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The Impact of Capital Structure on the Financial Performance of Firms: Evidence from Italy

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Acronyms

CS = Capital structure

FP = Firm performance

BD = Bank debt

TDTA = Total debt total assets

TDTE = Total debt total equity

DR = Debt ratio

DTA = Debt to total assets

LTD = long-term debt

STD = Short-term debt

ROA = Return on asset

ROR = Rate of return

ROE = Return on equity

EBIT = Earnings before interest and tax

CAPM = Capital asset pricing model

PWC = Price water house coopers

IPO = Initial public offering

BACH = Bank for the accounts of companies harmonized

WACC = Weighted average cost of capital

ANOVA = Analysis of variance

OLS = Ordinary least square

EPS = Earnings per share

GM = Gross margin

OPM = Operating profit margin

TFP = Total factor productivity

CG = Capital gearing

IC = Interest coverage

NPR = Net profit ratio

GPR = Gross profit ratio

OPR = Operating profit ratio

ROCE = Return on capital employed

ROI = Return on investment

ROIC = Return on invested capital

PTM = Pre-tax operating margin

MBVR = Market to the book value ratio

NSE = Nigerian stock exchange

KSE = Karachi stock exchange (currently Pakistan stock exchange)

EBITDA = Earnings before interest taxes depreciation and amortization

FTSE = Financial times stock exchange

CAP = Capitalization

Abstract

This study was conducted to investigate how changes in capital structure effects the financial performance of the firms in Italy. The study employs a 9 years quarterly panel data on a total of 50 firms that are registered on "Borsa Italiana" for a period of 2007 to 2015. The study includes two samples of firms. Firms with small capitalization makes the first sample while medium capitalized firms makes the second sample. The performance variable used are return on assets (ROA) and return on equity (ROE). To proxy for capital structure total debt to total assets (TDTA) and Total debt to total equity (TDTE) are used, while logarithm of total assets is used as control variable for firm size. The results of the study shows a significant negative relationship between capital structure and performance of the firms in Italy. This negative relationship exist both for small and big firms. The estimates also shows that a significant positive relationship exists between firm size and performance in Italy.

Introduction

The capital structure has gained significant importance in the past 60 years especially after the seminal paper by (Modigliani & Miller, 1958). The capital structure is concerned with how the firms divide the cash flows. It deals with whether the firm has to fulfill the fixed obligations of debt capital or return the residual claims of equity shareholders. The primary concern of almost all the firms, despite how small or large they are, is how to get the financing they need to carry out their business activities. There are hardly any businesses that could rely on retained earnings and don't need to look for external funding. Even if such a business exist, they stay very limited and the growth prospects look very dull or they ultimately lose the competition to other big and diversified rivals. In order to stay in the business, a firm needs to utilize all the available resources available.

There is a constant need for further investments which needs to be full filled promptly. The decision to look for external funds and what kind of funds to choose is not an easy one. It is of primary importance that a manager knows which kind of funding is appropriate for the business he/she is managing, especially now a days where a great deal of competition exists. Traditionally a firm could have a comparative advantage over firms just because of some special expertise in a product, a strategic location or some specific technology but now without a proper source and a mix of financing it is not possible, because the way how firms are financed changed throughout the years. The mix of all the different sources of financing results in the capital structure of a firm.

Majority of the capital structure of the firm is made-up of debt and equity. Both these sources of funding include more sub categories but we focus mostly on these two. Most of the text books and theories talk about the optimal capital structure but there is not a single capital structure that everybody can agree on and which can be applicable for all the firms, because it differs from firm to firm. Having a proper capital structure is of utmost importance for the management of the firm because it does not only helps in reducing the total costs of the company but also gives them an advantage over other firms in the same sector.

The literature on capital structure has been dominated by two popular theories, which are Trade-off theory and Pecking order theory which are of primary importance. Both these theories discuss the importance of the capital structure for the firms and explains how this affects the performance. The Trade-off theory explains the use of debt by emphasizing the tax-deductibility of debt. The theory argues that the maximum benefits of debt can be achieved by using debt up to a certain limit in the capital structure, after which it has a negative effect on performance. However debt is not the first preference in case of pecking order and suggests that debt can be used only when internal equity is not enough to fulfill the financing needs of the firm. These theories are discussed with more detail later in the first chapter.

The importance of the capital structure and how it can affect the performance of the firms as evident from theories and previous studies motivates me to conduct this study. This study is carried out on a sample of firms in Italy where we check empirically how the way a company is financed has a relative effect on performance. A number of studies has been conducted over the years with conflicting results about the relationship between capital structure and performance. This study will be addressing the small and large firms in Italy and derive empirical results to see the effects on performance. In addition to this, the study will also prove that the firm size is a significant factor in affecting the performance of firms in Italy.

This thesis is organized in five chapters. Chapter 1 covers the introductory part of the thesis, which includes a brief overview of the topic, including the classification of different means of financing that are available to the firm. It also includes a brief life cycle analysis of the firms in general and their financial needs. Chapter 2 includes a detailed analysis of the literature. It discusses the theoretical part that includes different theories presented about the capital structure and its impact on the firm performance. While the empirical part includes the literature on empirical studies related to capital structure and financial performance. Chapter 3 highlights a detailed design of the research, the hypothesis and the methodology that is used to address the research question. This chapter is divided into different sections which includes information on the population and the sample used in this study. Finally we discuss the measurement and use of the variables, and a detailed information on the statistical method used to derive the results. Chapter 4 presents the analysis and discussion on the data. Information on the data screening and data diagnostics is

available. Descriptive data analysis and interpretation of the results is carried out. Chapter 5 will conclude this thesis by presenting the final conclusion and recommendations.

CHAPTER 1 Capital Structure

1.1 Introduction to Capital Structure

Capital, in general, refers to the amount of money that we have in our business. "Capital structure is the combination of debt and equity securities that comprise a firm's financing of its assets". (Hampton, 2011). Another definition is given by Pandey (1981) in his book, capital structure and cost of capital, which is "Capital structure refers to the mix of long-term sources of funds, such as, debentures, long-term debts, preference share capital and equity share capital including reserves and surplus". In the discussion about capital structure of a business, we usually refer to the way, how company assets are funded. To be more exact, we see how these assets are supported by liabilities (debt and assets). Broadly speaking a firm has two means of financing their business activities which are debt and equity. For example, if a firm has 40 billion in debt and 60 billion in equity, this means that this firm is 40% debt-financed and 60% equity-financed.

The theory of capital structure was first proposed by (Modigliani & Miller, 1958). They argued that capital structure is irrelevant in perfect markets. They argue that since the market value is determined by firm earnings and the associated risk of the underlying asset, it is less important how the firm finances the operations. This theory was based on some unrealistic assumptions of no taxes, no transaction costs and bankruptcy costs, same lending and borrowing costs, symmetry of market information and debt irrelevance on company value. But in the real world all the assumptions fail and the capital structure is relevant and affects the value of the company, which is why one must be careful in financing a business.

If a firm decides to go for external funding, they can employ two main financing strategies. Either it obtains new funding through bank debt or they decide to go public by issuing new shares. Some firms choose to use both these sources of finance and hence creating a structure with mix of debt and equity. Access to debt and equity is motivated by a number of factors including the type of

firm, its origin, size, industry, age and management. The choice between debt and equity is not as simple as it seems, both choices has some ups and downs. A substantial part of corporate management is researching a good mix of different sources of finance with a decent risk reward payoffs. This is true for owners of big companies and small startups alike, to estimate the percentage of capital coming from a bank loan without hurting the business and how much should come from market equity without losing control of its business.

1.2 The Choice of Financing

Most of the businesses have two options available to finance its activities that are debt and equity (Damodaran, 2014). Both of these financing choices comes at a price and entail a series of advantages and downside in this paper, we will mostly base our discussion on debt and equity as the main sources of finance for a firm.

Debt vs. Equity

Generally, the debt and equity distinction is made on the basis of bonds and stocks but the real difference is how they differ in terms of cash flows that each financing type have. Looking closely the first distinction is that debt claims give the holder the right to receive contractual cash flows, mostly interest payments and principal payments, while equity claim gives the holder the right to have the residual cash flows once all other promised claims are met. Although this is considered as a main difference, other differences have surged as a consequence of tax code [1] and others because of legal developments.

The second difference lies in the fact how the cash flows can be claimed (contractual and residual). Debt receives prior importance by calling dibs both on cash flows and on the right on assets of the firm in case of liquidation. The third distinction lies in the tax laws and how treat the debt holders as a result of interest expenses, which seems to be an advantage for the debt holders, while having no advantage for the equity holders. For instance in Italy interest expense is fully tax-deductible up to the amount of interest income. According to PWC[2] the excess of the interest expense is

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[1] Deductibility of interest leads to lower cost of debt (US tax code).
[2] PricewaterhouseCoopers.

deductible at 30% of the gross operating margin [3]as reported in the financial statements of the companies. The fourth difference is that, there is a maturity date for debt on which the principal has to be paid, while equity on the other hand have no maturity date and thus can stay for the life of the company. Finally in case of control on the firm, the equity holders have most of control over the management, unlike debt holders who play a much lesser role in controlling the firm. The debt holders may not have control but they can exercise veto power [4] in case of significant financial decisions. To sum-up debt and equity are two major means of finance, having different contractual claims, maturity and different priority claims in case of bankruptcy.

Figure 1: Debt vs. Equity; Source: Damodaran (2014)
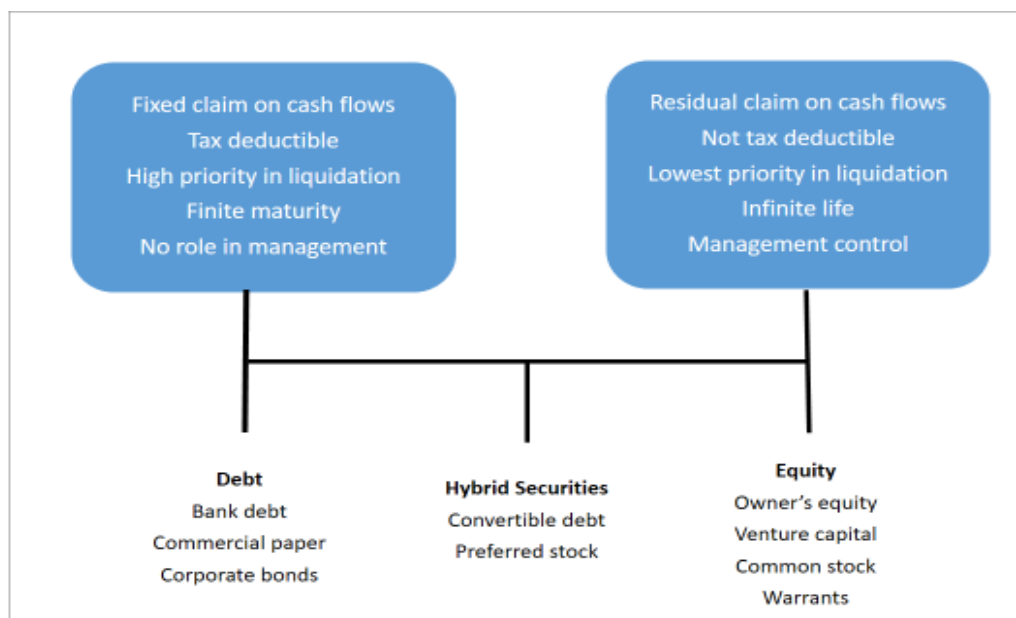
1.3 Debt and its types

Beside the use of debt and equity as financing tools there exist subsections in both that can be used depending on the type, size, maturity and location of the firm.

1.3.1 Bank Debt

Initially bank debt was used as a main source of financing both for private and public firms while charging them an interest based on the risk the entity borrowing money, which can be an individual or a company. However despite the high interest rates charged for some companies, as bank debt comes with several advantages. Bank debt is mostly used for borrowing small amounts of money as compared to other sources such as bonds which is mostly used for large amounts of borrowing. Bank debt comes as an advantage to those firms which are not well known publically nor have previous loan history, in such a case the borrower have to reveal information on the ongoing projects and the firm as a whole so that the lenders can both price the loan and evaluate the firm. As a result of borrowing from the bank, the borrowing firm don't have to rely on the rating agencies which is costly for small firms as compared to dealing with lending banks.

Apart from being a long and short-term source of finance for firms, banks often provide firms flexibility in case of unforeseen effects circumstances or financing on very short notice. In order to meet this kind of needs for individuals and firms, the bank offers, the line of credit[5], which is available for use any time if the firm needs financing. Line of credit sometimes set a limit on the amount a firm can borrow and uses the market rate of interest to charge for the borrowed funds. The advantage to have a line of credits for a firm is that it will have access to funds any time without paying interest if the funds stay unused. It also works better especially for firm with uneven payouts.

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[5] An arrangement between a bank and firm that establishes a maximum loan balance that the lender permits the borrower to access or maintain.

1.3.2 Bonds

Unlike bank debt, bonds are issued by large firms that are well known and are traded publically. Issuing bonds comes with several advantages to these firm such as, they have more flexible terms to ask for finance as compared to bank debt. In case of bonds, the risk is shared by all the investors in the market. The issuer of the bond can add some extra features to the bond depending on the bond type, like convertibles or commodity bonds, which otherwise cannot be added in bank debt. The issuer of the bond has a number of options at his disposal while issuing the bond, like bond maturity, interest payments on bond and security offered to the buyers of bond. Bonds can be modified to best match the firm financing requirements while keeping the interests of the issuer.

1.3.3 Leases

A replacement of bank debt and bonds which can achieve the same objective is leasing an asset. A lease gives a firm the right to use the asset while paying a fixed amount to the owner of the assets. Depending on the lease category the payments can be fully tax deductible or partially. If the firm is not able to pay the lease, it can lose the asset or sometimes can lead to bankruptcy. Depending on the type of lease, it can be cancelled by the lessee, and return the asset to the lessor which usually happens in case of operating lease. Depending on the type of a contract, the asset is returned to the lessor as the time of the lease agreement is usually shorter than the asset life. The price of the asset is also higher than the present value of the lease payment. While in case of capital lease, the lease contract is for the life of the asset. The present value of the lease payment covers the asset price. This type of lease cannot be cancelled. Firms that are usually small and new and are not confident about having enough funds to buy assets, usually use assets on lease.

1.4 Equity and its Types

An alternative to debt financing is equity. Depending on the firm type and age, equity have a number of types. The equity can have a variety of claims on business, it depends on whether the firm is private or publically traded and also on firm's growth and riskiness. The difference in

private and public firms is that private firms mostly have to rely on owner equity and internally generated funds. However publically traded firms have a variety of choices available because of being traded in the market. Equity can be classified as:

1.4.1 Owners' Equity

Considered as the main source of finance for new firms. A new firm has no market recognition to ask for money to public nor a past history of success to borrow from the bank. Such firms relies on owners' equity and retained earnings. The funds which are contributed by owners or taken from other family members or relatives are called owner's equity. These funds provide the initial growth necessary for the firm. Even the largest corporations started off with owner's equity to provide seed money for the business and investing back earnings of the firm into the business.

