whose single nominal value is higher

than kr 500,000, while the other is accessible also to retailers and dedicated to the rest of the titles. The minimum denomination is equal to kr 2 million and the admission procedure is very similar to the ExtraMOT PRO's. At the end of 2016 it was possible to find more than 1200 mini-bonds listed on Nordic ABM, with only 80 issued by industrial and commercial companies.

3. MINI-BOND MARKET IN ITALY

In the previous chapters, the aim of the analysis was to understand the motivations behind the choice of the Italian Government of introducing norms which could regulate the usage of innovative financial means to facilitate SMEs in the collection of funds. In particular, the last chapter focused on the mini-bond, as alternative instrument by way of which firms can satisfy their financial needs, through a substantial description of its intrinsic features and the "value chain" characterising the mini-bond market. In this segment, the study aims at analysing the status of the mini-bond market in Italy up until September 2017. In spite of the expansionary policies implemented by the European Central Bank (ECB), the mini-bond market counts 350 issues to which correspond an amount of € 14,619.247 million, and a number of issuers amounting to 258. The chapter is divided into two macro-sections: the former deals with the issuers, namely firms which issued mini-bond, based on a specific methodological definition, exhaustively depicted in the Section 1.1; the latter goes through the features of the issues by analysing the characteristic variables of a mini-bond described in the previous chapter. The purpose is to identify the characteristic traits of such instrument's issuers and possible trends with respect to the prior year. It is worth revealing in advance that the contents of the analysis in this chapter take into account the mini-bond market as a whole, discriminating between large enterprises and SMEs, since such debt security principally aims to provide SMEs with a valid alternative to the bank channel as source of funding. Consistently with this latter clarification, the next chapter focuses on SMEs only and it is aimed at evaluating how the issuers employ the capital collected through the mini-bond issue.

3.1 Methodological definition

The study takes into consideration all the bond instruments, with any maturity and financial promissory notes with a maturity within 36 months issued by Italian firms, in particular SMEs. The reference normative laws are contained in the decree law 22nd June 2012 no. 83 ("Decreto Sviluppo") and the subsequent modifications and integrations adopted by the decree law 18th October 2012 no. 179 ("Decreto Sviluppo Bis"), decree law 23rd December 2013 no. 145 ("Destinazione Italia") and decree law 24th June 2014 no. 91 ("Decreto Competitività"); whose contents have been analysed in the prior chapter. Mini-bond is intended as debt instrument issued by firms on the securities market, and subscribed by qualified and institutional investors, which offers a contractually stipulated remuneration by means of periodical coupons. Such typology of instruments is well-known to firms and investors, however up until 2013 they were means of financing almost exclusively utilised by listed firms. The implemented methodological definition circumscribes the analysis to mini-bonds and financial promissory notes satisfying the following prerequisites:

i. the issuer is a limited company or a cooperative company headquartered in Italy or, alternatively, whose business is mainly performed in Italy;
ii. the issuer is not a bank or an insurance company or in wider terms, it is not a bank group subject to Bank of Italy's vigilance committee;
iii. the issuer is not an entity with the only purpose of carrying out an acquisition or a securitization aims;
iv. the issue is characterised by a maximum amount of € 500 million, to be considered as cumulative for diverse issues which occur in a close time period;
v. the security is not listed on a regulated Stock Exchange, open to retail investors.

It is worth highlighting that the boundaries enunciated above do not take into account size variables of the firm such as revenue or assets' value. However, since the primary goal of this study is to focus the analysis on mini-bond's role as source of financing alternative to the bank debt mainly designated to SMEs, the statistics

distinguish between SMEs and large enterprises, with a focus on the issues whose corresponding amount is less than € 50 million. How pointed out in the first chapter, in Italy the need of innovative financial instruments rose up in a context where, the financial crisis and the consequent credit crunch threatened the financial stability of SMEs. Despite the expansionary policies the European Central Bank (ECB) implemented in the last 3 years, the mini-bond market has carried on growing with new issuers and issues, as an evidence of its effectiveness for differentiating the sources of funds, especially in the long-term, and as a proof of the deep interest that investors have towards this asset class.

The research of the needed data has been carried out on different internet platforms. The first step was the collection of information about issues. In this case, Bebeez.it and MilanoFinanza.it were the two principal sources, considering their attention to all the issues, both of relevant and smaller companies. Another fundamental source of information was the official site of the ExtraMOT PRO market, which publishes a list of the issues placed during the current day to which also some details on the issuers are attached. At the same time, many articles about mini-bond issues were found on "Il Sole 24 Ore" and on the financial columns of relevant newspapers such as "Corriere della Sera" and "La Repubblica". In particular, they published information about the most relevant issues in terms of capital raised and of importance of the issuer company.

Further news on mini-bond operations came from partners and collaborators of the "Osservatorio sui Mini-bond del Politecnico di Milano". These data were fundamental to confirm the collected information and, sometimes, to identify new issues.

The second step was the analysis of the issue information and the creation of the database. In the major part of the cases, the starting articles were not sufficiently detailed. For this reason, it was necessary to carry out the research also on the official sites of the issuers. Generally, the companies offer to investors a dedicated section called "Investor Relator", into which it is possible to collect many data about the company itself and its financial situation through the publication of the Financial Statements. Furthermore, in many cases these sections contain also the press

releases about the principal financial operations, such as bond issues, with the descriptions of the main characteristics.

Contemporary, an important role was played also by AIDA and Telemaco platforms. In particular, AIDA, which is a software developed by Bureau Van Dijk, permitted to identify the principal characteristics of the Italian issuer companies, such as the turnover, the number of employees, the financial indicators and the master data. At the same time, Telemaco is an internet platform owned by the Italian Company Register which contains all the company profiles of the registered firms and the filed minutes of the board meetings. The last ones, in particular, were a fundamental source of information about the issues, since many companies are not public and prefer not to openly communicate details about their financial operations.

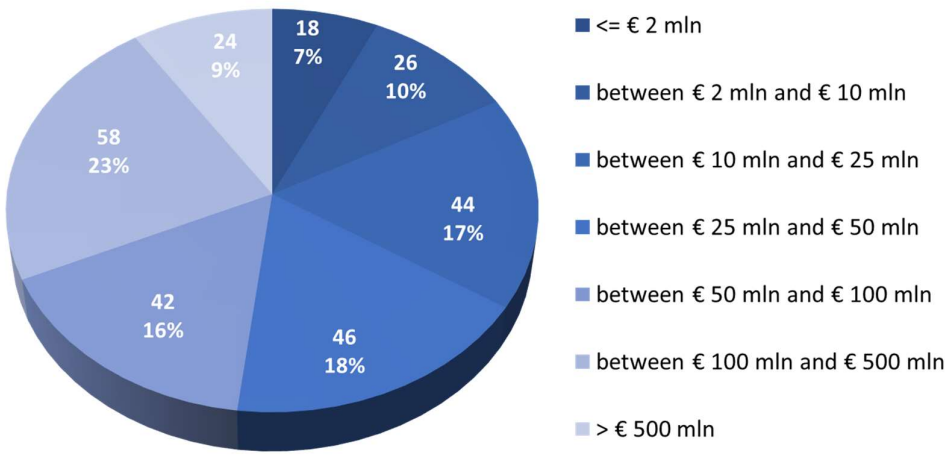
3.2 The issuers

This sub-chapter is dedicated to the analysis of the companies that issued mini-bonds from January 2017 to September 2017, according to the previously provided definition. As a reference for some statistics, the same 9 months are taken from the previous years, trying to align possible seasonality trends. The aim is identifying the principal characteristics and analysing possible trends that significantly changed compared with the past.

3.2.1 Descriptive Statistics

According to the methodological definition, during the first 9 months of 2017, 52 Italian companies placed mini-bonds on the market, with 58 single issues. The difference between the two data is given by the fact that 6 companies have issued titles in the same period but with different characteristics, or issued titles in different periods of the year. In the same period in 2016, instead, the issuers companies were 56. In absolute terms, there has been a relatively small increase of 4 elements, partially explained by the “Hydro-Bond” Operations conducted during the first semester of 2016.

Figure 3.1: issuers' segmentation according to the turnover



The issuer companies in 2017 are equally dived between SMEs and non-SMEs. In the first group, there are 24 companies, representing the 46.15% of the whole sample and with a decrease if compared with the 57.14% of the previous year.

The sample in 2017 is composed by:

i. 43 S.p.A. companies, equal to the 82.69% of the total amount, with an increase compared with the 80.36% of the 2016;
ii. 8 Srl companies, equal to the 15.38% of the sample, with another increase compared with the 14.29% of the 2016;
iii. 1 cooperative company, while in 2016 there were 2 cooperative companies.

The companies that placed a mini-bond for the first time between January and September 2017 were 36, while for 16 companies it was not a new experience.

All the issuer companies that placed a mini-bond since 2012 to September 2017 assemble a sample of 258 elements. The 85.27% of those are S.p.A., the 12.02% are Srl and only the 1.94% are cooperative companies, with the 0.77% which represents the foreign vehicles. The SMEs are 120, that is the 46.51% of the sample.

The Figure 3.1 segments the whole sample according to the company dimension expressed as the consolidated turnover of the last available Financial Statement

before the issue. The biggest class is the one which considers turnovers between € 100 million and € 500 million with 58 elements, equal to the 23%, and it is followed by the class between € 25 million and € 50 million with 46 observations, that is the 18% of the sample.

It is interesting to notice that 44 companies showed a turnover which was lower than € 10 million, with in particular 18 elements whose turnover was inferior than € 2 million.

This last data seems in contradiction with the normative exclusion of the "micro" companies from the issuing of mini-bonds, but the normative itself considers also two other factors according to the definition: the number of employees and the

At the same time, the Figure 3.2 shows the evolution of the context in the first 9 months of 2016 and 2017. It is possible to observe an increase trend of the average value of the turnover: the group of the issuers with a turnover included between € 100 million and € 500 million strongly increased, while the group with a turnover lower than € 2 million lost significantly weight.

Figure 3.2: issuers' segmentation according to the turnover, comparison between 09/2016 and 09/2017

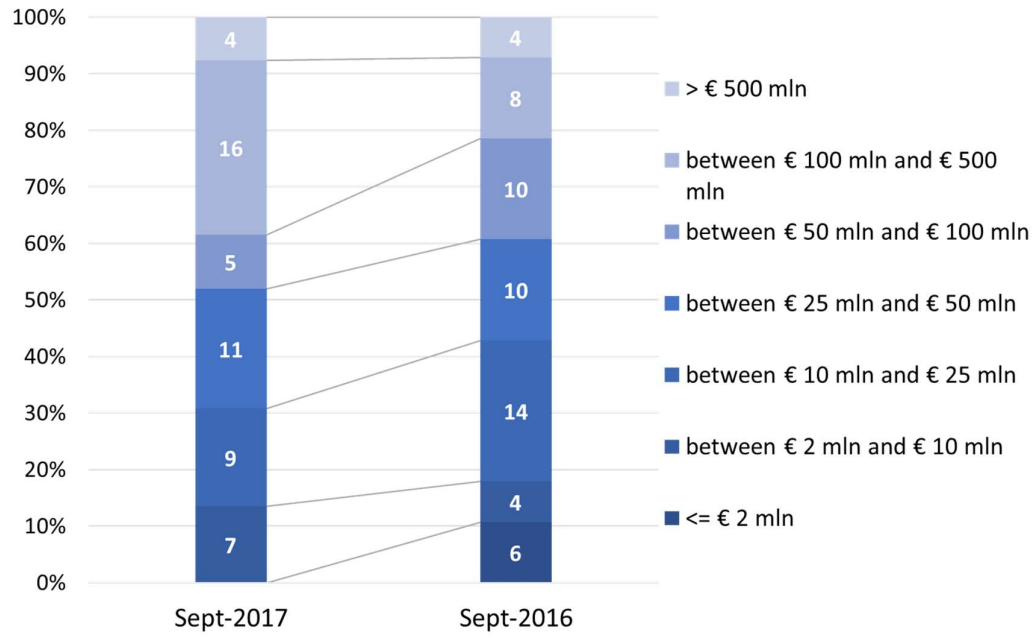
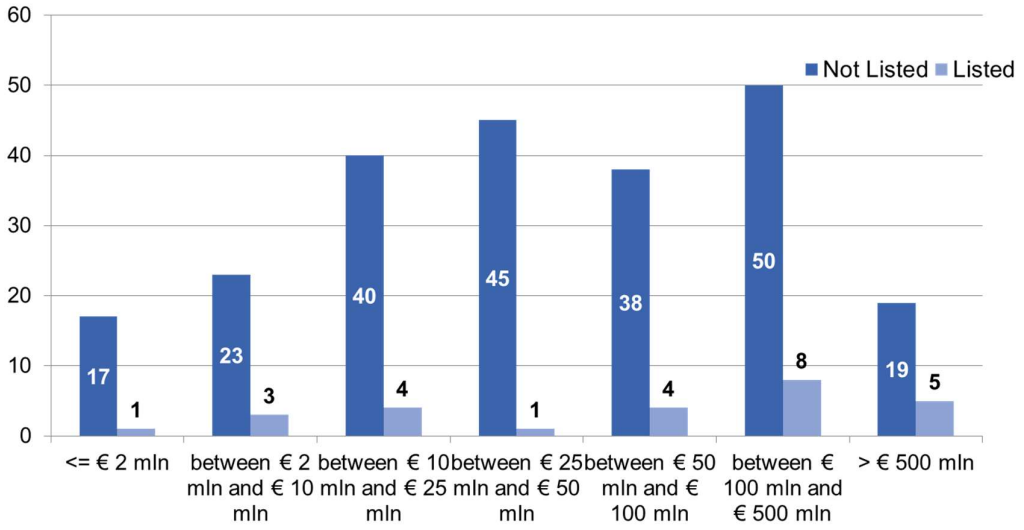


Figure 3.3: issuers' segmentation according to the listing on Stock Exchange and to the turnover



The Figure 3.3 distinguishes between those companies whose equity capital is listed on the Stock Exchange and those which are not public. At the issue moment, 26 companies (the 10.07% of the sample) were listed and, in particular, 12 were listed on the Italian Stock Exchange.

We can distinguish 5 companies which are listed on the STAR segment of Borsa Italiana, 1 listed on the MIV list, dedicated to the investment vehicles, 10 listed on the AIM Italia market, which is the segment dedicated to the companies with the lowest capitalization, and 3 on foreign Stock Exchanges (Hong Kong, New York and Paris). In 2017 only 2 listed companies developed mini-bond operations, while in 2016 they were 5.

The Figure 3.4 analyses the issuer companies according to the nominal value of their issues. The chosen threshold is € 50 million.

Also in this case it is possible to observe the presence of a correlation between turnover and value of the issue. Anyway, there are cases in which some companies chose to issue a mini-bond for a total amount that is strongly lower than the consolidated turnover of the group (less than 10% in 89 evidences) and cases in which the opposite choice was taken (29 elements).

Figure 3.4: issuers' segmentation according to the issue value and to the turnover

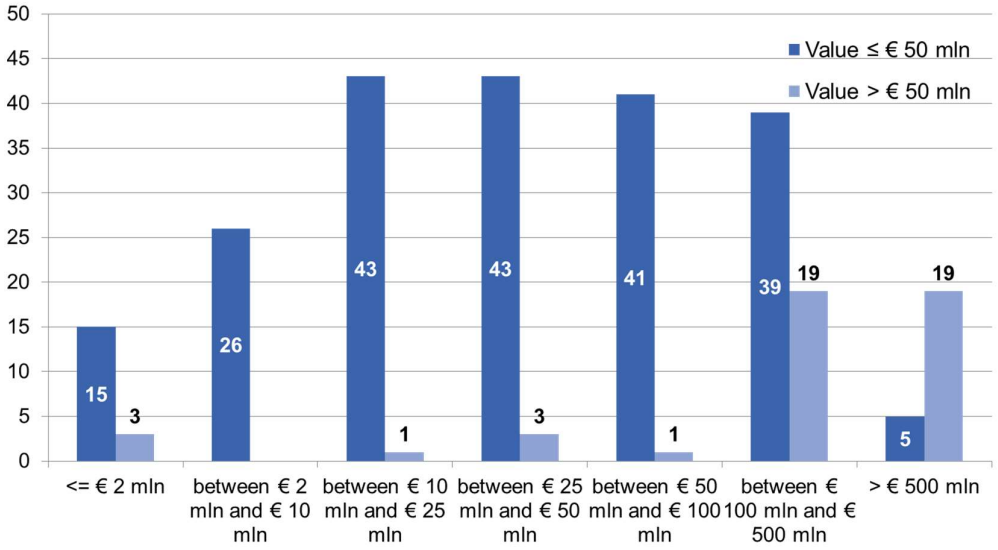
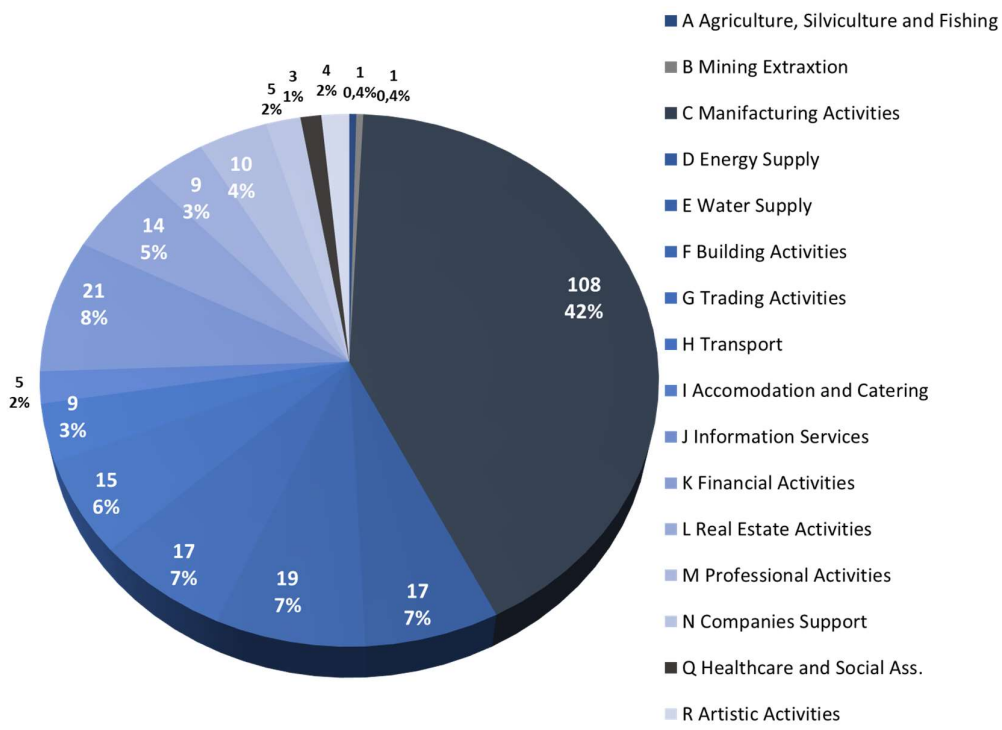


Figure 3.5: issuers' segmentation according to the ATECO sectors



The Figure 3.5 offers an overview about the classification of the issuer companies according to the ATECO segmentation. The most represented sector is the Manufacturing Activities, with 108 cases (41% of the sample), which is remotely followed by the Information and Communication Services sector with 21 elements (8%). The Water Supply sector is the third group for relevance (19 elements, 7%), but its dimension has been strongly influenced by the two operations known as "Hydro-Bond", that were developed during the 2014 and the 2016. At the same time, the comparison of the ATECO segments between the first nine months of 2016 and 2017, offered by the Figure 3.6, could be interesting. The importance of the Manufacturing Activities companies has grown (+7 elements, +35%), with a strong reduction of all the less common sectors (-12 elements). Moreover, Building Activities and Energy Supply sectors has strongly grown in relative terms (+200% and +250%), although their weight is still low in absolute terms. Generally, it is possible to notice a reduction of the heterogeneity of the issuer companies.

