FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

ON THE CAPITAL STRUCTURE OF BELGIAN REAL ESTATE INVESTMENT TRUSTS

CAN EVIDENCE FOR MODIGLIANI & MILLER'S CAPITAL STRUCTURE INDIFFERENCE THEOREMS BE FOUND?

Word count: 20.052

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Master's Dissertation submitted to obtain the degree of:

Master of Science in Business Economics

Academic year: 2017 - 2018

UNIVERSITEIT GENT

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Preface

This document is the cherry on the pie that is my education. This achievement would not have been possible without some people. I would like to thank my parents and my sisters for their unconditional support throughout the years.

I would like to thank Kristiaan Hoste for teaching me how to study and Ruben Verplancke for the great times we had on the faculty.

It was quite hard to find professionals willing to help my research. I realize that these people have a lot of work and responsibilities. Therefore, a special word of gratitude is needed to thank the people who took the time to help. The interviews in this dissertation provide an opportunity to go beyond quantitative analysis and theoretical assumptions. Consequently, this research would not have been possible without them.

Last but not least I would like to thank Prof. Rudy Aernoudt, not only for being my promotor but also for his lectures on cases in corporate finance. It was eye-opening to step back from theory in a fun and relevant manner. In a way, this is what I have tried to do in this dissertation.

Dutch Summary

In deze masterproef probeer ik na te gaan of er bewijs kan gevonden worden voor de indifferentietheorieën van Modigliani en Miller in de wereld van de Gereglementeerde Vastgoed Vennootschappen (GVV's). Deze met de Nobelprijs bekroonde proposities stellen dat 'financieringsbeslissingen niet belangrijk zijn' aangezien ze geen impact kunnen hebben op de kapitaalkost of op de waarde van het bedrijf. Het GVV-kader is gekozen omdat het enkele eigenschappen bezit die goed aansluiten bij de perfecte markten die M&M in 1953 vooropstelden. De belangrijkste zijn de vrijstelling van vennootschapsbelastingen en de verplichte uitkering van dividenden die de '*agency kosten*' van vrije kasstromen beperkt.

Om de theorie aan de praktijk te toetsen, het onderzoek een bepaalde richting te geven en resultaten beter te kunnen valideren, heb ik er voor gekozen om naast een numerieke analyse ook een kwalitatief onderzoek op te zetten. Dit onderzoek is gevoerd door middel van interviews met bevoorrechte getuigen.

Het qualitatieve deel verwerpt de M&M proposities. De bevoorrechte getuigen waren het er unaniem over eens dat een adequaat financieel beleid de kapitaalskost kan optimaliseren en waarde kan creëren voor aandeelhouders. De op ratio geschoeide proposities falen door de door emotie gedreven mensen. Financiële schulden worden soms niet als risicovol ervaren, mede door de invloed van reputatie en gewoonte.

In het kwantitatieve deel kom ik tot een andere maar vergelijkbare conclusie. Indien de impact van de uiterst kleine GVV Immo Moury uitgesloten wordt, is er geen significant verband waar te nemen tussen schuldgraad en kapitaalskost/*'market-to-book*' ratio. Indien deze GVV, waar eigenaars en managers uit dezelfde personen bestaan, in de data gehouden wordt, is er een positief verband van schuldgraad met eerdergenoemde variabelen. Ik vermoed dat de resterende GVV's optimaal gefinancierd zijn en dat financieringsbeslissingen rond dit optimum geen impact hebben. Dit zou verklaren waarom er, indien de data van het suboptimaal gefinancierde Immo Moury inbegrepen wordt, wel een verband waargenomen wordt.

Als Immo Moury in de de data zit, vind ik een positief significant verband van schuldgraad met '*market-to-book'*. In beide gevallen zijn sociale GVV's hoger gewaardeerd.

De conclusie luidt dan ook dat de M&M hypothesen falen door de irrationaliteit van de mens. In die zin leg ik de link naar Richard Thaler, die in 2017 de Nobelprijs voor de economie won door aan te tonen dat mensen voorspelbaar irrationeel zijn.

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Used Abbreviations

β	Bèta
AIF	Alternative Investment Fund
AIFMD	Alternative Investment Fund Managers Directive
BEVAK	Beleggingsvennootschap met Vast Kapitaal
BPR	Best Practices Recommendations
CAGR	Compounded Annual Growth Rate
Comm VA	Commanditaire Vennootschap op Aandelen
D	Debt
E	Equity
EPRA	European Public Real Estate Association
EPS	Earnings Per Share
FCA	Financial Conduct Authority
FCF	Free Cash Flow
FE	Fixed Effects
FFO	Funds from Operations
FIIS	Fonds d'Investissement Immobilier Spécialisé
GAAP	Generally Accepted Accounting Practices
GDP	Gross Domestic Product
GVBF	Gereglementeerd Vastgoed Beleggings Fonds
GVV	Gereglementeerde Vastgoed Vennootschap
ICR	Interest Coverage Ratio
IFRS	International Financial Reporting Standards
LN	Natural Logarithm
M&M	Modigliani & Miller
NAREIT	National Association of Real Estate Investment Trusts
NAV	Net Asset Value
NIY	Net Initial Yield
NNNAV	Triple Net Asset Value
NPV	Net Present Value
NV	Naamloze Vennootschap
OI	Operating Income

OLO	Obligation Linéaire/Lineaire Obligatie
PE	Price Earnings
POT	Pecking Order Theory
PPP	Public Private Partnership
PTB	Price To Book
R_d	Cost of Debt
R_e	Cost of Equity
RE	Random Effects
REIF	Real Estate Investment Fund
REIT	Real Estate Investment Fund
R_f	Risk Free Rate
R_m	Expected Return on Market
RV	Rental Value
S	Sales
SA	Société Anonyme
SCA	Société en Commandite par Actions
SICAFI	Société d'Investissement en immobilier à Capital Fixe
SIR	Société Immobilière Réglementée
STO	Static Trade Off
t	Tax Rate
TA	Total Assets
WACC	Weighted Average Cost of Capital

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1. INTRODUCTION

In 1958, Franco Modigliani and Merton Miller published "The Cost of Capital, Corporation Finance and the Theory of Investment", a paper that is until now considered one of the cornerstones of corporate finance. In a nutshell, they stated that under perfect laboratory like conditions, capital structure decisions 'do not matter' because they have no effect on firm value or WACC (Weighted Average Cost of Capital).

REITs (Real Estate Investment Trusts) offer a unique framework to do capital structure research in because they are prone to very specific regulation and control. The most important aspects are the absence of corporate taxation and very high dividend payout requirements. In some ways, this environment is close to a perfect capital market as defined by M&M. Consequently, this dissertation can be seen as a natural experiment.

In the months prior to his death, Franco Modigliani was trying to test M&M theorems in closed-end funds. He believed that the theorem should host most fittingly in this context (Pagano, 2005). This proves that (I) M&M theorems are still a fertile area for research and (II) testing these theorems can best be done in a specific context.

The question that pops up most in the REIT context is why debt financing is used at all. There are no tax benefits whereas in theory, costs of financial distress should be present. Agency costs of free cash flows are muted because of the high dividend payout requirements. Literature points towards clientele effects, information asymmetry, monitoring benefits and near-term flexibility that debt financing can offer.

Capital structure research is often characterized by low coefficients of determination and ambiguous evidence. In order to build a better bridge between theory and practice, steer my research in a certain direction and achieve a narrative behind the numbers, a qualitative research is done. This research consists of a series of exploratory interviews with privileged witnesses.

REITs are very important from a societal point of view. The latest set of changes the government made to REIT legislation, the recent growth in the sector and the unique model

they operate in, make it clear that REITs will have a large role to play in building the landscape of the future.

This research might be useful to a number of people. From an academical point of view, I hope the interviews I conducted add to the already vast amount of literature that is out there and succeed in bridging the gap that still exists between theory and practice. Explaining the M&M theories to professionals who did not know or remember them might have been value adding. After a number of years, people stick to habits. Zooming out from these habits and seeing the bigger picture was refreshing. The REIT model needs private investors to work. I hope that this dissertation informs them about the specific legal and operational framework.

Recently, behavioral economics have gained interest from both the professional world and the academic world. By comparing theory with practice, irrationalities were found in financing decisions.

This dissertation is structured as follows. First, a section is dedicated to explaining the history, the modus operandi and the legal framework REITs operate in. Attention is given to the social importance of these firms. Afterwards, M&M indifference theories are explained and the most common 'perfect market' distortions are summarized and analyzed within the REIT context. Departing from these distortions, a brief summary of capital structure theories is provided. Next, an overview of existing literature is provided followed with the most important aspects of the qualitative research. Finally, the quantitative research is conducted, and conclusions are drawn.

2. Real Estate Investment Trusts

"*A REIT, or Real Estate Investment Trust, is a company that owns, operates or finances income-producing real estate. Established by Congress in 1960 and modeled after mutual funds, REITs provide Americans the chance to own valuable real estate, present the opportunity to access dividend-based income and total returns, and help communities grow, thrive, and revitalize*." (The REIT Way, 2018)

2.1. History & Origin

REITs find their origin in the United States. In 1960, congress granted REITs the right to exclude distributed earnings from corporate taxation. The rationale behind this legislation is that investors in REITs should be taxed as if they own real estate and not as if they own shares. The benefits of this legislation are numerous. REITs provide investors with liquid, diversified, dividend generating, transparent and competitive shares based on real estate. This process is also called securitization of real estate. Previously, investing in real estate was only feasible for the happy few. From a societal point of view, private savings could now efficiently be invested in large-scale real estate (Dawson Jr, 1961); (History of REITs, 2018).

In Belgium, public investments in real estate were possible as of 1990, after the creation of the "*SICAFI/Vastgoedbevak*" statute. These entities were real estate investment companies with fixed capital. In 2013, European authorities created the AIFMD (Alternative Investment Fund Manager Directive) that posed strict laws on investment funds like these real estate investment companies. These directives aim to create more transparency towards investors and regulating authorities. Second, they aim to strengthen financial stability in funds (PWC - Alternative Investment Fund Management Directive, 2018). The Belgian government created the BE-REIT statute to sidestep this legislation. In French this statute was named SIR (*Société Immobilière Réglementée*) and in Dutch it is called GVV (*Gereglementeerde Vastgoed Vennootschap*). Furthermore, a shift in operational focus was achieved.

What distinguishes BE-REITs from the "*SICAFI/Vastgoedbevak*" statute is explained in the next paragraphs. Next to this, attention is given to how this relates to AIFMD legislation.

The AIFMD defines AIFs (Alternative Investment Funds) as: *"Collective investment undertakings, including investment compartments thereof, which raise capital from a number of investors, with a view to investing it in accordance with a defined investment policy for the benefit of those investors."* (Ng & Zhang, 2015)

As such, REITs are not seen as investment funds because they must legally mainly engage in operating activities instead of investment activities. REITs have a business strategy based on long-term value creation instead of buying in order to sell (EPRA Global REIT Survey, 2016). In fact, the Belgian government created a tailor-made statute for companies that we now refer to as BE-REITs. Next to this, the FCA (Financial Conduct Authority) stated that whether a REIT classifies as an AIF has to be examined on a case basis. There are some specific factors that can point toward or away a REIT being an AIF. These factors are summarized in underneath table (Ng & Zhang, 2015).

