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Capital structure and stock return

A quantitative study of the relationship between leverage and stock returns on Swedish listed firms

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Abstract

This study investigates the effect of leverage on stock returns on Swedish listed firms (Large and Mid-cap). Stock returns have been calculated, and leverage ratios have been collected through Datastream. The results contradict fundamental theories on capital structure. According to the fundamental theories there should be a positive relationship, but the result of this study suggests that the relationship is negative.

Key words

Capital structure, leverage, stock returns, Modigliani & Miller, pecking order theory, trade- off theory, financial risk.

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1 Introduction

1.1 Background

After the Global Financial Crisis in 2008 the central banks in many of the advanced economies in Europe pursued highly accommodative monetary policy which has resulted in low interest rates (Malovaná, Bajzík, Ehrenbergerová, Janku, 2022). Lower interest rates increase incentives to borrow, both for individuals but also for companies. This makes it cheaper for companies to borrow for investments, in order to create growth in sales and earnings for their shareholders.

In the world of business, the issue of raising capital is universal. Both the small business owner and large public firms need to raise capital in order to make the business operational. There are different ways to raise capital. The firm can raise capital through equity and debt.

A company's capital structure explains the relationship between equity and debt can be decisive for its future development. There are several theories that describe how companies should finance their operations. They can finance their operations through equity or borrowed funds and the capital structure can be measured by means of equity to assets ratio or debt to equity ratio. If companies can find an optimal debt to equity ratio for them, the cost of capital decreases and the value of the company is maximized. From a financing perspective, this is only considered to be one of the companies' most important goals, to create value for shareholders (Greve, 2016).

There are three prominent theories that explain the relationship between capital structure and profitability. The Modigliani and Miller theory of capital structure states that companies can benefit from a tax shield that arises from increased indebtedness and explains a positive relationship between the debt to equity ratio and profitability. The trade-off theory describes an optimal debt to equity ratio where companies benefit from mortgaging and shows a positive

correlation between debt to equity ratio and profitability, but only to a certain extent (Brealy, Myers, Allen, 2019). The pecking order theory, to some extent, opposes the above-mentioned theories and believes instead that companies should prioritize internal over external funds, this due to the costs that arise in connection with external financing (Myers and Majluf, 1984)

1.2 Problem

Within the field of business and economics, the relationship between leverage and firm performance has been a contentious topic. Studies have examined listed firms in the US and the UK, for example. We want to add evidence from the Swedish perspective on this issue. Further on, in Sweden (to our knowledge) stock returns have not been the basis for evaluation of firm performance on this topic, especially during the years of significantly low interest rates. We have found research that has book values as a performance measure, such as return on equity or return on total capital. We want to add evidence on market measurements of performance, in this case the possible effect of leverage on stock returns.

After the seminal work of Miller and Modigliani (1958) Hamada (1972) tested their theory and he presented results in accordance with their findings. Later on, both Korteweg (2004) and Sivaprasad (2007) found a negative relationship between leverage and stock return. The fact that studies have produced different results is one of the main factors why we think this topic is relevant to examine further, from a Swedish perspective.

Few researchers have focused on market-based measures of firm performance, such as stock returns, when conducting earlier studies within the subject. Instead, many studies have decided to use book values as a dependent variable, like return on equity or return on assets. This study will analyze the relationship between firm performance and capital structure from an investor's

perspective by basing the analysis on stock returns rather than book values. We think it would be interesting to see if investors should consider capital structure when making investment decisions.

1.3 Purpose

The purpose of this essay is to examine how the stock market responds when firms issue more debt. Our aim is to add new evidence on this topic, from a Swedish perspective. As mentioned above studies have been made on US and UK listed firms. Research on this topic has demonstrated different results. We want to contribute with more evidence on this topic for the Swedish market. By collecting leverage ratios and stock development data for Swedish firms listed on large and mid-cap, we will test the possible relationship between leverage and return through a regression.

1.4 Research question

Do leverage effect the stock returns for Swedish listed firms? If so, is it a positive relationship in accordance with Miller Modigliani, pecking order theory and trade-off theory? Or is it a negative relationship in accordance with the findings of Shivaprasad (2007)?

1.5 Limitations

The data collection of the Swedish listed firms will be limited to a time frame between 2010 to 2021. The bank and real estate-sectors will be excluded from the study due to the fact that their capital structure is significantly different compared to other sectors.