Figure 3.6: issuer's segmentation according to the ATECO sectors, comparison between 09/2016 and 09/2017

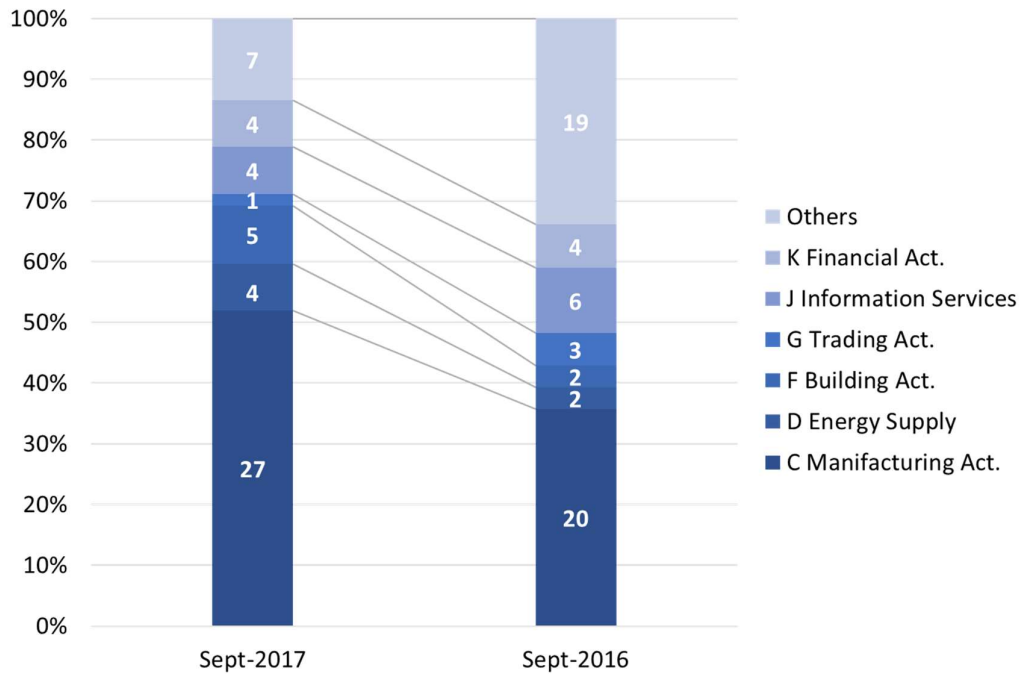
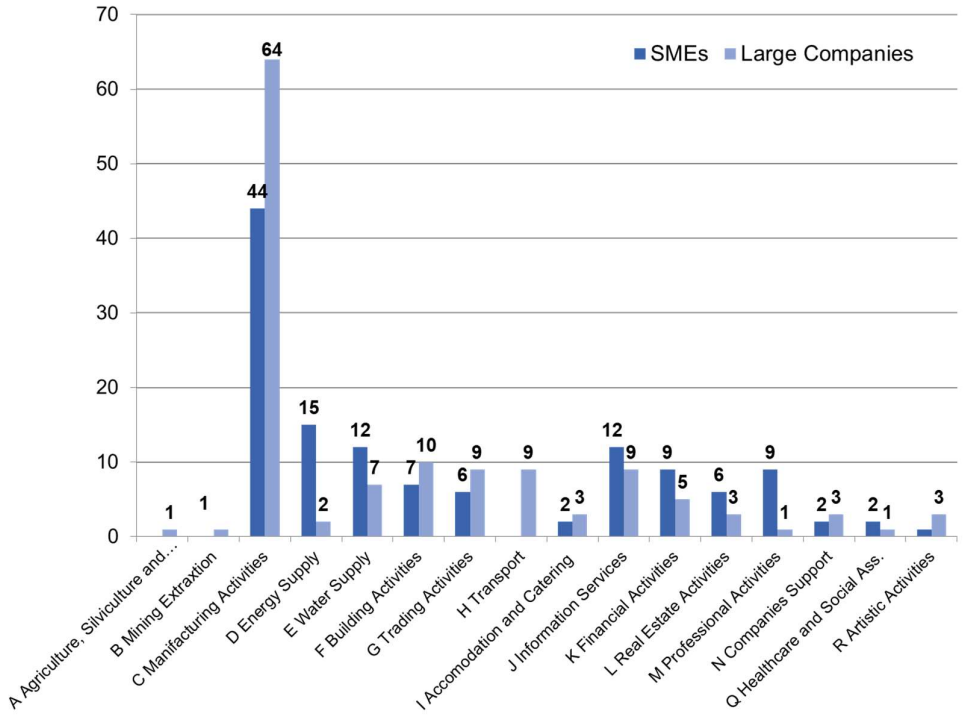


Figure 3.7: issuers' segmentation according to company's dimension (SMEs or Large Company) and to the ATECO sectors



Another important observation is the distribution of the SMEs companies and big companies and of listed and not listed companies across the several ATECO sectors, in the Figure 3.7 and 3.8. In most of the sectors, SMEs represent the majority of the issuer companies, excepting few cases among which Manufacturing Activities stands out. Another relevant factor is the total absence of SMEs in the Transport sector, which is represented only by big companies although mini-bond issues are not so rare. At the same time, always the Manufacturing Activities sector has the most relevant presence of listed companies, even if Building Activities, Trading Activities and Information Services present an elevated relative percentage of listed companies which issued mini-bonds (respectively 23%, 20% and 19%). It's also interesting the total absence of listed companies in the Water Supply sector, which is strongly characterised by public-controlled enterprises. The Figure 3.9 shows how in each ATECO sector there is a strong preference for issues whose total value is inferior than the € 50 million.

Figure 3.8: issuers' segmentation according to the listing on Stock Exchange and to the ATECO sectors

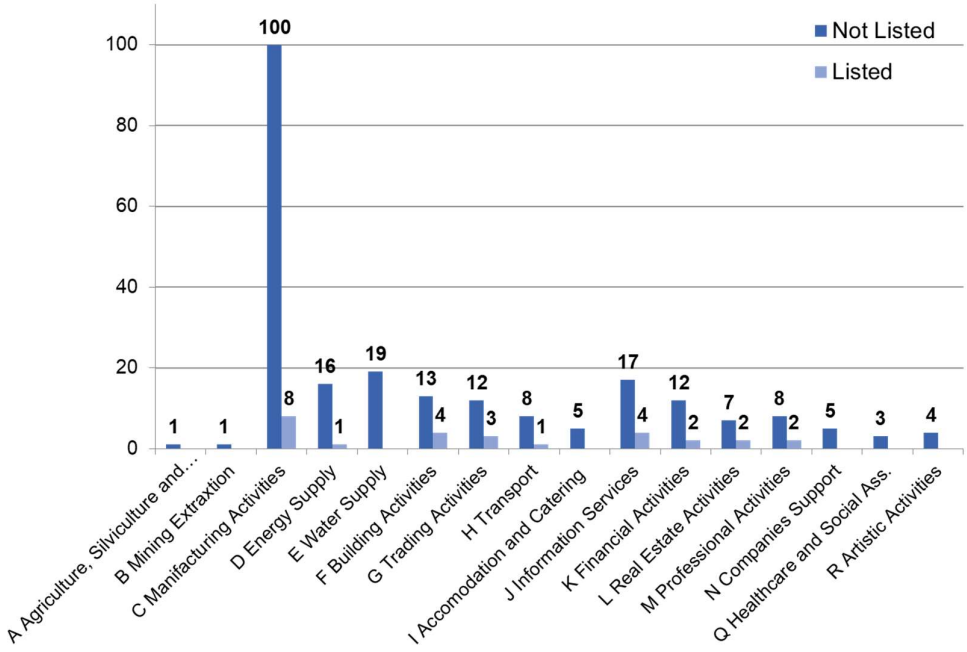


Figure 3.9: issuers' segmentation according to issue value and to the ATECO sectors

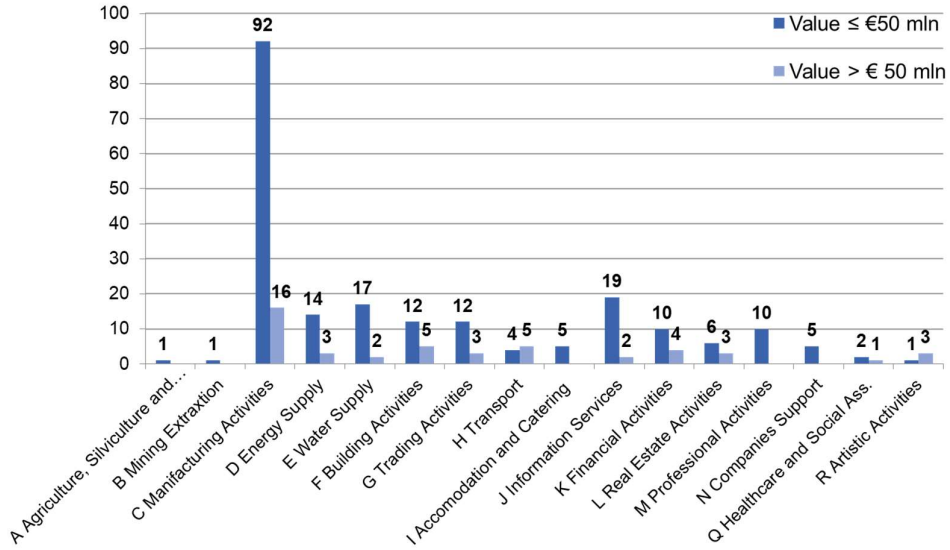
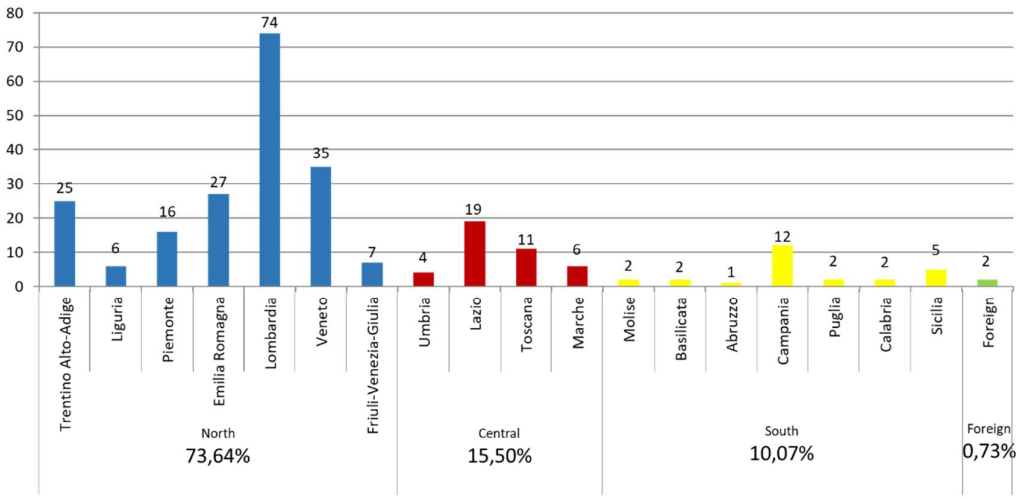
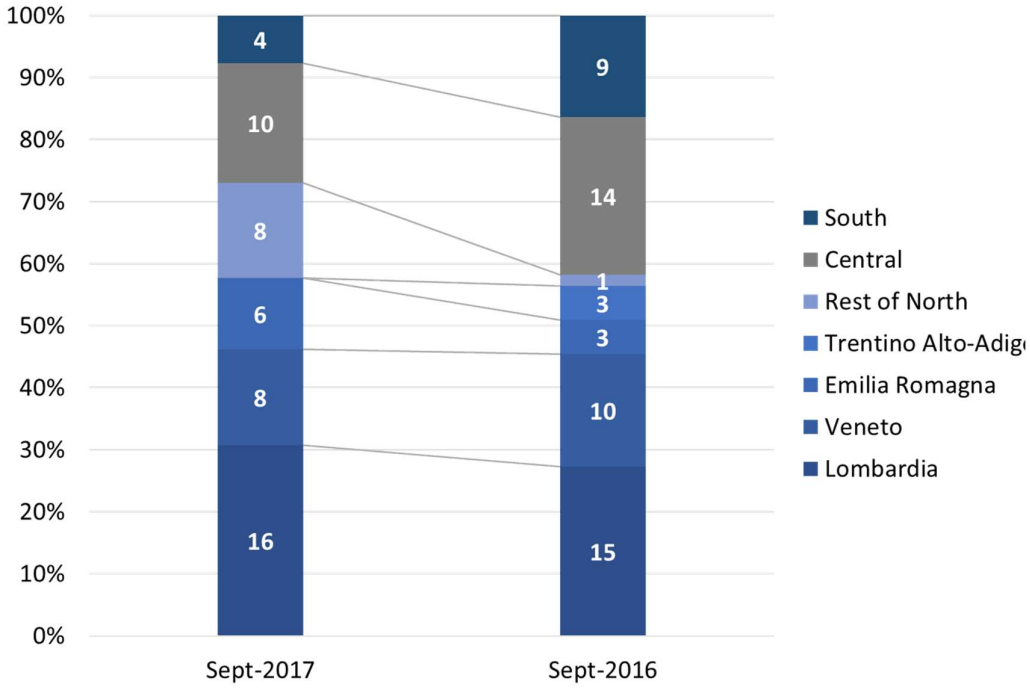


Figure 3.10: issuers' geographical distribution



The exception is another time represented by the Transport sector, in which there is a quite perfect equilibrium between the two classes, and by the Artistic Activities, in which the issues for a total value higher than € 50 million represent the 75% of the cases. A significant analysis is the one related to the distribution of the issuers' headquarters, considering the geographical location as in the Figure 3.10. As it was predictable, until the 30th September 2017, the Italian area with the highest concentration of issuer companies is the North, with 190 companies (73.64% of the sample) and 74 only in the Lombardy, which is the first Italian region for importance in this classification, principally thanks to the metropolitan city of Milan. Also Emilia-Romagna, Veneto and Trentino Alto-Adige provide many issuer companies to the Italian mini-bond market, representing overall the 33.72% of the sample. Between the Central regions of Italy (15.50%), the most valuable one is the Lazio region, with 19 elements (7.36%), which is followed by Tuscany with 11 companies (4.26%). At the same time, it is relevant the role of Campania in the Southern area, with 12 companies (4.65%) while the whole area represents only the 10.07% of the sample.

Figure 3.11: issuers' geographical distribution, comparison between 09/2016 and 09/2017



Furthermore, there are 2 companies formally recognized as foreign vehicles, but whose business interests are clearly focused in Italy (TE Wind SA and Rottapharm Manaus Ltd). Considering only the SMEs, the Lombardy is still the most valuable region with 38 issuer companies and it is followed by Trentino Alto-Adige (15) and Veneto (13), while Emilia-Romagna particularly loses importance (only 4). Also Campania and Lazio present good performances with respectively 9 and 10 SMEs that issued at least a mini-bond. On the other hand, only 7 big companies are located in Southern regions with a particular concentration of this kind of enterprises in the Northern and Central area. Looking at the Figure 3.11, it is possible to identify an important change in the trend: in fact, in the last two years the Southern regions were catching up the others, but, as underlined by the graph, the comparison between the first 9 months of 2016 and 2017 offers a renewed scenario with a relevant increase of the importance of Northern regions and a strong decrease of the participation of the rest of Italy. At the same time, the total absence of Trentino Alto-Adige in 2017 is surprising, since it has been an important contributor for the Italian market since its

creation, but it is well compensated by the increasing interest which has been demonstrated by all the other Northern regions.

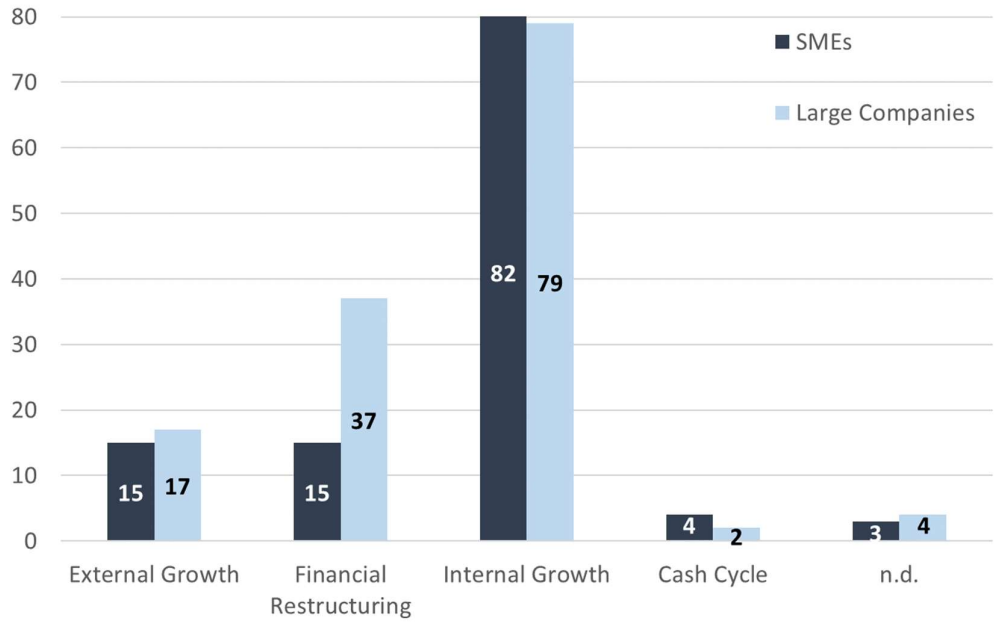
3.2.2 The Declared Reasons

Thanks to the published documents, it is possible to analyse the reasons that lead the company to the issue of mini-bonds.

In particular, there are four identified categories of motivations:

i. Internal Growth, which is the collection of capital to support the investments in R&D or in new products or in new markets;
ii. External Growth, which is the support to eventual M&A with other companies or divisions;
iii. Financial Restructuring, which is the adjusting of the financial debt mix and is based on the reimbursement of the debts close to maturity with the collected capital;

Figure 3.12: declared issue motivations



iv. Cash Cycle, which is the collection of capital to ensure the short-term equilibrium between the incomes from credits and the payments of debts.

The Figure 3.12 shows the distribution of the issuer companies according to the declared motivations or to the main motivations. Only in 7 cases it was not possible to determine the reasons of the debt choice. Almost the 65% of the companies was led by the necessity of capital for Internal Growth, while only 6 companies chose mini-bonds for Cash Cycle reasons. At the same time, the 24% and the 12% of the issuers opted for the mini-bond issue for respectively reasons of Financial Restructuring and External Growth. Distinguishing between SMEs and big companies, it is interesting to notice that there are not relevant differences among the different reasons. The only exception is represented by the Financial Restructuring that seems to be strongly preferred by big companies more than SMEs.

3.2.3 The Performance Analysis

Thanks to the AIDA platform, it was possible to collect all the data and information about the economical performances of the issuer companies to create benchmarks between the results before and after the issue. The sample takes in consideration the indexes of 118 SMEs, not including the financial companies. First of all, the Figure 3.13 allows to understand the potential impact of the mini-bond issue on the financial equilibrium of the company and the sustainability of the operation, distinguishing between:

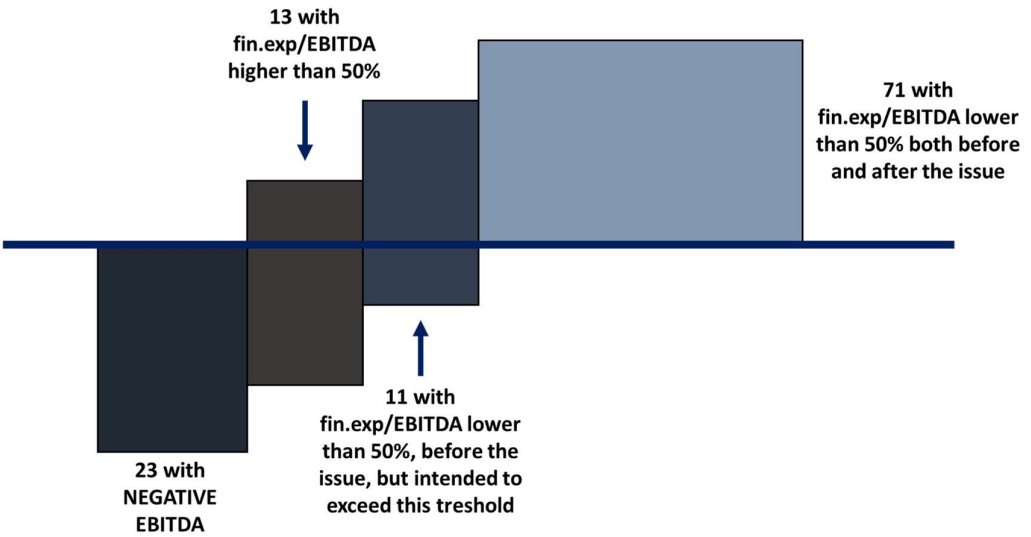
i. companies that in the year before the issue showed a negative EBITDA (23 cases, which is the 19.49%); for them, the capability of generating operational cash flows to reimburse the new debt contract is merely a function of the prospective improvement of the marginality, using for example new investments;
ii. companies with a ratio between financial expenses and EBITDA which was higher than 50% before the issue (13 cases, which is the 11.02%) they are companies considered as “high risk level”;

iii. companies with a financial expense-EBITDA ratio lower than 50% before the issue, but which was intended to increase above this threshold, considering the interest payments of the mini-bond (11 cases, hence the 9.32%); this is the case of companies that could show problems related to the future solvency;

iv. companies whose ratio was lower than 50% before the issue and intended to remain under this level also after the mini-bond issue (71 case, the 60.17% of the sample).

Clearly, this kind of analysis does not consider the payment of the principal, that, especially in case of amortising repayments, will further impact on the future cash needs of the company.Another interesting analysis is the one focused on the main performance indexes of the Balance Sheet of the years across the mini-bond issue. The Tables 3.1 and 3.2 show the average and median value for each year, taking as a reference the year of the issue (Year 0). Of course, it has not been possible to create a completely homogeneous sample for all the years, so total statistics are available only for the three years before the issue.

Figure 3.13: issuers' segmentation according to the Balance Sheet financial situation



The choice of taking in consideration both the average and the median value was determined by the presence of some disturbing elements that strongly affect the results: these are the cases of particular companies whose situations are understandable with difficulties and sometimes even not comparable with the rest of the sample. The first two indicators are related to the profitability of the companies:

i. Return on Equity (ROE), which is a measure of the profitability of a business in relation to the book value of shareholder equity or, in other words, a measure of how well a company uses investments to generate earnings growth;
ii. Return on Assets (ROA), which is a measure of the capability of generating revenues of the company's assets or, always in other words, it expresses what the company can do with what it has.

Focusing on the whole sample's indicators, it is easy to identify the presence of a positive trend before the issue both in the average and median values, with relevant variations especially between the Year -3 and -2. A possible interpretation is the fact that companies that experienced a favourable period are more willing to assume further risks in ambitious projects financing them with mini-bond issues. At the same time, median values are not particularly elevated and another reading could be the choice of recurring to mini-bonds as an attempt to relaunch the business. Focusing the attention on the indicators of 2013-2014 issuers, ROE and ROA have a negative trend in the years that followed the issue. It could be explained, at least for a part of the sample, by the negative effect of the higher leverage in presence of low profitability margins. At the same time, this piece of information seems not be confirmed for the companies that firstly issued a mini-bond in 2015 and 2016: although it is not possible to develop an analysis on a longer term, there is an increase of the indicators immediately after the issue and in the following year.