• Active in construction, development or creation of real estate. • Substantial number of employees on payroll. • Board has executive directors and meets regularly to make major decisions	Evidence that REIT is not an AIF.
• Outsources large parts of activities to third parties. • It is set up and being marketed like a fund.	Evidence that REIT might be an AIF.

Table 1: REIT classification as an AIF

The BE-REIT legislation was a success, all 'bevaks' changed their structure to the REIT framework.

Recently, on October 5th, 2017, the Belgian government made changes and additions to the original REIT law. These changes mainly include the relaxation of the legal framework for partnerships and joint ventures, the extension of the activities REITs are allowed to conduct and the creation of the Social REIT statute (Van Bever & Van Moorhem, 2017). The introduction of this legislation signals the belief the Belgian government places in the REIT statute to efficiently allocate private funds to public projects.

The first set of changes relaxes the requirements for REITs to participate in partnerships and joint ventures. The new law reduces the required ownership percentage of a REIT in its daughter companies from 50% to 25%. Furthermore, the mandatory deadlock clause[1] is erased from law (Van Bever & Van Moorhem, 2017).

The institutional REIT was not a success because of some legal limitations that are now abolished. The organization and control can now be executed at the public REIT level, a participation of 25% + 1 share is now sufficient and having control is no longer necessary. In this context too, the deadlock clause is now redundant. Another novelty is that private participations are allowed, opening possibilities for privately owned real estate portfolios (Van Bever & Van Moorhem, 2017).

More important is the second set of adjustments: the activities REITs are legally allowed to do are extended. From now on, REITs can also invest in infrastructure through public private partnerships (PPP) and installations. For example, REITs will now be able to exploit windmill parks (Van Bever & Van Moorhem, 2017).

The third adjustment creates the statute of the Social REIT. The requirements and consequences of this statute are explained in the next paragraph (Van Bever & Van Moorhem, 2017).

2.2. Classification

In general, three types of REITs exist. There are equity, mortgage and hybrid REITs. Equity REITs invest in real estate whereas mortgage REITs lend money to landlords and real estate developers. Hybrid REITs combine these two activities (Blue Vault, 2015). In Belgium, REITs are by law only allowed to actively manage real estate they own. As such, all BE-REITs are equity REITs (EPRA - Global REIT Survey, 2016).

[1] This deadlock clause states that REITs should at all times have the possibility to sell their stake at a predetermined price. This is done by issuing call and put options.

There are some other distinctions that have to be made in the Belgian REIT landscape. The first distinction is between social REITs and all others. Second, there are institutional and public REITs.

When a REIT invests 60% of its assets in real estate for healthcare and education, withholding tax is only 15% instead of the common 30%. REITs of this type are called Social REITs (EPRA - Global REIT Survey, 2016).

Article 2 (2° and 3°) of the REIT law clearly explains the difference between a public REIT and an institutional REIT. Institutional REITs are not publicly traded and can only exist as daughters of public REITs (GVV - Wet 2014, 2014). This distinction is not relevant for my dissertation because institutional REIT figures appear in the consolidated financial statement of their public owners.

2.3. Activity

According to article 4 of the REIT law, REITs in Belgium have as a statutory goal: the construction, acquisition, management, reconstruction, rental or selling of real estate. Real estate has to be interpreted in a broad way. Next to realty (as defined in the Civil Code) a number of other investment possibilities exist. These mainly relate to option rights of real estate and participations in other real estate firms (GVV - Wet 2014, 2014).

What REITs do is what landlords do, but on a much larger scale. A REIT aims to generate value by owning real estate for a long term and renting it to users whereas a fund aims to buy properties in order to sell them at a profit. It's clear that the defining character of a REIT is the operational nature of its activities.

2.4. Requirements

The most important characteristics and requirements [2] are to be found in article 7, 45 and 47 of the REIT law (GVV - Wet 2014, 2014). These conditions can be categorized into formal requirements, asset requirements, distribution requirements and leverage requirements.

2.4.1. Formal Requirements

Law requires REITS to obtain an FSMA license. In order to get this license, strict managerial requirements have to be met. For example, directors and persons in charge must have "*the appropriate professional reliability and experience to ensure an independent management*". Next to this, the FSMA assesses whether the REIT passes all other legal requirements.

A BE-REIT can be a public limited liability company (NV/SA) or a limited partnership with shares (COMM VA/SCA). The statutory seat and the general management has to be in Belgium. Law requires REITs to have a minimal share capital of EUR 1.2 million

Important is that the limited partnership with shares will be abolished in Belgium. Firms that are structured like a limited partnership with shares will automatically become a public limited liability company when they do not implement the adaptation themselves (Sephiha, 2017).

2.4.2. Asset Requirements

Assets have to be diversified to a point where no specific asset can be worth more than 20% of total assets. The law does not interpret "one specific asset" as one physical building but rather as one group of risk. In this regard, no single tenant can rent more than 20% of total assets (De Witte, 2018). Real estate is valued by experts on a quarterly basis and as a consequence the system of amortizations is not used (Leaseinvest - Fiscaal Statuut, 2014).

[2] Next to these requirements, there are a lot of other regulations to be found in the law articles. Most of these are of technical-legal nature and not relevant to this research, so I made a selection based on the EPRA Global REIT Survey (EPRA - Global REIT Survey, 2016).

REITs who do not obey the asset diversification requirement are disciplined by a lower maximal leverage of 33%. In Belgium, such a case can be found in the REIT 'Wereldhave Belgium'. This REIT is limited to 33% leverage because the shopping center 'Bell-Ile' takes up more than 20% of total assets. In the exploratory section, an interview with the CEO and CFO of this REIT was conducted. It was clear that the limitation on leverage severely reduced flexibility.

2.4.3. Distribution Requirements

Dividend payments have to be at least 80% of net profit. Capital gains (e.g. from the selling of property) are not included in this figure when these gains are reinvested within four years. When leverage exceeds, or will exceed 65% because of the distribution, no dividends can be paid and the free cash flows have to be dedicated to lowering leverage.

2.4.4. Financial Requirements

Belgian law requires that debts can not exceed 65% of the total fair value of all the assets in a REIT. When this leverage ratio exceeds 50%, a financial plan has to be presented to the FSMA. Financial costs related to these debts can not amount to more than 80% of operational and financial income. Using real estate as collateral is limited to 50% on a portfolio base and 75% on one individual asset base. Furthermore, a free float[3] of 30% has to be met.

2.5. Tax Treatment

I would be cutting corners by just stating that Belgian REITs are tax-exempt companies. De facto, this is a correct statement, de iure some more detail is needed. From a theoretical perspective, the REIT's taxable income is taxed at the standard Belgian corporate tax rate. This rate used to be 33,99% but has recently decreased to 29,58% and will further decrease to 25% as from 2020 (BDO - Langverwachte belastinghervorming vanaf 2018 - update, 2018). The effect of this changing tax rate will not be material for REITs since its taxable basis is limited

[3] The free float of a company's shares is the percentage of shares that is publicly traded as opposed to being held by certain parties. The opposite of a free-floating share is a locked-in share. (Ginglinger & Hamon, 2007)

to non-arm's length benefits[4], non-deductible expenses and undisclosed salaries and commissions (Wetboek inkomstenbelastingen, Art. 185bis, 1992). Hence, rental income or any other type of income is de facto not subject to tax

Next to corporate tax that is levied on this limited taxable basis BE-REITs are also subject to an annual subscription tax of 0,0925% of total assets. For institutional REITS, this percentage is 0,01% (EPRA - Global REIT Survey, 2016).

When a private investment fund or a normal company becomes a REIT, it has to pay an 'exit tax' of 16,995% on capital gains of the real estate after market value assessment (EPRA Global REIT Survey, 2016). For most companies considering becoming a REIT, this is a big cash burden. After all, real estate that has been in a company for a long time will be amortized for a large part, so capital gains after market value assessment will typically be high (Donche, 2018). This 'exit tax' rate which is actually better described as an 'entry tax', will also be changing in the future. In 2018, it will immediately decrease to 12.75% and increase again to 15% in 2020 (Van Gils & Gommers, 2017).

A Belgian REIT has a distribution obligation with respect to part of its profits. When dividends are paid, a withholding tax of in principle 30% (15% in case of a social REIT) is levied on dividend payouts to individual shareholders (EPRA Global REIT Survey, 2016). This tax is usually withheld "at the source", meaning that the dividend paying company (here the REIT) will have to pay the withholding taxes to the Tax administration. Corporate and foreign taxation have different aspects but lie beyond the scope of this dissertation.

[4] The arm's length principle is a condition requiring that transactions are independent and on an equal footing. The principle states that the price paid for a product between related parties has to be the same as between unrelated parties. A simple example is the sale of property from parents to children. The sales price might be below market value to circumvent legal and fiscal consequences of a gift. In this case, the transaction is not on arm's length base. (Arm's-Length Principle - USTransferPricing, sd)

2.6. Reporting Standards

The EPRA (European Public Real Estate Association) is "*the voice of the publicly traded European real estate sector*". EPRA was founded in 1999 and is based in Belgium. EPRA's mission is*:" To promote, develop and represent the European public real estate sector. We achieve this through the provision of better information to investors and stakeholders, active involvement in the public and political debate, improvement of the general operating environment, promotion of best practices and the cohesion and strengthening of the industry*." (EPRA - Who we are, 2018)

As stated, one of the key mission elements is the provision of better information to both investors and stakeholders. In practice, EPRA achieves this goal by providing a set of Best Practice Recommendations (BPR). Doing so they hope to achieve the ultimate target: "*high standards of reporting transparency across the European listed real estate industry*". (EPRA - Best Practices Recommendations Guidelines, 2016) These recommendations stem from the voice of investors, who complained that REITs 'window dressed' their annual figures by using the calculation methods that highlighted certain aspects. The following paragraphs summarize the EPRA metrics and explains why they were conceived and what the main corrections on traditional accounting figures are.

2.6.1. Earnings

EPRA argues that the IFRS (International Financial Reporting Standards) income statement does not provide stakeholders with the most relevant information on operating performance, which is an essential element to assess REITs This reasoning gave birth to a number of corrections that have to be done on IFRS figures. These corrections mainly include "*unrealized changes in valuation, gains or losses on disposals of properties and other items that do not necessarily provide an accurate picture of the company's underlying operational performance*" (EPRA - Best Practices Recommendations Guidelines, 2016).

2.6.2. Net Asset Value

Under IFRS, the NAV (Net Asset Value) is calculated as: $Current\ market\ value\ of\ property + Cash\ \&\ Accounts\ Receivable - Debt$. The EPRA measure aims to "highlight the fair value of net assets on an ongoing, long-term basis". As a consequence, the fair values of financial instruments and deferred taxes based on property valuation surpluses are not included (EPRA - Best Practices Recommendations Guidelines, 2016).

2.6.3. Triple Net Asset Value

The EPRA (NNNAV) triple net asset value measure aims to report the net asset value including fair value assessment of all material balance sheet items that are not included in NAV. These include the fair values of financial instruments, debt and deferred taxes. Some users refer to NNNAV as a liquidation NAV, this reasoning is not correct because liquidation values are not necessarily equal to net asset values (EPRA - Best Practices Recommendations Guidelines, 2016).