Due to lacking information on some firms in the database Datastream, firms have been excluded from the sample. Regarding some firms, there is data from some of the years, and in other cases there is no data at all. Another potential

problem is that some firms have been part of other listed business groups and in recent time have become an independent corporation. Another problem that we have faced is that we have only been able to collect one specific variable from specific firms in Datastream. The problems mentioned above have forced us to decrease our sample size.

2 Theory

2.1 Pecking order theory

One of the most prominent theories in corporate financing decisions in literature is the pecking order theory. A theory that was first formulated by Donaldson (1961) who identified that companies prefer internal capital as a source of financing. The purpose was to challenge the idea that companies reduce their capital costs through a combination of debt and equity financing. An idea that was then developed by Myers (1984) for companies to rank capital hierarchically. Myers and Majluf (1984) argue in their study that information asymmetry drives companies' capital structure. According to the theory, the information asymmetry is based on the company's management holding more information about the company and its investments in comparison with the market. The parties evaluate the firm differently and therefore companies prioritize the choice of financing according to a ranking based on the extent to which the financing alternative constitutes a risk of information asymmetry. Internally generated profits are thus prioritized first, when these are not enough, companies next step is to borrow funds. The last resort is new issues, which constitute the greatest risk of information asymmetry as a result of the required return on investors (Myers, 1984).

Asymmetric information favors the issue of debt over equity because debt issuance signals that the board is confident that an investment is profitable and that the price of the company stock is currently undervalued. Equity issuance signals the contrary, the lack of confidence in the board where they feel that stock price is overvalued which will lead to a drop in the price of the company stock (Adair, Adaskou, 2015).

The pecking order theory assumes that high-growth companies, which often have a large financing need, end up with a high level of indebtedness due to

management's reluctance to increase capital through new issues (Frank and Goyal, 2003). According to the pecking order theory, companies below follow a hierarchy of capital structure:

1.Internally balanced profits
2.Long-term liabilities (such as bank loans)
3. Rights issue

The choice of financing that is made is also affected by whether companies show a financial deficit or surplus. If you show a surplus, you are expected to use retained earnings to reduce long-term liabilities, and if you show a deficit, you are expected to add long-term debt in the first stage (Myers, 1984).

2.1.1 Adverse selection

The most common incentive for the pecking order theory is asymmetric information in the form of adverse selection, which was developed by Myers and Majluf (1984) and Myers (1984). The idea of adverse selection is that business managers of a firm have the knowledge of the true value of a firm's assets and opportunities to grow. Outside investors lack this knowledge and can only guess these values. If a manager wants to sell equity the outside investor needs to ask the manager of his thoughts behind that decision. It is often managers of overvalued firms that want to sell equity whilst managers of undervalued firms want the contrary.

2.2 Modigliani & Miller theory

As mentioned above, a firm's capital structure is the relative proportions of debt(D) and equity(E). The firm raises capital to finance its assets, which in turn shall generate cash flow. Firms can raise capital through only equity, but also through debt. We call equity in a firm with no debt Unlevered equity= Ru. Equity in a firm that also has debt outstanding is called Levered equity=Re. Payments to debt holders must be paid before eventual dividends can be paid out to the equity-holders of the firm. Miller and Modigliani first proposition

states: *In a perfect capital market, the total value of a firm's securities is equal to the market value of the total cash flows generated by its assets and is not affected by its choice of capital structure.*

MM first proposition states: E + D = U = A
, where U is the market value of equity if the firm is unlevered, and A is the market value of the firm's assets.

Miller and Modigliani discussed further that this proposition holds under certain conditions:

- Investors and firms can trade the same set of securities at competitive market prices equal to the present value of their future cash flows.
- There are no taxes, transaction costs, or issuance costs associated with security trading.
- A firm's financing decisions do not change the cash flows generated by its investments, nor do they reveal new information about them.

Because debt payments have to be made before paying out dividends to shareholders, as the debt-equity ratio increases, the more financial risk the shareholders take on. Levered equity holders want compensation for the increased risk by receiving higher returns. This leads us to the next proposition by Miller and Modigliani.

Miller and Modigliani second proposition states: *The cost of capital of levered equity increases with the firm's market value debt- equity ratio*.