Table 3.1: performance indexes' average values for 2013-2014, 2015, 2016, 2017 issuers

AVERAGE VALUES						
2013-2014	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-33.60	-5.82	1.27	9.67	8.29	4.97
ROA (%)	-2.23	3.11	3.06	3.77	3.98	2.11
EBITDA/Sales (%)	-9.50	15.72	14.06	10.89	8.91	-3.74
Quick Ratio	1.67	1.59	1.38	1.00	0.92	0.91
Leverage Ratio	0.68	1.92	1.73	2.12	2.30	3.11
2015	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	6.67	5.93	6.13	5.24	11.92
ROA (%)	-	5.19	5.39	8.15	8.32	5.76
EBITDA/Sales (%)	-	15.15	18.31	16.34	14.99	8.81
Quick Ratio	-	1.11	1.09	1.00	0.92	0.87
Leverage Ratio	-	1.50	1.29	1.30	1.53	2.80
2016	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	5.33	5.27	4.71	1.88
ROA (%)	-	-	1.66	1.42	2.28	-0.05
EBITDA/Sales (%)	-	-	8.23	-13.83	2.80	-15.76
Quick Ratio	-	-	1.17	0.97	0.83	0.86
Leverage Ratio	-	-	1.84	2.19	2.28	3.43
2017	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	-	10.30	9.67	0.61
ROA (%)	-	-	-	2.75	2.38	1.02
EBITDA/Sales (%)	-	-	-	13.85	5.60	8.43
Quick Ratio	-	-	-	0.85	1.02	0.84
Leverage Ratio	-	-	-	1.66	1.90	1.19
Whole Sample	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	-	9.67	8.29	4.97
ROA (%)	-	-	-	3.77	3.98	2.11
EBITDA/Sales (%)	-	-	-	10.89	8.91	-3.74
Quick Ratio	-	-	-	1.00	0.92	0.91
Leverage Ratio	-	-	-	2.12	2.30	3.11

The third indicator is the EBITDA to Sales ratio: it is a financial metric used to assess a company's profitability by comparing its revenue with earnings. In details, this percentage allows to understand the level of a company's earnings remaining after operating expenses. The whole sample's data seem to be coherent with the previous indicators, showing a positive trend in the three years that preceded the issue.

Table 3.2: performance indexes' median values for 2013-2014, 2015, 2016, 2017 issuers

MEDIAN VALUES						
2013-2014	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	3.06	3.10	5.09	5.42	5.80	3.81
ROA (%)	2.95	3.09	3.31	3.72	3.44	3.15
EBITDA/Sales (%)	11.03	11.77	10.83	9.71	9.87	8.02
Quick Ratio	1.28	1.31	1.14	0.84	0.80	0.76
Leverage Ratio	1.27	1.06	1.16	1.44	1.59	1.39
2015	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	6.36	5.09	4.06	3.77	2.80
ROA (%)	-	4.86	3.84	4.16	3.44	3.62
EBITDA/Sales (%)	-	11.34	12.89	12.88	14.87	10.41
Quick Ratio	-	0.79	1.02	0.81	0.73	0.72
Leverage Ratio	-	1.11	1.34	1.34	1.56	1.76
2016	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	5.41	3.74	5.06	3.83
ROA (%)	-	-	3.27	3.34	3.20	3.12
EBITDA/Sales (%)	-	-	8.96	8.50	7.39	6.35
Quick Ratio	-	-	0.96	0.76	0.72	0.67
Leverage Ratio	-	-	1.19	1.64	1.79	1.68
		-				
2017	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	-	8.98	7.34	3.05
ROA (%)	-	-	-	3.92	3.42	2.63
EBITDA/Sales (%)	-	-	-	8.08	10.01	7.52
Quick Ratio	-	-	-	0.80	0.79	0.84
Leverage Ratio	-	-	-	1.50	1.71	0.94
Whole Sample	**Year +2**	**Year +1**	**Year 0**	**Year -1**	**Year -2**	**Year -3**
ROE (%)	-	-	-	5.42	5.80	3.81
ROA (%)	-	-	-	3.72	3.44	3.15
EBITDA/Sales (%)	-	-	-	9.71	9.87	8.02
Quick Ratio	-	-	-	0.84	0.80	0.76
Leverage Ratio	-	-	-	1.44	1.59	1.39

Moreover, all the single periods taken in consideration confirm the interpretation of a favourable influence of the issues on the company's earnings. The fourth of the indicators which are taken in consideration is the acid-test ratio. It is a strong

indicator of whether a firm has sufficient short-term assets to cover its immediate liabilities and it is commonly known as the “quick ratio”.

The issue seems to enforce the positive trend that already affected the companies even before their choice to intervene on the bond market, with a particular reference to the 2013-2014 sample. On the other side, the 2017 companies show a quite stable trend before the issue while 2015 issuers seem to be affected by a significant reduction in their ability to cover the immediate liabilities from the Year +1. After all these data, the attention is focused on the leverage ratio, which expresses the comparison between the debt capital of a company and its equity value.

It is considered as a fundamental parameter of the structure of a company, even if it is not easily interpretable, and permits to observe and valuate the insolvency risk and the capital strength. On the average value, it is possible to analyse a little decrease of this parameter before the issue for the whole sample, which is coherent with the willingness of the companies to seem more solid and interesting for the possible investors. Moreover, this positive trend continues also after the issuance. This piece of information could signal a spread preference of using the mini-bond to improve the Net Financial Position of the company, more than invest in new projects, at least in the short-term.

Finally, it can be useful to analyse the compounded annual growth rate (CAGR). The Table 3.3 summarizes the values for the issue flows between 2013 and 2016: all the analysed clusters present a positive average value, with an average increase between 12.34% and 32.57%. At the same time, the median values, even if extremely lower, are still positive, underlying the fact that the major part of the issuer companies enjoy a significant growth also before the mini-bond operation.

It is also interesting to observe how the first quartile, excepting for the 2013 which is influenced by particular cases, is close to the null value: this data means that almost the 25% of the issuer companies do not register a turnover growth. Furthermore, the third quartile is instead characterised by high values, demonstrating that at least one quarter of the sample has a very positive trend of growth.

Table 3.3: issuers' CAGR of the consolidated turnovers across the issue

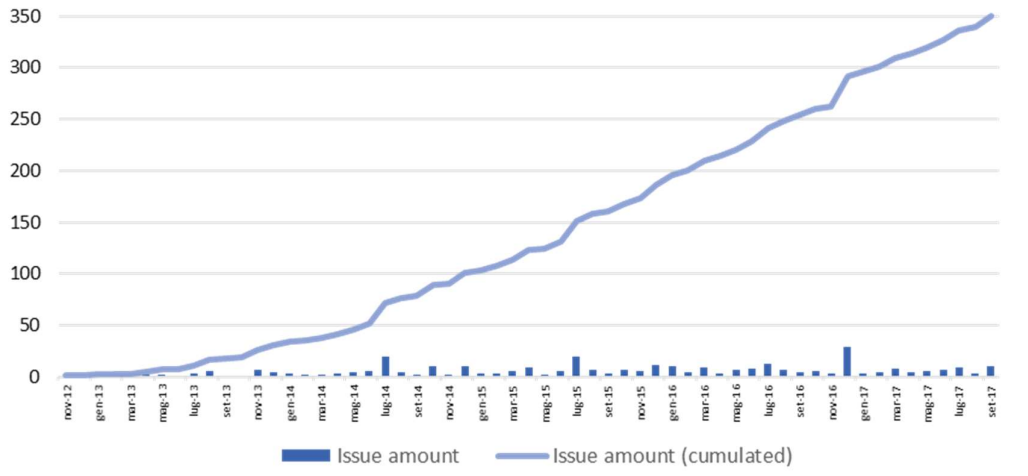
CAGR				
	2013 Issuers	2014 Issuers	2015 Issuers	2016 Issuers
Average Value	32.57%	12.34%	13.47%	23.86%
First Quartile	17.58%	-0.14%	1.56%	-0.44%
Median Value	18.03%	4.71%	14.17%	9.28%
Third Quartile	33.61%	13.85%	23.56%	29.50%

Even if there is not an elevated data availability, the sample is quite sufficient to suggest a correlation between the growth of the issuers' turnovers and the mini-bond issues. Anyway, basing on these data, it is not possible to identify in a proper way the details of this interaction.

3.3 The issues

Once illustrated the methodological definition and the characteristics of the firms issuing mini-bonds in the previous section, it is now rational going forward with the features of the issues in Italy, updated to September 2017.

Figure 3.14: mini-bond issues' timeflow up to September 2017



3.3.1 Descriptive statistics

In the year 2017 up until September, the issues of mini-bond securities in line with the methodology depicted in the Section 3.1 are 58, 42 below the threshold of € 50 million. The whole list is reported in the Attached 2. During the prior year the number of issues was 106, 68 until September 2016; the amount of issues is almost aligned to the dynamics of the previous year. The sample is made up of 350 placements whose which 287 do not exceed € 50 million. Figure 3.14 updates to September 2017 the time trend of the mini-bond issues starting from the enactment of the first decree law in 2012. The initial phase of the market exhibited sporadic issues, mainly characterised by an amount exceeding € 500 million and thus, which is not in compliance with the definition of mini-bond, introduced at the beginning of the chapter. The first signals of growth came in the second half of 2013 and intensified in 2014. The years 2015, 2016 and 2017 show a growth trend which is surprisingly linear; December 2016 recorded the maximum monthly flow of issues with 29 placements on the mini-bond market.

For what concerns the typology of financial securities, the issues are bonds for the most part, even though it is worth mentioning a handful of financial promissory notes accounting for 8% of the sample.

Figure 3.15: mini-bond issues' nominal value timeflow up to September 2017

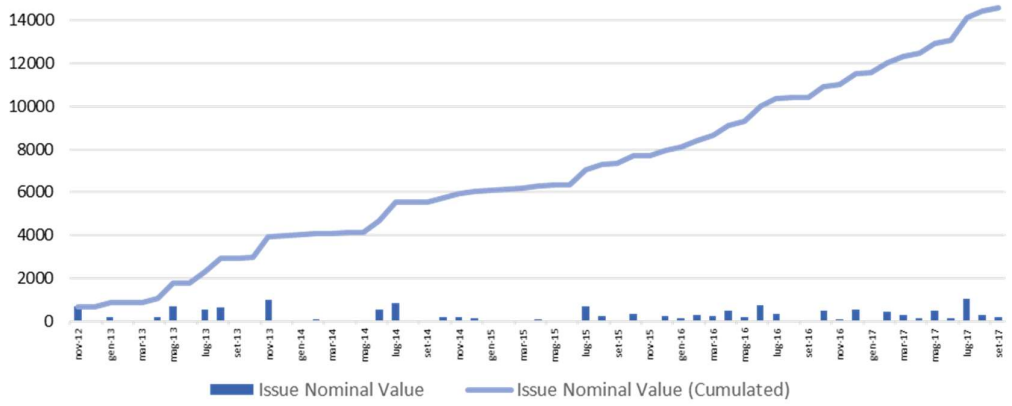
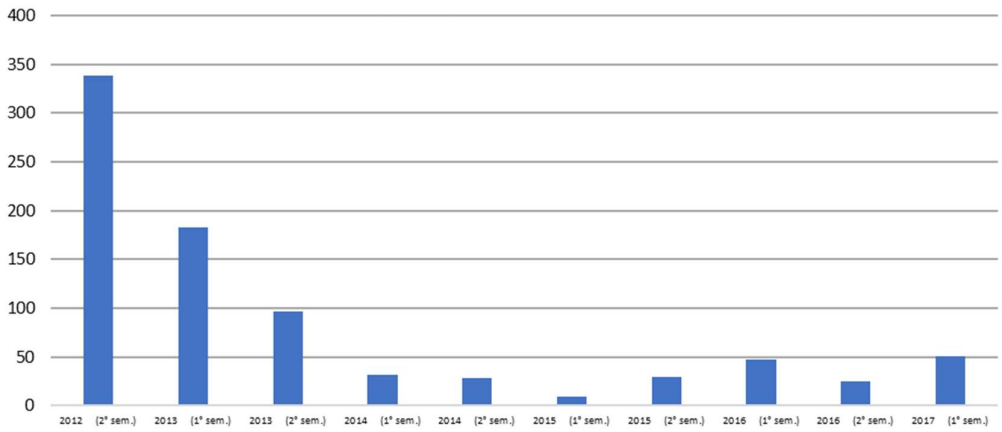


Figure 3.16: issues' average value for each semester of 2017



The table 3.4 synthesises the main features associated to the unique financial promissory note issued in 2017, namely the nominal value, the yearly coupon, the issue and maturity dates and the sponsor, that is, the financial intermediary who assists the issuer in all the placement's phases.

At the date of 30 September 2017, the number of financial promissory note is 28, to which corresponds a total value of € 63.9 million. The maturities are in between 1 month and 3 years, whereas the yearly interest rates vary from 1,5% to 7%. Actually, the issuers are significantly less than the issues, since the placement of a financial promissory note is characterised by a "rolling" modality, that is, when a financial promissory note is due to maturity, another one is immediately issued especially for short-term securities. How anticipated above, one issuer only entered the market in 2017: Scatolificio Salernitano Srl.

Table 3.4: financial promissory notes issued in 2017

Issuer	Issue date	Maturity	Par value	Annual coupon	Sponsor
Scatolificio Salernitano Srl	February 2017	February 2018	€ 350,000	2.25%	Unicasim

Figure 3.17: time flow of Mini-bond issues differentiated with respect to the firm size

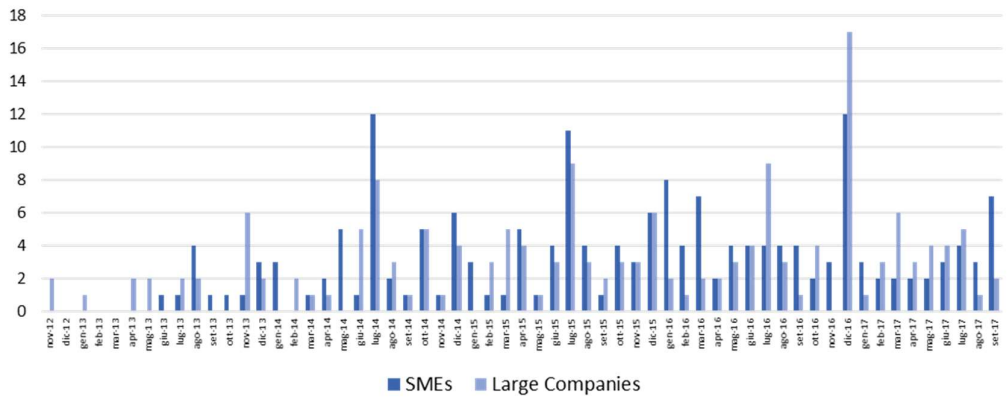
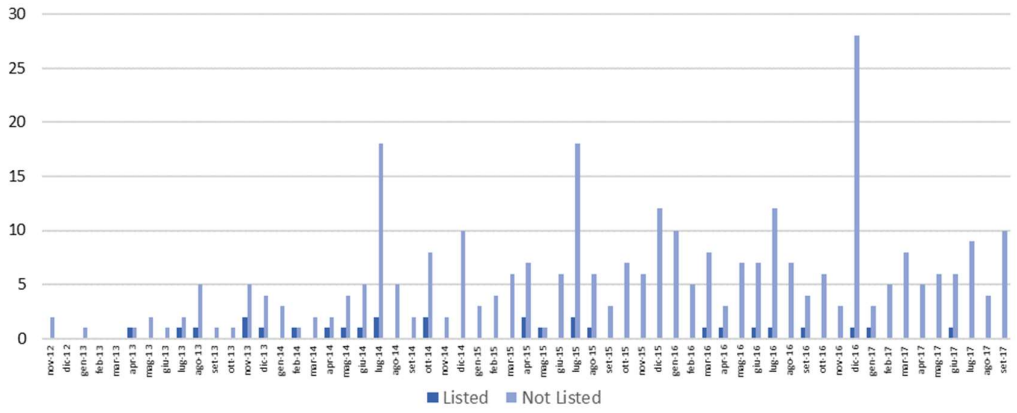


Figure 3.15 shows the time trend of mini-bond issues in relation to their corresponding value. The nominal value in September 2017 is € 14,619.247 million; the contribution of the first nine months of the current year is € 3,077.75 million, whereas for the overall 2016 the contribution was € 3,569 million, € 2,472.667 when looking at the cumulative value up until September 2016. By taking into consideration the SMEs' issues only, the total amount drops to € 1,616.855 million, while the issues which do not exceed the threshold of € 50 million are the majority: 287 or equivalently the 82% of the sample, to which corresponds an overall value of € 2,317.56 million; whereas the issues going beyond the limit-value of € 50 million are 63 corresponding to 18% of the sample.

Figure 3.16 updates until September 2017 the statistics concerning the average value of placement per each semester. In 2012 and 2013 the average value was considerably higher when compared to the other years; how previously explained the reason is that the mini-bond market welcomed a discrete number of SMEs starting from 2014. In that year, the issue's average value stabilized and in the first semester of 2016 slightly increased up to € 47 million, and decreased to € 25 million in the second semester of the same year.

Figure 3.17 shows a disaggregation of the issues' time outline based upon the size variable of the issuer, by discriminating between large enterprise or SMEs.

Figure 3.18: time flow of Mini-bond issues differentiated between listed and non-listed issuers



The issues carried out by small and medium enterprises are 181, against the 169 performed by large firms; respectively the 51.7% and the 48.3% of the sample. In 2017 the portion of issues conducted by SMEs is 48,28% in opposition to the 54,7% in 2016. The second part of that year showed a sort of comeback of large enterprises' issues on the market with 9 issues in July and 17 in December and in the first nine months of 2017 the large enterprises' issues seem to prevail on SMEs'.

Figure 3.18 differentiates between firms already listed on a Stock Exchange and the others. 29 observations belong to the former instance, equivalent to the 8.29% of the sample; whereas the majority of mini-bonds is issued by non-listed firms, that is the 91.71% of the overall observations. It is worth underlying that the study does not consider the issue of convertible bonds carried out by firms already listed on the Stock Exchange, since, normally, such securities are traded on a regulated market, open to any class of investor; thus, they contrast with the methodological definition provided in the Section 3.1.

Table 3.5 sums up the statistics for what concerns the nominal value of the issue as a function of various features of the issuer.

Table 3.5: statistics of issues' average nominal value

(Amount in € Million)	Yes	No
SME issuer	8.933	76.937
Listed issuer	72.260	39.015
Financial issuer	40.808	41.897
Average	41.769	

The overall distribution of the value of the individual issue is reported in the figure 3.19 below, where the issues are categorized based on value classes: it comes to light that a bit less than the half of the mini-bonds are characterised by a principal value in between € 2 million and € 10 million. 80 issues, namely the 22.86% of the overall observations do not go beyond € 2 million. Obviously, there is a non-negligible discrepancy with regards to both already listed firms and large enterprises. Indeed, if the average value is € 41.769 million for the sample as a whole such amount decreases to € 8.933 million when analysing the SMEs only. Additionally, the average value is € 41.897 million for the enterprises which do not belong to the financial sector. Finally, the last statistical note concerns the listing on a Stock. 234 out of the 350 observed mini-bonds are listed on the ExtraMOT PRO, the 66.86% of the sample,

Figure 3.19: overall distribution of the value [€] of the individual issues

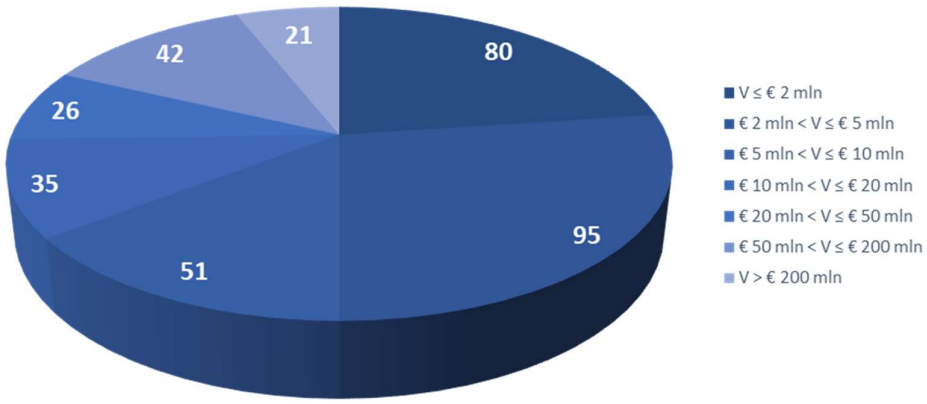
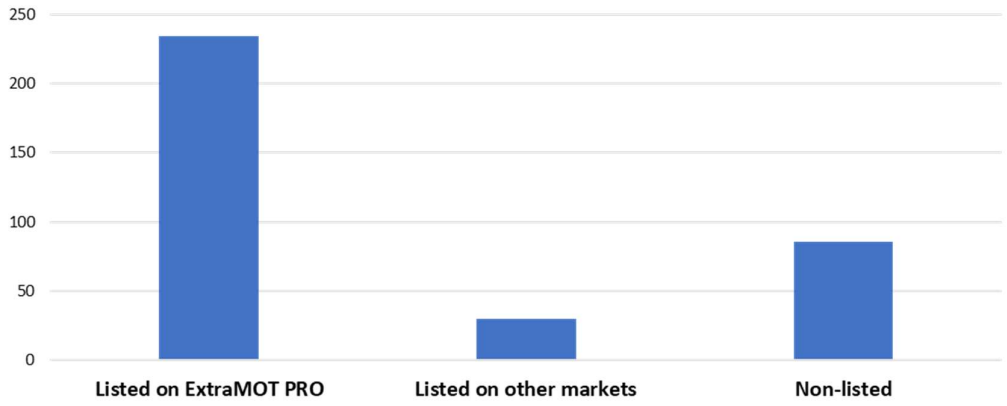


Figure 3.20: mini-bond listing on a Stock Exchange



whereas the non-listed issues are 86 equivalent to the 24.57% of the overall observations.