2.6.4. Net Initial Yield

Feedback from within the industry saying that various yield definitions exist made the EPRA develop one single standard yield disclosing measure, NIY (Net Initial Yield). First, the net rents have to be calculated. In order to do so, some corrections are made on all the cash rents passed at balance sheet date. This figure is then divided by the gross market value of all property.

2.6.5. Topped-Up Net Initial Yield

The "topped-up" measure is a yield figure in the case where properties were fully rented, and no other lease incentives[5] were given. As such it is calculated by adding a "notional rent" to the net rents used in NIY.

2.6.6. Vacancy Rate

After receiving feedback from investors, it was clear that various definitions of vacancy rates were used. This inconsistent definition made comparing REITs difficult, so the EPRA developed one measure to be used by all firms. The EPRA rate is calculated through following formula: $\frac{Estimated\ RV\ of\ Vacant\ Space}{Estimated\ RV\ of\ Whole\ Portfolio}$. Consequently, vacancy rates are calculated on a per euro basis, often these rates ware calculated on a per m^2 basis.

2.6.7. Cost Ratios

EPRA states that companies should distinguish between two cost measures. The difference being the inclusion of direct vacancy costs. The main added value is that for every type of cost, a 'line' has to be disclosed. As such, the investor knows what part of costs were expensed to joint ventures, real estate costs, rent costs, fees and others.

2.7. FSMA Supervision

The Financial Services and Markets Authority was established in 2011 and aims to protect consumers on financial markets. More specific, it strives for the '*honest and equitable'* treatment of these people. Second, it aims at information transparency by companies when they raise financing on public markets. Last, it controls financial institutions in order to assess whether these firms comply with regulation (Servais, 2017).

[5] Lease incentives relate to rent abatements, rent discounts and fit-out contributions. Rent abatements are rent-free periods and fit out contributions are compensations the lessor gives to the lessee for certain improvement works.

In the REIT framework, the FSMA is assigned the duty of controlling whether REITs comply with the rules explained above. From exploratory research, it became clear that the FSMA is very strict in the implementation of these rules and leaves very little wiggle room (Van Eenoo, 2018).

2.8. REIF

The securitization of real estate is Belgium is characterized by another novelty that might prove influential in the future. In 2016 the statute of "GVBF (Gereglementeerd Vastgoed Beleggings Fonds)/FIIS (Fonds d'investissment immobilier spécialisé)" was created. In English, it translates best to regulated real estate investment fund. In contrast to REITs, these funds are not publicly traded so only institutional and professional investors can invest.

The key difference with REITs is that this vehicle aims at minimal restrictions and maximal flexibility. As such, the beneficial tax regime and the minimal distribution requirements of REITs are left intact. In contrast, the diversification and leverage requirements are not present. In order to qualify as REIF, assets have to be at least EUR 10 million. Futhermore, these funds are not controlled by FSMA and are only subject to AIFMD regulations when assets amount to more than EUR 100 million or EUR 500 million in case there is no leverage (Bodeux & Aertgeerts, 2016).

The creation of this new statute relates to the reason why Vastned Retail Belgium (and perhaps other REITs) might be delisted in the future. Vastned Retail Belgium did not meet asset diversification requirements and as such had a cap on leverage of 33%. REIFs are not subject to stringent asset and leverage requirements, whereas they do enjoy the tax advantages. Second, being publicly traded is costly (EUR 500 000 on an annual basis). For some other REITs, changing to a REIF structure and as such being delisted might be more interesting, especially if the company is owned by a larger group. Such was the case for Vastned Retail Belgium. Consequently, delisting rumors are present for Wereldhave, partly because of the Dutch mother company (Luysterman & De Rijcke, 2018).

3. Modigliani & Miller

3.1. Theorem

In 1958, Franco Modigliani and Merton Miller published a paper that would later become one of the hallmarks of corporate finance. In this paper, they laid out the foundations for later capital structure research and theories by themselves or by others. For his work[6], Franco Modigliani received the 1985 Nobel Prize in Economic Sciences (The Prize in Economics - Press Release, 1985). The original paper is very influential in two ways. First, there is the fact that it is a benchmark case and second there is the methodological importance as it was the first paper to introduce arbitrage arguments to corporate finance (Pagano, 2005).

The M&M capital structure propositions can intuitively be sketched by example. Let's say a farmer has the possibility to either sell milk or sell both cream and skimmed milk in different quantities. It will follow that in efficient markets, no value can be made by selling different proportions of cream and skimmed milk out of the same quantity of milk. The reason being that arbitrage would limit these possibilities. If money could be made by turning milk into cream, many economic actors would do so and this would lower prices. The same reasoning can be applied to capital structure. In efficient markets, it will not be possible to generate firm value by selling future cash flows in different forms of capital, namely debt and equity (Villamil, 2008).

This reasoning results in different (but related) M&M propositions: (I) leverage does not influence the cost of capital, (II) leverage does not influence firm value, (III) firm value is independent of dividend policy and (IV) equity holders are indifferent about financial policy. For my research concerning capital structure, I will only investigate the first two.

The first proposition states that when leverage is added to a firm's capital structure, this increases the desired return on equity, because of the financial risk that is added. M&M argue that adding a larger portion of the cheaper debt compensates for the increased desired return on

[6] He was not rewarded the Nobel Prize solely on his contributions to financial markets but also on behalf of the life cycle hypothesis of savings.

equity. Consequently, financing decisions can not influence WACC. Underneath graph shows this reasoning graphically. When more debt financing is used, the cost of equity rises exponentially. However, more of the cheaper component is being used so the weighted average cost remains constant (Mulier, 2018).

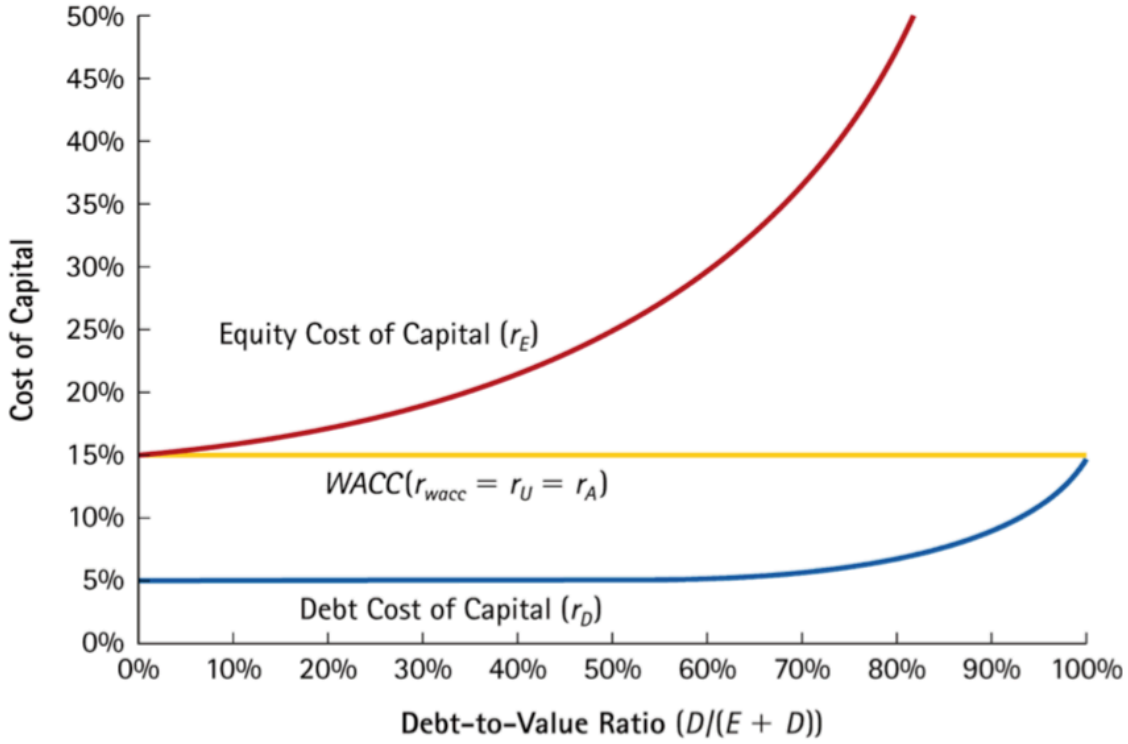

Figure 1: M&M WACC (Mulier, 2018)

Special attention has to be given to the way the cost of equity capital is determined. Traditionally, the Capital Asset Pricing Model (CAPM) developed by William Sharpe and John Lintner (for which Sharpe received the Nobel Prize in 1990) is used to determine the required return on assets (Fama & French, 2004). Underneath formula explains why the cost of equity (r_E) is an exponential function of leverage for given r_A (cost of assets) and r_D (cost of debt) (Mulier, 2018).

$$r_E = \underbrace{r_A}_{\text{Risk without leverage}} + \underbrace{\frac{D}{E}(r_A - r_D)}_{\text{Additional risk due to leverage}}$$

The second M&M proposition states that firm value is only affected by the present value of future cash flows and not by capital structure. M&M state that only the "size of the pie" matters, and not what parts of the pie go to the different claimholders in a firm. Following from this reasoning, levering up is just a repackaging of risk and returns (Mulier, 2018).

The main assumption in these propositions is efficient capital markets. In the above example, a government cream support program (like tax deductibility of interest payments) or separation costs in order to make cream and skimmed milk would result in the invalidity of the above conclusion. Once again, the same can be said about capital markets. Throughout the years, a couple of distortions were identified that resulted in the invalidity of indifference propositions (Villamil, 2008).

In 1958, M&M were already aware of the fact that their propositions were to be seen in the light of strong assumptions. In the final part of their original dissertation, they state the following: "*Our approach has been that of static, partial equilibrium analysis. It has assumed among other things a state of atomistic competition in the capital markets and an ease of access to those markets which only a relatively small (though important) group of firms even come close to possessing. These and other drastic simplifications have been necessary in order to come to grips with the problem at all. Having served their purpose they can now be relaxed in the direction of greater realism and relevance, a task in which we hope others interested in this area will wish to share*." (Modigliani & Miller, 1958)

3.2. Real World Imperfections

The M&M theorem tells us in what circumstances capital structure decisions do not matter. Quite contradictorily, the largest contribution of the theorem is that it structured the debate on why capital structure decisions could matter. As such, the M&M theorems provide us with a laboratory-like setting that allows us to examine the impact of real world circumstances. In a way, the M&M propositions provided the white sheet where later insights were drawn upon.

The following paragraphs summarize the most common real-world distortions because of which the theorem should not hold (Mulier, 2018). Each distortion is examined in a REIT context.

Some of these real-world frictions gave birth to later capital structure theories. Combining the effects of taxation, bankruptcy costs and agency relations is the foundation of the static trade-off theory. Information asymmetry is the underlying rationale for the pecking order theory of capital structure. Market timing theories exist because of imperfect capital markets. These theories are briefly explained further on in this dissertation.

3.2.1. Neutral Taxes

Neutral taxation of debt and equity is an issue that M&M addressed in the years after the publishing of the original paper. They argued that under certain circumstances, it could be optimal for firms to fully finance with debt (Miller, 1977). Interest payments are -in most firms- tax deductible and this tax deductibility lowers the after-tax cost of debt financing. This means that using more debt financing lowers WACC. Graphically this is made clear with a linear declining function of WACC. The slope is equal to the tax rate. As such, the interest rate does not influence the (negative) slope of WACC (Mulier, 2018).