The return of a portfolio is equal to the weighted average of the returns of the securities in it. This leads to the following relationship between returns of levered equity (rE), debt (rD) and unlevered equity (rU):

(E/E+D) * rE + (D/E+D * rD = rU

The equation above can be rearranged to:

rE = rU + (D/E) * (rU - rD)

Where *rU* stands for the risk without leverage, and *(D/E) * (rU-rD)* stands for the additional risk due to leverage.The levered equity return equals the unlevered equity return plus the effect of leverage. The effect of leverage will make the levered equity return accelerate when the firm performance is good (rU>rD), but also pushes it even further down when the firm performance is bad (rU<rD). According to Miller and Modigliani, the market value debt-equity ratio (leverage) determines the additional risk of levered equity. Further on Berk and DeMarzo argues that with leverage a firm can increase expected earnings per share (EPS), and the expectations connected with the expected growth in EPS should increase the firm's stock price. As the firm's expected EPS increases due to leverage, the volatility and risk of its EPS also increases. Berk and DeMarzo mentions that EPS should increase with leverage, but this increase is necessary in order to compensate shareholders for the additional risk. (Berk, DeMarzo, 2020)

2.3 Trade-off theory

A firm's debt-equity decision is often seen by financial managers as a trade-off between interest tax shields and the costs of financial distress. The trade-off theory is aware that target debt ratios may fluctuate between firms. Firms that have safe, tangible assets and masses of taxable income to shield should have higher target ratios. On the contrary, companies with no profit that have risky, tangible assets should rely primarily on equity financing. In a scenario where there are no costs of adjusting capital structure, each firm ought to always be at its target debt ratio. There are delays in adjusting to the optimal capital structure since there are costs of adjusting in practice. The random events that make companies bump away from their capital structure targets cannot be compensated immediately which should result in them being able to see random differences in actual debt ratios for the firms with the same target debt ratio (Brealy, Myers, Allen, 2019).

A big difference between the Modigliani Miller-theory and the trade-off theory is that according to the MM-theory firms should take on as much debt as

possible whilst the trade-off theory wants to avoid these extreme predictions and justifies moderate debt ratios. The usual opinion by financial managers is that they want to have target debt ratios although the target in many cases is specified as a debt rating instead of a debt ratio. The trade-off theory explains the industry differences in capital structure. In some industries companies borrow more money because their assets are more tangible and safe than for companies in other industries which have a higher risk. The trade-off theory cannot explain why some successful firms with low debt, thrive under these circumstances since the most profitable companies usually borrow the most. According to the theory, high profits should mean more debt-servicing capacity with more taxable income to shield which ought to result in a higher target debt-ratio but a reduction of the tax rate will reduce target debt ratios. Public companies rarely make big decisions regarding changes in the capital structure just because of taxes and it is hard to detect the present value of interest tax shields in the market values of these firms. Differences in the average debt ratios between companies in the same industry that have high respectively low leverage, exists even after important attributes are controlled for according to the trade-off theory (Brealy, Myers, Allen, 2019).

2.4 Previous studies

This subchapter will address previous studies on when the different theories have been tested in practice.

2.4.1 Pecking order theory

Murray Z Frank and Vidhan K Goyal tested the pecking order theory broad average of publicly traded American firms between 1971 and 1998. In their study of the theory, they have compiled conclusions from a number of studies, which show differences of opinion that exist around the theory.

According to Myers (2001) external finance only covers a small portion of capital formation and that issues regarding equity are minor, with the bulk of

external finance being debt. The evidence found for publicly traded American firms does not match these claims about external finance. External finance is more important than what it is often recognized for since it is common for it to exceed investments. One significant component of external finance is equity finance and it is common for the net equity issues to exceed net debt issues. Net equity issues track the financing deficit much more closely which according to Frank and Goyal, is remarkable.

The most important variable in testing the pecking order is tangibility. According to Harris and Raviv (1991), it might be expected that the problems connected to asymmetric information would be greater for firms with few tangible assets under the pecking order theory. Thus, firms with few tangible assets will tend to accumulate more debt over time and become more highly levered.

Rajan and Zingales (1995) tested a conventional set of variables in a cross-sectional model to account for corporate leverage. The intention of these variables used in a cross-sectional model was to explain the level of leverage compared to when they were used for the pecking order theory where they intended to explain the change of leverage. Frank and Goyal stated that the pecking order theory implies that the effects of conventional variables should be wiped out by the financial deficit which however was found not to be true no matter of firm size or time period.
Regarding the firm's size impact on the level of leverage, Frank and Goyal found that the future growth opportunities for firms with high market-to-book ratios is generally high but that the fear of a high debt could limit a firm's ability to seize such opportunities. For more defense firms the situation is different. In the study it was found that declining growth opportunities for defense firms leads to a higher use of debt financing. Large firms are usually more diversified which leads to them being predicted to have more debt in their capital structure.