Actually, by looking at the mini-bonds issued in 2017, the non-listed securities are 10 (25.86%), and the listed ones are 48 (74.14%). In 2016 the non-listed issues were 29.2% and the listed ones 71.8%. It seems to be a tendency towards a certain propensity to the security's listing. 30 listed issues on foreign markets complete the picture; in 2017, 10 mini-bonds were listed on foreign Stocks (11 in 2016), mainly on the dedicated market of the Austrian Stock (Wiener Borse).

3.3.2 Maturity, reimbursement and remuneration

This section aims to investigate the features of the mini-bond sample, subject of the analysis, in terms of maturity and investors' remuneration. For what concerns the maturity, figure 3.21 clusters the observations into classes of maturity. Mini-bonds with a maturity between 4 and 5 years turn out to be the most populous category; more precisely, 84 securities belong to such category, that is 24% of the sample. 51 instruments are characterised by a maturity within 12 months, even due to the specialisation of some market operators such as Frigiolini & Partners Merchant on short-term mini-bonds; on the contrary, 55 securities present a maturity greater than 7 years.

Figure 3.21: overall distribution of securities' maturity

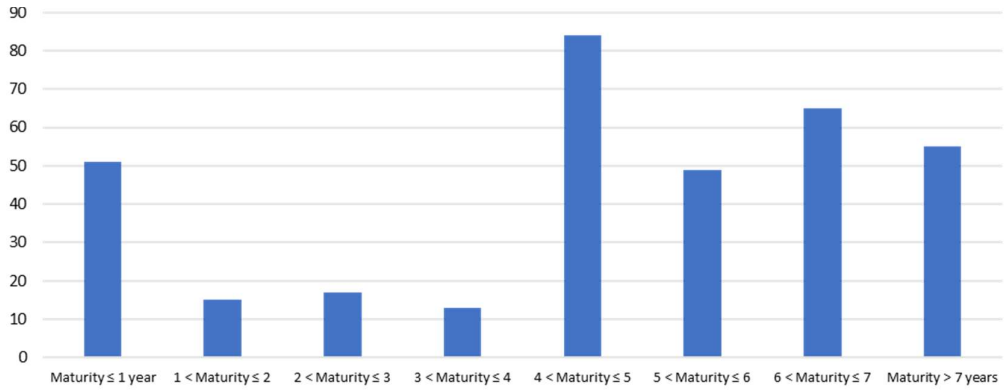


Figure 3.22 highlights the evolution of securities' maturity by comparing the years 2016 and 2017 (taking into consideration the first nine months only). In particular, 2017 is the year during which the issues belonging to the most populous maturity class dropped to 2; they were 13 in 2016 and 29 in 2015; whereas the observations increased in all the other classes. The average maturity becomes 4,69 years in 2017, in contrast with 5,7 years in 2016 and 5,2 years in 2015. The peak of maturity in 2016 demonstrates that firms benefited from the issue of mini-bonds, in a context of low interest rates on the market to ensure a long-term financing.

Figure 3.22: distribution of mini-bond maturities, comparison between 2016 and 2017

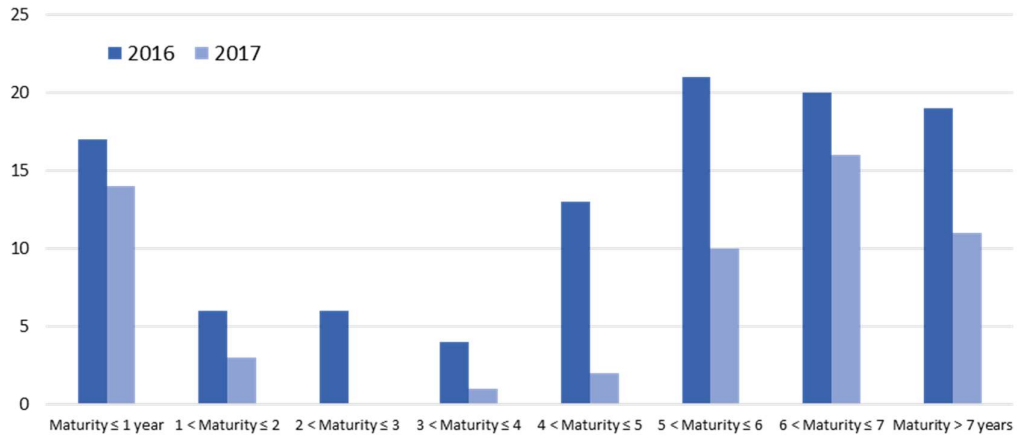
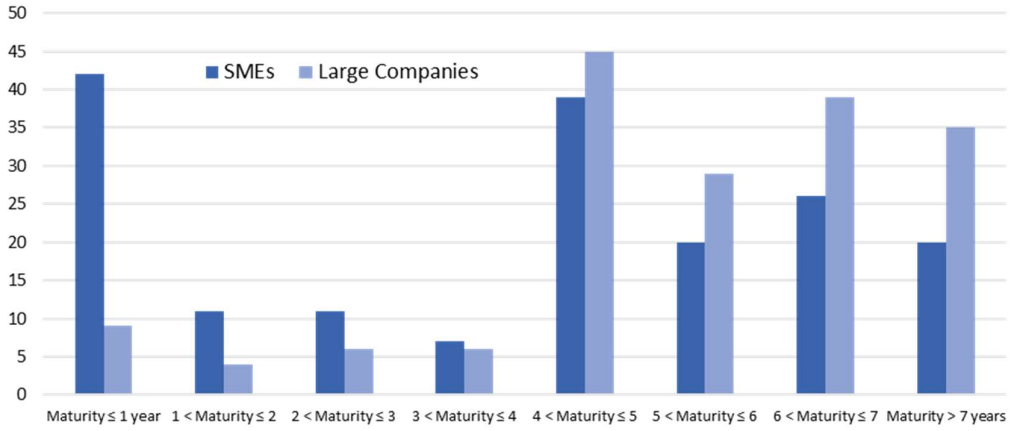


Figure 3.23: distribution of mini-bond maturities according to companies' dimension (SMEs or Large Companies)



Consistently with the purposes of this study, figure 3.23 discriminates between SMEs and large enterprises to analyse the discrepancy in terms of maturity, by utilising a size variable to differentiate the issuers. For what concerns the securities issued by SMEs, the maturity is generally lower: such category of issuers presents 42 out of 181 issues with a maturity within 12 months. Larger enterprises are basically absent in those classes of securities where the maturity is lower than 4 years, whereas they are predominant in the long-term maturity classes. Once again, SMEs tend to favour short-term debt.

Figure 3.24: distribution of mini-bond coupons

However, for the sake of completeness, it is worth reminding that the maturity of a security does not coincide necessarily with the capital reimbursement in favour of the investor. Indeed, the issuer may implement a bullet modality to reimburse the capital, meaning that the principal is entirely repaid at the maturity such as in the case of bonds issued by large enterprises or governments; or an amortising modality, a policy consisting in a progressive reimbursement of the capital over time.

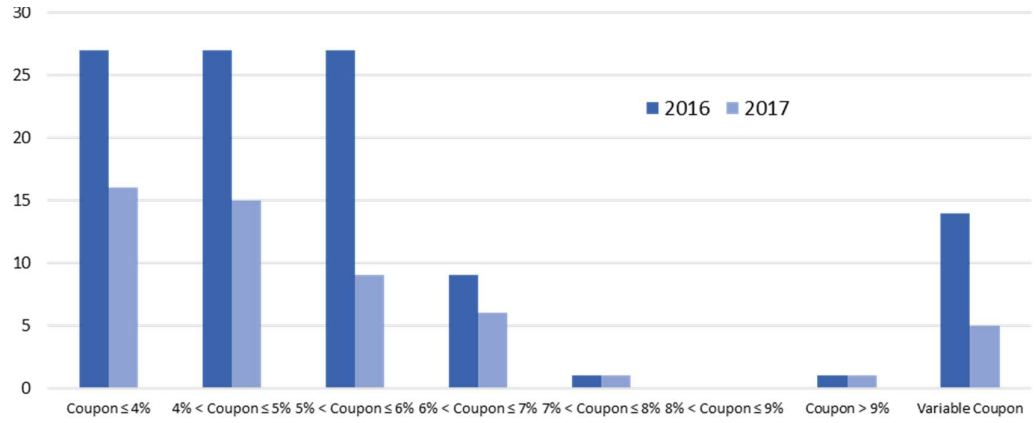
The aim is to decrease the duration, in its technical usage, and thus, reducing the risk for the investor, by spreading the issuer's burden on several years.

The table 3.6 synthesizes the choice of reimbursement modality, bullet or amortising, depending on a series of issue and issuer's characteristics.

Table 3.6: statistics on the modality of capital reimbursement

Reimbursement modality:	Bullet	Amortising	Not available
All the sample	53.71%	44.57%	1.71%
SMEs	49.17%	49.72%	1.10%
Large enterprises	58.58%	39.05%	2.37%
Listed enterprises	75.86%	20.69%	3.45%
Non-listed enterprises	51.71%	46.73%	1.56%
Issues ≤ € 50 million	46.34%	51.92%	1.74%
Issues > € 50 million	87.30%	11.11%	1.59%
Non-financial enterprises	48.87%	49.19%	1.94%
Financial enterprises	90.24%	9.76%	-
Maturity < 5 years	80.65%	17.74%	1.61%
Maturity ≥ 5 years	38.94%	59.29%	1.77%

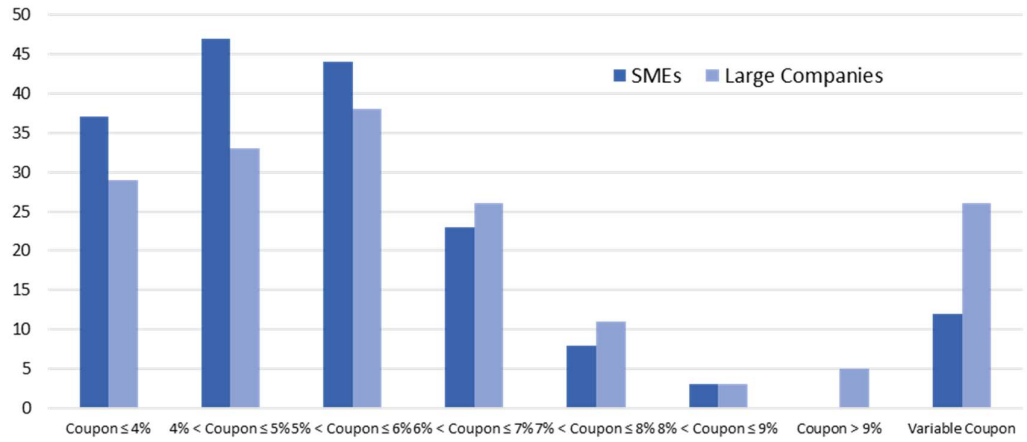
Figure 3.25: mini-bond coupons, comparison between 2016 and 2017



The bullet refund is mostly implemented, even though the frequency of amortising issues is increased in 2017, confirming the trend of the previous year. This latter modality is mainly utilised among SMEs, for long-term issues, below the threshold of € 50 million. On the contrary, the bullet policy is preferred by firms listed on the Stock Exchange, or enterprises devoted to financial services and large, short-term issues, meaning securities exceeding € 50 million, with a maturity within 5 years.

or what concerns the remuneration, a mini-bond pays a periodical coupon as a percentage of the nominal value. The coupon may be fixed and constant up until the maturity or variable and indexed to any observable market parameter, generally an interbank rate such as the Euribor. Furthermore, the annual coupon can be paid at different redemption dates: all things being equal, the early payment of the interests is an advantage for the investor if compared to the opportunity cost of capital, contributing to increase the internal rate of return (IRR). Figure 3.24 highlights how almost all the securities belonging to the sample pay a fixed coupon: only 38 mini-bonds, which correspond to 11.1% of the issues contemplate a variable coupon. The fixed remuneration is concentrated around values between 5% and 6%. The average value is 5.26%, whereas the median value is 5,25%.

Figure 3.26: mini-bond coupon and discrimination between SMEs and large firms



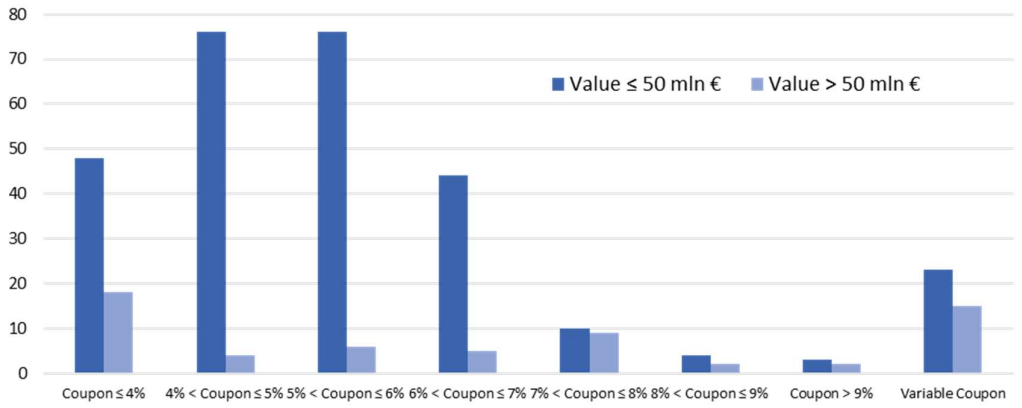
The distribution seems to be almost homogeneous on the average coupon; clearly the choice related to the coupon's amount depends upon several factors, the further the security's maturity, the higher the coupon's value; since for long-term maturities the market demands a risk premium.

Moreover, the coupon is dependent on the issuer's insolvency risk: the higher is the risk perceived by the market, the higher the risk premium the investors require. Finally, due to the scarce liquidity on the mini-bond market, the coupon includes an illiquidity premium which is expected to be increasing as the value of the issue decreases, especially if it is not-listed.

At this juncture, the purpose is to compare the mini-bonds between the years 2016 and 2017. Figure 3.25 shows how during the first nine months of 2017 the average coupon is decreased to 4.76%, confirming the trend already recorded in 2016, year during which the average rate dropped under the threshold of 5% at 4.89%. It is worth highlighting a decrease of the variable coupon, inconvenient for the issuers which may expect an increase of the interest rates in the future.

Figure 3.26 exhibits the coupon value by discriminating between SMEs and large enterprises, which seem to prefer variable rates.

Figure 3.27: mini-bond coupon and discrimination between issues over and below € 50 million

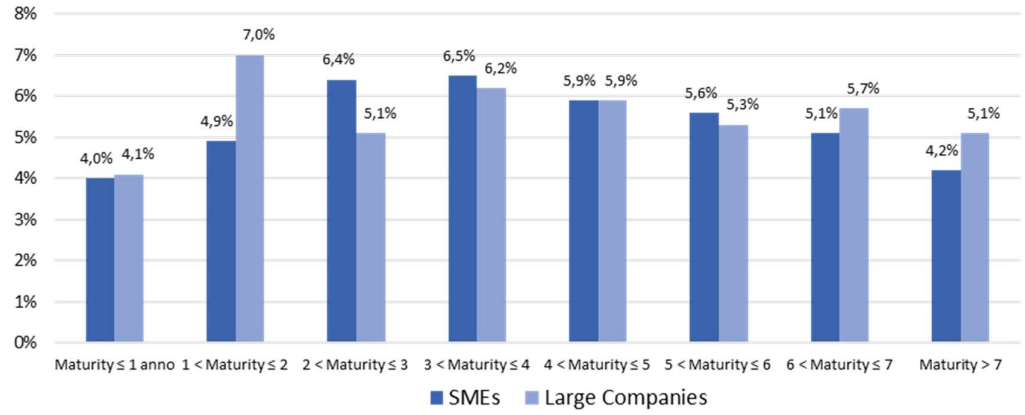


At first glance, it may look that the cost of debt of large firms is higher if compared to SMEs, since the average values are 5.47% and 5.1% respectively. However, it is worth remembering that smaller enterprises tend to issue bonds with a lower maturity, and thus a lower interest.

Figure 3.27 classifies issues by using as discerning value the threshold of € 50 million. As a preliminary analysis, the highest placements remunerate investors at basically equivalent conditions with respect to smaller issues: the average coupon is 5.27% and 5.26% respectively.

To take into account both the variables, firm size and maturity, figure 3.28 disaggregates the sample of fixed-coupon issues by analysing such factors. It should be noted that the average coupon associated to SMEs is significantly higher than the one connected to large enterprises when looking at issues characterised by maturities over 2 years and up until 4 years, whereas coupons seem to be more circumscribed, on average, with reference to maturities beyond 6 years. Finally, the goal is to underline how investors' remuneration depends upon the issue price. In almost all the observations of the sample, mini-bonds are issued at the face value of 100, even though some exceptions do exist.

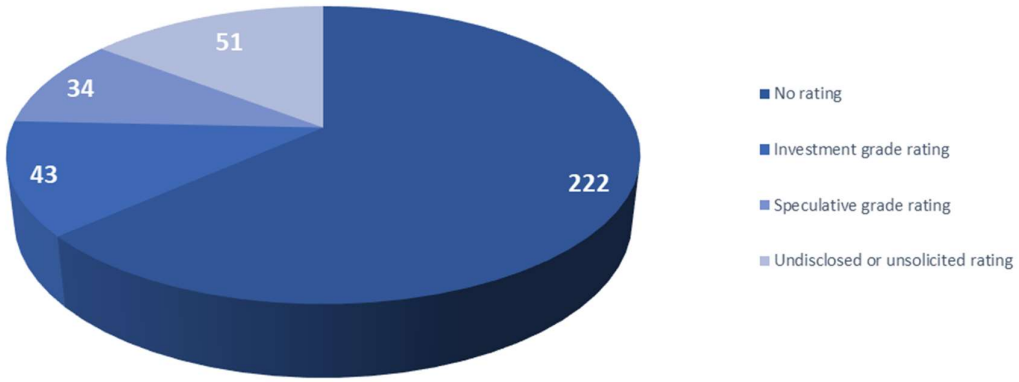
Figure 3.28: average mini-bond coupon and comparison between SMEs and large firms in relation to diverse maturities



3.3.3 Rating

The concept of rating has been argued in Chapter 2, Section 2.2.4. It is undoubtedly the main piece of information the market owns concerning the issuer's risk of insolvency. Actually, it is an evaluation synthesizing the issuer's capability to comply the commitment taken on towards the investors in relation to the capital reimbursement and coupon payment. Each rating agency utilises its own scale of evaluation to assess the issuer's solvency as a function of several indicators such as the degree of indebtedness, liquidity and prospective ability to generate positive cash flows.

Figure 3.29: rating in relation to mini-bonds



The rating is not mandatory: an issuer can choose if committing the mini-bond's evaluation to a rating agency, or not. Thus, it is interesting to analyse if the issues of the sample resorted to such option. It is worth recalling that the rating assessment can be disclosed or undisclosed, that is respectively publicly communicated or confidential. Generally, the rating is disclosed when it is solicited by the issuer itself, whereas it is unsolicited when requested by investors or other entities interested in grasping the risk profile of the firm applied to the issue. Figure 3.29 highlights that 63% of the issues is not accompanied by a rating; 43 observations are associated with an investment grade rating, which corresponds to an assessment equivalent to BBB at least, according to the rating scale used by Standard & Poor's; 34 securities characterised by a speculative grade rating, that is, below the indicated threshold. Finally, there are 51 mini-bonds with an undisclosed or unsolicited rating. Table 3.7 is aimed at better understanding the typologies of issues which more likely resort to a rating agency.

Table 3.7: statistics about rating attribution

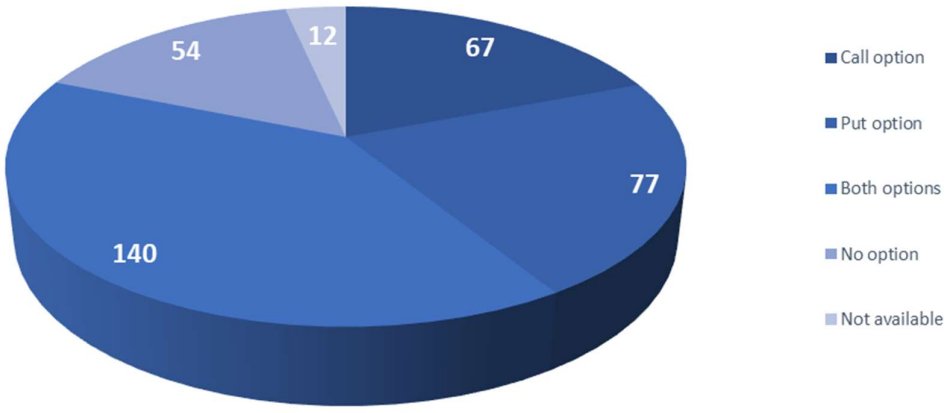
Rating:	Absent	Investment grade	Speculative grade	Undisclosed
All the sample	63.43%	12.29%	9.71%	14.57%
SMEs	70.72%	6.63%	5.52%	17.13%
Large enterprises	55.62%	18.34%	14.20%	11.83%
Listed enterprises	68.97%	17.24%	3.45%	10.34%
Non-listed enterprises	62.93%	11.84%	10.28%	14.95%
Issues ≤ € 50 million	65.85%	12.54%	3.83%	17.77%
Issues > € 50 million	52.38%	11.11%	36.51%	-
Non-financial enterprises	61.17%	12.30%	10.03%	16.50%
Financial enterprises	80.49%	12.20%	7.32%	-
Maturity < 5 years	75.81%	12.90%	4.84%	6.45%
Maturity ≥ 5 years	56.89%	12.00%	12.44%	18.67%

A disclosed rating is characteristic of placements carried out by large firms, and of issues over € 50 million. Much less frequent is the recourse of such an assessment for short-term issues and SMEs. On the one hand, it can be hypothesized that smaller enterprises are more sensitive to save with regard to such cost, renouncing the related benefits; on the other it is legitimate to deem that for a small firm which intends to sell a circumscribed amount of mini-bonds, there is the chance of a direct interaction with the interested investors who may personally evaluate the financial stability of the issuer. The confidential rating is more common among issues with maturity over 5 years. As a final remark, the issues over € 50 million have got a speculative grade rating, whereas small issues mainly present an investment grade rating.