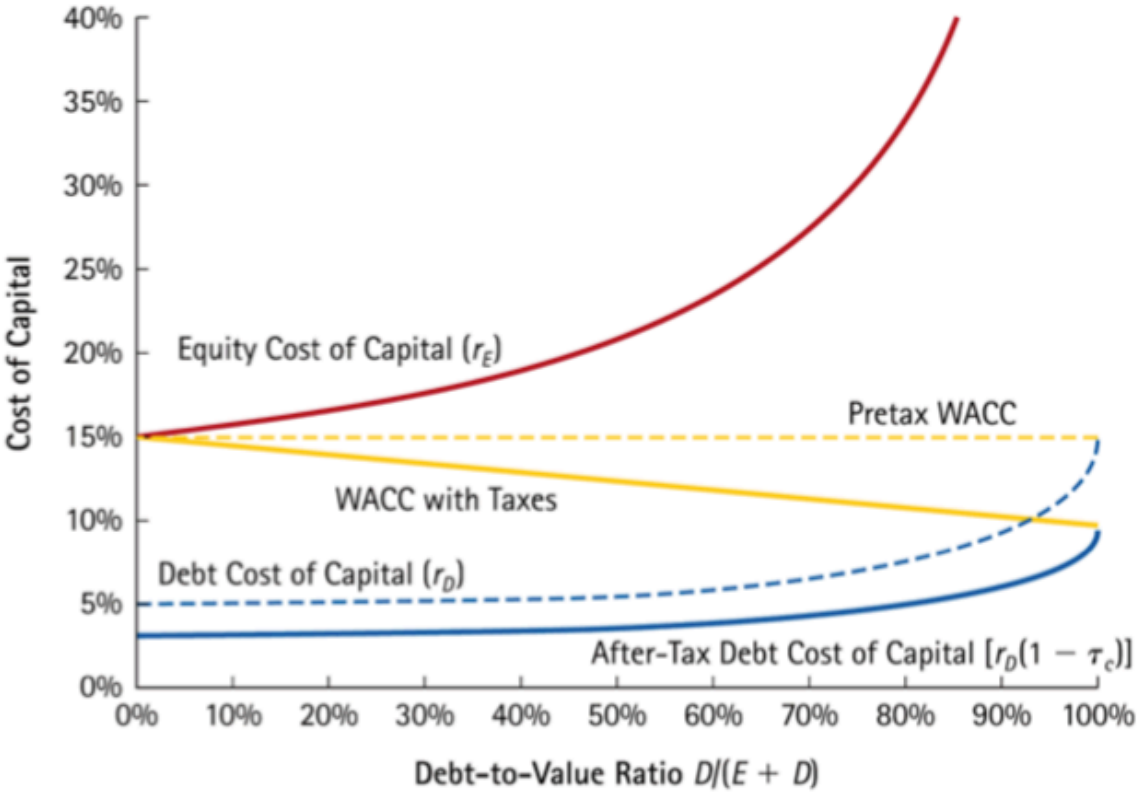

Figure 2: WACC and Taxes (Mulier, 2018)

By law, REITs are de facto not taxed on income. So, there can be no tax benefit of debt financing. The fact that REITs are exempt from taxation is a big factor in the hypothesis that the REIT context is a good environment to test M&M propositions in.

3.2.2. Bankruptcy Costs & Financial Distress

Taking the above in mind, one might conclude that it is indeed optimal for firms to use as much debt financing as possible. In practice this is not the case, so an offsetting factor was looked for - and found.

Costs of financial distress occur when a firm is in a situation where there is insufficient cash flow to satisfy all current obligations (Wruck, 1990).

Cost of financial distress can be direct or indirect. Direct costs relate to administrative and juridical nature such as court costs and legal and accounting fees. For example, when lawyers have to be paid to deal with delayed payments. Indirect costs are slightly more abstract by nature and include diverse difficulties firms face when they are in distress. For example, banks might intervene because credit covenants are violated. Suppliers might start to demand cash payment, fearing that they won't get their money. Customers might stop paying altogether because they think the firm will go bankrupt anyway (Mulier, 2018).

Laws state that REITs in Belgium are legally not allowed to lever up to more than 65% and financial costs are not allowed to be more than 80% of operational and financial income. Next to this, leverage above 50% requires REITs to provide financial plans to the FSMA (GVV - Wet 2014, 2014). Besides these legal requirements, banks only allow REITs to lever up to 55% (Meeussen, 2017). Furthermore, REITs are subject to FSMA control to protect shareholders. Before REITs face financial distress, the FSMA will most certainly already have spotted some issues. With above facts in mind, it's fair to say that costs of financial distress will not be particularly relevant in the REIT framework.

3.2.3. Agency Relations

When the ownership and control of a firm are split, agency relations occur. Managers (agents that control the company) are supposed to maximize firm value for shareholders (principals that own the company). The problems arise when management fails to do so and acts in its own best interest. For example, certain managers are only interested in managing the largest possible company and as such do investments and acquisitions that add little value. These actions are referred to as 'empire building tendencies'. In order to limit these managerial shortcomings, shareholders take certain actions. These actions are not free, so agency costs are incurred (Mulier, 2018).

Important to capital structure is the role of debt financing in these agency relations. Free cash flow is the cashflow that remains after all positive NPV (Net Present Value) projects have been invested in. It is this FCF that allows managers to "waste" money because it not strictly needed in the firm. Debt financing and its fixed interest payments have a controlling effect because they reduce free cash flow and the possibility for managers to spend money at their discretion (Jensen M. C., 1986).

Next to the free cash flow advantages, agency relations also exist between debtholders and managers. In this relationship, high leverage motivates managers to take excessive risks. When things go well, returns are very high and when things go bad, the bank takes the hardest punches. Furthermore, debt financing creates conflicts of interest between debtholders and shareholders. Debtholders want to maximize the probability of repayment and shareholders want share value maximization (Mulier, 2018).

By law, REITs have to pay out 80% of net revenue as dividends. Dividend payments are cash commitments. As such, free cash flow and the consequent agency costs are muted. This weakens the argument of using debt financing as a managerial control measure. The REIT law puts a cap on the maximal leverage of 65%. As such, the risk-taking incentive caused by excessive leverage will also be muted. Besides, the FSMA guards over the risks REITs take. The FSMA's statutory goal is to protect shareholders, so this entity will definitely not allow excessive risk taking (Wat doet de FSMA?, 2018).

3.2.4. Information asymmetry

Information asymmetry is a situation where insiders (managers) have better knowledge about the firm as outsiders. The problems associated with this situation were first explained by Akerlof. He used the analogy of a market for second-hand cars, but other examples are numerous. Let us assume that in the market for car insurance, there are risky drivers and safe drivers. Insurance firms should charge higher premiums to risky drivers as to safe drivers. An insurance firm can, a priori, never know what type of driver a given client is, therefore it has to charge an average insurance premium to every client. Safe drivers will argue that this premium is excessive and leave the market whereas risky drivers are doing the deals of their lives. It's clear that the car insurance market will fail because only risky drivers are interested in getting insurance. This phenomenon is known as adverse selection. A related topic is moral hazard. This term states that once drivers are insured, they will start driving like maniacs. More general, it states that when someone is not responsible for the consequences of risk taking behavior, he or she will take more risks (Akerlof, 1970).

This reasoning can be applied to capital markets. Firms that are trying to raise capital can do so by issuing new shares. The fact that this emission is being done signals to the outside world that the share prices are now overvalued, just like a driver buying car insurance signals that he is a risky driver. When management estimates that share prices are undervalued, it will look at other possibilities such as debt financing (Mulier, 2018).

Information asymmetry is less relevant in the REIT industry in comparison to other industries because of a number of reasons: (I) REIT activities are easy to interpret. They buy real estate and rent it. (II) Real estate is valued four times a year by experts. (III) The FSMA watches REITs closely. (IV) EPRA BPR disclosure means that financial statements are easily analyzed and compared. (V) The fact that every REIT focuses on one specific type of real estate makes it easier for the outside world to understand the underlying risks.

The existence of information asymmetry and the associated costs gave birth to a theory called pecking order. This theory is explained more thoroughly further on in this dissertation.

3.2.5. Transaction Costs

Dahlman classifies transaction costs into three broad categories: search and information costs, bargaining costs and policing and enforcement costs. Search and information costs are related to verifying whether a certain good is available on the market, what a correct price might be and other basic research. Bargaining costs are incurred afterwards. When a party is found, a contract has to be agreed upon. Policing and enforcement costs are the costs incurred to make sure the other party sticks to the contract and to take action when this would not be the case (Dahlman, 1979).

This distortion is related to information asymmetry because transaction costs are higher in informationally opaque settings. As such, the reasoning ut supra can be extended for this distortion: search and information costs will be limited, the fact that REITs are all publicly traded reduces transaction costs because bargaining costs will be virtually non-existent, and policing and enforcement costs will probably never be incurred since the FSMA is responsible for controlling REITs.

3.2.6. Equal access to capital markets

It was assumed in M&M's original paper that "homemade" leverage, borrowing on a personal level, was a perfect substitute for corporate leverage. This distortion was largely ignored by scholars because in perfect markets, this simply had to be true. In practice however, individual borrowing differs significantly from corporate borrowing in two ways. First, it is known that some individuals are credit constrained and consequently can not borrow money. Second, the terms at which individual borrowing occurs can differ significantly from the terms corporations borrow at (Stiglitz, 1988). Furthermore, limited liability is an important factor as it allows risk to be reduced by borrowing on the firm level (Baron, 1974).

From exploratory research, it became clear that REITs indeed have advantages in the debt market in comparison to individuals. First, the collateral REITs provide stems from the fact that no entity is granted collateral, as such all creditors have a proportional claim on the company's assets. This mechanism is called 'senior unsecured company financing' (Van den Hauwe, 2018). Second, it became clear REITs have unique relationships with banks that allow them to

borrow cheaper in comparison to investors who do not have these relationships (Van den Hauwe, 2018).

3.2.7. Risk Class

M&M assumed that each firm was part of a risk class. Within this class, business risk was supposed to be equal. The business risk firms experience is a residual category and relates to the demand for its products, the competitive position it is in and the structure of its costs. Financial risk relates to the risk that arises from the usage of debt financing and its fixed commitments (Wippern, 1966). The risk class a firm belongs to influences the rate cash flows have to be discounted at (Pagano, 2005).

The fact that REITs in general are focused on certain types of real estate makes it easy to divide them into very homogenous risk classes. Furthermore, Stiglitz showed that the risk class assumption is not essential to M&M propositions (Stiglitz, 1969).

3.3. Static Trade-Off

The static trade-off is a dynamic model that incorporates the effects of taxation, bankruptcy costs and agency relations.

"*The firm is portrayed as balancing the value of interest tax shields against various costs of bankruptcy or financial embarrassment*." (Myers, 1984). Sometimes, agency relations are included in this trade-off. Such is the case in underneath graph, which summarizes the (dis)advantages of too or too much leverage.