1.4.2 Venture Capital and Private Equity

Owner's equity can only get the firm so far in case of funding requirements. Once the business passes the initial stages of development, it needs more thorough funding to continue its business activities and grow. The firm runs into financial constraints, at this point the funds of the owner are not enough to sustain the business expenses like investments and growth needs. This is where venture capitalists comes in and provide finance to these small and probably risky firms in return to have a degree of ownership in the firm.

The opportunity cost of going to public for funding decreases with the firm size, and increases with uncertain future prospects of the firm, which is why small and new firms will seek private equity at the cost of giving up shares of the business.

1.4.3 Common Stocks

According to the book "Corporate Finance" by Ross, Westerfield and Jaffe (2009), common stock means different things to different people. They are the kind of stocks which gives a holder the

right to cash flows (in the form of dividends) and voting rights. These stocks are issued by a company that is already publically trading and needs more financing. The price of the new equity issued depends on the current price in market. If the market price of the stock is higher than the book price, this means the market is over estimating the stock price and the issuing authority, (stock markets or brokers) fix high price for the stock. On the other hand if the market price is less than the book price, it means the market is underestimating the company's stock; in such a case the broker will probably avoid issuing new stock. Issuing new equity while the stock is undervalued is bad, both for the firm and existing stock holders. According to Damodaran (2014), when a company issue common stock, it has a share of cash flows in the form of dividends and voting rights.

1.4.4 Warrants

Warrants are usually issued by companies to entice the public into buy new equity shares. The holder of the warrant receive the right, to buy shares in the company at a fixed price sometime in the future. The holder is not obligated to buy the shares which is a characteristic of a call option. Unlike options, warrants are issued by a company. According to Bodie, Kane and Marcus (2011), the one significant difference between call option and warrant is that the exercise of warrant require a firm to issue new shares, which results in increasing the number of shares. On the other hand, the writer of the call option has to deliver already issued share of stock when a call option is exercised, since no new shares are issued. A call warrant is used by a holder to purchase a specific number of shares from the issuer before the expiry date but Ross, Westerfield and Jaffe (2009) argue that some warrants are perpetual, which never expires. The advantage to use warrants as compared to common stocks is that, they are priced based on the volatility that underlying stock has, which means that a high volatility will bear a high value. What it means for the firm is that the firm may actually gain from issuing warrants by locking in a price for options, if the market overestimates the stock value. Secondly, when warrants are issued, no financial obligation are created, which is a good way for firms with current negative returns but have the potential for high growth. Third, warrants are good instruments for managers who are sensitive to dilution of company stocks. There is no instant creation of shares, but instead provide the firm with instant funds. According to Damodaran (2014), when warrants are exercised, fresh cash comes into the

firm and the number of shares outstanding increases which triggers a drop in share price. The dilution effect of exercise of warrants makes it less valuable. The adjusted stock price from the expected dilution of warrant exercise is given by:

$$\text{Dilution-Adjusted } S = (Sn_s + Wn_w) / (n_s + n_w)$$

Where:

S = current stock value

n_w = outstanding warrants;

W = market value of warrants outstanding;

n_s = shares outstanding.

1.5 Hybrid Securities

Beside commonly used debt and equity, a firm have other sources available to finance its investments, they vary depending on the type of financing and issuer of the loan. These new sources of investment have features like residual claims on cash flows and carries some degree of control over the management. They also share some similarity with debt by having fixed claims on firm assets and cash flows. Looking forward we have a number of other securities, which share both features of debt and equity and cannot be put neatly in either of the two categories we mentioned above.

1.5.1 Convertible Debt

It is a type of debt that have an option to convert into shares if the holders wills it. The number of shares are predetermined when the bond is issued. Convertible debt does not seem that attractive at the time of bond issue but it becomes more attractive when the price of the stock increases. Convertible debt is used mostly for two reasons by two different parties on the basis of how they serve their interests. It is used by the firms, when they want to lower the interest on the bond they

are offering. Such firms are confident about their earnings. While on the other hand, it is used by lenders who are worried about not getting their money back, so they add some features to the loan they give to firms. They can convert their debts to shares if they see that it's in their best interest.

1.5.2 Preferred stock

This kind of security works both like debt and equity, which is why it is sometimes treated as third component of capital. Having a fixed dollar dividend makes it similar to debt. If the firms do not possess the money it needs to pay as dividend, it is combined and paid in installments when the firm have sufficient earnings. Another similarity is that preferred stockholders do not have any authority in controlling the firm. They can only have a say in issues that significantly affect their cash flows claims. In contrast to debt, the payments don't have the advantage of tax-deductibility. There is no a fixed maturity date. They are not the first priority in case of bankruptcy, they are the last to claim any portion of asset. The reason a firm will choose preferred stock over common stock is to keep the control of the firm, having no effective voting rights in key decisions and management issues in the firm, a managers will prefer to use preferred stock. Another reason can be to keep the debt to equity ratio small. This ratio is a critical observation that investors look at when deciding to invest in a company. While having benefits of debt and keeping the debt ratio at a minimum makes the preferred stock attractive to managers of the firm who don't want to lose the firm's control to outsiders.

1.5.3 Option-Linked bonds

Option-linked bonds are the combination of an option and a straight bond. Firms usually use these bonds because they are easily modified to the firm needs. Companies issue such bonds by linking the bond interest to cash flows on assets. When the asset price increases, the interest payments also increases. The benefit for doing so is that it adjusts the bond cash flows to firm cash flows which helps in reducing the default risk. Insurance companies use such bonds because they have the advantage in case of any catastrophe, because the principal that a company offers on the bond reduces.

1.6 Capital Assets Pricing Model (CAPM)

Now that we have discussed different types of assets that a firm can use to finance its business activities, we discuss briefly how these assets are priced and how much return is expected from them based on the risk it carries. Here we define CAPM which stands for "capital asset pricing model". Initially Markowitz (1952) set the foundation for the model by presenting modern portfolio management. After more than a decade later it was developed by (Sharpe, 1964; Lintner, 1965; Mossin, 1966) in their papers. The CAPM gives us a prediction about the relationship that we should expect between the risk of an asset and its expected return. According to the book "investments" by Bodie, Kane and Marcus (2011), the relationship between risk of an asset and its expected return, serves two functions. First, it gives a possible benchmark return that we can expect form an investment. For example, if we are planning to invest in a stock, we need to know if the return we expect is more or less equal to the fair return, given the risk for that stock. Secondly, the model helps us in evaluating the return of an asset that is not yet being traded in the market. For example, how to price the stock that is offered for the first time, IPO. The general formula of CAPM can be written as:

$$R_a = R_{r_f} + \beta_a (R_m - R_{r_f})$$

Where:

Ra = expected return on asset

R_{r_f} = Risk-free rate

β_a = Beta of asset (reflects the asset riskiness)

R_m = Expected return in the market

$R_m - R_{r_f}$ = Risk premium

1.7 Importance of capital structure

Theoretically, when the capital structure alters, it has some direct and indirect effects on firms which are summarized as:

- Effect on Firm Value

A sound capital structure helps increase the firm's market value of shares and securities, which leads to an increase in the value of the firm. This is why careful understanding and analysis of the company's capital structure is an important study in finance. The performance of a company can be readily checked from how a firm is performing on the stock market. The shares prices can be a first clue to see how a firm is performing. There are some credit rating which help investors in choosing where to invest.

- Effective Use of Available Funds

A strategic capital structure enables a business to fully utilize its resources and ensures that the financial requirements of the firm are properly determined. Moreover it helps in raising funds in such proportions and from various sources for their best possible utilization. It also protect the firm from over and under capitalization. A clever manager will not invest all the funds in the same place because of the sudden ups and downs in the financial markets. Having said that, a good capital structure clearly shows which part of the business needs more investment and from where to finance that investment.

- Having Maximum Returns

An effective capital structure helps in increasing the profits of a company in the form of higher returns to its shareholders, such as increase in earnings per share. This can be achieved by the mechanism of trading on equity, which is increasing the proportion of debt in capital structure as a cheap source of capital. The company is said to be trading on equity if the rate of return on shareholder's fund and long-term borrowing exceeds the fixed rate interest paid to the debt-holders. A higher return for shareholder gives manager future flexibility in terms of investing in new projects. This builds trust of shareholders on managers and provide decision flexibility.

- Minimization of Costs

A good capital structure maximizes the shareholders wealth through a cost minimization of the overall capital. This is achieved by incorporating more long-term debt into capital structure, since it is cheaper as compared to cost of equity or preference share capital because the interest that a company pays is tax deductible. A firm can actually save by incorporating more debt in its capital structure up to a certain limit by the tax-deductibility on debt. Going beyond the optimal debt creates negative returns.

- Liquidity Position

A sound capital structure prevents a business from raising too much debt capital because at the time of poor earning, the solvency is distributed for a compulsory payment to the debt-suppliers. Although debt helps in increasing the value of the firm more than equity, its repayment has a high priority in time of financial crisis. The liquidity position of the company can be observed by looking at some common ratios like, debt to equity ratio, earnings per share, working capital ratio and price to earnings ratio.

- Flexibility

An effective capital structure allows a company some breathing room for adjustments in debt capital which can be increased or decreased owing to the changing market and firm conditions. Flexibility is usually important in times of unforeseen events like market crashes or temporary ups and downs in stock market. In times like these a firm have to make quick and affirmative changes to the company which can range from hiring and firing employees to changes in capital structure.

- Control of Company

A good capital structure maintains the control of equity holders over the company by not buying new equity while keeping the ratio of debt to equity at the optimum. The main interest of the shareholders is to get higher returns on its equity in the business, which otherwise is not possible. Managers issue new equity without a thorough study of the market while keeping in mind the current structure of his company. Equity holders fear that their ownership and stock in the company will be diluted by issuing new equity.

- Minimization of Financial Risk

Despite being a cheap source of capital, increasing debt leads to payment of fixed interest and principal amount of debt in time which increases financial risk. A good capital structure reduces this risk through a judicious mix of debt and equity in capital structure. Equity due to its nature is considered less risky as compared to debt. Managers usually decrease the risk from debt by including equity in the financial structure of the company, by having good of both worlds the financial risk of firm can be minimized.

1.8 Capital Structure Based on Firm Size and Age

The way how a company is financed does not stay the same as the firm ages. A firm goes through a financing cycle with different financing needs to fulfill the requirements. Usually a new firm which is not generally known to the public and for which there are no ratings available to analyze the credit, it do not have a lot of options available in financing itself and mostly relies on internal financing[6]. Internal equity refers to cash that we get from the present assets. Cash flows that we get from outside sources is referred to external financing. A new firm may prefer internal financing over external financing because, starting from the fact that it is expensive, if the firm is private it is usually difficult to raise financing because of its no historical background but it has some options available like venture capital at the cost of losing control of the firm. Venture capitalists provide the initial funding to such firm and in return they ask for a fair share in the business. The alternative to both debt and equity financing is using internally generated cash flows. Although sometimes they are not enough to fulfill the funding needs, they have the advantage of being cheap and the ownership of the firm stays intact.

Despite the fact that new firm should be using retained earnings, they have some downsides to its use for new projects. It should be noted that the internal funds they use are either cheap or have the same costs as external financing, because the model used to calculate cost of capital, applies to both (internal and external financing). The CAPM[7] is used to price the equity and can be used

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[6] Cash flows generated by the existing assets of the firm.
[7] Capital asset pricing model used to price assets.

both in case of internal and external equity. Considering the costs of equity, if the firm have higher returns in case of financing with internal equity then it should continue to do so otherwise a switch to external equity is recommended. Second, internally generated funds accounts only for the share of stockholders. Even if the firm do not pay dividends, these funds will not be enough for financing new projects. If the firm only have to rely on the internal equity it may affect new projects or in some cases it can lose the projects to competitors. Third, even if the projects are financed with internal equity, the managers should keep the stock price high otherwise stock holders in the firms lose their trust on managers for investing their money in the firm as compared to stock holder of firms with high stock price.

1.8.1 Growth, Risk and Financing through Firm Life Cycle

As a firm goes through its life cycle, the pattern of financing changes, the firm cash flows and risk follow specific patterns. As the firm value increases, the cash flows becomes larger, and risk of the firm appears to come close to the mean risk for other firms in the same industry. All these changes are reflected in the financing choices that a firm makes. Following a firm life cycle, we come across five stages.

1. Start-up: This is the initial stage of the business after it is formed for the first time. This business would usually be private and financed mostly with owner's equity or perhaps sometimes with short-term bank debt. Access to funds for such firms is usually restricted because of the fact that they are new to the market and will attempt to gain customers and get established. Since it is a critical stage for a fresh firm in terms of getting the response they expected from the market, most firm don't get passed this stage.

2. Expansion: Once the firm is successful in passing the first stage and attracts enough customers to get established, it will need funds to expand its business. Since internally generated funds will not be enough to finance the further expansion of the firm. The owner will probably look for external equity which can be private equity investors or share the business in a venture. Some firms at this stage may choose to go public through

an IPO[8] and raise funds by issuing common stocks. The down side to this will be losing some degree of control on the firm and the cost of going public.

3. **High Growth**: When the firm make a transition from a private to a publically traded firm, the financing choices of the firm prosper and they have more choices available. Although the revenues of the firm rise rapidly, they are still not enough to fulfill needs of reinvestments. A publically traded firm at a stage of high growth will consider issuing for equity in the form of common stocks, warrants or some other kind of equity options. If the firm is positive about its future cash flows and don't want to lose control of its business, it will use debt in the form of convertible debt for raising more capital.

4. **Mature Growth**: At this stage the growth of a firm matures and it starts to level up along the horizontal axis as evident from figure 1. Two things happens at this point, the earnings rise rapidly, which reflects the investments made before and the need for investing in new projects declines. The need for issuing more equity declines as it is substituted by internal financing and debt. The internal financing can now cover most of the financing needs but the use of bank debt and corporate bonds is needed. Generally at this stage a shift from equity to debt financing occurs.

5. **Decline**: This marks the last stage of the corporate life cycle of a firm. At this stage the business is mature and both revenues and earnings start to decline. For most firms the investments in new projects completely stops and thus new competitors have an incentive to takeover. The existing investments provide cash flows at a declining rate. Since the new investment halts, the internal financing observe a shift and surpasses the reinvestments needs. Firms retire debt and use the extra cash to buy back stocks or pay dividends.

The summary of all these stages can be seen from figure 1.2.