After testing the pecking order theory on these publicly traded American firms, Frank and Goyal found a number of surprising facts. The internal financing is not enough to cover investment spending on average, instead the most common financing decision is to use external financing. Another fact that was concluded in the study was that debt financing did not dominate the equity financing in volume, however the net equity issues follow the financial deficit while the net debt does the opposite. The final fact that contradicts the pecking order was that the long-term debt's current portion was not treated as a part of the financial deficit.

In a smaller sample of companies, the larger firms' financial behavior tends to support the pecking order theory in the earlier years of the time period. Over time, the support for the theory declines for two reasons. The first reason is that there were more publicly traded small firms during the 1980s and 1990s compared to the 1970s. Since the pecking order is not followed by the small firms, the overall average during 1980-1990 moves further from the pecking order. The second reason is that equity becomes more important when the attention is restricted to the largest quartile of firms. Frank and Goyal state that many of the aspects of the evidence found in their study pose problems for the pecking order. However, the financing deficit is not completely irrelevant because when large firms adjust their leverage the components of the financing deficit is taken into consideration (Frank, Goyal, 2003).

2.4.2 Modigliani & Miller theory

As mentioned before, studies regarding the relationship between leverage and stock return have proven different results. According to theory laid forward by Miller and Modigliani (1958), there should be a positive relationship between leverage and return. In their publication, they found evidence of a positive relationship between leverage and return. It is important to note that they limited their research into three sectors: oil, gas and utilities.

In accordance with Miller and Modigliani, Hamada (1972) tested their theory, with a cross-section approach. Hamada investigated the effect of leverage on the systematic risk (beta) of stocks. He incorporated more sectors and the evidence he found suggested not only a positive relationship between leverage and beta, but also between leverage and stock returns.

Korteweg (2004) published a time-series study, in which he tested the second proposition of Miller and Modigliani, which states that increased financial leverage should increase the expected return on equity. He found a negative relationship between leverage and return and rejected proposition 2 of Miller and Modigliani.

Sivaprasad (2007) tested the effect of leverage on stock returns with a valuation model based on Miller and Modigliani. Unlike Miller and Modigliani, she integrated all sectors in her test. In accordance with Miller and Modigliani, she found evidence in the utilities sector supporting their theory. But in all other sectors, her evidence suggests that there is a negative relationship, consistent with Kortewegs (2004) findings.

2.5 Operational and financial risk

In this subsection we discuss concepts and measurements of the relationship between financial risk and required return that was part of the inspiration for our research questions.

There are two general reasons why the risk of firms varies, operational and financial risk. Operational risk (which will not be addressed in further sections in this essay) are risks connected with the specific operations that the firm is active in. This can depend on whether firms operate in different markets and sectors, firms use different technologies and have certain advantages against one another. Operational risk can also be dependent on the firm's capability to withstand a weaker economy, and the potential to increase sales and earnings if the economy is booming. A firm’s capacity to adapt quickly to the

operational risks are often limited. Through its previous investments in both tangible and intangible assets, competence of its workers and customer relationships are firms obliged to operate within or around a certain framework. The shareholders take on the operational risk, both if the firm is financed through equity alone or with both equity and debt. The lenders want to receive interest payments independent of the firm's earnings. This leads us to financial risk.

The fact that the firm has to pay interest on their loan before paying dividends to their shareholders, means that the shareholders also take on financial risk. If a firm has a capital structure consisting of 50% equity and 50% debt in order to finance its assets, and has a beta of 0,8. The lenders do help the firm with financing its assets, but do not share the risk, the shareholders risk doubles in relation to their initial capital investments in the firm (beta=1,6). An increased leverage-ratio means greater financial risk for the shareholders. The shareholders want to be compensated for this risk and will require a higher rate of return. The bigger proportion of total capital consisting of debt, the operational risk remains constant, but the financial risk increases for the shareholders.

A larger proportion of debt in relation to total capital does not only mean more financial risk for the owners of the firm, it also means leverage of the owner's initial capital investment. The firm borrows money at a low interest rate and is used to generate a higher return, where the shareholders can claim the difference. With leverage (debt), the shareholders will get a higher return on their capital investment than if they had financed the firm completely on their own. (Greve, 2016)

3 Data and Methodology

The following part explains the approach to the study, how the data has been collected and how it has been handled.