When too little debt financing is used, tax benefits will not be used sufficiently. Second, there are free cash flows in the firm that are at managerial disposure. This allows for wasteful investment, excessive perks and empire building tendencies. Examples include the acquisition of companies that add no or little value to the firm, big offices, private jets, expensive dinner parties and the hiring of excessive staff.

Too much leverage creates distress costs and incentivizes managers to take disproportionate risks. The reason being that potential returns to shareholders are very high, whereas banks bear the full losses of failure (Mulier, 2018). A related consequence is underinvestment because of high leverage. When the bulk of returns goes to debtholders, profitable projects might not be realized because the returns to shareholders are insufficient (Myers S. , 1977). Besides, excessive borrowing creates costs of financial distress.

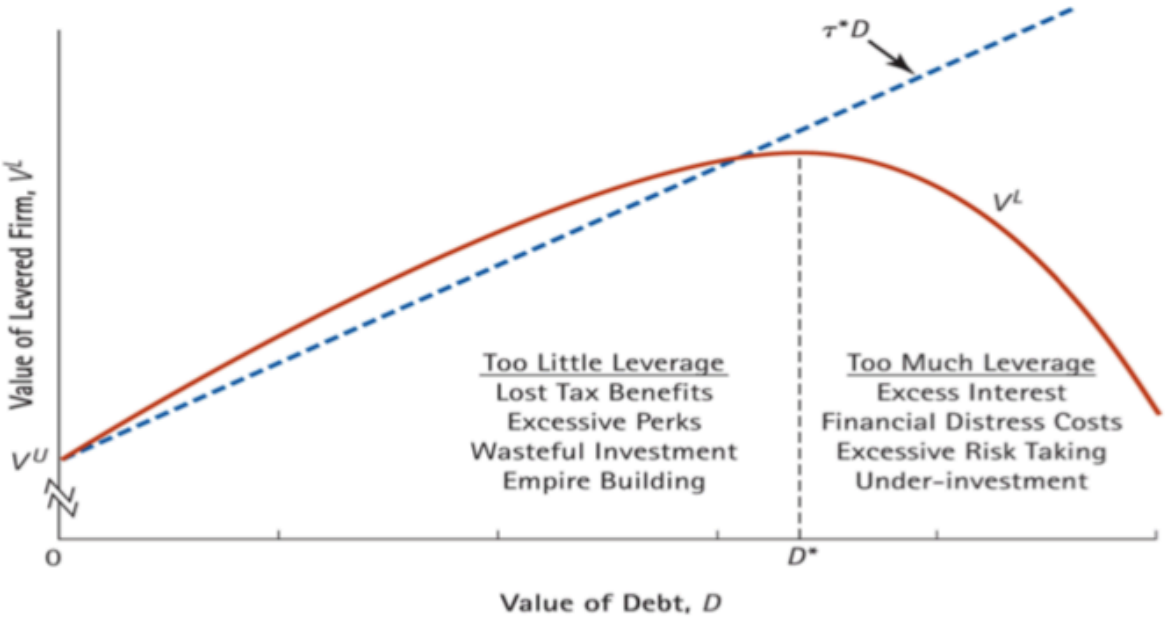

Figure 3: Static Trade-Off with Agency Relations (Mulier, 2018)

3.4. Pecking Order

As stated before, the pecking order theory is derived from the fact that there might be information asymmetries in capital markets. As such, "*a firm is said to follow a pecking order if it prefers internal to external funding and debt to equity if external financing is used*". Internal financing is preferred because this sends no signal to the outside world. Debt financing is preferred over equity financing because issuing equity signals that managers think it is overvalued (Frank & Goyal, 2007).

3.5. Market Timing

The market timing theory states that firms will issue equity when equity market values are high relative to book values and past market values. When market values are low, firms will repurchase equity. This theory states that capital structure is a result of past efforts to time the market (Baker & Wurgler, 2002).

In essence, this theory draws further on the M&M assumptions of perfect markets and information asymmetry. When a firm knows that it is doing well, it might wait to raise equity until the market knows it is doing well so it can sell its equity at a higher price. In practice, firms often issue equity after positive news or good results. Furthermore, CFOs admit to issuing equity when the market value is high (Baker & Wurgler, 2002).

3.6. Leverage clientele effect

The leverage clientele effect states that that investors will choose to invest in (un)levered firms based on their personal tax rate. It is assumed that, on investor level no taxes are levied on stock returns whereas taxes are levied on the returns from debt financing (Harris, Roenfeldt, & Cooley, 1983). As such it is predicted that investors in high personal tax brackets will invest in firms with little leverage whereas investors with low personal tax brackets will choose to invest in highly levered firms (Lewellen & McConnell, 1979).

4. Literature Review

M&M propositions date back to 1958 and have got a lot of attention from diverse scholars afterwards. This means that the amount of literature is enormous. Even in a REIT context, vast amounts of capital structure research papers are available. Considering this, I don't dare to claim that this review is exhaustive or complete. I tried to do my very best to find the most influential papers and select the most relevant parts from these papers.

The literature review is divided in two sections. First, a summary of existing scientific findings is presented. Second, I make a critical reflection on the methodology and consequent findings of the papers I have read.

4.1. Review

Giambona, Harding & Sirmans (2008) analyze the liquidity of the different types of real estate and conclude that in REITs, higher liquidity indicates higher leverage. They use a multidimensional model to assess the liquidity of real estate, their findings are summarized in attachment 1.

Ghosh, Giambona & Harding (2011) find that REITs with entrenched CEOs use less leverage. This finding is consistent with the assumed empire building tendencies of managers. Second, they find that combining ownership and management increases leverage, as do profitability, growth opportunities and liquid assets. Ertugul & Giambona (2011) find that earnings volatility and the competitive place within a segment influence capital structure. Capozza & Seguin (1999) state that traditional theories (bankruptcy costs, agency costs and taxes) are not applicable in REITs. Instead, dividend policy, asset type and size matter. Furthermore, focused REITs have higher optimal leverage. Howe and Shilling (1988) state that debt issuing has positive effects on stock prices and equity issuing has negative effect on stock prices. Next to this they argue that the non-tax deductibility of interest payments for REITs leaves them in a competitively bad position on the debt market.

Brown & Riddiough (2003) state that the big question in REIT corporate finance remains why debt is used at all. There is no tax advantage related to debt, but there are certainly costs of financial distress and payout requirements mute the free cash flow rationales. According to them, debt financing might have something to do with near-term flexibility or certain monitoring benefits. Feng, Ghosh and Sirmans (2007) are puzzled by REIT data, no benefits of debt financing seem to be present and yet debt financing is largely used. They point to free cash flow rationales as a possible explanation. Maris & Elayan (1990) find evidence for the leverage clientele effect in explaining REIT capital structure.

Weston (1963) argues that M&M evidence is often not correct. He argues that when growth is included in regressions, the effects of leverage are not in line with M&M propositions. Wippern (1966) states that M&M empirical research is tormented by conceptual and statistical problems. Conceptual problems relate to defining leverage, risk class and capitalization rates. Statistical problems include the correct measurement of these variables.

Stiglitz (1969) proves that the validity of M&M propositions is not influenced by the existence of risk classes, capital markets or the assumed distribution of outcomes. Only the homemade leverage problem and bankruptcy costs are important elements. Baron (1974) states that when investors and lenders are risk-averse, the levered firm can be higher valued as the unlevered firm due to limited liability. Smith (1972) states that investors will want firms to use leverage if the corporate borrowing rate is lower as the personal borrowing rate. When the opposite is true, investors prefer personal leverage and when borrowing rates are equal, investors are indifferent. Wippern (1966) states that debt financing can increase shareholder wealth because capital markets are not fully efficient. Sarma & Hanumata Rao (1969) provide evidence for the case where corporate debt is preferred over personal debt up to a level that is considered prudent. Solomon (1963) states that leverage is capable of adding value up to a point where the marginal cost of debt is equal to the WACC. McDonald (1999) states that in real estate, leverage on a firm level is preferred because of the unique possibility to use it as collateral and in order to be able to present higher yield figures to investors.

Weston (1963) argues that the risk class assumption in the original M&M papers is not valid. Within the set of 42 oil companies they examined, substantial differences in business risk were present.

McDonald (2011) argues that the fact that REITs lend at lower rates as those at which they borrow results in value being lost for every dollar borrowed. Jaffe (1991) finds evidence confirming M&M propositions within REITs in a mathematical way. Pavlov, Steiner & Wachter (2015) find that REITs that reduced leverage and increased maturities pre-crisis significantly increased returns post-crisis. Capozza & Seguin (1999) state that a correct amount of debt usage can provide shareholder value. Right next to this optimum, deviations don't have a high impact. Feng, Ghosh and Sirmans (2007) find that REITs with high book market to book values have persistent higher leverage. Zhang (2000) states that increased returns are associated with increased leverage and that REITs are value invariant to debt changes. However, he

advises REIT operators not to use leverage to increase returns as this strategy might be dangerous in the future. “Keeping dry powder” in the form of low leverage ensures flexibility and the possibility to take advantage of future possibilities. Maris & Elayan (1990) find that leverage may increase the cost of capital for REITs. Casey (2006) finds a positive relationship between PTB and leverage.

4.2. Critical analysis

In the introduction, it was already stated that evidence in capital structure research is often tormented by ambiguous evidence, low coefficients of determination and inconclusive results. This has a lot to do with the methodology that is being used by most of the academic literature. Traditionally, theories are interpreted, hypotheses are made, data is collected and analyzed, and results are interpreted It’s very striking that the evidence provided by literature fails to bring forward one complete and undisputed conclusion to the capital structure and M&M debate. The number of angles from which the problem can be looked at is enormous, as a consequence, possible explanations and the number of diverse conclusions is beyond measure.

This methodology relies heavily on data. However, measures such as P/B, WACC and leverage are influenced by factors that can never fully be measured but are nevertheless very influential. Growth, growth opportunites, managerial reputation, sector, size, ambition, moral and ethical convictions (which relate to fiscal policies) and experience are all distinguishing factors for firms. The amount of these possible influences is hard to understate, and this diversity makes it hard for researchers to be able to draw general conclusions. This is particularly true for quantitative research in the field of finance.

Firm events that have nothing to do with traditional explanations for financing decisions might alter crucial variables in a way that is hard, if not impossible, to quantify. For example, the CEO of LeasInvest recently decided to pass the torch to one of his colleagues (Vanacker, 2018). Vastned Retail Belgium might be acquired (and as such delisted) by its Dutch mother company Vastned Retail (Luysterman, 2018). From a legal point of view, Wereldhave has been ‘punished’ by the FSMA in its maximal leverage (only 33%) because of not meeting the asset diversification rule. Consequently, delisting rumors are also present for this firm. These are

known events, and as such they can be compensated for. Given the dynamics in a firm, it is highly likely that there are a lot of these examples that are not known.

Next to these dynamics, the importance of 'animal spirits[7]' in firm and capital market behavior can not be ignored. Rationality is assumed, but people are often led by emotional motives. These types of distortions cloud data and make inferention on the basis of regression analysis very difficult. In my opinion, they might even give way to false conclusions.

Literature is largely vacant in bridging the gap between theoretical-mathematical models and real life. Very few scholars have asked professionals how they think about leverage and how they make their decisions. Obviously, relying only on the answers of these people might bias results in many different ways, but so do data!