The stages mentioned above are not mandatory for all firms as there exists huge differences among firms. Depending upon different industry type, location and most importantly many firms don't even survive the first stage. Only a handful of firms out of many manage to stay while others fails. Another reason for not following the cycle can be that, not all successful firms choose to be traded

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[8] Initial public offering, used by firm for going public for the first time.

publically, instead they continue growing at a healthy rate on the retained earnings. Lastly there exist high growth firms who seems to have no need for external funds but instead use internal funds which are enough to finance the growth. Although there exists high differences between firms as high growth firm's issues debt while low-growth firms raise equity capital, still the life cycle framework provides a good picture of why financing behavior of firm changes as it matures.

Figure 1.2: Life Cycle of Financing; Source: Damodaran (2014)

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
External funding needs	High, but constrained by infrastructure	High, relative to firm value	Moderate, relative to firm value	Declining, as a percent of firm value	Low, as projects dry up
Internal financing	Negative or low	Negative or low	Low, relative to funding needs	High, relative to funding needs	More than funding needs
External financing	Owner's equity Bank debt	Venture capital Common stock	Common stock Warrants Convertibles	Debt	Retire debt Repurchase stock
Growth stage	Stage 1 Start-up	Stage 2 Rapid expansion	Stage 3 High growth	Stage 4 Mature growth	Stage 5 Decline
Financing transitions	Accessing private equity	Initial public offering	Seasoned equity issue	Bond issues	

1.9 Purpose and Motivation of the Study

Over the past 60 years a significant amount of research has been carried out in different countries to analyze that, if there an optimal capital structure for a firm. After a paper by Modigliani and Miller (1958) on "capital structure irrelevance" where they argue the irrelevance of capital structure to the value of a firm under certain assumption. A number of theories and research studies

have been presented to find the relationship between, how changes in capital structure affects the firm value and performance. Two popular theories in this area are "the Pecking order theory" and "tradeoff theory". These two theories have conflicting views about the use of Debt and equity financing in the firm capital structure. Pecking order theory supports the view that firms should use retained earnings to finance the firm and go for external financing only if they have to. Secondly, the use of debt and then external equity as a last resort. Trade-off theory states that a firm should prefer the use of debt instead, until the maximum benefits of debt are achieved. It also identifies the use of mix debt and equity where the decrease in WACC is off set by the increasing financial risk of the firm.

A number of studies conducted so far have distorted and mixed results on the issue of capital structure and performance. (Titman and Wessels, 1988; Kochhar, 1997 & Ebaid, 2009) found in their studies that capital structure in negatively related to a firm performance. Other studies in the same field by (Berger & Di Patti, 2003; Nimalathasan & Valeriu, 2010; Ebrati, Emadi, Balasang & Safari 2013) confirms a significant positive relationship between capital structure and performance. There are also some studies which have mix results on the issue in point like, (Abor, 2005; Al-Taani, 2013 & De Luca, 2014).

There are only a few studies conducted in Italy about the relation between capital structure and performance. This study will fill the gap by conducting a recent study on how firms are affected by changes in capital structure. According to Intrisano (2012) in his paper on Italian firms and BACH [9]outlook "Financial structure and profitability of European companies" (2014), firms in Italy usually have a high level of leverage. In light of these conflicting results above the fact that firms in Italy are highly dependent of debt, it would be interesting to see how this incidence of debt means for the firm. This motivates me to conduct this research paper and find how these changes in capital structure will affect the performance of firms in Italy.

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[9]BACH is a database that contains harmonized annual accounts statistics of non-financial firms in Europe. This database is useful for a cross country analysis in Europe and for analyzing the structure and performance of different companies.

1.10 Objective of the Study

The objective of the study is to analyze empirically in light of different theories and previous studies, the effect of capital structure on the financial performance of firms in Italy. Especially:

- To present a detailed analysis of the theories on capital structure of the firm, and point out the one that works best in case of firms in Italy.
- The analysis on how changes in the capital structure affects the return on equity in case of Italian firms.
- To critically analyze capital structure affects the return on assets in the case of Italian firms.
- To analyze how the change in the firm size will affect the financial performance of the firms in Italy.

 Based on the motivation and objectives of the study, this research aims to answer the following questions.

- What are the effects of changes in the capital structure on the financial performance of firms in Italy?
- Do firms with different sizes in Italy have different effect on the financial performance, with changes in capital structure?
- Do small and large in Italy respond differently to changes in capital structure?

1.11 Contribution to the knowledge

The recent estimates from a study by Socio and Russo (2016) who argue that in the post crisis period, firms in the euro area stepped up the use of debt financing including Italy. Their results, based on a large sample of firm's show that Italian firms are about 13 percent more leveraged than other countries. Although the debt of firms in Italy has been diminishing at a slow pace since 2011, still the Italian government have put some incentives in place to encourage firms towards equity financing by decreasing the debt tax shield.

The governments sometime encourage firms to make changes in their capital structure to achieve a specific target. Since the effect of these changes goes a long way and companies have to bring the necessary changes in terms of how they finance their investments. This will contribute by helping non-financial firms in Italy to choose the most suitable mix of capital in order to improve their financial performance. The gradual decrease in the use of debt since 2011 will be an interesting analysis and will have broader implications for firms. The study findings will also be beneficial for the students in the field of finance, to review and carry out further research.

1.12 Limitations of the Study

A limitation of this study include the reliance of the secondary data which is mostly provided by Bloomberg. This study do not include any primary data. The results of the study are mostly based on the accuracy, reliability and quality of secondary data. Another limitation can be that the correlation analysis is done without taking into consideration the industry type of firms, which might result in distorted results. And lastly the correlation analysis is done based on three independent variables. It is not completely clear if the result could have been different if more independent variables were included. Finally the study only covers the non-financial firms that are registered on the Italian stock exchange, which means that the study findings could not be generalized for firms in other countries.

Chapter 2: Literature Review

2.1 Literature Review

This chapter includes a detailed discussion on capital structure, and how changes in the capital structure will affect the performance of the firms. First of all, a short description of capital structure is presented, which is followed by a discussion on Modigliani and Miller (1958) model of capital structure irrelevance. Since all the contemporary theories on capital structure originates after the irrelevance proposition, we will start from here. This chapter is divided into two main parts. The theoretical part, in which we will discuss the theories related to the capital structure and firms performance. The core principles of Modigliani and Miller, which are followed by Pecking order theory, Trade-Off Theory, Agency cost Theory and Market Timing Theory will be discussed. The empirical part will include a detailed study of previous researchers in this area. Section 2.2 includes a detailed discussion on the theoretical part of the literature. Section 2.3 will discuss the empirical studies on capital structure and performance of the firm. The study of theoretical and empirical literature will allow us to develop a research hypothesis, which will be discussed after we run the data. Lastly, the chapter will be concluded by drawing on the empirical studies previously done, in order to explore how the capital structure of firms in Italy affects the performance of the firms, based on firm size.

2.2 An Overview

Considering the work done on capital structure, can see many names and theories out of which the most famous is Modigliani and Miller (1958), who formed the basis for the literature in this area stating that the decision a company takes about its capital structure is immaterial to the value of the firm in absence of taxes, transportation costs, bankruptcy costs, asymmetric information. And they assumed that markets are efficient and have homogenous expectations. Under these strict assumptions, the way we finance a firm will have no effect on the firm value, moreover the stock price remains the same even if the financing pattern of the company changes. Following a lot of criticism on their theory of capital structure irrelevance, Modigliani and Miller (1963) stated that

taking into account the effect of corporate tax and tax deduction, the value of the firm will increase when firm takes on more debt and this increasing amount will be the value of tax shield. Which means that firms will benefit from taking more leverage. But in reality more and more debt induces risk in the firms, after which the concept of bankruptcy was introduced to offset the effects of benefits of more debt. Kraus and Litzenberger (1973) considered the balancing of benefits from tax shield and risk added from bankruptcy cost. As debt increases, the return on equity increases because the increase in debt makes the investment in the company more risky, which gives investors the reason to demand high returns. The inclusion of taxes give rise to tax shield. The tax shield can increase the firm value as the debt is tax-deductible, which is why it is considered important when we evaluate a firm. The careful choice and use of capital is one of the important element in the setting of financial strategy, which needs to be updated constantly to meet the firm's needs depending on the market. While in case of Italian firms, the choice of financial structure has a great importance, considering different aspects of the European markets and firms, such as undercapitalization and excessive incidence of short term debt. Italy is one of the most indebted economy is Europe according to BACH outlook "Financial structure and profitability of European companies" (2014). Their survey confirms that Italian firms are heavily dependent on debt to finance their companies. This is why we are interested in analyzing how capital structure of Italian firms effects the performance.

Figure 2.1: Contributions to Changes in Leverage of Italian NFCs; Source: Banca D'Italia
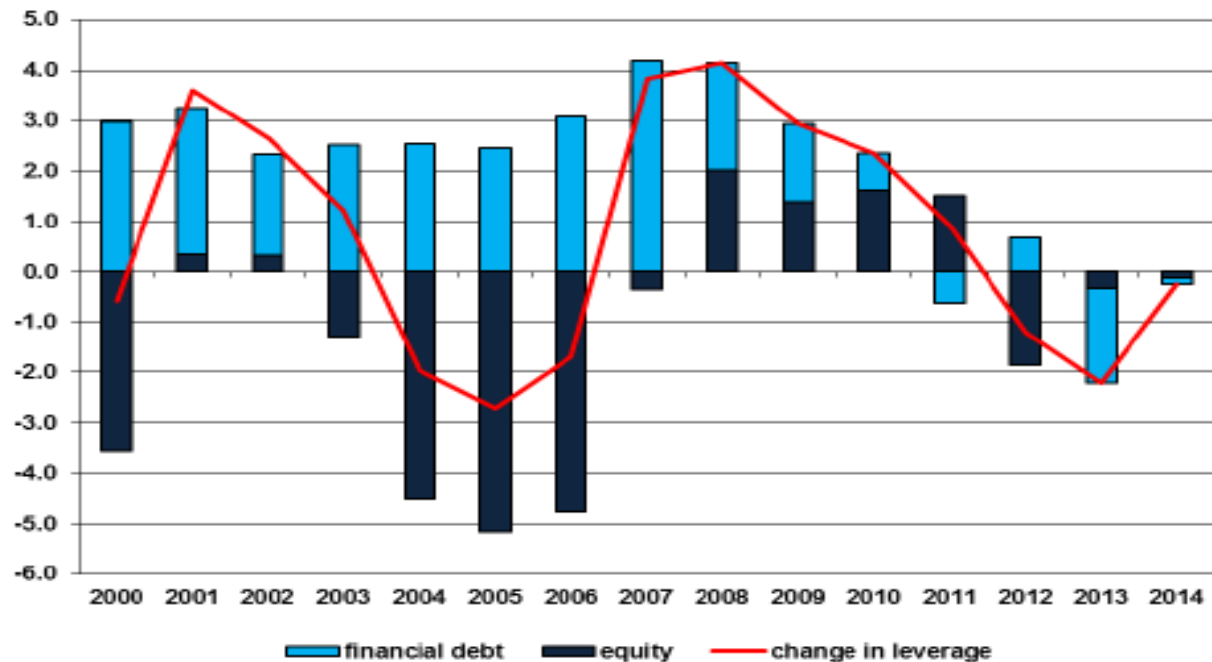
2.3 Theories on Capital Structure

2.3.1 Pecking Order Theory

Myers and Majluf (1984) presented pecking order theory, following the findings of Donaldson (1961), who presented this idea after interviewing large firms in the United States and concluded that management would prefer internal financing rather than go for external funds. This theory suggests that the choice of capital structure reflects the tendency of the firms to prefer financing new projects first with retained earnings, then by debt, which considered an expensive form of financing and finally equity as a last resort when external financing is necessary. This hierarchy of funding is also confirmed from other papers like Al-Tally (2014) which says that firms prefer to finance new investments with internally generated funds, then with debt capital and eventually would go for equity issue. This theory also explains that firms borrow more when internal funds

are not enough to fulfill the investment needs (Sunder & Myers, 1999), which is confirmed by (Myers, 2001). He argues that the debt ratio reflects the cumulative figure for external financing.

The hierarchy in funding is the result of information asymmetries between firm and potential investors. Myers and Majluf (1984), argues that the information asymmetries can be resolved if the firm do not issue new securities but instead relying on its retained earnings to support new investments opportunities. From this we can conclude that, information asymmetries exists only in case of external financing and more profitable a firm would be if it has more internal funds available. (Harris & Raviv, 1991; Rajan & Zingales, 1995) expect a negative relation of leverage and profitability if the theory proposes retained earnings for funding new investments. Also the capital structure decisions are there to eliminate inefficiencies, which arise because of information asymmetries (Harris and Raviv (1991)). Although debt financing is not the first choice of managers when they need funds, it can send a positive image to the market that the management is confident in paying back the debt (Frydenberg, 2004). The figure 2.2 explains how different financing sources affect information asymmetries.

Figure: 2.2 Financing Hierarchy with Asymmetric Information; Source Guice (2015)
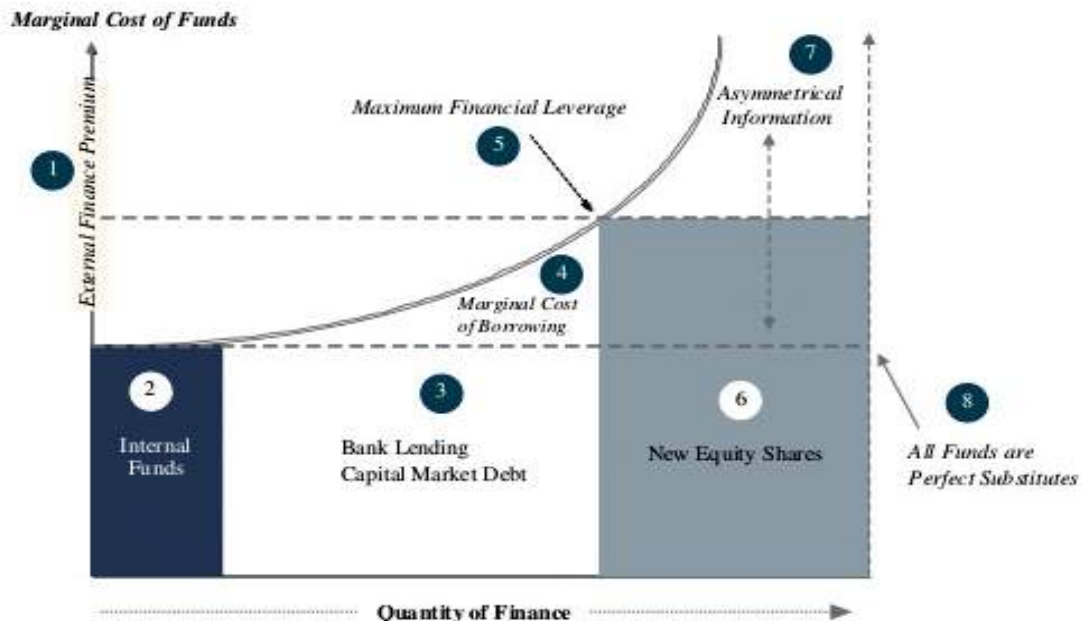
The horizontal axis represents the quantity of finance while the left vertical axis shows the marginal cost of funds. Points (2), (3) and (6) show three different sources of financing. Point (8) shows a perfect capital line, which is horizontal to the marginal cost of funds because both internal and external sources would be perfect substitutes. The movement from left to right represents our demand for investment. After exhausting our internal funding, we move on to debt and that is where we encounter external finance premium at point (1) and the effect of asymmetric information comes into play at point (7). An increasing demand for investment, increases the marginal cost of borrowing at point (4). The marginal cost continue to rise until we reach our debt capacity at point (5). At this point we have the maximum benefit that we can have from debt, after this point we have to consider issuing new equity shares if we need additional financing. Both information asymmetry and external finance premium become more evident when we move across the horizontal axis.