3.3.4 Options, covenants and warranties

Another factor affecting the mini-bond remuneration is the presence or absence of possible options, the investor or the issuer can exercise. In the event of a callable mini-bond, at the issuer's discretion, the security can be reimbursed even prior to maturity. The call option may be suitable if the issuer glimpses the chance to get funds at better conditions, or if an expected cash inflow allows the issuing enterprise to have available sufficient liquidity to carry out the reimbursement.

Figure 3.30: put and call options in relation to mini-bonds



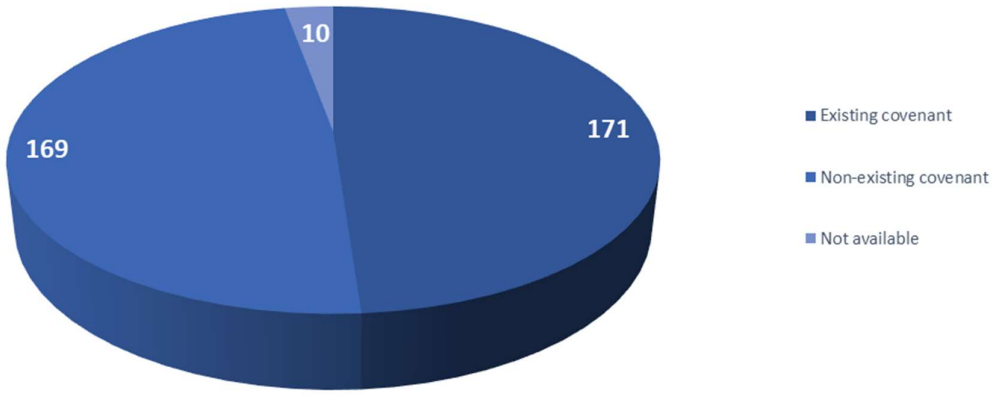
All things being equal, such opportunity benefits the issuer since it will be exercised when convenient. The opposite case is when the mini-bond is associated to a put option; the putable security allows the early redemption at the investor's discretion.

The sample subject to the analysis is made up of securities which own both the options, one only or no one. Figure 3.30 stresses that more than one third of the observations contemplate both the options, 140 issues equivalent to 40% of the sample; 45 mini-bonds do not contemplate any options. Finally, 77 securities are putable, that is, 22% of the overall observations and 67 are callable, 19% of the sample. To verify the frequency of a call or put option in relation to the early redemption, the sample is disaggregated as the table 3.8 shows. The call option is more commonly associated to SMEs and short-term issues. Curiously, the put option is more frequent among firms listed on the Stock Exchange and, without any surprise, among the large enterprises.

Table 3.8: statistics on put and call options

Presence of options:	No	Call	Put	Both	Not available
All the sample	15.43%	19.14%	22.00%	40.00%	3.43%
SMEs	18.23%	22.65%	19.89%	37.57%	1.66%
Large enterprises	12.43%	15.38%	24.26%	42.60%	5.33%
Listed enterprises	13.79%	13.79%	27.59%	37.93%	6.90%
Non-listed enterprises	15.58%	19.63%	21.50%	40.19%	3.12%
Issues ≤ € 50 million	15.33%	16.72%	24.74%	40.07%	3.14%
Issues > € 50 million	15.87%	23.81%	9.52%	46.03%	4.76%
Non-financial enterprises	11.97%	18.12%	23.62%	42.39%	3.88%
Financial enterprises	41.46%	26.83%	9.76%	21.95%	-
Maturity < 5 years	24.19%	24.19%	11.29%	38.71%	1.61%
Maturity ≥ 5 years	10.67%	16.44%	28.00%	40.89%	4.00%

Figure 3.31: presence of warranties in relation to the reimbursement



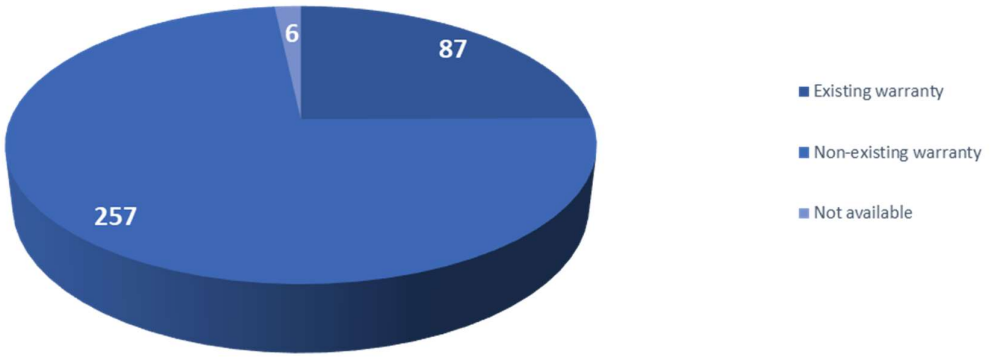
Another precaution to safeguard investors is to offer a warranty in the event of a hypothetical insolvency. All things being equal, a warranty can decrease the cost of capital for an issuer; in such a case the mini-bond is defined as secured, otherwise it is an unsecured security. Figure 3.31 shows how the presence of a warranty is rare among the observations of the sample. In this context, the warranty consists of collaterals such as pledges, liens or sureties; even though more peculiar collaterals do exist. Warranties come into view more frequently among issues of large enterprises and with a long-term maturity, consistently with the hypothesis previously illustrated. Probably SMEs do deem too much burdensome offering a warranty at the service of investors, and they may not be endowed with adequate competences on the topic. Large firms and listed ones tend to favour long-term issues and are willing to accept a request of warranty, even to further decrease the cost of capital with respect to unsecured issues.

The last paragraph of this section concerns the topic of financial covenants offered by issuers at the time of issue. Apart from the intrinsic risk of business, one of the criticalities investors of mini-bonds have to deal with is the danger of opportunistic behaviour and conflict of interest. In general, it is in the interest of investors monitoring the firm's financial status, to avoid that the risk of insolvency gets worse and worse, with an inescapable negative consequence on the security. Financial covenants are constraints, explicitly declared in the rules of the issue, whose

unsuccessful fulfilment by the firm entails the trigger of one or more events aimed at safeguarding the interest of investors. Proper examples are: the observance of given ratios such as the impact of financial debt or the Net Financial Position on the total assets or equity; the coverage ratio, meaning the ratio between the Earning Before Interests Taxes Depreciations and Amortisations (EBITDA) and the interest on debt, which should have to be over or below a certain threshold.

Other instances of non-financial covenants involve the preservation of the firm's ownership structure, the prohibition, under specific circumstances, to distribute dividends rather than the impracticability to carry out M&A operations or other procedures of extraordinary finance. The non-compliance with financial covenants may trigger the early redemption in favour of creditors, or other penalties. Certainly, to be effective, a covenant must concern objective data, meaning measurable and non-capable of being manipulated, avoiding any possible counter-argument. Figure 3.32 shows that the constraint of financial covenants is quite frequent: it is present into 171 observations, corresponding to 49% of the sample. It seems there is a higher likelihood for issues below € 50 million and for securities with long-term maturity. It is conceivable that for small placements the recourse to financial covenants is preferable to warranties due to the minor cost of incidence and the need for creditors to safeguard themselves in the long-run.

Figure 3.32: presence of financial covenants to comply



4. THE MODEL OF CAPITAL EMPLOYMENT

This chapter is dedicated to the analysis of the utilisation of the capital collected through mini-bonds by the issuer companies. The questions that it aims at answering are:

i. How much of the collected capital was invested in new projects/assets?
ii. How much of the collected capital was employed to restructure the existing financial debt?
iii. How much of the company's capital requirements was covered with the mini-bond?
iv. What could determine these decisions?
v. How much does the mini-bond affect company's operations?
vi. Are there any trends that can be useful in predicting the future growth of a mini-bond issuer?

Until the last year, answering to these questions would have been difficult due to the absence of a significant sample and to the too short time horizon, since SMEs started issuing mini-bonds only in 2013.
Our workgroup collected as much information as it has been possible and tried to provide a clear response to all the previous requests, developing an innovative model which is going to be described together with the results that were obtained.

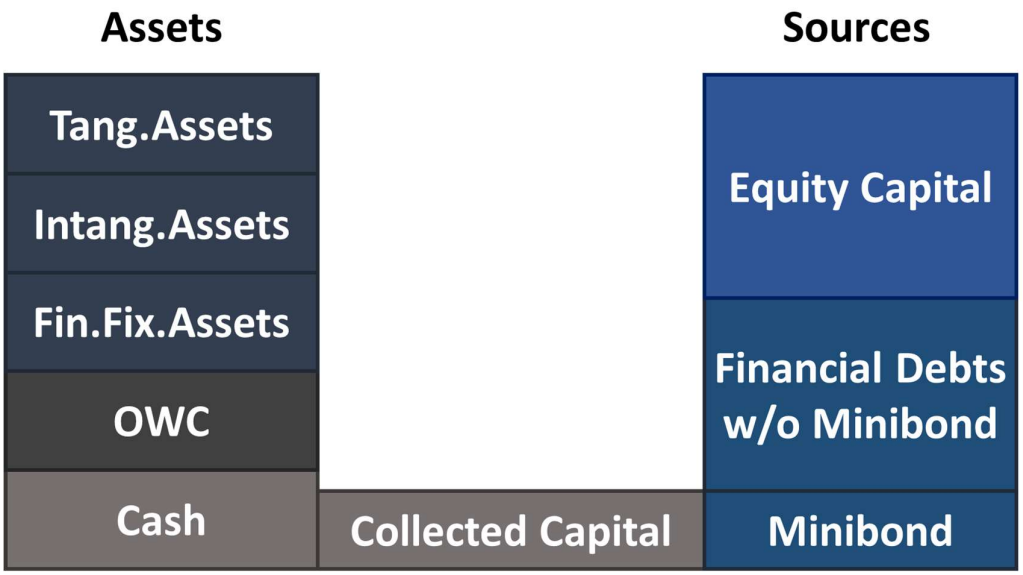
4.1 The Sample

The analysis has been conducted on a sample composed by 48 SMEs that issued a mini-bond from 2013 to 2015, excluding the financial companies. The reference definition of mini-bond applied in identifying the sample is the same previously described:

i. the issuer is a limited company or a cooperative company which is resident in Italy or runs the majority of its operations in Italy;
ii. the issuer is not a bank or an insurance company (in general, a financial company) or it is not part of a banking group subjected to the surveillance of Banca d'Italia;
iii. the issuer is not a vehicle created with the aim of sustaining an acquisition or a securitization;
iv. the issue is characterised by a maximum value of € 500 million (considering the cumulated amount in the case of different issues in the same period);
v. the title is not listed on a regulated Stock market which is open to retail investors.

The coverage ratio on the total number of issuers in the considered period is 81.4% due to the impossibility of obtaining data about some issuers (especially of 2013). In fact, there are some cases in which the companies were put in a winding-up position or merged or acquired by other entities, with the consequence that their Balance Sheets were not anymore available or no more coherent with the provided definition. Furthermore, some companies were born in the same year of their issue, making their data not relevant for the analysis operated by the Model. Anyway, the analysed sample is to be considered sufficient for the model's purposes and, therefore, its results are reliable. For the companies that issued more than one mini-bond in the period taken in consideration, the ratios are computed with reference to the amount collected in the first issue.

Figure 4.1: Balance Sheet reclassification according to the presented Model



4.2 Model Description

The Model is based on the reclassification of the consolidated Balance Sheet of the issuer companies, as described in Figure 4.1, and the comparison of the results between two years. The attention is focused on the trend more than an instant image of the situation to better understand the impact of the mini-bond on the financial activities of the company.

All the data have been collected on the AIDA platform or, as alternative ways, on the companies' official website or on the Telemaco platform. The Balance Sheets inserted in the model are registered at the Italian Company Register and, in the cases in which it was possible, the priority was given to the consolidated Financial Statement, with the aim of including the whole group's situation.

Furthermore, our workgroup decided to take in consideration the data of the year before the issue and those of the following years which are available at the moment (0 and +1 for 2015 issuers, +2 for 2014 issuers and +3 for 2013 issuers). To make all the cash flows comparable, all the data are reported as a percentage computed as

the item value on the mini-bond amount and the variation are always computed as the difference between the indicated year and the year -1.

The only exception is represented by the percentage of coverage of Requirements (REQ), which is computed as the value of the mini-bond divided by the company's requirements. In turn, the requirements are defined as the sum of the positive variation of the items classified in the Assets plus the negative variations classified in the Sources. Then, it represents the total amount of the purposes the company has taken during the three years, as investing in new assets or restructuring the existing debt. This index is particularly interesting since it shows if the capital collected through mini-bond played a fundamental role or not in the investment strategies of the company.

Going into details, our workgroup identified 8 different items in which the Balance Sheets have been reclassified:

i. the value of the net investments stock which have been operated by the companies, distinguishing between Financial Fixed Assets (FA), Intangible Assets (IA) and Tangible Assets (TA). The analysis of the evolution of those variables allows to understand if the issuers employed the collected capital to implement new investments in fixed capitals (machineries or real estates, for example), in financial capital (securities or other financial investments) or intangible capital (patents or starter accounts coming from new mergers and acquisitions);
ii. the value of the liquidity accounted in the Cash item (C), which allows to understand the amount of the collected capital that have not been used or, at the same time, the necessary capital which has been provided by internal funding;
iii. the value of the Operating Working Capital (OWC), net of the non-financial liabilities, which represents the stock of investments in short-term activities (for example commercial credits or stocks) net of the financial liabilities (for example, commercial debts or set aside funds);

iv. the value of the Financial Debts excluding the mini-bond amount (FD), that allows to analyse the employment of further debt from other sources for developing the projects or the choice of partially or totally refund it;

v. the value of the mini-bond (MB), taking in consideration the collected amount, i.e. the value of the year 0; this means that the model is not influenced by the different choices of principal repayment (bullet or amortising) and makes all the cases comparable;

vi. the value of the Equity capital (E) of the company, which can change between two years due to possible seasoned equity offering or capital increases and due to retained earnings or cumulated losses.

The model's functioning highlights on one side the utilisation of the capital year by year and on the other side the chosen financing sources. All the cash flows are compared with the liquidity collected through the mini-bond, which is going to increase the Cash value, until it is invested.

Analising for each issuer the differences of the items between the various years (keeping as reference the year -1) allows to understand if the collected capital is immediately invested or not, for what amount and with which intention.

As in the previously presented analyses, the results are computed as the average value and the median value, to permit a correct understanding of the data.

4.3 The Results Analysis

Looking at the average changes in investments or the disinvestments in Intangible Assets, it is interesting to notice the presence of a positive increase starting immediately in the year of the issue (+19.08%) and a further strengthening of the trend in the two following years (respectively +30.51% and +22.52%). The same result is offered by the median values but with lower percentages: this could indicate the fact that some companies invested very high amount of capital in a rapid way, while others took the same choice but with slower rhythms. Furthermore, 2013 data seem to be an exception, in particular for the year of the issue: the average value is

negative, even if the median value is aligned with the whole sample, and it signals the presence of strong disinvestment operated by some companies, which have been compensated in the following years with an important growth. A possible interpretation is offered by the fact that many mini-bond issuers operate in the service industry, so their key resources are represented by Intangible Assets more than other items.

The situation of investments in Tangible Assets is similar to Intangible Assets' although it is characterised by smaller growths. One more time, the 2013 data represent a particular situation, showing percentages which are even negative in average and median terms and signal a choice of disinvestment. It could be explained looking at the nature of the issuers: there is only one company classifiable in the Manufacturing Activities sector, which generally shows higher values for this Tangible Asset items, and another one belonging to the Building sector, which has been going through a very difficult situation due to the recent crisis and showed relevant decreases in terms of assets and company value.

Issuers showed a lower initial interest to the Financial Assets, whose variations become relevant only in the second year after the mini-bond placement. This information seems to coincide with the reduction of investments in the other Assets and could signal the choice of adjusting and stabilizing the situation through financial operations after the important changes undertaken in the previous years. 2014 issuers were the most active in these direction, while at the moment 2015 issuers seem not to be very interested in intervening in this field, with median value very close to zero (respectively 0.62% and 4.46%).

At the same time, it is not a surprise to discover a positive variation in the Cash item after the issue for an average percentage of 38.23% and a median percentage of 15.80%. It means that generally the issuers do not invest immediately the whole amount of the collected capital, but prefer to preserve a certain reserve as liquidity to analyse the situation and take other decisions basing on the results. In particular, 2013 issuers seem to be the most rapid in utilise the collected capital, while 2014 issuers invest only a little more than the half of the total amount.

A more interesting analysis could be applied on the Operating Working Capital variations, which present a relevant difference between the 2013 issuers and the rest of the sample. In fact, the first case is characterised by an important increase of the OWC (75,86% in the issue year and even 227.84% in the year +2), signaling a strong interest also to the implementation of further short-term activities. This phenomenon could be also explained taking in consideration a possible reduction of the non-financial liabilities which have a negative impact on the OWC amount. At the same time, 2014 issuers show a very low positive variation which can indicate the fact that the mini-bond issue did not affect with a particular relevance the operating activities of the companies. Moreover, the companies which issued the mini-bond in 2015 seem to be the more comprehensible in this sense: their OWC, after having showed variation percentages close to 0 in the year of the issue, relevantly increased in the first year. A possible interpretation is that the effect of the investments implemented in year 0 start to influence the company's results only from the year +1, hence their settlement period was lower than 12 months.

Furthermore, it is important to underline the fact that on average the issuer companies tend to strengthen their Equity capital after a mini-bond issue. The average increase on the mini-bond amount is 10.09% in the issue year and it raises to 31.53% in the following year, with median value which are not so far. This is coherent with what previously said and it is the demonstration that mini-bond issues determine an increase of the earnings starting from the year +1, which are accounted as Retained Earnings in the Balance Sheet. Another possibility is the choice of operating a Capital Increase, but this option is to be considered as rare since the presence of internal funds is in antithesis with the necessity of issuing a bond debt. A particular case is represented by the year +2 of 2013 issuers, which is affected by troubles in some companies. This is the reason of such a negative value (-64.20% on average) which is also totally not coherent with the data offered by the previous years.

The last variation which is taken in consideration is the difference between Financial Debts on the mini-bond amount, that allows to understand if the company chose to

refund the debt or to raise further debt from financial institutions. In this case, the statistics on the whole sample result quite useless since the three considered years offer variegate trends. In particular, the 2013 and 2014 issuers followed a similar path, refunding the existing debt in the year 0 and +1 and raising new financial debt starting from the year +2. The aim was probably to restructure the current debt due to the inability to repay it according to the existing conditions and to collect new financial debt, especially in form of bank loans, which will be reinvested in new projects or employed to repay the mini-bond debt. At the same time, the 2015 issuers took totally different decisions raising new financial debts, beside the mini-bond issue, to have an extra-liquidity and invest in differentiated projects.

Of course, these different choices are a mirror of the changed economic situation in Italy: if 2013 and 2014 companies needed to restructure their debt to avoid default positions, 2015 issuers intervened on the mini-bond market in a more favorable environment and their aim was clearly to invest in ambitious opportunities that bank would have hardly financed due to the risk they were going to undertake. At the same time, the average and median data do offer only an aggregate image of the issuers' decisions, so it is necessary to add that there are many examples that are inconsistent with the above offered analyses of the respective year.

To evaluate the impact on the Requirements of the company, it can be useful to analyse the percentage computed as the mini-bond amount on the total requirements of the company. As previously explained, the Model defines the company requirements as the sum of the positive variation of the items classified in the Assets plus the negative variations classified in the Sources. In this case, there are not relevant differences between all the issuers along the three years that are taken in consideration. The trend seems to underline a constant reduction of the weight of the capital collected through mini-bonds on the total amount of required capital. In the year of the issue, generally, the mini-bond has been utilised to finance the 57.76% of the activities of the company, with this percentage that decreases to 47.53% in the year +1 and even to 39.03% in the year +2. A possible interpretation of these results is obtainable taking in consideration the fact that in the years after the issue,

companies met new opportunities of financing, as shown previously, with internal funds or through debt capital.

Anyway, the impact of the mini-bond is to be considered relevant on the company's operations since a large part of the Requirements comes from the raised capital, even if it is almost halved in less than 2 years.