5. Importance of research

One aspect of the relevance of this research is the importance the REIT industry has on society. This importance is two-sided. First, the REIT framework is essential in building the landscape of the future because it allows sleeping savings to be invested in real estate. Second, investing in REITs provides a number of benefits to investors.

The scientific and professional importance of this research is also a two-sided story. Both the professional and the academic world might benefit from the comparison and integration of these two different mindsets that I try to do in this thesis.

5.1. Societal Importance

The commercial property industry has some impressive statistics to show how important it is for the European economy. This industry contributed EUR 329 billion (2.5%) to the economy. This percentage might not seem very high, but this is about what the automotive and telecommunications sector contribute, combined. Furthermore, it employs 3.7 million people,

[7] Animal spirits refer to the emotional nature of people (who run firms).

which is more than the amount of people that are employed in banking. Investments in commercial property buildings amount to approximately EUR 252 billion. This amount is equal to 10% of total investments in the economy. In other words, this figure is also equal to the size of the Danish GDP It is estimated that around 40% of all European commercial real estate is rented office space. This leasing of real estate creates flexibility for businesses because it allows them to invest in growth rather than premises. Sale and lease back operations, when done well, allows firms to focus on their core activity. (EPRA - Real Estate in The Real Economy, 2016).

Financing large-scale projects is difficult for a government that is tormented by increasing debt. As such, the Belgian government aims to allocate the "sleeping savings" of EUR 260 billion to valuable real estate projects. The REIT framework allows to do this efficiently. Previous attempts to get people to invest their savings in infrastructure have proven less successful. For example, the "volkslening[8]" and the "ARKimedesfonds[9]" once had this goal but are now both dropped. As such, we can conclude that these concepts failed to allocate capital in the long run. The "volkslening" was cancelled after the fiscal benefits were cancelled and the "ARKimedesfonds" is costing the government a lot of money because of the 90% state guarantee (Racquet, 2017).

Next to previous macro influences, the role of REITs to investors can not be understated. Directly investing in real estate is -for most people- not straightforward. A large capital is needed, investments are not liquid and demand time and skill to be maintained. This maintenance can be outsourced, but this reduces returns. REIT shares offer a good alternative to direct investment because they provide solutions to previous problems. Shares are currently traded for around EUR 100 per share and the 17 REITs in Belgium each have a geographical and operational focus. This focus allows investors to easily create a liquid and diversified portfolio of well-managed real estate (Meeussen, 2017).

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[8] The "volkslening" was a special kind of savings certificate. Its proceeds had to be invested in government certified projects and initially the revenues of this certificate ware taxed at 15% instead of the usual 30%. After this tax benefit was dropped, the "volkslening" stopped too. (Racquet, 2017), (Wikifin - De volkslening, sd)

[9] The ARKimedes fund was established in order to participate in SMEs. From a societal point of view, the fund was very effective. (Manigart, Vanacker, Knockaert, & Standaert, 2014) However, the government guaranteed 90% repayment to shareholders. Current share prices are a lot lower as the initial amount, so the government is losing a lot of money. (Racquet, 2017)

Research has been done to provide an answer to the question whether private and public real estate provide comparable returns and risks. The conclusion was that in the short run, differences can occur because of data complications, market frictions and slow adjustments in the private market. In the long run, these differences are not present and public and private real estate show similar return and risk measures. The study measured risk as standard deviation of total returns. It is a limitation that liquidity risk is not included in this measure (Hoesli & Oikarinen, 2014). Globally, these results might be comparable but for the unexperienced or unlucky direct investor deviations might occur (which would not have been experienced if this investor had invested in publicly traded real estate). Concluding, when investors are not experienced in direct investments in real estate, investing in REIT shares might be more interesting.

Another unique feature of REITs is that they have sufficient funding to conduct operations normal investors can not. This point is best made clear by example. Home Invest Belgium states that they change 4% of their portfolio on an annual basis. The sale of old property amounts to approximately one third of dividend payments, the other two thirds being rental income. They generate value because they are capable of buying whole apartment buildings, renting these for a few years and then selling them on a per apartment basis (De Witte, 2018). It's clear that such operations demand huge capital, knowhow and vision.

To conclude: REITs succeed in combining the advantages of investing in shares (liquidity and diversification) and the advantages of investing in real estate (long term value generation, stable income). Next to this advantage to investors, REITs efficiently allocate funds to value generating (on a macro scale) projects. I strongly believe that this financing model will be important in building the landscape of the future. The fact that the Belgian government expanded the activities REITs are allowed to do, strengthens this belief.

Having sketched the social importance of REITs, explaining how leverage influences firm value and WACC is important to REIT executives, government policymakers and investors.

5.2. Professional Importance

From the exploratory research, the interviewees were positive about the fact that their industry got attention from a student (Huysman, 2018). For people who have been in this industry for a long time, zooming out and putting things in a theoretical perspective was value adding. Especially for professionals who were not familiar with M&M theories, explaining the foundations and sketching the big picture of capital structure theory was very refreshing (Donche, 2018).

5.3. Scientific Importance

Most of existing literature focusses on finding evidence for either the pecking order or static trade off theories of capital structure. Through regressions, scholars try to make models that predict capital structure (cfr literature review). In my research, I wanted to go back to the basics and analyze all M&M distortions in a REIT framework. Furthermore, I don't rely on data alone to make conclusions. Exploratory research that consists of interviews is value adding because it steers research in a certain direction, makes it possible to bridge the gap between theory and practice and provides unique opportunities to look for a narrative behind the numbers.
Taking the above in mind, I think this research adds to the already very established literature on M&M theories. Furthermore, to my knowledge there is no literature on this topic in Belgium.

6. Research

6.1. Hypotheses

The research hypotheses in this dissertation will not be drawn from previous research or established theories. The general M&M predictions are the basis of this research, consequently these also form the basis for underneath hypotheses. These hypotheses do not assume either a positive or a negative influence, no influence is our H_0. After the qualitative section, these hypotheses will be sharpened.

(I) There is no effect of leverage on the weighted average cost of capital

(II) There is no effect of leverage on price to book

6.2. Qualitative Research

In this part, 'privileged witnesses' are interviewed. The goal of these interviews is to get to know the underlying rationale -that might not be explained by numbers- financial responsibles make when they choose between debt and equity financing. This section is essential to bridge the gap between theory and practice and further refine the hypotheses stated above. Furthermore, this research aims to get a general feeling for the REIT market and the way financing is done.

6.2.1. Interviews

6.2.1.1. Philippe Donche - Ulvenhout Retail Invest Fund

Ulvenhout is now a private real estate investment fund. It is planning its IPO as a REIT in 2020. The fund started in 2009 and is active in the retail real estate business. Is has already done 7 private capital rounds and was managing €142 million in assets in 2017.

In the current non-public fund, debt financing is mainly used to provide investors with higher returns. A new project is financed with approximately 30% equity and 70% debt financing.

This distribution maximizes returns up to a point that banks allow. When Ulvenhout becomes a REIT, the same rule of thumb will be used but at a 50/50 distribution between debt and equity.

Ulvenhout wants to go public to give investors an opportunity to cash out. Furthermore, the fiscal transparency is very interesting.

The mandatory quarterly value assessment of real estate in REITs is seen as very hollow because real estate agents are also the value assessors. This situation has a lot in common with the role of rating agencies during the credit crisis. When a certain firm sells real estate and is also responsible for the valuation afterwards, it might face commercial difficulties when this valuation is lower than the original selling price.

Ulvenhout is active in the retail real estate business and is now overexposed to Carrefour (approximately 35%) to become a REIT. To solve this problem, more assets will have to be invested in. It is however essential that only retail real estate is being held in order to go to the market. Investors like transparency so they can individually put together a portfolio of real estate that is deemed optimal for them.

6.2.1.2. Mickaël Van den Hauwe – CFO Warehouses De Pauw (WDP)

The key distinguishing element in this interview is the fact that the interviewee knew and understood M&M propositions. This is because of his past experience in equity research at KBC Securities, Dexia and Bank Nagelmackers. Next to being CFO at WDP, Mr. Van den Hauwe is also treasurer of the BE-REIT association. This is important since it makes it more plausible that the answers he gives are true for other REITs. For a large part of the answers, this was explicitly stated.

In 2018, Mr. Van den Hauwe was nominated by Trends magazine to become CFO of the year because of his share in the change to the REIT statute in 2014 and because of the excellent financial policy of WDP in the last years (Business CFO of the year, 2018).

REITs don't use the mortgage system, instead they use "*senior unsecured company financing*". By borrowing on a mother level and giving no party collateral, they in essence give every party

collateral. In every debt contract, there is a clause that says when they would give collateral to one bank, they need to give this collateral to all banks.

Futhermore, there are a couple of mechanisms in the REIT framework that make debt financing safer. First, a REIT can choose to pay off debt at a rate of 80% of earnings when dividends are not paid. Second, WDP sometimes pays dividends in the form of new shares. This brings extra money in the company. Third, there is still the maximal leverage of 65%. When WDP would reach this point, no money can leave the firm until leverage has gone down.

WDP aims at a leverage of between 55% and 60%. This leverage is high in the industry, but the market knows and appreciates this. As such, the desired return on equity does not rise from the extra risk that is associated with debt financing and the share prices remain stable. If the leverage would rise further, an effect could be noticed. Leverage is considered very useful because of its effects on EPS returns. This a known theoretical fallacy: when debt financing is used to boost EPS figures, the risk for equity holders has also gone up, so no real value is created (Mulier, 2018). In practice, this is not the case because low (up to 60%) leverage does not mean you take a lot of risk.

It is considered essential to have well-managed debt. There is a strong difference between a CFO that unknowingly uses debt financing to lever returns and a CFO that knows the (dis)advantages of debt financing and tries his best to balance them out. For example, debt maturities and lease terms are carefully matched, consequently the company can be reasonably certain that no distress problems will have to be faced in the future.

Market timing theories are not applicable, because they argue that it destroys value when “a war chest of cash” is sitting on the balance sheet. This makes sense since this capital costs money and does not generate any returns. Instead, WDP opts to finance on a project basis. This is, when a good and profitable project is found, a mix of approximately 50% debt and 50% equity is collected when needed, not when share prices are high.

6.2.1.3. Michael Van Eeenoo – Head ING Corporate Finance

Mr. Van Eenoo guides REITs when they want to go public. The asset diversification rule is heavily monitored by the FSMA and they leave very little wiggle room. Especially in the care

sector, where consolidation in operators is happening, this is a big problem. The problem is that when the diversification is not met, leverage is limited. This is problematic because it limits near-term flexibility.

6.2.1.4. Ellen Grauls (Head of External Communication & Investor Relations) & Valerie Kibieta (Head of Treasury & Project Finance) – Cofinimmo

What distinguishes Cofinimmo from other REITs is the fact that they are rated by Standard & Poor's. Leverage has a strong influence on this rating and that this rating influences the cost of debt. As such, a good rating is extremely important in the companies financing decisions.

A target leverage of about 45% is aimed at and there are bank covenants that allow them to lever op to 60%. This target leverage is the result of the trade-off between (dis)advantages of debt financing. On the one hand, using more of the cheaper debt can reduce the WACC. On the other hand, increasing leverage up to a point where credit ratings start to drop increases the WACC.