2.3.2 Trade-Off Theory

This theory has dominated the capital structure, and proposes that the optimal level of debt is where the marginal benefits from debt equals its marginal cost. Firms with high business risk has less capacity to sustain financial distress and has to use less debt (Kim & Sorensen, 1986; and Titman, 1984). The optimal capital structure is usually achieved by adjusting debt and equity which thereby balances the benefits from tax shield and financial distress costs. Mayers (1977) argues that debt can be used only up to a certain limit after which after which it will have negative effects. The name trade-off is used because we are actually adjusting our capital structure in a way where we balance the positive effects of debt, like tax shield and low weighted average cost against the risk of financial (Arnold, 2001). This effect is also confirmed by Miller (1988) and argues that the optimal debt to equity ratio shows the highest possible tax shield that a company can enjoy.

Figure: 2.3 Optimal Gearing; Source Kalpan Financial Online (2014)
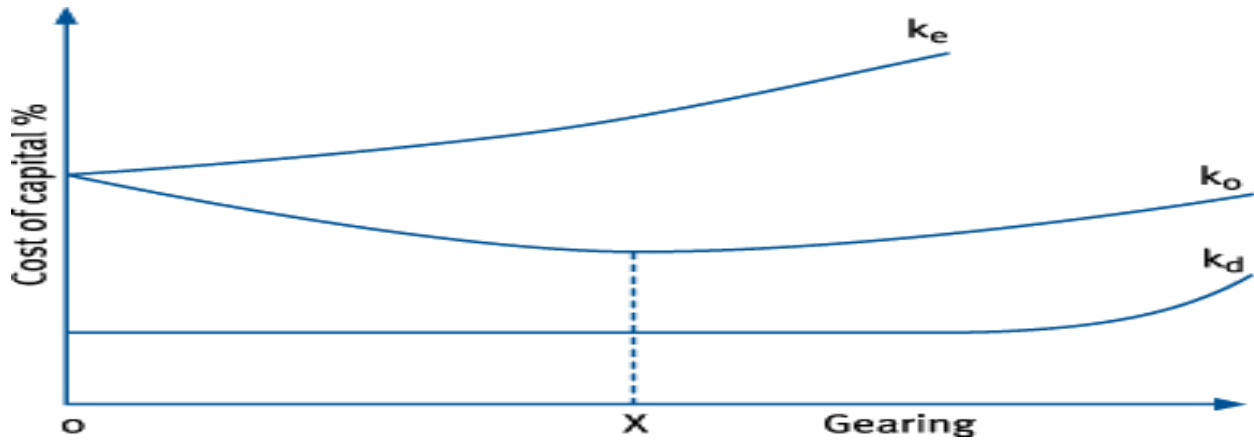
Where:

K_e = Cost of Equity

K_d = Cost of Debt

K_0 = Weighted average Cost of Capital

X = optimal level of gearing (leverage)

From the figure 2.3, we can see the financing pattern of a company. Gearing refers to the leverage. At low level of gearing the firm faces a higher cost of equity because the maximum benefits of the debt are not achieved at low levels of gearing, so the firm decides to take advantage of cheap debt, which results in a lower level of WACC. The WACC follows a horizontal line until it reaches a point where the company has exhausted all the benefits from the debt at point X. After point X a further increase in gearing results in a higher coast of debt and equity, which in turn results in a higher WACC.

2.3.3 Agency Cost Theory

This theory is proposed by Jensen and Meckling (1976) in which they discussed the conflicts that arise between the stack holders and managers, usually managers and board members. They argued that agency costs arise because of the separation of ownership and control. According to Arnold (2008), the agency cost is a combination of direct and indirect costs which results from principals and agents acting in their own best interest. Shareholders want an increase in the value of the firm, Managers prefer flexibility in decision making while Creditors are concerned about getting their money back. Grigore and Stefan-Duice (2013) in their paper "Agency theory and optimal capital structure" argues that Agency costs arises because managers own only a fraction of the shares of the company. This partial ownership will cause the managers to work less vigorously and will consume more luxuries, like company cars, expensive hotels, since majority of the owners share most of the costs. Managers can be motivated to work in the interest of firm (shareholders) by different contracts that pay them by the value of the company's shares. Harris and Raviv (1990) argued that the presence of debt in a firm acts a monitor which provides information on the agency behavior. Managers are sensitive towards providing more information which could risk liquidate the firm and lost them their jobs. As pointed out by Jensen (1986), since debt commits the firm to pay out cash, it reduces the amount of "free" cash available to managers to engage in self-interests, this is sometimes used by shareholders to control the managers and run the firm more efficiently. While debtors protect themselves by clauses in contracts or asking for convertible bonds which gives them shares in the company and voting rights, if they are not satisfied with their bond contract. Agency costs can categorized in two ways which are:

Monitoring Costs- The cost of observing the behavior of the agents to make sure that everything done, is according to the company interests and policies. For example: auditing costs.

Bonding Costs- The costs which are borne by the agents (manager) as a result of aligning their interests with the principal (owners). For example the financial reports by the manager, a cost to the manager in terms of time and effort.

The two categories sums up with the residual loss to make agency costs. The residual loss refers to the loss which is incurred by the "principal" because the agent's decisions do not serve its interests.

2.3.4. Market Timing Theory:

According to the market timing theory, the fluctuations in the price of the shares effect corporate financing decisions and finally the capital structure of the firms. Issuing equity is influenced by the market performance, (Lucas & McDonald, 1990; Korajczyk, Lucas & McDonald, 1992). Firms usually issue new security when their shares in the market are overrated and buy back shares when they are undervalued (Baker & Wurgler, 2002). Empirical work by (Choe, Masulis & Nanda, 1993; Bayless & Chaplinsky, 1996; Baker & Wurgler, 2000) suggests a positive relation between equity issues and the business cycle. They suggest that equity should be issued only when the economy is booming and not the other way around. Rajan and Servaes (1997) argue that the forecasts of earnings or realizations of the firm's profits motivates the managers to issue more equity because they believe in the prospects of firms. On the same issue Graham and Harvey (2001) finds in there survey, conducted on managers, that according to managers, the price of market is regarded as most important factor in the decision of either to issues new stocks. Baker and Wurgler (2002) in their paper "market timing and capital structure" proved empirically that market timing has large and continuous effects on the capital structure of a company. They conducted a regression analysis by taking leverage as a dependent and "external finance weighted-average" market to book ratio[10] as an independent variable. The regression analysis concluded that a low leveraged firm will try to get raise more funds market value was high, while high leveraged firms prefer raising further finance when their market value is low.

2.4 Empirical Evidence

2.4.1 Capital Structure and Firm Performance

Before we proceed with the effects of capital structure on performance we should have an idea about the determinants of capital structure, the factors which motivates the firm to have a different capital structure from other firms. According to Bauer (2004) in his paper "Determinants of capital structure", a study conducted on Czech listed firms concluded empirically that, capital structure is

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[10] Weighted average of firm's past market-to-book ratio.

positive affected by firm size, negative by profitability, tangibility and P/B ratio (proxy for growth opportunities). This study also confirms that a firm with high future growth opportunities should use more equity financing. While Frydenberg (2004) on his study on Norwegian unlisted firms found a negative relation of leverage with firm size, dividends and return on assets and positive for fixed assets, return on assets, firm growth and high risk firms. The study of the financial structure of firms plays a crucial role especially for the effects that it has on risk, cost of capital, the cash flow dynamics and generally on the value of the firm. A number of studies has been carried out to understand the capital structure of the companies and analyze its impact on performance. The significance of the relation between capital structure and performance is influenced by many factors but mostly the firm type and country of origin (Krishnan & Moyer, 1997). Kochhar (1997) in his paper "Strategic Assets, Capital Structure, And Firm Performance" explains the asset specificity, which says that debt holders usually do not prefer firms which have assets that are firm specific and even if they do, they will charge a high interest. While on the other hand equity holders will do the opposite. Kochhar further argues that having a sustained source of competitive advantage is not enough to improve value but financial policies of the firm should be in harmony with its economic rents and the strategy adopted by the firm should be consistent with policies of the firm. Therefore we need to consider other factors which have somewhat direct or indirect relation with the firm performance; these can be firm size, listed or unlisted firm, age growth, industry, asset structure managerial characteristics and ownership, institutional and macroeconomic environment of the firm and finally the performance measures we want to use.

Faulkender, Milbourn and Thakor (2009) in their paper "Does Corporate Performance Determine Capital Structure and Dividend Policy?" noted that capital structure and firm performance depend on disagreements between managers and investors. They argued that a better firm performance leads to investor's confidence on managers and future flexibility in decision making which in turn leads to better performance.

 A study by Booth (2001) found that companies in developed markets typically have more long-term debt and higher long-term debt–total debt ratios than companies in emerging markets. In case of Italy, Intrisano (2012) in his paper on Italian firms argue that, firms in Italy usually have high level of leverage with strong exposure to short-term debt, they are generally undercapitalized and have a high dependence on loan in capital as compared to equity. He further argues that this high

incidence of short-term debt and leverage leads to a fragile financial system which are represented by exposure to financial risk, rigidity of financial costs and instability of funding sources. The correlations of different debt ratios with its determinants and performance ratios makes it difficult to suggest a single theory that explains debt structure of Italian firms. Following the literature of corporate finance we come across a number of studies with conflicting results. These results include positive relations, negative relations and mixed relations on how changes in capital structure affects performance of the firm. All these different studies are considered below separately.

2.4.1.1 Capital Structure with Negative Effects on Performance

A significant amount of studies have proved a negative relation between leverage and financial performance/profitability. This inverse relationship of between firm performance and leverage supports the logic of the pecking order theory.

Fama and French (2002) conducted their study using the theoretical results of pecking order theory and trade-off theory. After applying the empirical analysis they argued that the firm profitability is inversely related to leverage. Their study also concluded that increase in firm size will decrease the leverage and on average a negative relationship between dividend payout and size. The same relation was evident from the study of Kochhar (1997) in his study, "strategic assets, capital structure and firm performance".

Khan (2012) in his study on 36 engineering firms in Pakistan, that are registered on the stock exchange for the period of 2003-2009 finds a negative relation of leverage with performance, while using ROA, GM and Tobin's Q as a measure for performance and STDTA and TDTA as a measure for leverage. He further argued that firms in engineering sector mostly rely on short-term debt with strong covenants, which affects performance.

Sudiyatno, Puspitasari and Kartika (2012) conducted an empirical study on the Indonesia Stock Exchange, using a sample of manufacturing firms that are registered at the stock exchange from a period of 2008-2010. They used ROA and DTA (debt to total assets), as proxies for performance and leverage respectively. Regression analysis and ANOVA tests shows that financial leverage

has a negative and significant effect on the corporate performance. They further argue that, this negative relation is due to the low ROR (rate of return), that results from the additional use of debt. Thus according to them, the firms in Indonesia are not able to cover the cost additional debt, with the profits from debt.

Ebaid (2009) in his study on non-financial listed firms in Egypt from a period of 1997 to 2005, finds a negative relationship between short-term debt and Return on equity. Other measures of performance like, long-term debt to assets has no significant effects on gross profit margin as a proxy for firm performance. These findings are in line with those of Nassar (2016) in his study on 136 industrial companies that are listed on Istanbul stock exchange, while using an 8 years of data. The researcher used ROA, ROE and EPS (earnings per share) as measures for performance and ER (debt ratio) for Capital structure.

Kajananthan and Nimalthasan (2013) conducted a study on listed firms of Sri Lanka using four proxies (ROE, ROA, GPM and NPM) for measuring performance. Variables to measure leverage were debt equity ratio and debt assets ratio. ANOVA test was used to see the relation, which proves that more leverage seems to have negative effect on ROE while a non-significant on the rest of variables.

Bauer (2004), who conducted a study on the 72 firms that were registered on the Prague stock exchange during the period of (2000-2001), found a negative relation between profitability and leverage. He used ROE as a measure of performance, while total debt to total equity as measure for leverage. These results are in line with the results of Zeitun and Tian (2007), who conducted their study on 167 Jordanian firms for a period of 1989-2003.

Chen (2011) conducted his study on 305 companies that were registered on the Taiwan stock exchange in the 2009. Making the use of correlation analysis, while using the debt/total capital as a proxy for leverage and ROE as a measure of performance, he finds a negative relation between profitability and leverage. His results are consistent with the predictions of the pecking order theory. He further argues that firms should only go for external financing, if they don't have any other option available.

Shen (2012) in his paper on European firms, used the specific accounting data of 2007 from countries like Germany, France, Italy and UK. The study makes the use of descriptive to statistics,

correlation metrics and OLS to derive at the final results. Shen finds empirically that leverage has a negative relation with firm performance in Italy, France, Germany and UK. These findings are quite similar compared to the findings of Rajan and Zingales (1995) on their analysis of G7 countries which suggests that relationship of capital structure and firm performance did not changed during the past decade. Shen stated three explanations for his negative results, Pecking order theory, firm over-leveraged by the manager which hurts the performance and third is the franchise value, which is associated with high efficiency from liquidation. This means that equity will serve as a substitute for the firm's performance.

Pouraghajan and Malekian (2012) found a negative relation between DR and financial performance of the firm, using a sample of 400 firms from different industries that are registered on Tehran stock exchange for a period of 2006 to 2010. They used ROA and ROE as measures of performance. Other variables like, tangibility, growth and age have a positive relation with performance.

Domenichelli (2012) performed an empirical analysis on small Italian firms in the region of Marche. The firms were selected from the Bureau Van Dijk database for the period of 1999-2008. The analysis was conducted on 310 firms using Ordinary least square (OLS) method. The researcher found a negative and significant relationship between leverage (debt to assets) and performance (ROE), thus giving evidence that pecking order theory explains the capital structure of small firms in Italy.