3.1 Data

3.1.1 Databases and data collection

To carry out the study, data will be collected in the form of different key figures from different firms and their stocks that are listed on the Stockholm Stock Exchange and the trading lists Large Cap and Mid Cap. The key figures that will be collected are the firm's debt-to-equity ratio, stock price and market capitalization. The data collection will be delimited to a time frame between 2010 to 2021. The reason for delimiting the data is because of the interest rate situation after the financial crisis 2008 which is described in the background section of this study. The bank and real estate-sectors will be excluded from the study due to the fact that their capital structure is significantly different compared to other sectors. After excluding these sectors and the firms with lacking data our sample consisted of 113 companies.

3.1.2 Variables

In order to run the regression, the different variables have to be determined. The dependent variable will be stock returns and the independent variable will be leverage. A controlled variable for the regression will also be in order to enhance the internal validity of the study. The controlled variable set for the regression will be firm size based on market capitalization. We used the logarithmic value of market capitalization in order to strengthen the goodness of fit of our model.

3.1.2.1 Return

The stock return was calculated by taking the stock price of the later year divided by the past year minus 1. This calculation was used for all companies in the sample and for all years during the 12-year period.

3.1.2.2 Leverage

The values of the leverage are collected from Thomas Reuters Datastream where the values are calculated using the following formula:

$$Leverage\ (\%)\ \frac{Long\ term\ debt + Short\ term\ debt\ \&\ Current\ Portion\ of\ Long\ term\ debt}{Total\ Capital + Short\ term\ debt\ \&\ Current\ Portion\ of\ Long\ term\ debt}$$

In the regression the leverage will be named as DE.

3.2 Method

We used balanced panel data, and runned a linear regression. In the regression model, stock return is the dependent variable, leverage as an independent variable, and firm size as a controlling variable. We tested for both fixed effects and random effects. The variable size was insignificant in the regression with random effects. An Hausman test was done in order to evaluate which of our models were the most efficient, fixed effect or random effect. The insignificance of the size variable with random effects and the Hausman test implied that the regression with fixed effects should be the main statistical result of our analysis.

4 Results from empirical data

In the following chapter, results from the empirical data will be presented. An explanation is also given of how the results are interpreted.

4.1 Hausman test

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
DE	-.0045191	-.0035765	-.0009426	.0008762
Logsize	.3905682	.0337401	.356828	.0399604

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 80.49
Prob>chi2 = 0.0000

Table 1: The Hausman test runned in Stata.

In Table 1 the different variables are runned in a Hausman test in order to differentiate the fixed effect model and random effect model. As shown the fixed effects are consistent under H0 and Ha whilst the random effects are inconsistent under but efficient under H0. This resulted that the difference between the coefficients being non-systematic. Since the p-value is 0 we will reject H0 and use the fixed effect model for our analysis.

4.2 Regression analysis

Regression results

	FE	*RE*	*pooled OLS*
de	*-0.0045***	*-0.0035***	*-0.0033***
	(0.00112)	*(0.00070)*	*(0.00063)*
size	*0.39***	*0.03*	*-0.010*
	(0.04515)	*(0.02103)*	*(0.01862)*
constant	*-2.35***	*0.10*	*0.25***
	(0.31329)	*(0.14415)*	*(0.12734)*
No. Observations	*1,342*	*1,342*	*1,342*
R-squared	*0.0010*	*0.0197*	*0.0206*

Table 2: Regression results from fixed effect model (FE), random effect model (RE) and pooled OLS.

*Notes: ***, **, * denote significance at 1%, 5%, 10% level. Standard errors are reported in parentheses.*

In accordance with the result of the Hausman test, the regression results with fixed effects (FE) will be the basis for our analysis. One can observe from table 2 that there is a negative relationship between leverage (DE) and stock returns. With an 1% increase in leverage stock returns will decrease by 0,45%. The negative relationship is significant but note that the correlation is very small. On the other hand, there has been a positive relationship between size and stock returns during 2010-2021, for the firms in our study.

4.3 Descriptive statistics

variable	Obs	Mean	Std.Dev	Min	Max

return	1344	0,23	0,53	-0,82	6,64

Table 3: Descriptive statistics for the stock returns during the time period 2010-2021.

In Table 2 the descriptive statistics for the dependent variable stock return, is displayed. The data show that the number of observations is 1.344, a mean value of 0,23 (%), standard deviation of 0,53, minimum value of -0,82 and a maximum value of 6,64.

variable	Obs	Mean	Std.Dev	Min	Max
logsize	1344	6,95	0,78	4,59	8,88

Table 4: Descriptive statistics for the firm size during the time period 2010-2021.