Consolidation in care operators is considered problematic since this might violate the asset diversification rule. Violating this rule means limiting leverage to 33%, and this would result in a much higher WACC because the cheaper debt can not be used.

6.2.1.5. Kasper Deforche (CEO Werelhave Belgium) – Cédric Biquet (CFO Wereldhave Belgium)

Mr. Deforche has built an impressive career in real estate. He started at VastNed Retail Belgium as an asset manager. Next, he worked at AG Real Estate and eventually became CEO of Wereldhave. Mr. Biquet started his career at KPMG and later started working for Befimmo. It's fair to state that these people have a lot of experience in the sector. As such, their input is very valuable because it increases the possibilities for extrapolation.

The most interesting aspect of this interview is the fact that this firm is only allowed to lever up to 33% because the asset diversification rule of 20% is violated. If the penalty would stop,

the optimal leverage would be 45-50% because using more of the cheaper debt would optimize the WACC and increase yield figures. This statement is in strong contrast with M&M theory.

A very limited maximal leverage also means limited near term flexibility. This is best stated by example. A couple of years ago, an acquisition was planned. Normally, this acquisition could have been done with 100% debt financing. Given that leverage would exceed 33% because of this debt-financed acquisition, an equity issue had to be conducted. However, equity issues are costlier and take a lot more time. This reduced near term flexibility is considered problematic at certain moments in time.

6.2.2. Conclusion of Qualitative Research

It became clear that there is a striking difference between theory and practice. To put it plainly, some professionals looked at me like I was an idiot when I told them the M&M propositions. Theory predicts that when leverage is raised, even the smallest bit, cost of equity will raise in an exponential fashion. In practice however, this is clearly not the case. Consequently, the leverage ratio is heavily used to influence WACC and P/B.

A reasonable amount of well-managed debt is capable of reducing WACC because the increase in leverage is not associated with higher risks for equity holders. In theory, this would not be possible and as such the first hypothesis can be rejected.

Debt financing is appreciated by investors because it raises their returns. Homemade leverage is not a perfect substitute for corporate leverage because of the collateral that can be provided on a corporate level and the unique relationships firms have with bankers. The higher return on equity generated by leverage is not associated with higher risks, up to a certain point. This finding allows to reject the second hypothesis: in practice, financing decisions do influence valuation.

Debt financing is preferred for its flexible nature. If important investment decisions have to be made in the short term, mostly these are debt-financed. Raising equity demands a lot more time and money because consumers are involved. Furthermore, limited leverage and short-term investment possibilities mean that the market has to be addressed when it is suboptimal to do

so. This was very clear at Wereldhave, the legal cap on leverage is problematic because of this reason.

Having rejected the two hypotheses that state that there is no influence, the question remains what kind of influence can be expected. From the exploratory research stems the following: leverage can reduce WACC up to a point where leverage is considered risky. At this point, equity- and debtholders want a higher return for the supplementary financial risk. The same reasoning goes for P/B, limited leverage generates higher returns, so P/B will increase with leverage up to a point where this leverage is perceived as risky. At this point, P/B will decrease for higher leverage.

A very striking conclusion is that none of the traditional costs and benefits of debt financing are elements of the privileged witnesses' answers. For example, monitoring benefits, information asymmetry, clientele effects, bankruptcy costs and market timing were never part of the discussion

In general, the qualitative research finds conclusions that are in line with the conclusions of (Capozza & Seguin, 1999), (Feng, Ghosh, & Sirmans, 2007) and (Zhang, 2000). Capozza & Seguin (1999) state that debt financing can provide shareholder value, Feng et al. (2007) state that REITs with high market to book ratios have higher leverage. Zhang (2000) states that higher returns are associated with higher leverage. These is consistent with the views of privileged witnesses. Maris & Elayan (1990) state that higher leverage may lead to higher costs of capital, this view is certainly not consistent with the exploratory research.

Two other key specifics of debt financing in the REIT framework were made clear to me. First, when the quarterly value assessment results in lower net asset values, leverage percentages go up. Therefore, monitoring such mechanics is an important aspect of managing a REIT. Second, the near-term benefits of debt financing were made clear with the usage of credit lines. These credit lines put a number of very cheap, immediately available cash equivalents on the balance sheet. Consequently, when an interesting investment is found, immediate action can be taken.

6.3. Quantitative Research

The conclusion of the qualitative part resulted in the rejection of both the hypotheses. In this section, I try to find out whether data analysis backs up this finding.

A critical point of reflection taken from the qualitative section is whether the legal framework allows to lever up to a point that is considered risky enough to raise WACC and lower PTB.

When leverage exceeds 50%, financial plans have to be presented to the FSMA. At 65%, all cashflows have to be dedicated to lowering leverage. Leverage figures are heavily monitored by financial responsibles, banks and investors, so it is highly unlikely that REIT managers will lever up to the point where the negative aspects of debt financing prevail. In this regard, the legal framework that was initially selected as beneficial to this investigation might be working against us. It's highly unlikely that examples of excessive and problematic debt financing will be present in my sample.

Concluding from this insight is that it might be hard to find numerical evidence for the insights provided by interviewees. In fact, it might even lead to the conclusion that 'financing decisions do not matter', because around the optimal leverage, (where most REITs are) they indeed don't.

6.3.1. Data

Data is collected in two ways. WACC, P/B, Total Assets and Net Debt to Enterprise Value are collected from Thomson Reuters Eikon Datastream. The leverage as defined by Royal Decree, real estate type and EPRA figures are collected manually from annual filings.

Data is collected for book years 2015, 2016 and 2017. Choosing these years limits the impact of the change in legal framework (2014) and of the economic environment (2010). Including multiple years means that the dataset is of the time-series type, which makes analysis more

difficult. Even though time-series data is used, the amount of observations[10] is rather limited at 51.

The REITs in my sample include Aedifica, Ascenio, Befimmo, Care Property Invest, Cofinimmo, Home Invest Belgium, Immo Moury, Intervest Offices & Warehouses, Leasinvest Real Estate, Montea, QRF, Retail Estates, Vastned Retail Belgium, Warehouses De Pauw, Warehouses Estates Belgium, Wereldhave Belgium and Xior Student Housing.

6.3.2. Variables

6.3.2.1. Leverage

Leverage, the amount of borrowed money that is used in comparison to own money is -at first sight- a straightforward variable. However, some dots have to be put on some i's. First, there is the problem of non-debt liabilities such as trade credit and pension liabilities. These are considered operational and not financial by nature, so they have to be excluded from leverage figures (Rajan & Zingales, 1995). Second, there is the dilemma between book values and market values of debt and equity. Book values are considered backward looking whereas market values are considered forward looking (Frank & Goyal, 2007).

Attachment 2 provides an overview of the most common operational definitions of leverage and their (dis)advantages. It is clear that the amount of metrics is numerous and diverse.

Rajan and Zingales state that the definition of leverage should be based on the type of research that is conducted. For example, when the agency problems associated with debt financing are researched, the relevant definition will be the stock of debt relative to firm value because these problems largely relate to how a firm has been financed in the past. When costs of financial distress are examined, a flow measure such as ICR is most relevant (Rajan & Zingales, 1995).

[10] There are only 17 REITs in Belgium, and these are all included in the dataset. As such, this is a sample that is equal to the whole population. Increasing sample size by including more countries would complicate analyses because of differing legal factors.

For this research, the definition of leverage should be the same as the one REIT law uses to define leverage. This definition carries most impact as legal consequences are attached to it. Given the consequences, both REIT managers and the outside world will make decisions based on this figure. However, I'm aware of the fact that this is in contrast with corporate finance theory, so I include the Net Debt to Enterprise Value metric which is based on market valuation. In order to be able to choose between either one of the two, a comparative regression analysis is conducted.

6.3.2.1.1. Leverage - Royal Decree

The legal definition of leverage stems from the Royal Decree of 2014. Leverage is defined as all debts divided by balance sheet total (Koninklijk besluit met betrekking tot gereglementeerde vastgoedvennootschappen, 2014). There are some exceptions that are not included in debts, but these are not material for this investigation.

Underneath graph is included because it provides some interesting firm specifics. For example, the first two bars from the left are observations from Immo Moury. This REIT had leverage figures of 7,8% in 2015, 19,5% in 2016 and 18,1% in 2017. Immo Moury is a REIT that is still largely owned and run by the Moury family. Georges and Gilles-Olivier Moury are the company's main managers. With a balance sheet total of EUR 27.9 million in 2017 (the average is EUR 1 billion), it is by far the smallest REIT in my sample. I suspect that a tax incentive might be present. Taking the above in mind, special attention will have to be given to Immo Moury since it is a stranger in our midst with very extreme leverage observations.

Of the seven observations between 0.2 and 0.3, six are from Vastned Retail Belgium and Wereldhave Belgium. These REITs experience a limited leverage of 33% because they do not meet diversification standards. The other observations seem to be close to a normal distribution and are all close to the average. The bulk of REIT leverage figures is between 35% and 55%.

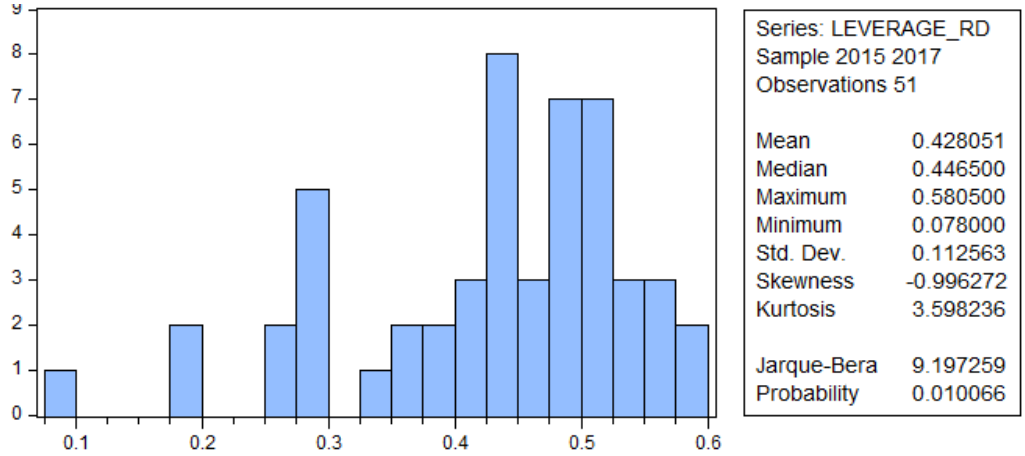

Figure 4: Distribution of Leverage (Royal Decree)

6.3.2.1.2. Leverage - Net Debt to EV

Net debt is defined as total debt minus cash and cash equivalents. Enterprise value is the market capitalization (#shares * share price) minus cash and cash equivalents.

Underneath histogram shows the distribution of this variable, the same firms have approximately the same positions even though this leverage figure is generally lower.