Lavorskyi (2013) conducted an analysis on the non-financial firms in Ukraine, which are registered on the stock exchange from a period of 2001-2010. After dropping financial companies, state owned companies and companies with uneven returns, the researcher is left with 16,595 firms. The study reveals leverage and firm performance are inversely related to each other, performance is measured by ROA, operating profit margin (OPM) and total factor productivity (TFP). The same negative relation exists with different measures of leverage. The researcher argues that the negative relation is explained by a number of reasons. Corporate market does not seems to be developed in Ukraine[11], debt financing commits the firm to fixed payments, which deters further investments

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[11] Jensen (1986), hypothesis of free cash-flow holds only if good corporate control market exists.

and tax shield does not apply to Ukraine, since big companies shift their profits offshore to avoid taxes.

Al-Tally (2014) included 57 publically trading firms in Saudi Arabia from a period of 2002-2010 in his study. Using the ratio of total debt to assets as a measure of leverage, while ROE and ROA as measures of firm performance. After going through the statistical procedures and running ANOVA he found that on average, the performance of firms tended to increase with respect to a decrease in leverage level. The decrease in debt to asset ratio was linked to a higher gross profit margins like ROA and ROE.

Taylor (2015) conducted her study on "the determinants of capital structure of non-financial firms before and post crisis of 2007". She used TDTA as a proxy for leverage and independent variables like, size, profitability, tangibility, liquidity and growth. After conducting a correlation analysis, she found a negative relationship of profitability and growth with leverage. This negative relation was in line with the proposed hypothesis in the study. Another study with negative relationship of leverage and performance was conducted by Nagambi and Wase (2015) on the non-financial firms in Cameroon. The data used was from (2009-2011), which mostly included manufacturing firms. The ROE was used as a measure of performance while total debt to assets reflects leverage. Other variables like, size, tangibility, growth were used as control variables.

Abbadi and Abu-Rub (2012) conducted a study on the financial institutions of Palestine which were registered on the Palestine stock exchange. The data sample consists of four years from a period of 2007-2010. Using the ROA and ROE as measures of performance, while total deposits to assets as a leverage proxy, they found a negative relationship between. They further argues that, due to the weak financial and banking system of Palestine, there are no significant returns to equity and assets. Due to which the results may not be fully accurate.

2.4.1.2 Capital Structure with Positive Effects on Performance

Berger and Di Patti (2003) in their paper on the banking sector used profit efficiency rather than using cost efficiency and other accounting ratios for evaluating the performance, because they argued that profit efficiency accounts for how well the revenues are raised and the costs are

controlled. They proved that an increase in debt or decrease in equity creates higher profit efficiency for the banks, this effect was both economically and statistically significant. They also found that profit efficiency is responsive to ownership structure of the firm which is consistent with the agency theory. This paper was also significant in the sense that they considered reverse causality of performance on the capital structure, which is unique as compared to other research papers in this area.

Nimalathasan and Valeriu (2010) in their study on the manufacturing firms in Sri Lanka, found a positive and significant relationship between capital structure and performance. For their analysis, a five years data was used form, 2003 to 2007. A multiple regression analysis and correlation matrix was used to derive results. DTE, DTA, CG (capital gearing) and IC (interest coverage) were used as indicators of capital structure, while GPR (gross profit ratio), OPR (operating profit ratio), NPR (net profit ratio), ROCE (return on capital employed) and ROI (return on investment) were as measures of performance. The researcher further argues that capital structure has a great impact of the all the profitability ratios except for two.

Another study by Majumdar and Sen (2010) on 1026 firms from India in a period of 1988-1993, listed on the Bombay stock exchange, gave a positive indication about the relationship between debt and performance. After running OLS method and quantile regression, they found that most of the variables that capture the capital structure are insignificant except for fixed deposits which seems to have a positive relation with performance. They also argue that in case of India, arm's-length lending seems to be more affective in influencing firm's profitability. Their results also shows that, more profitable firms have a negative effect on performance with increased bank borrowing.

Ebrati, Emadi, Balasang and Safari (2013) conducted a study on firms form Iran that were listed on the Tehran stock exchange for a period of 2006 to 2011. According to the results the relationship between capital structure and performance is positive. To measure the capital structure, they used SDTA, LDTA, TDTA and TDTQ, while for performance they used ROE, ROA, EPS, MBVR (market value of equity to the book value of equity). The regression analysis shows that performance, measured by ROE and MBVR is positively associated with capital structure.

A study on the banking sector performed by Adesina, Nwidobie and Adesina (2015) found that capital structure has a significant positive relationship with the financial performance. Their study included a sample of 10 banks which were quoted on the Nigerian stock exchange (NSE) for a period of 8 years from 2005 to 2012. The results were derived using the ordinary least square method. Bank performance as a dependent variable, while bank debt finance and bank equity finance were used as independent variables. The Arthurs also argue that an increase in debt while leaving equity unchanged will result in an increased financial performance.

2.4.1.3 Capital Structure with Mixed Effects on Performance

Jensen and Meckling (1976) were curious to see the impact of capital structure on the performance of enterprises; in this paper a number of tests as an extension port were performed to inspect the relationship between performance of firm and financial leverage. However the results revealed contradictory and mixed results. Based on this study a number of studies were conducted to see the real relationship. While some studies do have either positive or negative results, still a number of studies have contradictory results.

Krishnan and Moyer (1997) conducted their study on the major economies in Asia, which includes 81 corporations. They used ROE and ROIC (return on invested capital), PTM (pre-tax operating margin) and Market return on stock as proxies for corporate performance. To avoid short-term measurement instability and Bias, they used five year averages, ending in 1992. Leverage is measured as a ratio of market debt to the market value of equity and long-term debt to market value of debt. Their results shows a high return on equity in case of Hong Kong, since most of the company is financed with equity, which suggests a negative relation of leverage with performance. In contrast, Korean firms show high levels of debt in their capital structure but it has no effects on the performance of the firm. The average return on equity for Malaysia is about 14%, which shows a moderate effect on performance. They further argue that the main factor in determining the profitability of firms is country related.

Abor (2005) in his paper on all the firms from Ghana, which were registered for a period of 5 years (1998-2002), found a mixed result from using different measure of leverage. The researcher used ROE as a measure for performance, while for leverage he used a ratio of short, long and total debt

to total capital. The regression analysis reveals a significant positive relationship between (SDA) short-term to total capital, (DA) total debt to total capital and profitability. While a negative relationship was found between (LDA) long-term debts to total capital and profitability. The researcher argues that, firms in Ghana mostly rely on short-term debt finance for their business. Long-term debt is used rarely because they are relatively more expensive and employing it in high proportion could lead to low profitability.

Salim and Yadav (2012) investigated a sample of 237 firms that were listed on the Bursa Malaysia stock exchange from a period of 1995-2011. Their study included a number of variables as proxy for capital structure, like LTD, STD and TD. The proxies for performance were ROA, ROE, EPS and Tobin's Q. The variable of performance indicated a conflicting results with the capital structure of the firm. While performance measured by ROA, ROE and EPS is negatively related to LTD, STD and TD, there exists a significant positive relationship between performance, measured by Tobin's Q and STD and LTD.

Umar, Tanveer, Aslam and Sajid (2012), performed on a sample of 62 firms in Pakistan which were registered on Karachi stock exchange (KSE) stock exchange for a period of 2006 - 2009, found a combination of positive and negative result for capital structure and performance. The OLS and descriptive statistic tools were used to derive the results. Capital structure measured by current liabilities, long term liabilities and total liabilities to total assets, shows a negative relationship with performance which is measured by EBIT, ROA, EPS and net profit margin. On the other hand, price earnings ratio shows a positive relationship with long term liabilities to total assets. Also the ROE shows a positive relationship with long term liabilities to total assets.

Al-Taani (2013) performed a study on the manufacturing firms of Jordan that were registered on the Amman stock exchange from a period of 2005-2009. Using a five years data and ROA and PM (profit margin) as measures for performance and STDTA, LTDTA and TDE as measures of capital structure, the researcher found mixed and distorted results from different variables. A negative relation was found between STDTA and LTDTA. And ROA and PM, while a positive relation between TDE and ROA. The other regression model reveals a negative relation of TDE and PM. The researcher concludes from the results that, capital structure is not an effective and major determinant of firm performance.

De Luca (2014), in his paper "capital structure and performance of firms in Italy" using the data from 2007-2011 on 120 firms registered in Italy, found contradicting and mixed results based on the different variables used. Out of 120 firms, 79 were manufacturing firms and 41 were service industry. He used three different variables to account for financial debt and three variables for measuring economic performance. The results show a positive and significant relation of ROE and total long-term and short-term financial debt, Return on investment (ROI) and short-term and long-term financial debt. While a negative relation between ROE, ROA of large manufacturing firms and short-term financial debt to assets. According to this paper, in Italy both in manufacturing and in service industry, the large firms have best performance which is followed by medium and small firms.

2.5 Performance Based on Firm Size

The size of the firm is an important variable in the analysis of capital structure and performance. Difference in firm size affects the leverage that firms have and second, the performance they can achieve with the given amount of debt. Different studies have contradictory results for firms with different sizes. Titman and Wessels (1988), in their paper "The determinants of capital structure choice" used factor-analytic technique [12]for unobserved factors that affect the corporate debt ratios, while using natural logarithm of sales as a proxy for firm size. Their results shows that transaction costs may be an important determinant of capital structure and short-term debt ratios are negatively related to firm size and thus leads to negative performance. They also argued that the cost of issuing debt and equity is related to the size of the firm. According to them, small firms pay more as compared to large firms when they issue new equity and also more for issuing long-term debt. This is why small firms are more leveraged than large firms. The alternative for small firms will be to go for short-term loans from banks, which is a better alternative rather than long-term debt.

Shergill and Sarkaria (1999) in there study of 197 firms, from 17 different industry types and in the period of 1980s, found a positive relation between the firm size and the performance in Indian

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[12] A method used to describe variability among observed, correlated variables in terms of potentially lower number of unobserved variables which are called factors.

firms. They argued that larger firms are more diversified, they have the advantage from economies of scale and have access to advanced technology, which they can get at lower cost.

Berger and Di Patti (2003) in their paper on banking sector of US, using profit efficiency as a measure of performance argued that, efficiency is responsive to ownership structure and size of the firm. Their results suggest that, large institutions holders and firms have favorable monitoring effects which reduce agency costs and thus improve performance. Psillaki and Daskalakis (2008) in their study shows that usually large firms are more levered than small firms. Krasauskaite (2011) in his study "Capital Structure of SMEs: Does Firm Size Matter?" argues that micro firms on average are less levered than small and medium-sized firms, however when only positive long-term debt amounts are considered, the relationship reverses and small firms have high leverage ratios than medium-sized firms.

Another study by Zeitun and Tian (2007), conducted on the firms in Jordan for a period of 1989-2003, found a positive relationship between firm size and performance. They used log of assets as a proxy for firm size. The data sample contained firms from 16 different industry sectors excluding firms from financial and banking sector. The researcher argued that large firm can easily earn higher returns as compared to small firms because of diversification and economies of scale.

A detailed survey by BACH[13], which features the "financial structure and profitability of firms in Europe", reveals mix results for firms with different sizes and countries. The results are based on the data from 2012. EBITDA over net turnover was used as proxy for profitability. The results shows substantial cross country differences. According to the study, in countries like Spain, Portugal and Poland, large firms are among the most profitable, which are followed by medium and small firms. In other countries, it is the small firms that are most profitable with an exception for Italy, where medium sized firms are more profitable than firms with different size. Using ROE as a profitability proxy shows that after the crisis of 2007/2008, ROE was higher for large firms as compared to medium and small firms.

Shen (2012) in his paper on European countries, while using natural logarithm of assets as a proxy for size of the firm size finds a positive relationship between firm size and performance. However, his study finds a negative relation in case of UK. He argues that small companies tends to do better

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[13] Bank of the accounts of companies harmonized.

in case of UK, because small firms are flexible and can easily change to fit the desired results. These positive results are consistent with the results of Chen (2011), using company size as a moderator in his study. He further argues that the path from tax to capital structure is moderated by the size of the firm, which means that size of the firms heavily effects the capital structure and thus the performance. His results also stats that, bigger companies have the advantage to raise financing from formal institutions, which leads to the advantage of the tax deductibility of debt.

A study by Lavorskyi (2013) found conflicting results while using logarithm of assets as a proxy for firm size. Different performance proxies gave diverse results. Size and performance are positively and negatively related while using EBIT margin / TFP as a performance proxy. While on the other hand they are negatively related, when ROA is used as a proxy.

Abor (2005) in his on the firms from Ghana, while using natural logarithm of assets as a proxy for firm size, found a positive relationship between firm size and performance. This relationship is also verified by Pouraghajan and Malekian (2012) in their study on the firms from Iran, using the logarithm of assets as a proxy for firm size. The same positive relation between firm size and performance is also evident from a more recent study by Abeywardhana (2016) on the manufacturing sector SMEs in UK. While using the natural logarithm of assets as proxy for the firm size and ROA and ROCE (return on capital employed) as measures of financial performance. The analysis was done using the data from 1999-2008.

Chapter 3: Approach and Methodology

3.1 Research Methodology

Chapter two presented a review of the literature on the capital structure and the relation with the performance of the firms. Both the theoretical and empirical studies were taken into account. Based on the previous studies, we derive expectations for the relationship of a company's capital structure and its financial performance. The study of previous research also confirms that there are only a number of studies conducted in Italy which explained the relation of capital structure and performance based on the firms with different size. This research will fill the gap by taking into account the firm size and see how firms with different sizes can be affected by changes in their capital structure. This chapter will outline how the research will be organized and carried out to reach our objective. The chapter starts with explaining the data and resource of the data in section 3.2. The next section 3.3 discuss the population and how the sample is derived. The next section which is 3.4, discusses the type of data used in this research and why such data is used. Going forward we discuss the techniques of data representation and the statistical tests used to analyze our data in section 3.5. Finally in the last two sections, 3.6 and 3.7, we discuss how the econometric models will be delivered using the software E-views and comment on the variables used in the study.

3.2 Data Source

In this study most of the data collected and used is secondary data. Based on the research type and dealing with the financial sector, most of the data needed was qualitative data which comes from the financial statements, annual and quarterly reports. This data is secondary data which is collected from Bloomberg terminal located in the library of Ca' Foscari University. This research uses the book value. According to De Luca (2014), the book value is used for three reasons. Firstly, because of the volatility in the market, it is difficult to get a fix value. Also managers think in terms of book values because of its easy availability and lack of volatility. Secondly, the measurement of the economic performance of a firm is based on income statements while the leverage is used

as a proxy of the market value (Rajan & Zingales, 1995). Lastly, in a financial distress, the firm value is near to the book value. If the firm bankrupts, the returns to the debt holder are measured using book values and not market values.