In Table 3 the descriptive statistics for the controlled variable firm size, is displayed. The data show that the number of observations is 1.344, a mean value of 6,95 (logsize of market cap), standard deviation of 0,78, minimum value of 4,59 and a maximum value of 8,88.

variable	Obs	Mean	Std.Dev	Min	Max
de	1342	29,06	22,78	0	199,32

Table 5: Descriptive statistics for the leverage during the time period 2010-2021.

In Table 4 the descriptive statistics for the independent variable leverage, is displayed. The data show that the number of observations is 1.342, a mean value of 29,06 (%), standard deviation of 22,78, a minimum value of 0 and a maximum value of 199,32.

5 Discussion and analysis

Since the work of Miller and Modigliani (1958), studies on this topic have provided us with different results. Our result, like Korteweg (2004) and Sivaprasad (2007) shows a negative relationship between leverage and stock returns. We have not separated the firms in their respective sectors, like for example Sivaprasad did. If we had separated the firms into sectors, we may have found positive relationships in some sectors, but we can only speculate at this moment. Even though we find a negative relationship, the coefficient is very small and the effect of leverage on stock return according to our regression model, is very little.

In section 2.5 the concept of financial risk in a business is discussed and how it connects with required returns for investors. The concept of this section is that with leverage, shareholders ‘’should get’’ a higher return on their capital investment than if they financed the business completely on their own. In our result we see the opposite. Note that we have not taken dividends into account in our study. The firms that have issued more debt have not received a positive response from the market, according to our result.

Berk and DeMarzo argued that leverage should increase a firm’s earnings per share (EPS). But with more leverage the EPS becomes more volatile and risky. The expectations of an increase in EPS should result in an upward stock movement. When observing our results of the firms that we have studied, investors seem to not appreciate additional leverage in most cases. It comes down to the trade-off between risk and return, where investors in the Swedish firms that we have investigated, do not respond positively when the firms in question raise additional capital through leverage.

Adair & Adaskou (2015) states that asymmetric information favors the issue of debt over equity since it signals that the managers of a firm are confident

that an investment is profitable and that the company stock is undervalued. Since the results of this study shows a negative relationship between stock returns and leverage it contradicts the pecking order theory. According to the pecking order theory the results from the regression analysis ought to have shown that the correlation between stock return and leverage should be positive. The results are inconsistent with the Modigliani and Miller theory and the trade-off theory as well. Due to the risk that comes with being leveraged, the Modigliani and Miller theory suggests that companies with a large amount of debt should also have a high return. According to the trade-off theory, this is true up to a certain level of debt, the target debt. Accordingly, a company with a lower debt ratio should provide a lower return.

The low R-square demonstrates that there are more variables that we could have included in our model. If we had added more controlling variables, we assume that our R-square would be higher. The R-square gives us an estimate of the relationship between movements between the dependent variable due to a movement in an independent variable. A consequence of a low R-square is that it gives us difficulties if we want to do predictions. Our aim was to examine the relationship between leverage and stock return based on previous data, not to make predictions.

6 Conclusion

The purpose of the study was to examine if there is a relationship between stock returns and leverage for Swedish companies listed on the Stockholm stock exchange. The objective was to bring new evidence to an already well-debated and researched topic on which previous researchers' findings were inconsistent. The study included firm size as a controlling variable in order to improve our statistical model and excluding small cap. During the time period 2010 - 2021 we have found that there is a negative relationship between leverage and stock return which suggests that outside investors are not rightfully rewarded for the risk of leverage. The evidence found contradicts with the different theories regarding capital structure such as the Modigliani and Miller theory, trade-off theory and pecking order theory. Previous studies made on this topic have come to the same conclusion. However, Sivaprasad separated the firms investigated into different sectors which makes it difficult to conclude how the outcome of this study would have looked like if we had divided our sample into different sectors.

7 Future studies

In order to improve our study, it would be interesting to expand the time period. Another way to expand is to include the real estate sector. If we allow ourselves to speculate, we think that the result would be different if the real estate sector were included in the study.

In this study we had stock return as the dependent variable and leverage as the independent variable. It would be interesting to switch, thus making leverage dependent and stock return independent. We found a small correlation in our result. From this we can conclude that another way of improving the study is by incorporating more controlling variables than we did. When measuring stock returns, we took the investors perspective of performance. But another angle could be to have a book value as a measure of performance.

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