Table 4.1: average and median values of the investment indexes for the 2013 issuers

AVERAGE (2013)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	-4.93%	-4.08%	10.04%	3.68%	75.86%	2.93%	-21.40%	60.28%
-1/+1	41.93%	-0.48%	-3.45%	-3.14%	134.57%	12.64%	-11.56%	33.67%
-1/+2	45.77%	-5.68%	-12.32%	-7.63%	227.84%	-64.20%	113.72%	28.95%
-1/+3	54.43%	-8.80%	56.84%	89.84%	177.32%	0.51%	35.53%	38.81%
MEDIAN (2013)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	5.10%	-1.96%	10.29%	0.85%	55.67%	3.27%	-17.55%	53.98%
-1/+1	32.31%	2.49%	16.63%	-0.04%	175.29%	6.10%	-2.51%	31.30%
-1/+2	54.21%	-1.20%	28.58%	-0.12%	116.49%	-58.05%	67.31%	24.31%
-1/+3	16.34%	1.65%	97.42%	11.78%	5.54%	-45.39%	0.17%	22.69%

Table 4.2: average and median values of the investment indexes for the 2014 issuers

AVERAGE (2014)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	10.36%	10.12%	12.88%	46.67%	12.98%	22.53%	-31.21%	59.02%
-1/+1	23.64%	31.89%	19.97%	40.67%	2.95%	36.16%	-18.98%	52.72%
-1/+2	16.71%	32.13%	80.30%	57.94%	-0.71%	49.01%	36.31%	43.13%
MEDIAN (2014)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	2.02%	0.42%	7.25%	15.39%	5.54%	9.65%	-3.18%	53.98%
-1/+1	3.76%	4.23%	6.86%	11.61%	12.88%	24.93%	-0.71%	40.52%
-1/+2	0.58%	8.60%	13.62%	31.43%	-2.08%	29.13%	-26.84%	40.07%

Table 4.3: average and median values of the investment indexes for the 2015 issuers

AVERAGE (2015)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	42.24%	34.11%	18.70%	37.47%	-2.76%	-7.44%	27.32%	54.76%
-1/+1	38.38%	58.33%	7.83%	54.26%	30.10%	31.00%	45.83%	43.82%
MEDIAN (2015)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	11.71%	4.22%	0.62%	22.94%	-8.43%	5.70%	24.77%	57.27%
-1/+1	7.13%	15.73%	4.46%	25.67%	54.84%	19.73%	56.13%	40.86%

Table 4.4: average and median values of the investment indexes for the whole sample issuers

AVERAGE (WHOLE SAMPLE)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	19.08%	16.34%	14.46%	38.23%	15.59%	10.09%	-10.48%	57.76%
-1/+1	30.51%	35.71%	13.22%	39.09%	28.38%	31.53%	1.71%	47.53%
-1/+2	22.52%	24.57%	61.77%	44.83%	45.00%	26.37%	51.79%	40.29%
MEDIAN (WHOLE SAMPLE)								
	%IA	%TA	%FA	%C	%OWC	%E	%FD.	%MB/REQ
-1/0	3.62%	0.31%	6.98%	15.80%	0.23%	9.24%	-7.70%	60.35%
-1/+1	4.23%	5.32%	5.34%	11.84%	11.10%	20.01%	-3.18%	43.46%
-1/+2	1.54%	1.95%	13.62%	12.00%	1.79%	15.29%	9.88%	39.03%

5. EMPIRICAL ANALYSIS

The purpose of this chapter is to perform an empirical analysis to evaluate if the mini-bond issue is somehow correlated to firm intrinsic variables or dependant on the issue's characteristics.

In detail, the aim of the analysis is to verify if the increase or decrease of the financial debt, once the firm issued the mini-bond, or the percentage of financial needs' coverage through the mini-bond issue are somehow correlated to intrinsic peculiarities of the issuer or dependent upon the characteristics of the issue. The analysis is carried out by running a multiple linear regression on three time intervals to investigate if the issue has an impact, not only in the year of the issue, but even in the subsequent years. Section 5.2 deeply describes the explanatory variables used in the model and the expectations in terms of correlation with respect to the increase or decrease of the financial debt and mini-bond impact over the issuer's financial needs. Section 5.3 exhibits the outcome of the multiple linear regression applied for each time horizon. Apart from the statistical significance of each independent variable with respect to the dependent variable, suitable tests are performed to verify the efficiency of the regression analysis, the multicollinearity, the normality and the homoscedasticity of residuals.

Finally, in the light of the analysis performed in the previous sections, Section 5.4 provides a conclusive thought in relation to the analysis and goal of this chapter.

5.1 The Sample

The analysis is carried out with reference to a sample made up by 48 SMEs which issued a mini-bond from 2013 to 2015, excluding the financial companies. For companies that issued more than one mini-bond in the period taken in consideration,

the multiple linear regression is run with reference to the amount collected in the first issue. The definition of mini-bond applied in identifying the sample is the same already described in the previous chapters:

i. the issuer is a limited company or a cooperative company which is resident in Italy or runs the majority of its operations in Italy;
ii. the issuer is not a bank or an insurance company (in general, a financial company) or it is not part of a banking group subjected to the surveillance of Banca d'Italia;
iii. the issuer is not a vehicle created with the aim of sustaining an acquisition or a securitization;
iv. the issue is characterised by a maximum value of € 500 million (considering the cumulated amount in the case of different issues in the same period);
v. the title is not listed on a regulated Stock market which is open to retail investors.

The coverage percentage is 81.4% due to the impossibility of attaining data about some issuers (especially of 2013). In fact, there are some cases in which the companies were put in a winding-up position or merged or acquired by other entities, with the consequence that their Balance Sheets were not anymore available or no more coherent with the provided definition. Furthermore, some companies were born in the same year of their issue, making their data not relevant for the analysis purposes. If 0 is the year of the issue, the analysis takes into consideration the year prior to the issue (-1) and the subsequent years which are currently available (+1 for the issuers up to 2015, +2 for the issuers up to 2014 and 2013). Therefore, the number of observations decreases as the time horizon extends: 48 firms in the time interval [-1; 0], 45 firms in the time interval [-1; +1] and 29 in the interval [-1; +2].

5.2 Variables definition

The multiple linear regression model is used to analyse the relationship between a dependent variable and one or more dependent variables.

The regression models herein performed use as dependent or explained variable:

I. Model_01: the ratio between the debt variation and the issue amount;
II. Model_02: the ratio between the issue amount and the firm's financial needs.

The dependent variables are time-dependent; as a consequence, for each time interval, the corresponding explained variable is used. Furthermore, since the purpose of the analysis is to evaluate if the increase or decrease of the financial debt and the mini-bond impact on the overall financial needs depends upon the issue, the explanatory variables refers to the year prior to the issue (-1). For instance, when the Model_01 is applied upon the time interval [-1; 0], the regressand is the ratio between the debt variation in the time horizon [-1; 0] and the issue amount; similarly, if the Model_02 is applied upon the time interval [-1; +1], the regressand is the ratio between the issue amount and the firm's financial at time +1. Concerning the independent or explanatory variables, both the Model_01 and the Model_02 use the following:

I. material assets;
II. cash;
III. growth;
IV. industry;
V. age;
VI. listed / non-listed;
VII. leverage;
VIII. reimbursement;
IX. option;
X. maturity;
XI. rating.

Consistently with the purposes of the analysis, the regressors describe both the issuer and issue's features. Specifically, the variables: material assets, immaterial assets,

liquidity, growth, industry, age, listed and leverage are related to factors characterising the issuer; whereas the variables: reimbursement, option, maturity and rating depend upon the features of the issue.
All the explanatory variables refer to the year of issue and thus, to the Balance Sheets data of the year prior to the mini-bond issue.

5.2.1 Material assets

It is a firm-dependent variable which synthetises the absolute value of the issuer's durable physical properties, mainly including: machineries and equipment, buildings and lands. Both the Model_01 and the Model_02 adopt the logarithmic transformation in using the material assets as explanatory variable. It is presumable that, if the firm is characterised by a significant value of material assets, a lender will be apt to dispense borrowings, since the firm pledges a property to the lender to secure repayment of the loan. Actually, in a lending agreement, the property acts as a collateral to safeguard the lender against the firm's default; in other words, the material asset can be used to offset the loan if the firm fails to pay back the principal and the interests as stipulated in the lending agreement.
As a consequence of the rationale depicted above, the correlation between the regressand and the value of the issuer's material assets is expected to be positive in the Model_01 and negative in the Model_02. Indeed, in the former case the ratio between the debt variation and the issue amount increases as the value of the issuer's material assets increases since the firm can rely on the bank channel to raise debt; in the latter case, the ratio between the issue amount and the issuer's financial needs decreases as the value of the issuer's material assets increases since the mini-bond covers a circumscribed percentage of the firm's financial needs due to the opportunity to diversify its financing strategy even via bank channel.

5.2.2 Cash

It is a firm-dependent variable which synthetises the absolute value of the issuer's money in-hand, meaning money in banking account, checks or any other form of

currency that is easily accessible and can be quickly turned into physical cash. Both the Model_01 and the Model_02 adopt the logarithmic transformation in using cash as explanatory variable. It is presumable that, if the firm's cash is high, the firm may use the available liquidity to finance investment projects, and diversifying the sources of funding through the issue of mini-bond and via bank channel. As a result of the rationale above-depicted, the correlation between the dependent variable and the issuer's liquidity is expected to be positive in the Model_01 and negative in the Model_02. Indeed, in the former a good level of liquidity may signal the need for funds to finance investments which is satisfied through a diversified financing strategy, including bank debt; in the latter case, the ratio between the issue amount and the issuer's financial needs decreases as the cash in-hand of the issuer increases since the mini-bond does not cover a significant percentage of the firm's financial needs due to the possibility to rely on its internal liquidity to finance investments.

5.2.3 Growth

It is a firm-dependent variable. In the analysis, the growth of an issuer is synthesized by the compounded annual growth rate (CAGR) in the time horizon [-3; -1]. It is presumable that, a firm exhibiting a notable growth rate, will implement a diversified financing strategy to ensure the collection of the needed funds to further boost the growth. In light of what depicted above, it is logical to expect a positive correlation between the regressand and the issuer's CAGR in the Model_01 and a negative correlation in the Model_02. Indeed, in the former case the ratio between the debt variation and the issue amount increases as the firm's compounded annual growth rate is notable, since the issuer to back the growth up implements a strategy aimed at increasing the debt as source to collect funds; in the latter case, the ratio between the issue amount and the issuer's financial needs decreases as firm's compounded annual growth rate is noteworthy since the mini-bond issue covers only partially the firm's financial needs.

5.2.4 Industry

It is a firm-dependent dummy variable identifying the industry in which the issuer is active. The variable takes value 1 if the issuer is a manufacturing firm, 0 otherwise.

The logic behind the insertion of the variable in the model is due to the hypothesis whereby manufacturing firms have available more tangible assets especially in terms of machineries and equipment when compared to enterprises active in other industries. Thus, the same reasoning described in Section 5.2.1 is here applied: tangible assets can be used to offset the loan if the firm fails to pay back the principal and the interests as well, facilitating the access to the bank channel. Furthermore, if a manufacturing firm can rely on tangible assets as a warranty for debt repayment, it does not need to diversify the sources of financing and consequently, if it issues a mini-bond, the impact on the overall needs for fund is relevant. Therefore, the variable "Industry" is expected to be positively correlated to the regressand in both the Model_01 and the Model_02.

5.2.5 Age

It is a firm-dependent variable. Both the Model_01 and the Model_02 adopt the logarithmic transformation in using the issuer's age as explanatory variable. From a theoretical standpoint, advancement in age may potentially give to a firm the chance to take advantage of benefits associated with corporate reputation and experience. Hypothetically, older firms have the opportunity of establishing a strong asset base, gaining attractive industry reputation, and acquiring experience on the mechanisms of macroeconomic structures and capital markets. Concerning the access to sources of financing, Petersen and Rajan (1994) argue that aged firms may potentially have acquired a certain quality reputation to be able to attract funds more easily and cheaply from financial markets. As a result of the above-mentioned reasoning, it is presumable that aged issuers can rely on sources of financing alternative to the bank debt such as the financial markets. Therefore, the age of the issuer is expected to be negatively correlated to the regressand both in the Model_01 and in the Model_02. Thus, in the former case the ratio between the financial debt variation and the issue

amount decreases as the issuer is aged, since, from a theoretical perspective, the aged firm can also easily and cheaply access to funds by relying on sources of financing alternative to the bank debt and use such funds to restructure the debt; in the latter case, the ratio between the issue amount and the issuer's financial needs decreases as the issuer's advancement in age increases, because the issuer satisfies its financial needs only partially by resorting to mini-bond issue.

5.2.6 Listed

It is a firm-dependent dummy variable which takes value 1 if the issuer is a listed firm, 0 if it is a non-listed firm. How highlighted in Chapter 1 listing on the Stock Exchange is a strategic relevance decision allowing the firm to access novel financial means. However, listing may increase the prestige of the firm, allowing it to enjoy positive repercussions in terms of reputation and bargaining power toward financial institutions. Therefore, in the light of the above-mentioned analysis, in the Model_01 it is presumable expecting a positive correlation between the regressor "Listed" and the regressand, since a listed firm may use the prestige of being listed to attain favourable loans via bank channel or retract the debt features due to its bargaining power. In the Model_02 the regressor is expected to be negatively correlated to the dependent variable, since a listed company covers in a very limited manner its financial needs by issuing a mini-bond, but rather by restoring to the financial markets.

5.3.7 Leverage

It is a firm-dependent variable synthesizing how much debt a firm uses to finance its assets in relation to the value of shareholders' equity. A high leverage or debt to equity ratio generally means that a firm is aggressive in financing the growth through bank debt capital. Therefore, an issuer whose financial structure is based upon bank debt capital as predominant source of funds is expected not to significantly increase the level of indebtedness, but rather the firm satisfies its financial needs through sources of financing alternative to the bank channel. As a consequence of the

rationale depicted above, the correlation between the regressand and the issuer's debt to equity ratio is expected to be negative in the Model_01 and positive in the Model_02. In the former case the ratio between the debt variation and the issue amount decreases as the firm is leveraged, since the more the firm is indebted the less it can further rely on bank debt to collect funds, but rather on alternative sources such as the mini-bond issue; symmetrically, the ratio between the issue amount and the issuer's financial needs increases as the firm is leveraged, since the more the level of indebtedness, the more the firm needs to rely on alternative financial means, namely the mini-bond, to satisfy its financial needs.

5.2.8 Reimbursement

It is an issue-dependent dummy variable which takes value 1 if the issue includes a put option, 0 if based upon a bullet modality. The deferral of principal reimbursement until the mini-bond maturity entails lower financial disbursements during the mini-bond lifetime but implies a risk for the issuers which are not prepared to face a lump sum payment. In the amortising modality, the face value is paid off through a fixed repayment schedule. How highlighted in Chapter 3, the amortising policy to pay off the capital related to the mini-bond issue is common among the SMEs since a lump sum repayment would impact too much significantly on the firm's financial stability. Thus, SMEs may be apt to pursue a financial strategy based upon a small, but constant decrease of the financial debt and consequently the debt variation in a short-term horizon is not significant. In parallel, the strategy of a firm to decrease the financial debt may be interpreted as an inclination to rely on sources of financing alternative to the bank debt to run its activities or boost the growth through investments, especially for firms which to attain borrowings via bank channel. On the basis of what displayed above, it is coherent to expect a negative correlation in the Model_01 and positive correlation in the Model_02.

5.2.9 Option

It is an issue-dependent dummy variable which takes value 1 if the issue includes a put option, 0 if involves a call option. The put option gives the investor the right, but not the obligation, to be reimbursed prior to the maturity; clearly, other things being equal, the put option puts at a disadvantage the issuer which may face an unexpected financial outflow to satisfy the request of the investor to be paid back in advance with respect to the mini-bond maturity, especially if the issuer is a SME. Therefore, it is likely that a firm, opting for issuing a mini-bond involving a put option, does not only rely on such source of financing to fulfil the financial needs, and especially, the issue amount is quite circumscribed to avoid the hypothetical scenario in which the investors exercise the put option and the issuer must be up against a significant financial disbursement to pay off the debt related to the issue. In the light of the above-mentioned thought, it is presumable that if a put option is attached to the issue, the correlation between the explanatory variable "Option" and the regressand is positive in Model_01, and the ratio between the debt variation and the issue amount is expected to be larger, since the issuer increases the stock of financial debt to safeguard itself in the event the investors exercise the put option. On the contrary, in Model_02 the correlation between the explanatory variable "Option" and the regressand is negative, since if the issue includes a put option the mini-bond covers only partially the issuer's need for funds.

5.2.10 Maturity

It is an issue-dependent variable depicting the lifetime of the mini-bond issue. At the bond maturity, the issuer is required to repay the full amount of the outstanding principal plus any applicable interest to the investor. Both the Model_01 and the Model_02 adopt the logarithmic transformation in using "Maturity" as explanatory variable. If the mini-bond exhibits a short-term maturity, it is logical to expect that the funds collected through the issue are aimed at satisfying short-term financial needs. Therefore, the maturity is expected to be negatively correlated to the dependant variable in the Model_01 in the years following the issue; in other words,

the ratio between the debt variation and the issue amount tends to decrease if the issue is long-term, since the issuer uses the funds collected through the mini-bond issue to restructure its financial structure. Instead the correlation in the very short-term is deemed to be negative in the Model_02, since the shorter the mini-bond maturity, the more relevant its impact on the short-term financial needs.

5.2.11 Rating

It is an issue-dependent variable which takes value 1 if the issue is rated, 0 if not. As outlined in the previous chapters rating is a crucial variable in relation to an issue since alerts investors to the quality and stability of the mini-bond. In other words, the rating influences the investors' appetite in relation to a mini-bond issue. Actually, the rating is surely the main piece of information investors can have in relation to the issuer's insolvency; in particular, the assessment depends upon the issuer's capacity to fulfil the expected commitments concerning the remuneration and principal payback. In the light of what mentioned above, it is presumable that the correlation between the "Rating" regressor and the dependant variables in both Model_01 and Model_02 is positive. In detail, the ratio between the debt variation and the issue amount increases if the issue is rated, since if the issue is rated the asymmetry information between the firm and the financial institutions with which the firm interacts decreases and thus, it may be easier to attain borrowings via bank channel. Analogously, the ratio between the issue amount and the issuer's financial needs increases, since if the issuer submits the mini-bond under a rating process, the ultimate aim is to minimize the information asymmetry towards the investor and enhance its standing as borrower in investor's eyes; thus, it is likely that the capital collected is aimed at covering a non-negligible component of the issuer's demand for funds.

5.3 Results

In this section, the regression outcome is reported, both for the Model_01 and for the Model_02 for each analysed time horizon.

Table 5.1: Model_01, OLS, time interval [-1; 0]. Sample: 48 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	−0.624654	1.01258	−0.6169	0.5413	
Material assets	−0.0408962	0.0657971	−0.6215	0.5383	
Cash	0.175910	0.0656640	2.679	0.0112	**
Cagr [-3; -1]	0.231817	0.184298	1.258	0.2168	
Industry	0.171259	0.307098	0.5577	0.5806	
Listed	0.217611	0.467383	0.4656	0.6444	
Leverage	−0.0959248	0.0531645	−1.804	0.0798	*
Age	−0.547569	0.250752	−2.184	0.0358	**
Maturity	0.0588924	0.270810	0.2175	0.8291	
Reimbursement	−0.167673	0.425942	−0.3937	0.6962	
Option	0.715784	0.293890	2.436	0.0201	**
Rating	0.583537	0.327639	1.781	0.0836	*

Mean dependent var	−0.119028		S.D. dependent var	0.975660
Sum squared resid	24.06839		S.E. of regression	0.829258
R-squared	0.450343		Adjusted R-squared	0.277593
F(11, 35)	2.606911		P-value(F)	0.015356
Log-likelihood	−50.96278		Akaike criterion	125.9256
Schwarz criterion	148.1273		Hannan-Quinn	134.2802
Average VIF	1.765		P-value(White's test)	0.541007

***** indicates significance at the 10 percent level

****** indicates significance at the 5 percent level

******* indicates significance at the 1 percent level

Table 5.2: Model_01, OLS, time interval [-1; +1]. Sample: 45 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0.884015	1.40160	0.6307	0.5326	
Material assets	0.0104495	0.0938845	0.1113	0.9121	
Cash	0.0859586	0.0891319	0.9644	0.3419	
Cagr [-3; -1]	0.0573102	0.248927	0.2302	0.8193	
Industry	−0.451523	0.438818	−1.029	0.3110	
Listed	0.278765	0.692661	0.4025	0.6899	
Leverage	−0.0851278	0.0733831	−1.160	0.2544	
Age	−0.636935	0.356576	−1.786	0.0832	*
Maturity	−0.511938	0.379443	−1.349	0.1865	
Reimbursement	−0.127230	0.597555	−0.2129	0.8327	
Option	0.650873	0.490234	1.328	0.1934	
Rating	1.05804	0.462357	2.288	0.0287	**

Mean dependent var	−0.014417		S.D. dependent var	1.257688
Sum squared resid	43.60028		S.E. of regression	1.149444
R-squared	0.373544		Adjusted R-squared	0.164725
F(11, 33)	1.788844		P-value(F)	0.096722
Log-likelihood	−63.14126		Akaike criterion	150.2825
Schwarz criterion	171.9625		Hannan-Quinn	158.3646
Average VIF	1.767		P-value(White's test)	0.553481

* indicates significance at the 10 percent level

** indicates significance at the 5 percent level

*** indicates significance at the 1 percent level

Table 5.3: Model_01, OLS, time interval [-1; +2]. Sample: 29 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0.908619	3.50625	0.2591	0.7986	
Material assets	0.312568	0.193662	1.614	0.1249	
Cash	0.132569	0.289965	0.4572	0.6533	
Cagr [-3; -1]	−0.0200263	0.713087	−0.02808	0.9779	
Industry	−0.401573	1.12945	−0.3555	0.7266	
Listed	−2.67962	2.45983	−1.089	0.2912	
Leverage	−0.178275	0.170689	−1.044	0.3109	
Age	−1.41698	0.795604	−1.781	0.0928	*
Maturity	−1.85674	0.784728	−2.366	0.0301	**
Reimbursement	1.96952	1.62627	1.211	0.2424	
Option	−0.668121	1.27859	−0.5225	0.6080	
Rating	0.172334	1.16769	0.1476	0.8844	

Mean dependent var	0.523224		S.D. dependent var	2.137401
Sum squared resid	71.67916		S.E. of regression	2.053393
R-squared	0.439646		Adjusted R-squared	0.077063
F(11, 33)	1.212541		P-value(F)	0.349225
Log-likelihood	−54.27033		Akaike criterion	132.5407
Schwarz criterion	148.9482		Hannan-Quinn	137.6793
Average VIF	2.514		P-value(White's test)	0.175294