3.3 Population and Sample of Study

The study is conducted on firms that are registered on the Italian stock exchange "Borsa Italiana". The firms are divided into two groups, mainly FTSE small cap[14] and FTSE mid cap[15]. Based on the diversity in the firms in the two groups, a mix of firms from different industries is considered except for the firms in the banking, financial and real estate sectors because the peculiarity of their operations, different cash flows, liabilities and asset structure is different from other firms and could possibly distort the results (De Luca, 2014). Based on the data availability in some sectors, we have considered only 9 different industries in our analysis. We believe that the selected sample of firms represents well, the total number of firms in Italy which are registered on the stock exchange. The classification of these firms can be seen from the table 3.1. The number of cross sections included in this study are 50. The sample size of the study can be computed as follows.

Number of observations for small cap = (2007Q1 – 2015Q4) $\times$ 24 = 36$\times$25 = 900

Number of observations for mid-cap = (2007Q1 – 2015Q4) $\times$ 24 = 36$\times$25 = 900

Total observations = 1800

So the total observations becomes 1800. Out of the total number of observations, 900 belongs to the firms with small capitalization while the remaining are firms with medium capitalization.

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[14] Companies with market capitalization of less than $2 billion.
[15] Companies with market capitalization between $2 billion and $10 billion.

Table 3.1: Industry Classification of the Sample Analyzed in the Empirical Application

Industry / Sector	FTSE SMALL CAP	FTSE MID CAP
Industrial	5	5
Consumer goods	3	3
Consumer services	3	3
Food and beverage	2	2
Utilities	3	3
Technology	3	2
Media	2	2
Oil and Gas	2	2
Health care	2	2
Total firms	**25**	**25**

3.4 Data Type

The nature of the data used in this paper is panel data. A panel data is a combination of both time series data and cross-sectional data. This data holds some advantages over other data types because it is more detailed and carries more information. The analysis done with panel data is called panel analysis. Brooks (2008) arguing the advantages of panel data that, it takes into account a wider range of issues and more complex problems, which on the other hand with time series and cross-sectional are not possible. Another advantage comes from the fact that we often are interested in the dramatic change in relationship among the variables. Panel data can investigate this change easily as compared to pure time series data which will often require long run data to derive at final

conclusion. By combining cross-sectional and time series data, we can increase the degrees of freedom and thus the power of testing the hypothesis in our study.

3.5 Data Analysis

The analysis employed on the data includes descriptive analysis, which will be followed by diagnostics tests to verify if our data is free from any kind of seasonality and make sure the variables in our data are significant, respectively. Once we have all the trends and seasonality removed from the data and the variables are proved to be significant, we proceed with the model building and a regression analysis will be carried out.

The descriptive analysis reveals some important aspects of the data about the capital structure and the performance of firms and provide us with the initial information about our variables. This also helps us identify if our data needs some transformations, either a log or a difference transformation. Diagnostic tests such as normality and unit root test for autocorrelation are carried out to ensure that the data fulfill the basic assumptions which are required for a classical linear regression model. Before we proceed with the regression analysis we check Hausmen test which is used in case of panel data. This test is used to identify if there exists Endogeneity in our model and suggests the used of fixed effects and random effects in our model. To check how the changes in the capital structure will affect the performance of Italian firms, we will proceed with the regression analysis. To see the magnitude of change in performance, we will also use panel least square method.

Finally we will decide based on the P-values if the constant term and the coefficients in the regression are significant. The overall significance of the model will be tested using F-test. The coefficient of determination R^2 is used to measure the strength to which the independent variables explain the changes in the dependent variable. The analysis in this research paper will be carried out with the statistical software E-views.

3.6 Model Specification

To model the effects of capital structure on the performance of the firms, we used a multiple regression model. Multiple regression is a whole family of techniques which is usually used by most of the researchers to explore the relationship between the endogenous variable and a number of exogenous variables (Beck, Bryman & Liao, 2003).

According to Brooks (2008), the majority of the econometricians make use of the regression analysis to derive quantitative estimates of economic relationships between the variables. The relationship between these variables was limited to theory in the past. Regression is a statistical technique which explains how a change in one variable, the dependent variable, is caused by the changes in another variable, the independent variable or the explanatory variable through the use of single equation (Brooks, 2008).

In a normal multiple regression equation, there will often be a number of explanatory variables, to see which variable has most of the effect on the dependent variable, we observe the estimated value of the coefficient and the significance can be seen by the respective probability of 1%, 5% and 10%. The general form of a multivariate regression model with K independent variables is written as follows:

$$Y_i = \beta_0 + \beta_1 X_{1_i} + \beta_2 X_{2_i} + \ldots + \beta_k X_{k_i} + \varepsilon_i \qquad (i = 1, 2, 3 \ldots n)$$

Where Yi is the ith observations of the dependent variable, while $X_{1_i}, \ldots . X_{k_i}$ are the ith observations of the independent variable. $\beta_0, \ldots . \beta_k$ are called the coefficients of the regression, which tells us by which percentage our dependent variable changes with respect to independent variable. εi is the stochastic error term which accounts for all the other factors that might affect our dependent variable and n stands for the number of observations.

For the analysis of how a capital structure affects the performance of firms in Italy, we used two models. The reason for using two models is because of using two proxies for measuring the firm's performance. ROE is used as accounting financial performance measure, which will mostly reflect the equity returns of the firm, while ROA is another proxy and is another accounting measure of performance which will reflect the returns on the assets of the firm. Both these measures of financial performance will reflect our dependent variables. Our independent variable will reflect

the capital structure of the firm and will include total debt to total equity (TDTE) and total debt to total assets (TDTA). In order to account for the effect of the firm size on performance, we will include firm size as a control variable. The financial performance as a function of capital structure which can be written as:

Financial performance = f (Capital structure)

The final models will look somewhat like this:

$$\textbf{Model 1} \qquad ROA = \alpha + \beta_1\,(TDTA) + \beta_2\,(SIZE) + \varepsilon_{i_t}$$

$$\textbf{Model 2} \qquad ROE = \alpha + \beta_1\,(TDTE) + \beta_2\,(SIZE) + \varepsilon_{i_t}$$

Where:

ROA = Return on assets

ROE = Return on equity

α = Constant coefficient

β = Regression coefficient for measuring the independent variables

TDTA = Total debt to assets

TDTE = Total debt to equity

SIZE = firms size

ε = Error term

Depending on the data and descriptive data analysis, we will use logarithmic or differenced transformation for both model 1 and model 2. To remove the skewness in our data we use a log transformation while a differenced transformation is used to improve stationarity. Researchers often transform the data in hopes of achieving normality prior to using some form of the general linear model.

3.7 Variables in Study and Hypothesis

3.7.1 Dependent Variable

The dependent variable used in the model is the firm performance. Return on assets (ROA) and return on equity (ROE) are proxies for the firm performance. The reason we have chosen ROA as a proxy for financial performance of the firm is because it shows the percentage of profits that a firm earns as compared to the total assets owned by the firm. ROA is a profitability ratio and measures the amount of profits made by the firm per Euro of its assets. In other words we can say that, it shows the ability of a company to generate profits before interest and taxes. Moreover, when we measure the return on assets, it includes all the assets which the firm have from liabilities and those from the investors. This measure of performance also gives us an idea on how efficiently the management is using the assets to generate profits (Ghosh, 2007). Return on asset (ROA) is used by a number of researchers including (Zeitun & Tian 2007; Salteh, Ghanavanti, Khanqah & Khosoroshahi, 2009). ROE was also used by Pouraghajan (2012), followed by Kajananthan and Nimalthasan (2013) as a proxy variable in their study of the capital structure and impact on firm performance on manufacturing companies in Sari Lanka. For the firms in Italy the same proxy variable was also used by De Luca (2014) and most recently by (Nagambi & Wase, 2015; Nassar, 2016) & Kifle 2016). The formula used to calculate Return on asset is given by:

$$ROA = \frac{Earnings\ before\ Interest\ and\ Tax}{Total\ Assets}$$

The second proxy for firms performance used in this paper is Return of equity (ROE), which measures the ability of the firm to generate profits from the investments by the shareholders. Looking from a different prospective, it measures how much profits are generated for each Euro invested by common equity holders (Donaldson, 1961). ROE is also used by many researchers including Abor (2005), Cheng, Liu, Chien (2007), Karadeniz, Kandir, Bacilar (2009) and Akinyomi (2013). Most recently it was used by Ngambi and Wase (2015) and Nassar (2016). ROE is calculated using the formula:

$$ROE = \frac{Net\ Income}{Total\ Equity}$$

3.7.2 Independent Variables

Capital structure which is our independent variable, also referred to by some researchers as Leverage, is measured either by long-term debt to equity, short-term debt to equity or Total debt to equity. This ratio measures debt financing as a percentage of total financing. For our study we used total debt to total equity ratio as measure of capital structure, which is used by researchers such as (Abor, 2005; Shen, 2012; Leon, 2013; & Pouraghajan, 2012). The formula used to evaluate debt ratio is given by:

$$TDTE = \frac{Total\ debt}{Total\ equity}$$

Literature predicts that leverage helps in lowering the agency costs among the manager and the equity holders. Since the bankruptcy risks associated with increasing debt makes it risky, this makes the managers to be more careful in investing the extra cash in the firm because they have an obligation to return the loan with interest.

We have contradictory results on the use of debt as a financing instrument, according to pecking order theory by Mayers (1984) which suggests that there is hierarchy in regard to funding an investment by the firm and cost of financing increases with asymmetric information. The firm will first prefer to finance new projects with internally generated funds like, undistributed earnings and retained earnings, next by less risky debt and then external equity as a last resort. As the firm goes through the funding hierarchy, the asymmetric information increases. The order of preferences of the firm reflects the relative costs of finance, which varies between different sources of finance.

Our second independent variable is total debt to assets (TDTA). This variable is used as a second proxy to determine the capital structure of the firm. It will give us information on the relative amount of debt that we have as compared to total assets in the firm. It can be written as:

$$TDTA = \frac{Total\ debt}{Total\ assets}$$

Total debt of assets ratio as a proxy to determine capital structure is used by (Kajananthan & Nimalthasan, 2013; De Luca 2014; & Tally, 2014).

3.7.3 Hypothesis

Based on the contradicting results about how the changes in capital structure effects the financial performance of the firm and all the literature studies, we come up with the following two hypothesis:

Ho: Capital structure affects financial performance of firms significantly in Italy.

Ho: Capital structure affects financial performance of small and large firms differently in Italy.

The research will focus on these two hypothesis by running two models. The size of the firm will act as a control variable.

3.7.4 Control Variable

A control variable, more or less works like an independent variable which enters the regression analysis to account for some factor. Control variables are not important like other independent variable but they are related to the dependent variable. We mostly use them to differentiate the association between particular variables and to enhance the explanatory power of independent variables in the model. Most of the researchers use these variables to account for some factors. Since the study will focus mostly on small and large firms to check how their capital structure differ from each other, we will use Log of assets as a proxy for size as a control variable, which was used by (Abor, 2005; Cheng & Chien 2007; Shen, 2012; and Ngambi & Wase, 2015).

Size = Log (assets)

3.8 Variable Summary and Measurement

All the variables included in this paper and the expected signs according to the previous literature are given in the table 3.2 below.

Variables of Study	Measurement / Formula	Variable source	Sign expected
Dependent Variable			
Return on Assets	ROA= EBIT/Total Assets	Hammes & Chen (2004), Ebaid (2009), Pouraghajan (2012), Lavorskyi (2013), Kifle (2016)	
Return on Equity	ROE= Net Income/Total Equity	Abor (2005), Cheng, Chien (2007), Shen (2012), Kajananthan, Nimalthasan (2013), Kifle (2016)	
Independent Variables			
Debt to Asset Ratio	TDTA= Total Debt/Total Assets	Shen (2012), Kajananthan, Nimalthasan, Lavorskyi (2013), Nassar (2016)	(+)/(-)
Debt to Equity Ratio	TDTE= Total Debt/Total Equity	Krishnan, Moyer (1997), Ebaid (2009), Pouraghajan (2012), Shen (2012), De Luca (2014),	(+)(-)
Control Variable			
Size	Natural log of Total assets	Bauer (2004), Abor (2005), Shen (2012), Al-Tally (2014), Ngambi, Wase(2015)	(+)(-)

Table 3.2: Research Variables with Expected Sign.

Chapter 4: Data Analysis and Discussion

4.1 Introduction

This chapter covers the presentation, interpretation and analysis of data that we have collected. The results shall be derived using E-views version 9. This chapter is divided into several sections. In section 4.2 we will discuss the descriptive statistics of all the variables under study, including the dependent variables, return of asset (ROA), return on equity (ROE) and dependent variables such as Total debt to total assets (TDTA) and Total debt to total equity (TDTE). A control variables for size, represented by Log (total assets) is included as well. Before we proceed with the regression analysis, we need to make sure that our data is stationary, normally distributed, lack any Multicolinearity and is free from seasonal effects. In section 4.3 we carry out a correlation matrix analysis. Section 4.4 include diagnostic analysis which include the normality test and the unit root test to check the stationarity in the data. The Hausmen test will determine whether we should use random or fixed effects model for the regression analysis. Section 4.5 include the results of the regression analysis for both our models, including small and mid-cap firms. To conclude this chapter, section 4.6 will discuss the results of the analysis and conclude the findings of the study by relating the findings to the studies that are previously done.

4.2 Descriptive Statistics

In this section we discuss the descriptive statistics like, mean, median, standard deviation, minimum and maximum, skewness and kurtosis of all the exogenous and endogenous variables under study. Based on the type of study we are conducting, we have two sets of descriptive statistics. Based on the fact that our study includes the analysis of two set of companies which are presented separately. The first set include a total of 25 companies with small capitalization, while the second set includes the same number of companies with middle capitalization. All these companies are listed on the Italian stock exchange. The data collected is quarterly and from the

period of 2007-2015. The total sample consists of 870[16] observations for small cap firms and 855[17] observations for mid-cap firms. The statistics based on these observations are given in the table 4.1 and 4.2 respectively.

Table 4.1 Descriptive Statistic of Small Cap; Source: E-views Output by Author

	ROA	ROE	SIZE	TDTA	TDTE
Mean	-1.311717	-8.163381	2.573536	0.328019	1.448062
Median	0.259350	0.682450	2.548994	0.304780	0.785365
Maximum	18.40650	71.48860	4.228298	0.923928	63.43394
Minimum	-47.21640	-415.9492	1.380483	0.000000	-50.06741
Standard deviation	7.390810	40.08251	0.558580	0.171470	3.786243
Skewness	-2.195348	-4.951464	1.180923	0.388899	4.325861
Kurtosis	10.49515	36.65311	4.506426	3.311912	135.2086
Jarque-Bera	2735.262	44609.24	284.4767	25.45688	636331.0
Probability	0.000000	0.000000	0.000000	0.000003	0.000000
Observations	870	870	870	870	870

[16] Based on the number of missing data, the final number of observations consist of 870 out of 900 for small cap.
[17] Based on the number of missing data, the final number of observations consist of 855 out of 900 for mid cap.

From table 4.1 we can see a negative mean value for both the proxies of financial performance (ROA) and (ROE). The mean value of -1.311717 for (ROA) and a value of -8.163381 for (ROE) suggests that in case of small companies, the mean performance is actually negative from their investments in total assets and total equity, and compared to total debt in the company for the period of 2007-2015. The maximum value of 18.40650 and 71.48860 while the minimum - 47.21640 and -415.9492 are presented for (ROA) and (ROE) respectively. The volatility in returns for assets is estimated to be 7.390810 while the volatility in case of return on equity is 40.08251. A high mean value of 1.448062 for (TDTE) as compared to 0.328019 for (TDTA) represent a high incidence of debt in Italian companies. The mean value of size is given by 2.573536. It should be noted that the probability value of Jarque-Bera for all the variable is less than .05 suggesting the normality and significance of the variables.

Table 4.2: Descriptive Statistic of Mid Cap; Source: E-views Output by Author

	ROA	ROE	SIZE	TDTA	TDTE
Mean	3.180118	8.065605	3.19813	0.282205	1.114019
Median	2.979400	10.39780	3.195331	0.312651	0.993426
Maximum	24.58520	126.3163	3.930656	0.568626	16.93537
Minimum	-27.42910	-238.5249	2.336316	0.000690	0.002521
Standard deviation	5.987125	25.88643	0.419221	0.154045	1.216830
Skewness	-0.638016	-4.212952	-0.105771	-0.240818	6.166592
kurtosis	8.994963	33.46000	1.859053	1.941993	69.54185
Jarque-Bera	1338.354	35582.52	47.96947	48.14188	163159.8

Probability	0.000000	0.000000	0.000000	0.000000	0.000000
Observations	855	855	855	855	855

Unlike the estimates in table 4.1, the output of 4.2 tells a different story. The positive mean value of 3.180118 for (ROA) and 8.065605 for (ROE) is reported. In contrast to small cap companies, the performance indicated by return on assets (ROA) and return on equity (ROE) in the case of mid cap companies is positive for the total investment of assets and debt in the company. The capital structure proxy by a ratio of total debt total assets (TDTA) and total debt total equity (TDTE) indicates a value of 0.282205 and 1.114019 respectively. The latter value suggests a more graduate level of use of debt. The mean value of size is 3.19813 suggesting a stable mean for bigger firm size. The volatility of 5.987125 and 25.88643 for (ROA) and (ROE), as compared to the volatility of small caps suggest that on average, big companies have more stable returns as compared to small firms.

4.3 Correlation Matrix of the Variables

The correlation matrix of the variables under study will give us the degree to which they are related to each other. It is assumed that there does not exist any Multicolinearity between the variables but in most of the cases it is not possible to fully eliminate correlations between variables. In the test of Multicollinearity the values of the coefficient ranges from -1 to 1 as from perfectly negative to perfectly positive correlation. Pallant (2005) argues that Multicollinearity exists between variables if the correlation between two variables exceeds 0.9.

Table 4.3: Correlation Matrix of variables for Small Cap Companies

Covariance Analysis: Ordinary
Date: 06/10/17 Time: 17:38
Sample: 2007Q1 2015Q4
Included observations: 870
Balanced sample (listwise missing value deletion)

Correlation Probability	ROA	ROE	SIZE	TDTA	TDTE
ROA	1.000000				

ROE	0.736182	1.000000			
	0.0000	-----			
SIZE	0.098751	0.070919	1.000000		
	0.0035	0.0365	-----		
TDTA	-0.210595	-0.308674	0.260391	1.000000	
	0.0000	0.0000	0.0000	-----	
TDTE	-0.191456	-0.318546	0.040172	0.409721	1.000000
	0.0000	0.0000	0.2365	0.0000	-----

As evident from table 4.3, there exist a positive correlation of 0.736182 between the dependent variable ROE and ROA. While a weak positive correlation between size and the dependent variables exist. A weak negative correlation of -.210595 and -0.191456 can be seen with the dependent variables. It can be seen that in the case of small firms, both of our dependent variables seems to have a negative correlation with the capital structure and a weak positive correlation with the size can be observed. All the correlation values are well below 0.90, suggesting the absence of perfect collinearity between the variables.

Table 4.4: Correlation Matrix of variables for Mid Cap Companies

Covariance Analysis: Ordinary
Date: 06/10/17   Time: 18:50
Sample: 2007Q1 2015Q4
Included observations: 855
Balanced sample (listwise missing value deletion)

Correlation Probability	ROA	ROE	SIZE	TDTA	TDTE
ROA	1.000000				

ROE	0.796792	1.000000			
	0.0000	-----			
SIZE	-0.246456	-0.099902	1.000000		
	0.0000	0.0035	-----		
TDTA	-0.284430	-0.143101	0.233604	1.000000	
	0.0000	0.0000	0.0000	-----	
TDTE	-0.348819	-0.433421	0.094352	0.561971	1.000000
	0.0000	0.0000	0.0058	0.0000	-----

The results from table 4.4 suggest the absence of any serial correlation between the variables. Although the dependent variables ROE and ROA show a strong positive correlation of 0.796792, this is still less than 0.9 to be considered perfectly collinear. Unlike small capitalized companies, the performance indicators of big companies are negatively correlated with all the independent variables TDTA and TDTE. The negative correlation also exists between the sizes. Although the independent variables shows the strongest correlation, it is followed by the positive correlation of 0.561971 between TDTA and TDTE.

4.4 Tests for Variable Diagnostics

The diagnostic analysis is an important part of the data analysis where we make the use of a variety of tests to cleanse the data from any prior problems. The purpose of this is to make the data ready for our analysis. The econometric analysis works best with the data that is free from any seasonality and trends.

4.4.1 Test of Stationarity

A unit root test is carried out to make sure that the variable under analysis is stationary. If the variable possess a unit root and is non-stationary, we remove the unit root by transforming the variable. The null hypothesis used in this case is usually the presence of unit root while the alternative is no unit root or stationarity. The literature suggest that panel-based unit root tests are more efficient and have more power as compared to simple time series. The computation with E-views will give us the summary of five different test results.

Table 4.4.1: Unit Root Tests; Source: E-views Output

Unit root test for testing ROA

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.9966	0.0000	25	825
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-18.5421	0.0000	25	825
ADF - Fisher Chi-square	384.742	0.0000	25	825
PP - Fisher Chi-square	416.986	0.0000	25	838

Unit root test for testing ROE

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.83995	0.2005	25	815
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.85171	0.0320	25	815
ADF - Fisher Chi-square	83.8992	0.0019	25	815
PP - Fisher Chi-square	75.2112	0.0121	25	842

The output in table 4.4.1 above suggest that both the dependent variables ROE and ROA are stationary. We find that our variable ROA is not stationary at level but after the first difference, it becomes stationary while ROE is stationary at level. Based on the probabilities, we reject the null hypothesis of unit root and accept the alternative hypothesis of stationarity.

4.4.2 Hausmen Test

Hausmen test is usually used in the application of panel data in order to differentiate between the use of models with the fixed effects and with random effects. These two broad classes of panel estimators differ in way the intercept of the regression model is treated. In case of fixed effect model the intercept in the model differs on cross-sectional basis but not over time, while the estimates of the slope remain fixed over time and on cross-section.

The random effect assumes that the covariance of the unobserved factors with the independent variable is zero. Hausmen test decides between fixed and random effect by detecting endogenous regressors in the model. The presence of endogenous variables in the model will result in a failure of OLS estimates. To decide the best method of regression for our model, we have to figure out if the values of the predictor variables are endogenous. This is where we will use the Hausmen test. The test tells us if there exists correlation between the errors and the regressors in the model while keeping the assumption that regressors are uncorrelated in each period with the disturbance term. Since the null hypothesis varies across different studies and software used, in case of the E-views our hypothesis is that unobserved heterogeneity terms are not correlated with independent variable or simply the random effect model is appropriate. Brooks (2008) argues that the rejection of our null hypothesis would suggest the use of a fixed effect model, while in case of acceptance of the null hypothesis, we will use a random effect model.

The Hausmen hypothesis can be written as:

Ho = Random effect model is appropriate

H1 = fixed effect model is appropriate

Table 4.5: Hausmen Tests for Small Cap Companies; Source: E-views Output

Correlated Random Effects - Hausman Test for Model 1

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	14.084401	2	0.0009

Correlated Random Effects - Hausman Test for Model 2
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.129369	2	0.0023

Table 4.6: Hausmen Tests for Mid Cap Companies; Source: E-views Output

Correlated Random Effects - Hausman Test for Model 1
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	11.027129	2	0.0040

Correlated Random Effects - Hausman Test for Model 2
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	19.969280	2	0.0000

According to the estimates from table 4.5 in case of companies with small capitalization, the P-value of 0.0009 and 0.0023 can be seen for model 1 and model 2 respectively. In case of mid cap companies the P-values are 0.0040 and 0.0000 for both the models. The low value of probability in both cases leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis. The acceptance of the alternative hypothesis means that fixed effect model will be used in the regression analysis of both the company types.

4.5 Regression Analysis

After the results from the Hausmen test we proceed with the regression analysis for our variables while applying the fixed effect model. According to Reyna (2007) we make some assumptions while using the fixed effect model. We assume that something within the individual may be biased towards our independent variable and we want to control for it. The use of a fixed effect model controls the time-invariant characteristics so we can have a clear picture of the net effect of our independent variable. Another assumption is that the time-invariant characteristics are uniquely related to individuals and should not be correlated with other individual characteristics.

4.5.1 Capital Structure and Financial Performance of Small Cap Companies

In this part we shall be discussing through a regression analysis, how the return on asset (ROA) and return on equity (ROE) as proxies of performance are affected by changes in the total debt to total equity (TDTE) and total debt to total assets (TDTA) as proxies for the capital structure of firms with small capitalization in Italy. The regression analysis is carried out using a fixed effect model, which means that we are looking for the impact on variables that vary over time while the cross-section is kept constant.

Table 4.7: Regression Analysis Measured by ROA for Small caps

Dependent Variable: ROA
Method: Panel Least Squares
Date: 06/04/17   Time: 19:02
Sample: 2007Q1 2015Q4
Periods included: 36
Cross-sections included: 25
Total panel (unbalanced) observations: 882

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-22.20458	3.898469	-5.695718	0.0000
TDTA	-21.70175	2.033278	-10.67328	0.0000
SIZE	-10.83254	1.474996	7.344116	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.469427	Mean dependent var	-1.608053
Adjusted R-squared	0.453292	S.D. dependent var	8.142328
S.E. of regression	6.020411	Akaike info criterion	6.458322
Sum squared resid	30989.77	Schwarz criterion	6.604716
Log likelihood	-2821.120	Hannan-Quinn criter.	6.514300
F-statistic	29.09479	Durbin-Watson stat	0.306405
Prob(F-statistic)	0.000000		

Table 4.7 shows the regression results with fixed effects. We can see that our dependent variable TDTA has a coefficient value of -21.70175 at a given P-value of 0.0000. This means that our independent variable has a significant negative relationship with the dependent variable at a significance level of 1%. Keeping other things at a constant value for an increment of 1 unit in the ratio of TDTA, the ROA is decreased by -21.70175 units. The size variable can be seen with a coefficient value of -10.83254 at a low significance level of 1%. This means that, holding other variables constant, size has a significant positive relationship with performance, measured by the ROA. The R-squared value shows that 46% of the variation in the dependent variable is explained by the independent variables in the model while the rest is explained by unobserved factors.

The value of F-statistic is 29.09479 which is significant at 1%. This indicates that we can have confidence in the value of R-squared.

Table 4.8: Regression Analysis Measured by ROE for Small Caps

Dependent Variable: ROE
Method: Panel Least Squares
Date: 06/10/17   Time: 11:23
Sample: 2007Q1 2015Q4
Periods included: 36
Cross-sections included: 25
Total panel (unbalanced) observations: 870

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	47.52783	22.31553	2.129810	0.0335
TDTE	-2.564190	0.317971	-8.064224	0.0000
SIZE	-20.19716	8.641482	-2.337233	0.0197

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.358069	Mean dependent var	-8.163381
Adjusted R-squared	0.338271	S.D. dependent var	40.08251
S.E. of regression	32.60581	Akaike info criterion	9.837401
Sum squared resid	896226.0	Schwarz criterion	9.985388
Log likelihood	-4252.269	Hannan-Quinn criter.	9.894025
F-statistic	18.08562	Durbin-Watson stat	0.375289
Prob(F-statistic)	0.000000		

Tables 4.8 reveals somewhat alike results where the performance variable is proxied by the return on equity (ROE). The coefficient of (TDTE) has a value of -2.564190, with a significance level of less than 1%. These results confirm a negative relation of capital structure with the performance of small firms. The control variable, size, with the coefficient of -20.19716, is significant at 5% and shows a negative value.

4.5.2 Capital Structure and Financial Performance of Mid Cap Companies

After the analysis of small cap companies we proceed with how companies with middle capitalization reacts to changes in the capital structure measured by TDTA and TDTE. The performance variables are measured by two well-known proxies such as ROA and ROE. The regression analysis also includes size as a control variable which is measured by the natural logarithm of total assets of the company.

Table 4.9: Regression Analysis Measured by ROA for Mid Cap

Dependent Variable: ROA
Method: Panel Least Squares
Date: 06/10/17   Time: 11:34
Sample: 2007Q1 2015Q4
Periods included: 36
Cross-sections included: 25
Total panel (unbalanced) observations: 861

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-12.38704	4.821566	-2.569091	0.0104
TDTA	-11.99379	2.149664	-5.579380	0.0000
SIZE	5.912764	1.519791	3.890510	0.0001

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.610489	Mean dependent var		3.126474
Adjusted R-squared	0.598346	S.D. dependent var		6.100198
S.E. of regression	3.866070	Akaike info criterion		5.573211
Sum squared resid	12465.38	Schwarz criterion		5.722419
Log likelihood	-2372.267	Hannan-Quinn criter.		5.630330
F-statistic	50.27495	Durbin-Watson stat		0.260962
Prob(F-statistic)	0.000000			

The regression output in table 4.9 shows that the negative co-efficient value of -11.99379 for TDTA is significant at 1%. The size coefficient with the same significance level of 1% has a positive value of 5.912764. This result suggests a negative relationship between performance and

capital structure measured by ROA, while a positive relationship between firm size and performance can be seen. The intercept value of -12.38704 suggests that our dependent variable will take this value if all the remaining variables were zero. The overall significance can be seen with the F-statistics of 50.27495 which is significant at 1%. The significance of F-statistic builds our confidence in the value of R-squared, which is valued at 0.610489. This value suggest that the overall variation in the dependent variable ROE is explained by our independent variables TDTA and size for about 60%, while the remaining 40% is explained by unobserved factors.