***** indicates significance at the 10 percent level

****** indicates significance at the 5 percent level

******* indicates significance at the 1 percent level

Table 5.4: Model_02, OLS, time interval [-1; 0]. Sample: 48 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	1.20113	0.261376	4.595	<0.0001	***
Material assets	0.00270218	0.0169840	0.1591	0.8745	
Cash	−0.0525025	0.0169497	−3.098	0.0038	***
Cagr [-3; -1]	−0.0434581	0.0475724	−0.9135	0.3672	
Industry	0.0123568	0.0792703	0.1559	0.8770	
Listed	−0.162298	0.120644	−1.345	0.1872	
Leverage	0.0149119	0.0137232	1.087	0.2846	
Age	−0.0526901	0.0647260	−0.8140	0.4211	
Maturity	0.0798842	0.0699036	1.143	0.2609	
Reimbursement	0.0117434	0.109947	0.1068	0.9155	
Option	−0.0622925	0.0758611	−0.8211	0.4171	
Rating	0.00858187	0.0845726	0.1015	0.9198	

Mean dependent var	0.579565		S.D. dependent var	0.235407
Sum squared resid	1.603671		S.E. of regression	0.214054
R-squared	0.370902		Adjusted R-squared	0.173186
F(11, 33)	1.875930		P-value(F)	0.077735
Log-likelihood	12.68941		Akaike criterion	−1.378828
Schwarz criterion	20.82294		Hannan-Quinn	6.975847
Average VIF	1.765		P-value(White's test)	0.61554

***** indicates significance at the 10 percent level

****** indicates significance at the 5 percent level

******* indicates significance at the 1 percent level

Table 5.5: Model_02, OLS, time interval [-1; +1]. Sample: 45 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0.779611	0.314319	2.480	0.0184	**
Material assets	−0.0283406	0.0207438	−1.366	0.1811	
Cash	−0.0309731	0.0200668	−1.544	0.1322	
Cagr [-3; -1]	0.0307991	0.0560574	0.5494	0.5864	
Industry	0.0959797	0.0983701	0.9757	0.3363	
Listed	−0.153523	0.142389	−1.078	0.2888	
Leverage	0.0182929	0.0161454	1.133	0.2654	
Age	0.0565433	0.0762788	0.7413	0.4638	
Maturity	0.145272	0.0825043	1.761	0.0875	*
Reimbursement	0.0651665	0.131814	0.4944	0.6243	
Option	−0.0512764	0.0903126	−0.5678	0.5740	
Rating	−0.0148950	0.101279	−0.1471	0.8840	

Mean dependent var	0.479353		S.D. dependent var	0.260160
Sum squared resid	2.090682		S.E. of regression	0.251702
R-squared	0.297971		Adjusted R-squared	0.063962
F(11, 33)	1.273331		P-value(F)	0.282121
Log-likelihood	5.204143		Akaike criterion	13.59171
Schwarz criterion	35.27166		Hannan-Quinn	21.67378
Average VIF	1.747		P-value(White's test)	0.612753

***** indicates significance at the 10 percent level

****** indicates significance at the 5 percent level

******* indicates significance at the 1 percent level

Table 5.6: Model_02, OLS, time interval [-1; +2]. Sample: 29 observations

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
Const	0.296020	0.526131	0.5626	0.5810	
Material assets	−0.00689630	0.0269384	−0.2560	0.8010	
Cash	0.00602800	0.0364962	0.1652	0.8708	
Cagr [-3; -1]	0.0435550	0.0905814	0.4808	0.6368	
Industry	0.0202087	0.154458	0.1308	0.8974	
Listed	−0.0840047	0.302394	−0.2778	0.7845	
Leverage	−0.0179572	0.0237620	−0.7557	0.4602	
Age	−0.0414528	0.0922332	−0.4494	0.6588	
Maturity	0.0155887	0.0999818	0.1559	0.8779	
Reimbursement	0.292759	0.215197	1.360	0.1915	
Option	0.0252451	0.149668	0.1687	0.8680	
Rating	−0.0402531	0.172599	−0.2332	0.8184	

Mean dependent var	0.404676		S.D. dependent var	0.249161
Sum squared resid	1.314913		S.E. of regression	0.278115
R-squared	0.243553		Adjusted R-squared	-0.245912
F(11, 33)	0.497591		P-value(F)	0.879444
Log-likelihood	3.706898		Akaike criterion	16.58620
Schwarz criterion	32.99375		Hannan-Quinn	21.72484
Average VIF	2.296		P-value(White's test)	0.357678

* indicates significance at the 10 percent level

** indicates significance at the 5 percent level

*** indicates significance at the 1 percent level

5.3.1 Results' analysis

The efficiency of the regression analysis is verified through the F-test and the multicollinearity through the computation of average VIF (Variance Inflation Factor) and variance-covariance matrix reported in the tables below. The average Variance Inflation Factor both in Model_01 and Model_02, in every time interval is below 10, threshold over which a collinearity issue may emerge. R^2 and adjusted R^2 coefficients are reported both for the Model_01 and the Model_02 for each time interval. Furthermore, the normality and homoscedasticity of residuals is verified respectively through the implementation of the White's test and the Q-Q plot. The residuals seem to behave according to a normal distribution and the White's test p-value allows to accept the null hypothesis H_0: homoscedasticity, both in Model_01 and Model_02 for every time horizon.

Table 5.7: Variance-Covariance Matrix, time interval [-1; 0]

	Mat.	Cash	Cagr	Ind.	List.	Lev.	Age	Mat.	Reimb.	Opt.	Rat.
Mat.	**6.4674**	1.6467	-0.3445	0.1443	-0.1086	0.1442	0.9270	0.6319	0.3242	0.1336	-0.0033
Cash	1.6467	**5.7837**	-0.8937	-0.0671	-0.1490	0.0826	0.6217	0.3166	0.2133	-0.0749	0.2459
Cagr	-0.3445	-0.8937	**0.8322**	-0.0891	0.0587	1.1150	-0.3211	-0.0216	0.0604	-0.0899	-0.0239
Ind.	0.1443	-0.0671	-0.0891	**0.2091**	-0.0041	-0.2064	0.0974	-0.0569	-0.0005	-0.0100	0.0199
List.	-0.1086	-0.1490	0.0587	-0.0041	**0.0779**	-0.0887	-0.0357	-0.0128	-0.0032	-0.0059	-0.0095
Lev.	0.1442	0.0826	1.1150	-0.2064	-0.0887	**10.6829**	-1.1654	0.0383	0.1756	-0.3928	-0.5127
Age	0.9270	0.6217	-0.3211	0.0974	-0.0357	-1.1654	**0.5625**	0.0549	0.0388	0.0750	0.0824
Mat.	0.6319	0.3166	-0.0216	-0.0569	-0.0128	0.0383	0.0549	**0.3703**	0.1190	-0.0324	-0.0019
Reimb.	0.3242	0.2133	0.0604	-0.0005	-0.0032	0.1756	0.0388	0.1190	**0.1675**	0.0041	0.0770
Opt.	0.1336	-0.0749	-0.0899	-0.0100	-0.0059	-0.3928	0.0750	-0.0324	0.0041	**0.2173**	0.0335
Rat.	-0.0033	0.2459	-0.0239	0.0199	-0.0095	-0.5127	0.0824	-0.0019	0.0770	0.0335	**0.2309**

Table 5.8: Variance-Covariance Matrix, time interval [-1; +1]

	Mat.	Cash	Cagr	Ind.	List.	Lev.	Age	Mat.	Reimb.	Opt.	Rat.
Mat.	**6.0377**	1.5871	-0.3747	0.2362	-0.1168	0.1852	0.8976	0.5838	0.2498	0.0691	-0.0755
Cash	1.5871	**5.9979**	-0.9304	-0.0522	-0.1544	0.1232	0.6313	0.3169	0.2061	-0.1014	0.2341
Cagr	-0.3747	-0.9304	**0.8654**	-0.0898	0.0602	1.1502	-0.3363	-0.0265	0.0588	-0.0920	-0.0237
Ind.	0.2362	-0.0522	-0.0898	**0.2054**	-0.0035	-0.2163	0.1119	-0.0475	0.0133	-0.0010	0.0306
List.	-0.1168	-0.1544	0.0602	-0.0035	**0.0810**	-0.0971	-0.0374	-0.0144	-0.0044	-0.0054	-0.0094
Lev.	0.1852	0.1232	1.1502	-0.2163	-0.0971	**11.0866**	-1.2089	0.0356	0.1796	-0.3894	-0.5169
Age	0.8976	0.6313	-0.3363	0.1119	-0.0374	-1.2089	**0.5785**	0.0485	0.0302	0.0687	0.0763
Mat.	0.5838	0.3169	-0.0265	-0.0475	-0.0144	0.0356	0.0485	**0.3755**	0.1113	-0.0410	-0.0096
Reimb.	0.2498	0.2061	0.0588	0.0133	-0.0044	0.1796	0.0302	0.1113	**0.1600**	-0.0044	0.0711
Opt.	0.0691	-0.1014	-0.0920	-0.0010	-0.0054	-0.3894	0.0687	-0.0410	-0.0044	**0.2143**	0.0227
Rat.	-0.0755	0.2341	-0.0237	0.0306	-0.0094	-0.5169	0.0763	-0.0096	0.0711	0.0227	**0.2291**

Table 5.9: Variance-Covariance Matrix, time interval [-1; +2]

	Mat.	Cash	Cagr	Ind.	List.	Lev.	Age	Mat.	Reimb.	Opt.	Rat.
Mat.	**7.3679**	1.1781	-0.6541	0.0825	-0.1037	-1.4049	0.7612	0.5515	0.0330	0.4312	-0.5064
Cash	1.1781	**5.5307**	-1.4978	0.1091	-0.1788	-0.0680	0.5587	0.4937	0.2627	0.0407	0.1893
Cagr	-0.6541	-1.4978	**1.2292**	-0.0731	0.1122	1.7344	-0.4835	-0.0424	0.0600	-0.1162	-0.0634
Ind.	0.0825	0.1091	-0.0731	**0.1427**	-0.0119	-0.2989	0.0672	-0.0509	-0.0107	-0.0071	0.0155
List.	-0.1037	-0.1788	0.1122	-0.0119	**0.0642**	-0.1509	-0.0382	-0.0343	-0.0250	-0.0166	-0.0214
Lev.	-1.4049	-0.0680	1.7344	-0.2989	-0.1509	**16.0185**	-1.8339	0.0829	0.1910	-0.4922	-0.6934
Age	0.7612	0.5587	-0.4835	0.0672	-0.0382	-1.8339	**0.6522**	0.0528	-0.0042	0.1102	0.0347
Mat.	0.5515	0.4937	-0.0424	-0.0509	-0.0343	0.0829	0.0528	**0.4725**	0.1035	-0.0397	-0.0175
Reimb.	0.0330	0.2627	0.0600	-0.0107	-0.0250	0.1910	-0.0042	0.1035	**0.1189**	-0.0012	0.0428
Opt.	0.4312	0.0407	-0.1162	-0.0071	-0.0166	-0.4922	0.1102	-0.0397	-0.0012	**0.1831**	-0.0059
Rat.	-0.5064	0.1893	-0.0634	0.0155	-0.0214	-0.6934	0.0347	-0.0175	0.0428	-0.0059	**0.2140**

Figure 5.1: residuals' normality analysis of Model_01; time interval respectively [-1; 0], [-1; +1] and [-1; +2]

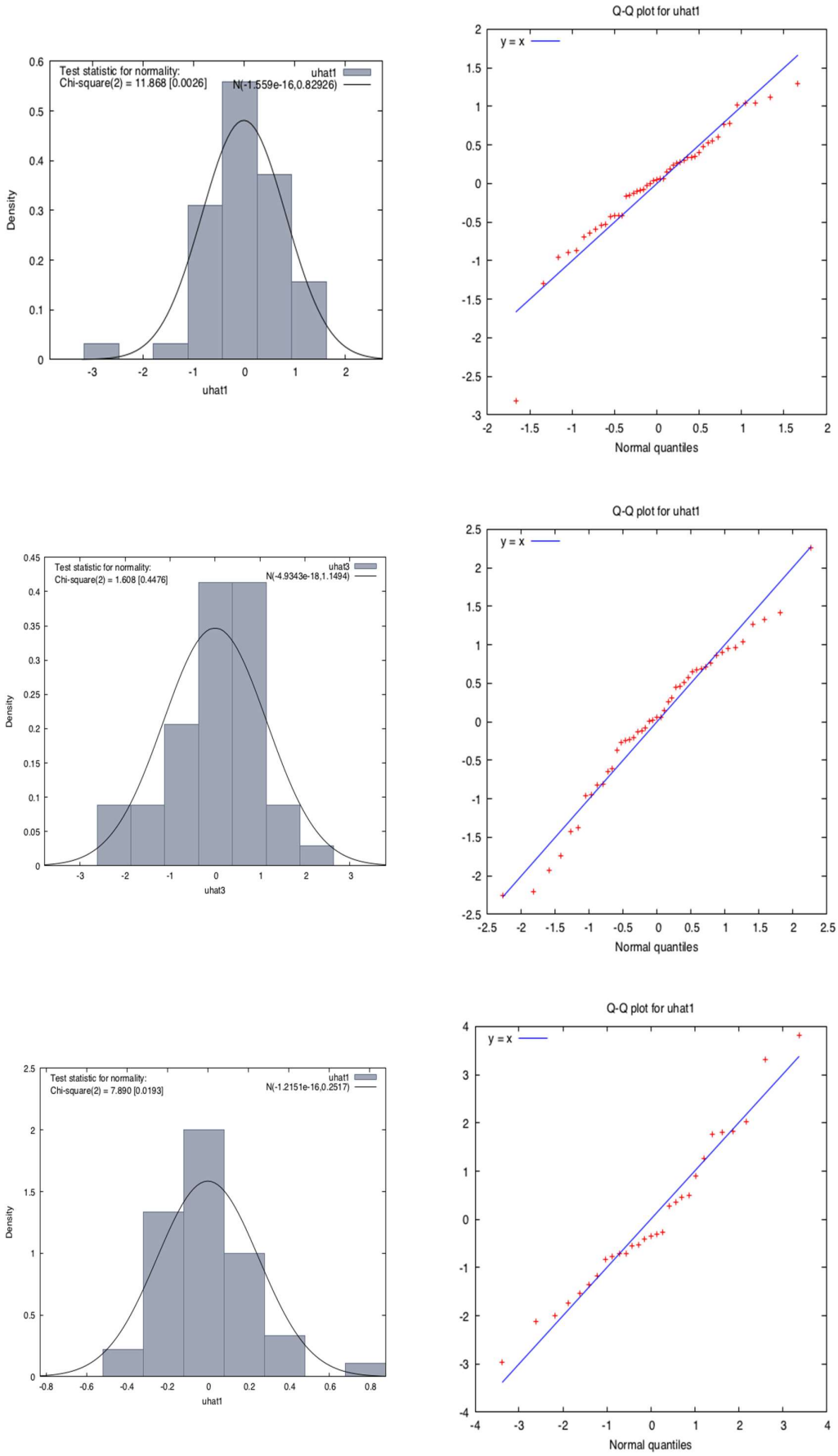
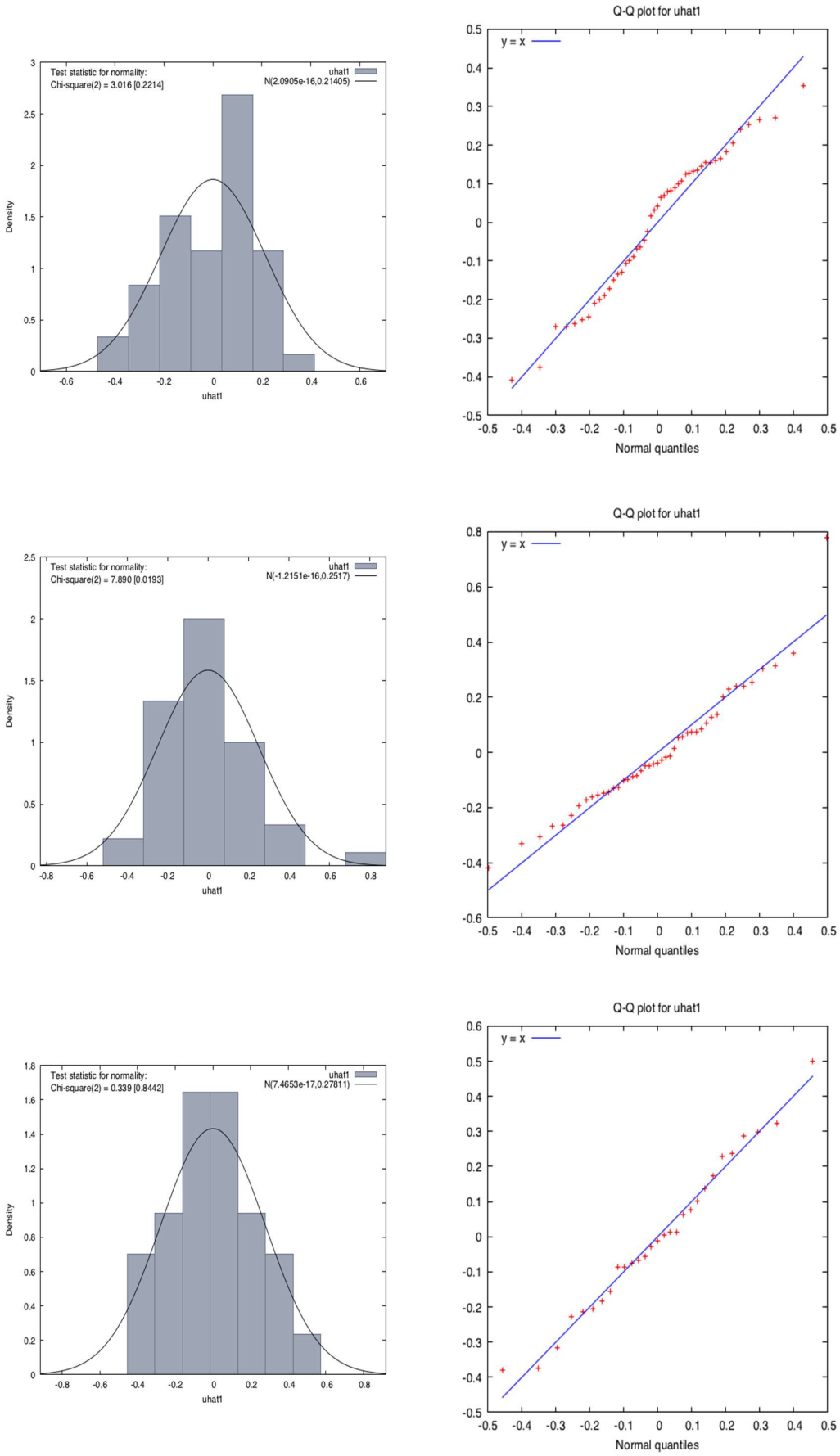


Figure 5.2: residuals' normality analysis of Model_02; time interval respectively [-1; 0], [-1; +1] and [-1; +2]



As a preliminary analysis, the tables exhibit a decreasing correlation between the dependent variable and the explanatory variables as the time goes by. In other words, the impact of the mini-bond issue on the debt variation and the financial needs tend to decrease year by year. Furthermore, the residuals behave as a normal distribution as showed in the graph 5.1 and graph 5.2.

Table 5.1 shows the outcome of the Model_01 applied to the time interval [-1; 0]. The results of the multiple linear regression are aligned to the expectations outlined in the Section 5.2, in particular the independent variables “Cash”, “Leverage”, “Age”, “Option” and “Rating” are statistically significant, meaning that such variables are correlated to the ratio between the debt variation and the issue amount. The F-test allows to reject the null hypothesis H_0 and confirms the significance of the regression. In detail, the regression model statistically confirms:

i. the positive correlation between the regressor “Cash” and the regressand. Therefore, if the mini-bond issuers have available money, it may be due to a need to diversify the sources of funds to finance future projects. Thus, the issuer is expected to integrate the internal liquidity with external debt to achieve its purposes;
ii. the negative correlation between the regressor “Leverage” and the regressand. Therefore, mini-bond issuer characterised by a financial structure based upon debt tend decrease the debt component and keep on implementing an aggressive financing strategy by relying on alternative sources of funds;
iii. the negative correlation between the regressor “Age” and the regressand. Therefore, aged mini-bond issuers tend not to collect further debt capital. Indeed, consistently with what highlighted in Section 5.2.5, aged firm tend to access to funds by relying on sources of financing alternative to the debt channel which may be used to restructure their financial structure;
iv. the positive correlation between the regressor “Option” and the regressand. Therefore, mini-bond issuers which include a put option into the issue tend to increase the stock of debt. One possible motivation is that the issuer

implements a strategy of financing sources' diversification to be safeguarded against the scenario in which the investor exercises the put option;

v. the positive correlation between the regressor "Rating" and the regressand. Therefore, the mini-bond issuers which submit the issue under a rating process tend to increase the amount of debt. Indeed, the rating decreases the asymmetry information between the firm and the "external" public including the financial institutions with which the firm interacts. Thus, banks may be less reluctant to dispense borrowings.

When applying the Model_01 with reference to the time interval [-1; +1], the F-test confirms the significance of the regression, indeed the hypothesis H_0 can be rejected. The results of the multiple linear regression (see table 5.2) exhibit a correlation between the independent variables "Age" and "Rating". In detail, the Model_01 applied in the above-mentioned time horizon confirms:

i. the negative correlation between the age of the issuer and the dependent variable. Once again, such a correlation implies a tendency for aged mini-bond not to collect further debt capital, preferring to rely on sources of financing alternative to the bank channel;

ii. the positive correlation between a rated issue and the dependent variable. Once again, such a correlation implies an increase the stock of debt with reference to mini-bond issuers which submit the issue under a rating process tend to increase the amount of debt. In the time horizon [-1; 1] the correlation is even more statistically significant.

Finally, the implementation of Model_01 in the time interval [-1; +2], highlights the correlation between the variables "Age" and "Maturity" in relation to the explained variable, how depicted in the table 5.3. However, the F-test does not allow to reject the null hypothesis $H_{0:}$ the linear regression is not significant.

Table 5.4 shows the outcome of the Model_02 applied to the time interval [-1; 0]. The unique significant correlation with respect to the dependant variable is between

the variable “Cash”. In detail, the regression model statistically demonstrates the negative correlation between the above-mentioned variables. Thus, the ratio between the issue amount and the issuer’s financial needs decreases as the cash in-hand of the issuer increases since the mini-bond does not cover a significant percentage of the firm’s financial needs due to the possibility to heavily rely on its internal liquidity to finance investments. The result is in line with the expectations summarized in Section 5.2.2. The F-test allows to reject the null hypothesis H_0 and confirm the significance of the regression model.

When looking at the time interval [-1; +1]. the results of the multiple linear regression, showed in the table 5.5, exhibit a statistically significant correlation between the independent variable “Maturity” and the dependant variable. In Section 5.2.10 the correlation was expected to be positive, since the shorter the mini-bond maturity, the more relevant its impact on the short-term financial needs; here, the linear regression reveals a negative correlation. The outcome may be justified in relation to the time horizon on which the model is applied. Additionally, the F-test allows to reject the null hypothesis with very low levels of significance.

Finally, the implementation of Model_02 in the time interval [-1; +2] does not exhibit any statistically significant correlation between the dependent variable the explanatory variables: the F-test allows to accept the null hypothesis H_0; thus, the linear regression is not significant.

5.4 Conclusions

The ultimate aim of the chapter was to evaluate if a mini-bond issue is somehow correlated to firm intrinsic variables or dependant on the issue’s characteristics. In detail, the purpose of the empirical analysis was to investigate if:

I. the mini-bond issue implies a significant variation of the firm’s debt amount, and if the debt increases or decreases is due to the features of the issue or ascribable to the contextual characteristics of the issuer;

II. the mini-bond issue covers a significant percentage of the issuer's financial needs, and if it is due to the features of the issue or ascribable to the contextual characteristics of the issuer.

On the basis of the analysis developed in Section 5.3, the Model_01 seem to statistically prove the presence of determinants which influence on the issuer's debt amount, whereas the Model_02 does not exhibit variables which turn out to be statistically significant in explaining the mini-bond impact on the overall financial needs of the issuer. The significance of the Model_01 is statistically confirmed in the time horizon [-1; 0] and [-1; +1]. In detail, the issuer's characteristics capable of explaining the debt variation are: the age, the leverage and the available liquidity; even the features of the issue seem to impact on the choice of increasing or decreasing the financial debt: the put option and the rating. Concerning the former, a firm opting for issuing a mini-bond involving a put option, does not only rely on such source of financing to satisfy the financial needs to avoid the hypothetical scenario in which the investors exercise the put option and the issuer must be up against a financial disbursement to pay off the debt related to the issue, but rather the issue of mini-bond may be a means through which diversifying the sources of financing. For what concerns the latter, if the issue is rated the asymmetry information between the firm and the financial institutions with which the firm interacts decreases and thus, it may be easier to attain borrowings via bank channel.

6. CONCLUSIONS

This study evaluates the relevance of mini-bonds as an alternative source of financing for the Italian enterprises, with a particular attention to the SMEs.

Statistics illustrated in the Chapter 3 underline a constant growth of the market, which in the first nine months of 2017 has grown by almost 20%, if compared with data from 2016.

Which could be the reasons behind the incessant growth of the mini-bond issues?

SMEs approach this instrument looking for an easier and less binding source of funds compared to listing on the Stock Exchange or Private Equity, which may require a higher managerial ripeness of the firm.

Therefore, the mini-bond can actually represent a further option of funding rather than the common bank channel. In fact, the disadvantage of the higher costs related to the coupons, if compared with the current banking interest rates, are counterbalanced by the advantages in terms of fiscal benefits, warranties, covenants and capital employment.

After having ascertained the desirability of this instrument, the main objective of the study was to analyse the usage of the capital raised through the issue and identify possible correlations between firm intrinsic variables or dependant on the issue's characteristics and the mini-bond.

In detail, the questions the study wanted to answer were: how much of the collected capital was invested in new projects? How much of the collected capital was employed to restructure the existing financial debt? How much of the company's capital requirements was covered with the mini-bond? What could determine these decisions? How much does the mini-bond affect the company's operations? Are

there any trends that can be useful in predicting the future growth of a mini-bond issuer?

To give an answer to each of the questions above, our work group developed an innovative model which reclassifies the consolidated Balance Sheet of each issuer company with the aim to highlight the impact of the issue on the assets and liabilities. The model was applied on a sample composed by 48 Italian SMEs that issued at least one mini-bond in the period between 2013 and 2015.

The results of the model are significant and offer many different interpretations concerning the usage of the capital collected through mini-bonds. For what regards Intangible and Tangible assets the outcome of the analysis was predictable: in fact, the most declared reason for opting to a mini-bond issue is the internal growth, which generally means undertaking new investments in machineries, lands or patents. At the same time, it is interesting to observe the relevant increase of the Intangible assets, which could find an explanation in the fact that companies resort to mini-bonds to invest in assets whose return is not so certain and this could be also one of the motivations of the typical higher risk associated to this instrument, if compared with bank loans. At the same time, another surprising result is related to the Financial Assets, whose growth plays a relevant role in the issuers' investments and demonstrates a particular attention towards the securities or other financial investments, probably with the aim of counterbalancing the risk of some other investments with financial operations. Furthermore, the growth of the Cash item is aligned with the expectations: the choice of preserve a part of the liquidity as a sort of "umbrella" in case of unforeseen events is a positive behaviour of the firm management and it may also be considered a good reserve for investments in opportunities that arise in the short-term. The positive trend that characterises the Equity capital variation is interpretable as a spread decision of retaining the earnings at the end of the accounting year. Increases in share capital seem to be not coherent with the need of external financing. The last variation which is taken in consideration is the difference between Financial Debts on the mini-bond amount, that allows to understand if the company chose to refund the debt or to raise further debt from

financial institutions. The 2013 and 2014 issuers followed a similar path, refunding the existing debt in the year 0 and +1 and raising new financial debt starting from the year +2. At the same time, the 2015 issuers took totally different decisions raising new financial debts, beside the mini-bond issue, to have an extra-liquidity and invest in differentiated projects. Analysing the Requirements coverage, in the year of the issue, generally, the mini-bond has been utilised to finance the 57.76% of the activities of the company, with this percentage that decreases to 47.53% in the year +1 and even to 39.03% in the year +2. A possible interpretation of these results is obtainable taking in consideration the fact that in the years after the issue, companies met new opportunities of financing, with internal funds or through debt capital.

In the fifth Chapter, instead, our workgroup performed a multiple linear regression analysis to check if the increase or the decrease of the financial debt after the issue (Model_01) or the percentage of the capital requirements covered by mini-bond (Model_02) are correlated to intrinsic features of the issuers or dependent upon the peculiarities of the issue. Evidently, the analysis is based on the same sample on which the capital employment model was applied, and takes in consideration the three time horizons to evaluate if the correlation between the dependent variables and the explanatory variables is durable over time or circumscribed to the issue year. On the basis of the analysis developed, the Model_01 seem to statistically prove the presence of determinants which influence on the issuer's debt amount in the time horizon [-1; 0] and [-1; +1]. The results of the multiple linear regression stress the correlation between the independent variables "Cash", "Leverage", "Age", "Option" and "Rating" and the dependent variable of the Model_01. In particular, the F-test allows to reject the null hypothesis H_0 and confirms the significance of the regression. In detail, for what regards the first time [-1; 0], the regression model statistically demonstrates first of all the positive correlation between the regressor "Cash" and the regressand. Therefore, if the mini-bond issuers have available money, it may be due to a need to diversify the sources of funds to finance future projects. Thus, the issuer is expected to integrate the internal liquidity with external debt to achieve its purposes. At the same time, also the negative correlation between the regressor

"Leverage" and the regressand is confirmed. Therefore, mini-bond issuer characterised by a financial structure based upon debt tend to decrease the debt component and keep on implementing an aggressive financing strategy by relying on alternative sources of funds. Furthermore, the negative correlation between the regressor "Age" and the regressand is underlined. In fact, aged mini-bond issuers tend not to collect further debt capital. Indeed, aged firm tend to access to funds by relying on sources of financing alternative to the debt channel which may be used to restructure their financial structure. Another result is the positive correlation between the regressor "Option" and the regressand. One possible motivation is that the issuer implements a strategy of financing sources' diversification to be safeguarded against the scenario in which the investor exercises the put option. Finally, the positive correlation between the regressor "Rating" and the regressand is demonstrated. Therefore, the mini-bond issuers which submit the issue under a rating process tend to increase the amount of debt. Indeed, the rating decreases the asymmetry information between the firm and the "external" public including the financial institutions with which the firm interacts. Thus, banks may be less reluctant to dispense borrowings.

With reference to the time interval [-1; +1], the F-test confirms the significance of the regression, indeed the hypothesis H_0 can be rejected. The results of the multiple linear regression exhibit a correlation between the independent variables "Age" and "Rating". In detail, the Model_01 applied in the above-mentioned time horizon highlights two different correlations: the negative correlation between the age of the issuer and the dependent variable and the positive correlation between a rated issue and the dependent variable. The former correlation implies a tendency for aged mini-bond not to collect further debt capital, preferring to rely on sources of financing alternative to the bank channel. At the same time, the latter correlation implies an increase the stock of debt with reference to mini-bond issuers which submit the issue under a rating process tend to increase the amount of debt. In the time horizon [-1; +1] the correlation is even more statistically significant.

On the other hand, the Model_02 does not exhibit variables which turn out to be statistically significant in explaining the mini-bond impact on the overall financial needs of the issuer.

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ATTACHED 1 – ABSTRACT (ITALIANO)

Il presente lavoro di tesi valuta e analizza l'utilizzo del capitale raccolto da PMI italiane attraverso l'emissione di un nuovo strumento finanziario conosciuto come "mini-bond". Introdotto nel mercato italiano nel 2012 al fine di supportare le piccole imprese con una opzione di finanziamento alternativa, il mini-bond ha delle caratteristiche simili a quelle dei più comuni bond emessi da grandi imprese, ma non è accessibile per gli investitori retail. L'analisi si concentra sul mercato italiano dei mini-bond e sulle principali caratteristiche delle imprese emittenti e dei titoli, come la maturità, il rimborso, le opzioni e la cedola. In particolare, la ricerca sembra confermare un trend di crescita positivo sia prima che dopo l'emissione, anche se gli indicatori finanziari non mostrano un andamento univoco. Successivamente, studiando un campione di 48 PMI italiane che hanno emesso almeno un mini-bond nel periodo 2012-2015, il lavoro di tesi offre un modello innovativo che permette di identificare le principali scelte di impiego del capitale raccolto e come l'emissione impatti sulle necessità di finanziamento dell'impresa. In particolare, si cerca di rispondere alle seguenti domande: quanto del capitale raccolto è stato investito in nuovi progetti/asset? Quanto del capitale raccolto è stato utilizzato per ristrutturare il debito finanziario esistente? Quanta necessità di capitale è stata coperta con il mini-bond? Che cosa potrebbe determinare queste scelte? I risultati ottenuti applicando il modello sul campione preso in considerazione suggeriscono che le due principali ragioni che spingono ad emettere mini-bond siano gli investimenti in nuovi asset e la ristrutturazione del debito. Questi risultati appaiono coerenti con le ragioni che hanno portato all'introduzione dei mini-bond nel mercato italiano per le piccole

imprese. L'analisi di regressione identifica quali sono le principali caratteristiche di un'impresa che determinano la scelta di finanziamento tramite mini-bond e offre un'interpretazione degli elementi più significativi, come la cassa e la leva finanziaria dell'anno precedente, la presenza di un rating e di un'opzione put e l'età dell'impresa stessa.

ATTACHED 2 – ISSUERS' LIST

ID	ISSUER	YEAR
1	Guala Closures SpA	2012
2	Rottapharm Madaus Ltd	2012
3	Alessandro Rosso Group SpA	2013
4	Buscaini Angelo Srl	2013
5	Caar SpA	2013
6	ETT SpA	2013
7	FIDE SpA	2013
8	Filca Coop.	2013
9	Fincantieri SpA	2013
10	Gamenet SpA	2013
11	GPI SpA	2013
12	Grafiche Mazzucchelli SpA	2013
13	Iacobucci HF Electronics SpA	2013
14	Ifir SpA	2013
15	IMVEST SpA	2013
16	IVS f. SpA	2013
17	Manutencoop Facility Management SpA	2013
18	Marcolin SpA	2013
19	Meridie SpA	2013
20	Mille Uno Bingo SpA	2013
21	Prada group SpA	2013
22	Primi sui motori SpA	2013
23	Rhino Bondco SpA	2013
24	Salini Costruttori SpA	2013
25	Sisal Holding SpA	2013
26	Sud Commerci Srl	2013
27	Teamsystem Holding SpA	2013
28	Zobele holding SpA	2013
29	Acque del Basso Livenza SpA	2014
30	Acque del Chiampo SpA	2014
31	Acque Vicentine SpA	2014
32	Alto Garda Servizi SpA	2014

ID	ISSUER	YEAR
33	Alto Vicentino Servizi SpA	2014
34	Antin Solar Investment SpA	2014
35	Asi SpA	2014
36	Banca Farmafactoring SpA	2014
37	Bim Gestione dei servizi pubblici SpA	2014
38	Bomi SpA	2014
39	Centro Veneto Servizi SpA	2014
40	Cipriani Profilati Srl	2014
41	Cmc Ravenna coop.	2014
43	Cogemat SpA	2014
44	Corvallis Holding SpA	2014
45	Coswell SpA	2014
46	Dedagroup SpA	2014
47	Dynamica Retail SpA	2014
48	E.S.T.R.A. SpA	2014
49	Eco Eridania SpA	2014
50	Energie SpA	2014
51	Enerventi SpA	2014
52	Enna Energia Srl	2014
53	Etra SpA	2014
54	Eurotranciatura SpA	2014
55	Exprivia Healthcare IT Srl	2014
56	Finanziaria Internazionale SpA	2014
57	FRI-EL Biogas Srl	2014
58	Generalfinance SpA	2014
59	Geodata Engineering SpA	2014
60	Global System International SpA	2014
61	Gruppo PSC SpA	2014
62	IMI FABI SpA	2014
63	Inglass SpA	2014
64	Innovatec SpA	2014
65	Ipi SpA	2014
66	Isolante K-Flex SpA	2014
67	JSH Group SpA	2014
68	MEP SpA	2014
69	Microcinema SpA	2014
70	Molinari SpA	2014
71	Mpg Manifattura Plastica SpA	2014
72	Officine Maccaferri SpA	2014

ID	ISSUER	YEAR
73	Olsa SpA	2014
74	Penelope SpA	2014
75	Rigoni di Asiago Srl	2014
76	Rsm Italy A&A Srl	2014
77	S.I.G.I.T SpA	2014
78	SEA SpA	2014
79	Selle Royal SpA	2014
80	SGG Holding SpA	2014
81	Sipcam SpA	2014
82	TBS Group SpA	2014
83	Te Wind SA	2014
84	TechnoAlpin Holding SpA	2014
85	Ternienergia SpA	2014
86	Tesi SpA	2014
87	Tesmec SpA	2014
88	Trevi Finanziaria Industriale SpA	2014
89	Twin Set SpA	2014
90	Usco SpA	2014
91	Waste Italia SpA	2014
92	Alitalia SpA	2015
93	Ama SpA	2015
94	Aquafil SpA	2015
95	Asja Ambiente SpA	2015
96	Barilla SpA	2015
97	Beni Stabili SpA	2015
98	Building Energy SpA	2015
99	C.L.N. - Coils Lamiere Nastri SpA	2015
100	Capi Group Srl	2015
101	Cartiere Villa Lagarina SpA	2015
102	CMD Costruzioni Motori Diesel Srl	2015
103	Coleman SpA	2015
104	Diatecx SpA	2015
105	EGEA SpA	2015
106	Essepi Ingegneria SpA	2015
107	Etrion SpA	2015
108	Expert System SpA	2015
109	FAB Group SpA	2015
110	Ferrarini SpA	2015
111	First Capital SpA	2015

ID	ISSUER	YEAR
112	FNM Ferrovie Nord Milano SpA	2015
113	Frener&Reifer SpA	2015
114	Gino SpA	2015
115	Industrial SpA	2015
116	Isaia&Isaia SpA	2015
117	ITWay SpA	2015
118	K4A SpA	2015
119	L.E.G.O. SpA	2015
120	Landi Renzo SpA	2015
121	Ligabue SpA	2015
122	Macchine Elettroniche Piegatrici SpA	2015
123	Marangoni Meccanica SpA	2015
124	Matica System SpA	2015
125	Menz&Gasser SpA	2015
126	Mercedes Benz Financial Services SpA	2015
127	Micoperi Srl	2015
128	Microspore SpA	2015
129	Moncaro Coop.	2015
130	My Best Group SpA	2015
131	Noemalife SpA	2015
132	Nosio SpA	2015
133	Oxon Italia SpA	2015
134	Pama SpA	2015
135	Pasta Zara SpA	2015
136	Proma SpA	2015
137	QS Group SpA	2015
138	Rapetti Foodservice Srl	2015
139	Renco Group SpA	2015
140	Sace BT SpA	2015
141	SCM group SpA	2015
142	Settentrionale Trasporti SpA	2015
143	SG Elettrica Srl	2015
144	Sirio SpA	2015
145	Tecnocap SpA	2015
146	Teethan SpA	2015
147	Thermokey SpA	2015
148	Torino Hotel Immobiliare SpA	2015
149	Tundo SpA	2015
150	WIIT SpA	2015

ID	ISSUER	YEAR
151	4 Madonne Caseificio dell'Emilia Coop.	2016
152	Acque Minerali d'Italia SpA	2016
153	Acque Veronesi Srl	2016
154	Aero Sekur SpA	2016
155	Agrumaria Reggina Srl	2016
156	Alto Trevigiano Servizi Srl	2016
157	American Coffee Company SpA	2016
158	Antonio Zamperla SpA	2016
159	Aristoncavi SpA	2016
160	Arti Grafiche Boccia SpA	2016
161	Azienda Gardesana Servizi SpA	2016
162	Azienda Solare italiana SpA	2016
163	Bioera SpA	2016
164	Boni SpA	2016
165	BV Tech SpA	2016
166	CAP Holding SpA	2016
167	Caronte & Tourist SpA	2016
168	Chili SpA	2016
169	Cibus SpA	2016
170	Clabo SpA	2016
171	Condor SpA.	2016
172	Crif SpA	2016
173	Cristiano di Thiene SpA	2016
174	Datacol Srl	2016
175	Dedalus Holding SpA	2016
176	DentalPro Srl	2016
177	Energetica Srl	2016
178	Enertronica SpA	2016
179	Epta SpA	2016
180	Estra SpA	2016
181	Europa Investimenti SpA	2016
182	Falkensteiner Hotelmanagement Srl	2016
183	Faro Società Cooperativa Agricola SpA	2016
184	Fenicia SpA	2016
185	Fine Foods Pharmaceticals SpA	2016
186	Gestione piccini Srl	2016
187	Giglio Group SpA	2016
188	Giplast Group SpA	2016
189	Global Display Solutions SpA	2016

ID	ISSUER	YEAR
190	Grandi Navi Veloci SpA	2016
191	Halley Consulting SpA	2016
192	HdM SpA	2016
193	ICM SpA	2016
194	LKQ Italia Bondco SpA	2016
195	Lucart Group SpA	2016
196	Marvil Engineering Srl	2016
197	MM SpA	2016
198	Moby SpA	2016
199	N&W Global Vending SpA	2016
200	Neiderstaetter SpA	2016
201	Net Insurance SpA	2016
202	Osa Coop.	2016
203	Osai SpA	2016
204	Polesine Acque SpA	2016
205	Pro-Gest SpA	2016
206	Renovo Bioenergy SpA	2016
207	Renzini SpA	2016
208	Salini Impregilo SpA	2016
209	San Basilio Property SpA	2016
210	Saxa Gres SpA	2016
211	Seip Srl	2016
212	Soleto SpA	2016
213	Sonnedix SpA	2016
214	Space SpA	2016
215	Tecno TF SpA	2016
216	Trefin SpA	2016
217	TS Energy Italy SpA	2016
218	Unionbau Srl	2016
219	United Brands Company SpA	2016
220	Wiva Group SpA	2016
221	Wolftank SpA	2016
222	Yachtline Arredomare 1618 SpA	2016
223	YourVoice SpA	2016
224	AC Milan SpA	2017
225	Agatos SpA	2017
226	Ansaldo Energia SpA	2017
227	Autotorino SpA	2017
228	CMC Coop.	2017

ID	ISSUER	YEAR
229	CR SpA	2017
230	D'Amante SpA	2017
231	EdiliziAcrobatica SpA	2017
232	Energa Group SpA	2017
233	Energon Esco SpA	2017
234	Finaria SpA	2017
235	Fonderia Casati SpA	2017
236	Granarolo SpA	2017
237	Green Bit SpA	2017
238	Hightel Towers SpA	2017
239	ICOP SpA	2017
240	Innovaway SpA	2017
241	Invitalia SpA	2017
242	Ireos SpA	2017
243	Kedrion SpA	2017
244	Lima Corporate SpA	2017
245	Neo BC SpA	2017
246	Percassi Srl	2017
247	Piave Servizi Srl	2017
248	Prima Sole SpA	2017
249	Q&T SpA	2017
250	Quadrifoglio SpA	2017
251	Rino Mastrotto SpA	2017
252	Safco Engineering SpA	2017
253	Scatolificio Salernitano	2017
254	Silam Srl	2017
255	The Outplay Italy Srl	2017
256	Tper SpA	2017
257	Velier SpA	2017
258	Werther International SpA	2017

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Gianluca e Edoardo

(alias GP e ET in tutte le mail)

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