Table 4.10: Regression Analysis Measured by ROE for Mid Cap

Dependent Variable: ROE
Method: Panel Least Squares
Date: 06/10/17   Time: 11:35
Sample: 2007Q1 2015Q4
Periods included: 36
Cross-sections included: 25
Total panel (unbalanced) observations: 855

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-111.2450	22.22106	-5.006289	0.0000
TDTE	-10.02314	0.634308	-15.80170	0.0000
SIZE	40.79772	6.957514	5.863835	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.559290	Mean dependent var		8.065605
Adjusted R-squared	0.545451	S.D. dependent var		25.88643
S.E. of regression	17.45270	Akaike info criterion		8.587935
Sum squared resid	252206.0	Schwarz criterion		8.737970
Log likelihood	-3644.342	Hannan-Quinn criter.		8.645390
F-statistic	40.41482	Durbin-Watson stat		0.245057
Prob(F-statistic)	0.000000			

The regression analysis in table 4.10 reveals a negative relationship between performance and capital structure and a significant positive relationship between size and financial performance of the firm. The coefficient value of TDTE is -10.02314 and that of size is 40.79772. Both these values are significant at 1%. The intercept value is a high negative of -111.2450. This is the value

that our dependent variable will take if the rest of the variable have a value of zero. The model is explained 55% by the independent variables in the model while the rest is explained by unobserved factors. The overall significance of the model can be seen from a value of 40.41482 for F-statistics.

4.6 Discussion of the results

In this study we wanted to see empirically how changes in the capital structure of the firm (mix of debt and equity) affects the financial performance (ROA and ROE) of 50 publicly listed firms (25 small and 25 medium) on Italian stock market for a period of 2007 to 2015. The study is based on the understanding from previous literature and a number of theories presented on how the financial performance is linked to the financing structure and size of the companies. In this section detailed discussion on the results is carried out in the light of the objectives and the stated research questions. Based on the results from other researchers, the results of this study will be compared. Section 4.5.1 and 4.5.2 gives the regression results of the small capitalized and mid capitalized companies. On the average, the leverage of the firms in Italy have a negative impact on the financial performance of the small and mid-capitalized companies. Unlike leverage, the size variable seems to have a significant positive impact on the financial firms in Italy.

4.6.1 Capital Structure and Financial Performance Measured by ROA

In this study the return on asset (ROA) is used as one of the dependent variable, also used in studies by Hammes & Chen (2004), Ebaid (2009) and Pouraghajan (2012) as proxy for the financial performance of the firms. A ratio of total debt to total asset (TDTA) is used as proxy for capital structure, also used by (Shen, 2012; & Lavorskyi, 2013). The studies of the literature and theories on capital structure have contradicting results on the use of debt. As the static trade-off theory suggests that a company's capital structure should have debt to have the advantages of tax shield and to discipline the self-interested managers. However, pecking order theory opposes the use of more debt and argues that firms should rely on internal funds instead of using external debt as primary source of financing. The results of this study supports the pecking order theory which suggest a negative impact of debt on performance of firms and favors the use of internally

generated funds instead of using debt. These results are counter to the view of trade-off theory and the second proposition of Modigliani and Miller (1963).

The study result from table 4.7 and 4.9 where ROA is used as proxy of performance shows that the capital structure is negatively related to the financial performance of firms in Italy. The coefficients in both tables are negative, at a value of -21.70175 and -11.99379. Both these values are significant at 1%. The result of this study are consistent with the studies in different countries by (Fama & French, 2002; Bauer, 2004; Ebaid, 2009; & Chen (2011). They proved empirically that there exists a negative relationship between capital structure and financial performance of firms. The same negative results of our study are also consistent with other studies conducted on the firms in Italy by (Domenichelli, 2012 & De Luca, 2014). While using the same proxies for their variables, they found a negative relationship between debt and firm profitability.

4.6.2 Capital Structure and Financial Performance Measured by ROE

The results from table 4.8 and 4.10 reflect the performance measured by the return on equity (ROE). The use of this proxy as a measure of performance of the company is used in a number of studies in the past because it gives an easy indication of how well a company is performing. The returns on equity are the earnings that every shareholder receives based on the share in the company. Studies conducted by Abor (2005), Cheng and Chien (2007), Kajananthan and Nimalthasan (2013) and Kifle (2015) have used (ROE) as a proxy for measuring the financial performance of the company. The negative coefficient value of -2.564190 from table 4.8 and a value of -10.02314 from table 4.10 reveals that capital structure, proxied by total debt to total assets (TDTE), has a significant negative relationship with financial performance. These finding are consistent with the pecking order theory which states that firms will first used internal retained earnings, then external debt and equity as a last resort. Fama and French (2005) argues that a company will have more than the required debt if the investment requirements exceeds the available funds. This theory can be interpreted as that a high leveraged firm would have a low profitability.

Keeping all other things common we can see from the regression equation that a change on 1% in the capital structure affects the ROE by -2.564190 in case of small companies and -10.02314 in

case of big companies. These results are significant at 99%. The value of R-squared for these findings is 35% and 55%, respectively and significant value of F-statistic is observed. This negative relation between capital structure and financial performance is in line with the results from studies conducted by (Abbadi and Abu-Rub, 2012; Al-Tally, 2014; & Taylor, 2015).

4.6.3 Firm Size and Financial Performance

As is evident from the review of literature, firm size has a significant effects on the financial performance of the firm. This is also evident form the theoretical point that, as the firm grows, the financial requirements of the firm increases and it needs more funds for further expansion of the firm. Damodaran (2014) argues that as a firm goes through its life cycle, the way the firm is financed also alters. Damodaran (2014) and pecking order theory by Myers and Majluf (1984), stresses the use of internal equity first. When the firm grows and financial obligations rise the use of debt is advised, while the external equity can be used as a last resort. The findings of this thesis are also consistent with the same hypothesis. To account for firm size, we have used the log of total assets as proxy. The results from the regression analysis show a significant negative relationship in the case of small firms which is consistent with the results of De Luca (2014) in his study on small, medium and large manufacturing and service firms in Italy. While on the other hand, the regression results show a significant positive relationship of firm size and firm profitability in case of big firms. From tables 4.9 and 4.10 we can notice a coefficient value of 5.912764 was estimated for size when ROA was used as proxy for financial performance and a value of 40.79772 was estimated when ROE was used as performance proxy. Both these significant positive estimates were obtained in the analysis of mid cap companies, which might be due to the fact that big firms are more diversified and have access to diverse sources of funding. These results are consistent with the arguments of trade-off theory, according to which bigger firms have the advantage of economies of scale, access to new technology and cheap sources of funding available through diversification. The results of this study are also verified by previous studies by Shergill and Sarkaria (1999), Berger and Di Patti (2003), Abor (2005) and Zeitun and Tian (2007) who used the natural logarithm of total assets and total sales.

4.6.4 How this Study Relates to Previous Studies

The studies on how capital structure affects the financial performance of the firm in case of Italy were performed by (Domenichelli, 2012; & De Luca, 2014). According to the findings of De Luca (2014), a mixed result is observed between firms with different sizes, while using more than one proxy for performance. While Domenichelli (2012) on other hand found a significant negative relationship between the increasing debt and performance of the firm. Their results also shows a strong influence of firm size on performance, which might be due to the fact that big firms have been established for a longer periods and thus gaining expertise, diversify and consequently have easy access to financing resources. The results of my study are in line with their findings, indicating a negative relation of debt and performance of the firm. The studies conducted in Italy also reveals that firm size is a significant factor in the financial performance of the firm.

The theoretical proposition by Modigliani and Miller (1958) of having no effect on the firm value with changes in debt and equity in presence of several assumptions. In the presence of these unrealistic assumptions we can expect no relationship between financial performance and capital structure. In the aftermath of these theories, a number of empirical studies have been carried out which provide incontrovertible evidence that such a relationship does exists. Following the arguments of more theories like Pecking order theory and trade-off theory which states that capital structure do influences, several researchers have conducted studies to explore if this relation do exists. Following the theoretical results, Titman and Wessels (1988) found a negative relationship, while study in the same area by Kochhar (1997) in his study "strategic capital structure and performance" found a significant negative relationship between increasing debt and financial performance of the firm. Similar results were indicated from the studies by Fama and French (2002), Bauer (2004) and Ebaid (2009) who argues that high leverage in the company inversely affects the financial performance of the firm. The results of these studies are consistent with the findings of the current study conducted on the firms in Italy. Although a number of these studies are conducted in different countries, these results certainly represents different markets, economies and firm types. As in case of Italy, the high incidence of debt and heavy reliance on debt, inflicts a negative effect on the financial performance of the firm.

Chapter 5: Conclusion and Recommendations

The motivation to conduct this study was to check if there exists a significant relationship between the capital structure and the financial performance of firms in Italy. The study has been carried out in such a manner to answer the questions that we asked in the first chapter and achieve the objectives of this study. First we start with an introduction of the concept of capital structure and its detailed background. The combination of diverse financing resources together to make up the capital structure, which in our case is combination of debt and equity. We also discussed the significance of carrying out this research. To better understand the background and direction of our study, we carried out a detailed review of literature. Based on the previous literature we have the knowledge carry out our study. After which we proceed with our analysis by defining the variables of our study and the methodology. The analysis is done using panel data by applying a variety of statistical tests. In this last chapter we will summarize the findings of chapter 4, conclude the results and give possible recommendations based on the findings.

5.1 Conclusion

The topic of capital structure and performance has long been an interest of researchers after the proposition of capital structure irrelevance by (Modigliani & Miller, 1958). A number of studies based on different countries, methodologies, data and different use of variables have been carried out. We believe that all these factors significantly affects the outcomes of the study which is why this study is limited to the firms in Italy. Although very few studies have been conducted in the case of Italy, this study is an attempt to analyze the relationship between capital structure and financial performance of small and large firms in Italy based on recent data.

The study is conducted using the return on asset (ROA) and return on equity (ROE) as proxies to represent the financial performance of the firm. The ratio of total debt to total assets (TDTA) and total debt to total equity (TDTE) reflects our capital structure. To account for the firm size, a natural logarithm of total assets have been used. The results are estimated using a quantitative approach by collecting panel data from Bloomberg terminal for a period of 2007 to 2015. This

data is free from any seasonal trends. A statistical software, E-views 9 is used for the analysis of the data.

The results are presented in two sets. The first part includes the results from small companies with a market capitalization of less than $2 billion. The results of the regression shows a significant negative relationship between capital structure (TDTA) and financial performance (ROA). The negative coefficient value of -21.70175 for (TDTA) can be seen with a significance level of 1%. According to the results, 46% of the variation in the independent variable is explained by our independent variables. In case of (ROE) as a performance indicator, the coefficient stands at a negative value of -2.564190. The negative value of -20.19716 of the size coefficient in case of small firms indicates a negative relation of firm size and performance of small firms.

The second sample represents bigger companies with a market capitalization between $2 billion up to $10 billion. For these companies the same negative and significant relation can be observed between capital structure and financial performance. Keeping other things constant, a 1% increase in TDTA has negative affect of -11.99379 units on ROA. The results in table 4.10 shows a significant negative value of -10.02314 for (TDTE) which reflects a negative relation with ROE. Both in table 4.9 and 4.10 the result shows that, unlike small firms, the size variable has a significant positive relationship with performance proxies ROA and ROE for big firms.

After a final analysis of both the data sets for small and big companies, we come to a conclusion that firm in Italy have a heavy dependence on debt as a source of finance, which is evident from a study by (Intrisano, 2012). Our study shows that this reliance on debt has effects on small and large firms. On average, the financial performance of small firms in Italy decreases if they include more debt in their asset structure. This result is confirmed from small companies and also from large companies which shows a significant negative relationship between debt ratio and performance. These results are consistent with the pecking order theory which supports the view of a negative relationship between leverage and financial performance, as high levels of debt decreases the business performance.

Apart from the results of debt on performance, our results also confirms a significant positive effect of firm size on performance. This take us to believe that big firms on average has a better performance than small firms in Italy. The reasons for better performance by big firms could be

greater expertise, having advantage of economies of scale, more diversified and have more cheap sources of funds available. While small firms are usually new with less expertise, lack economies of scale and accessing new funds is usually expensive because of no previous history.

5.2 Recommendations

Considering the importance of capital structure, this study is an attempt to try and check empirically how the way a firm finance itself can affect its profitability. The primary objective of most firms is to increase its firm value and maximize shareholders wealth. This is achieved by maximizing the profits of the firm while minimizing the costs. Traditionally the primary focus of the firms was to increase profits while cost minimization got the importance after the paper by (Modigliani & Miller, 1958). Since then a number of studies tries to identify how the financing of firms can be altered to save more money and improve performance. The study imply the importance of capital structure for the firms in Italy. The high incidence of debt financing of firms in Italy could prove to be the reason why firms on average do not perform as compared to firms in other countries in Europe. Although big firms on average seems to do better as compared to small firms, still firms in Italy needs to be more prudent in making financing decision. A recent study by Balduzzi, Brancati and schiantarelli (2016) on financial markets and firms financing decision in Italy reveals that small firms in Italy mostly use variable-rate credit as means of financing themselves. The researchers believes that this could be the reason why small firms are mostly vulnerable when there are changes in cost and availability of funding from the banks. In order to tackle such challenges where the fluctuations in banks cost of funding has a direct effect on the firms, the reliance of the firms on bank loans should be limited. Firms should mostly rely on retained earnings and issue external equity only if it has to while the use of external debt should be minimum. According to a report by the "European Firms in a Global Economy" (EFIGE), Italian firms are doing worse in case of exports as compared to their counterparts Germany and France. This could be one of the reason firms in Italy perform poorly when it comes to international comparison with other firms. If the firms have to rely on debt, an exposure to international markets and more diversified portfolios can help turn around the looming financial performance of firms in Italy.

5.3 Recommendation for Future Research

The first recommendation of this study is to have a deeper understanding of the proxy variables used to represent the capital structure and performance. It seems obvious from a number of studies that results changes while using a variety of proxies to represent our capital structure and performance variable.

The second recommendation would be that there is need for a more comprehensive analysis in this area. Since this study used simple descriptive analysis of the panel data, variable correlation and OLS models to examine the relation of variables for 50 firms. Future studies should be conducted using more diverse data based on individual or groups of firms which are classified based on industry types and sectors. The use of reverse causality of performance on capital structure can be analyzed.

Finally it can be argued that the analysis of one data set does not justify that repeating the same analysis with a different data, places and time periods will have the same outcomes. The repetition of the analysis could get us closer to more accurate results. Thus we can conclude that although the results of this research are significant, they are not definitive. The study recommends the need for more research in the case of Italy so that these results can be confirmed.

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