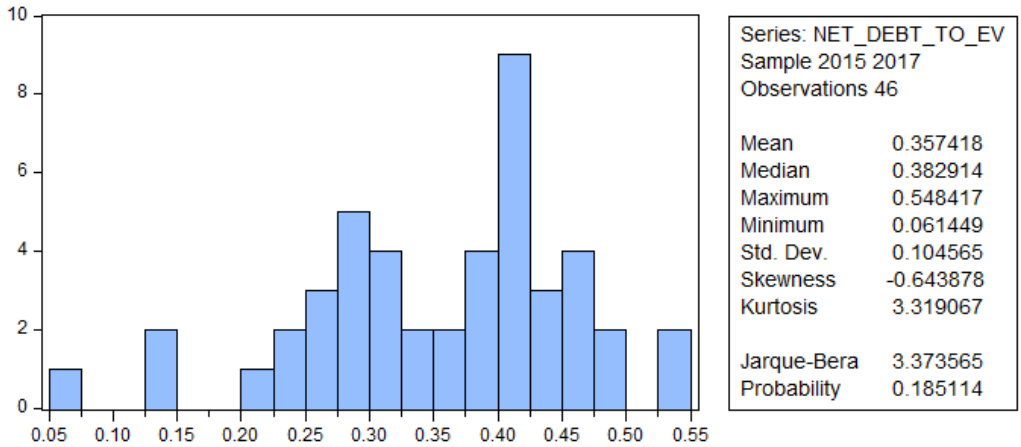

Figure 5: Distribution of Leverage (Net debt to EV)

6.3.2.1.3. Comparative Analysis

In order to compare the two leverage definitions, I performed a regression analysis of the leverage according to the royal decree variable on net debt to EV. The R^2 parameter tells us that

95% of variance in net debt to EV is explained by the Royal Decree definition of leverage. The β estimation of 0.63 means that -in general- net debt to EV values will only be 63% of leverage by Royal Decree. Since there is a clear linear relation, it does not matter which variable is used. Because of its signaling function, the Royal Decree variable is chosen. Attachment 3 provides an overview of regression output.

6.3.2.2. WACC

The Weighted Average Cost of Capital is the cost a firm incurs to finance itself. This figure is determined by the cost of equity (R_e), the cost of debt (R_d), the proportions debt and equity used and the tax rate (T_c) (Verraes, 2014). A general formula is provided underneath.

$$WACC = \left(\frac{E}{E+D} * Re\right) + \left(\frac{D}{E+D} * Rd\right) * (1 - Tc)$$

The debt and equity proportions are based on market values and the cost of equity is determined using the CAPM-model.

It is possible to calculate the WACC using the needed input variables. However, there is a WACC variable preprogrammed in the data software. In order to limit mistakes, use consistent definitions and have reliable data I have chosen to use the WACC data provided by Thomson Reuters. This software uses following input parameters: R_f was 2.8%, R_m 8% and β was 0.34 on average, 0.28 median, 0.07 minimum and 0.69 maximum.

Underneath graph shows a histogram and some key metrics. The most striking of which is the fact that on average, BE-REITs are funded at 2,6%. In comparison to the 10-year government bond rate (OLO) of 0,78% the margin is minimal.

In the variable WACC, there are two observations missing. These relate to Xior Student Housing in 2016 and 2017.

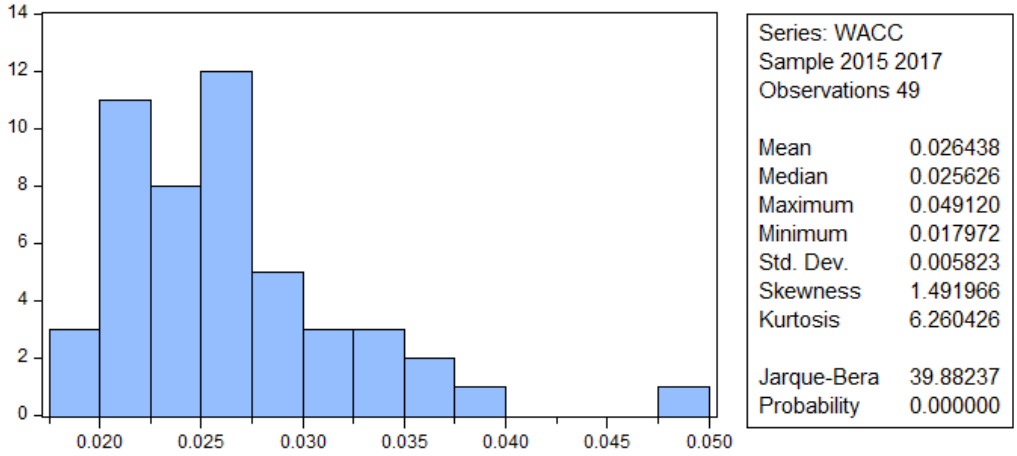

Figure 6: Distribution of WACC

6.3.2.3. Price-to-Book

In order to assess the market valuation of a company, the variable price-to-book ratio was chosen. This variable shows how stock is valued relative to its book value.

The price to book ratio for a REIT, or the premium it is trading over is a very important metric. For the bulk of BE-REITs, this ratio is higher as 1. For Befimmo however, this ratio was 0,92 in 2017 and 0,99 in 2015 and 2016. Care Property Invest traded at 2,66 times book value in 2016. A reason might be that investors believe in the future potential of Care Property Invest, in contrast to the future of Befimmo.

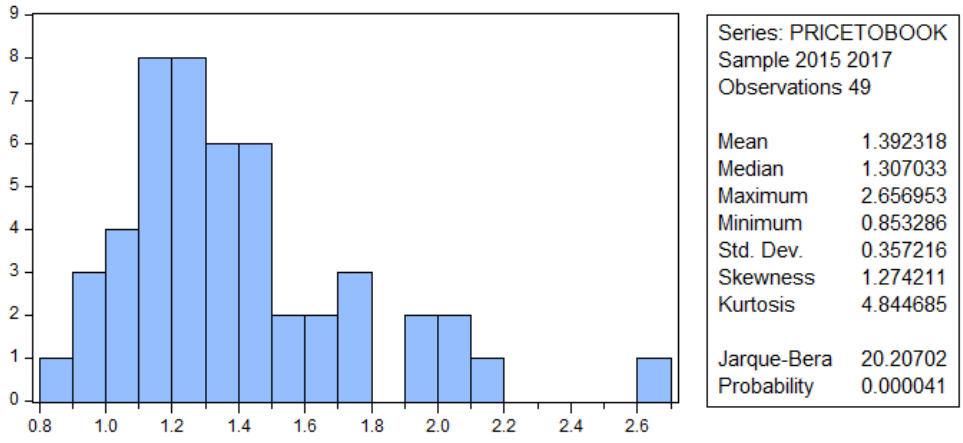

Figure 7: Distribution of P/B

6.3.2.4. Control variables

To control for other aspects, a set of variables that are established in capital structure research are used (Titman & Wessels, 1988). Tax rate is not used since this can be considered homogenous across firms. Furthermore, tangibility of assets and industry type are assumed to be covered by the type of real estate dummies. Next to traditional variables, some other variables that can be considered material in a REIT context are used. The goal is not to use these variables as explanatory variables like in traditional research, but as control variables in order to remove the effect of these variables from the regressions. Ultimately, I am interested in finding out whether leverage has an impact on firm value and on WACC, not in finding out what factors determine leverage.

6.3.2.4.1. Size

Titman & Wessels propose the usage of ln(sales) and quit rates of employees as indicators of size. The rationale being that bigger firms have diversified career opportunities so that quitting the firm is much less common (Titman & Wessels, 1988). In a REIT context, the total pool of real estate can be considered more material, so the variable size is defined as total assets. In order to reduce the impact of outliers, the natural logarithm is taken (Benoit, 2011).

The REIT industry has some impressive statistics to show. In the 2014 – 2017 period, the total assets of all REITs grew from EUR 13.5 billion to EUR 17.9 billion. This is a 32.5% increase.

6.3.2.4.2. Age

Age is defined as the number of years since incorporation. Older REITs might have advantages in the stock market that might result in higher PTB ratios. The same reasoning can be extended for capital markets. Older REITs might have better relationships with banks and investors. This might result in higher or lower WACC values.

6.3.2.4.3. Type of real estate

Exploratory research showed that a characteristic of the Belgian REIT market is that every REIT has its own focus on certain types of real estate. Each type of real estate bears different risks and has different liquidity characteristics. For example, commercial real estate is considered less attractive because retailer's business model is under pressure. Second, social real estate is taxed differently on the investor level. These considerations might influence WACC and valuation.

In their master's thesis, Vanhoucke and Van Daele distinguish between residential real estate, commercial real estate and professional real estate. (Vanhoucke & Van Daele, 2017) For reasons stated above, I make a supplementary distinction in the form of social real estate. Doing so, I arrive at the table underneath.

Type	BE-REITs	Number
Residential	Home Invest Belgium, Xior	2
Commercial	Ascenio, Montea, Retail Estates, VastNed Retail Belgium, Warehouses Estates Belgium, Wereldhave Belgium	7
Professional	Befimmo, Intervest Offices & Warehouses, QRF, Warehouses De Pauw	4
Social	Aedifica, Care Property Invest	2
Mixed	Cofinimmo, Immo Moury	2

Table 2: Classification of BE-REITs

6.3.2.4.4. Growth

Growth is defined as Compounded Annual Growth Rate (CAGR) in total assets from 2014 to 2017. The historical growth rate of a company might influence P/B because it can reduce the

opportunities for further growth. Second, an impact of growth on WACC can be expected because higher growing firms might have issued more equity and debt in de past.

In the 2014 – 2017 period, all REITs had an average CAGR of 14,47%. This average is inflated largely because of a number of newcomers in the market that are growing at very high rates. Xior Student Housing grew at 52.70% in 2015, 34.51% in 2016 and 84.27% in 2017. Other high-growth (more than 20%) REITs include Aedifica, Care Property Invest, QRF and Montea.

6.3.2.4.5. EPRA Metrics

Whether a firm discloses in EPRA can be considered a useful control variable since it measures managerial commitment to inform the outside world of its inside activities. Next to this, when a firm discloses EPRA figures, some supplementary variables like cost ratio, vacancy ratio and profitability can be included in regressions. In my sample, 70% of firms disclose according to EPRA BPR.

The EPRA cost ratio, vacancy rate and yield are proxies for operational efficiency. This in turn might influence WACC and P/B ratios. Underneath table provides some essential descriptives.

	Yield	Vacancy Ratio	Cost Ratio
Average	5.64%	3.64%	17.98%
Median	5.68%	2.87%	16.95%

6.3.3. Correlation & Model Building

Correlation is a basic requirement for influence, so the first step in regression analysis is making a correlation table. This is done, and results are analyzed for each hypothesis separately. These correlations determine what variables have to be included in regression models.

We can not -a priori- know what relation we want to test. In order to choose the correct model, a scatter plot will be provided and analyzed.

Two separate correlation tables were made, one with EPRA figures and one without EPRA figures. In the dataset with EPRA disclosure, leverage is no longer correlated with WACC or P/B. As such I decide not to do further analysis on these figures because the goal of this dissertation is to find out whether leverage influences WACC and P/B, not in estimating what other factors influence these figures.

In the explanation of the variable leverage it became clear that there were quite extreme observations present for the REIT Immo Moury. In order to assess the impact of this firm on data, separate scatter plots are provided.

6.3.3.1. Hypothesis I

From the correlation tables including Immo Moury, only leverage and the dummy 'professional' are significantly correlated with WACC. Without Immo Moury, no significant correlations can be found.

In the underneath scatter, an exponential or a linear relationship could be present. There are higher WACC figures present for higher leverage.

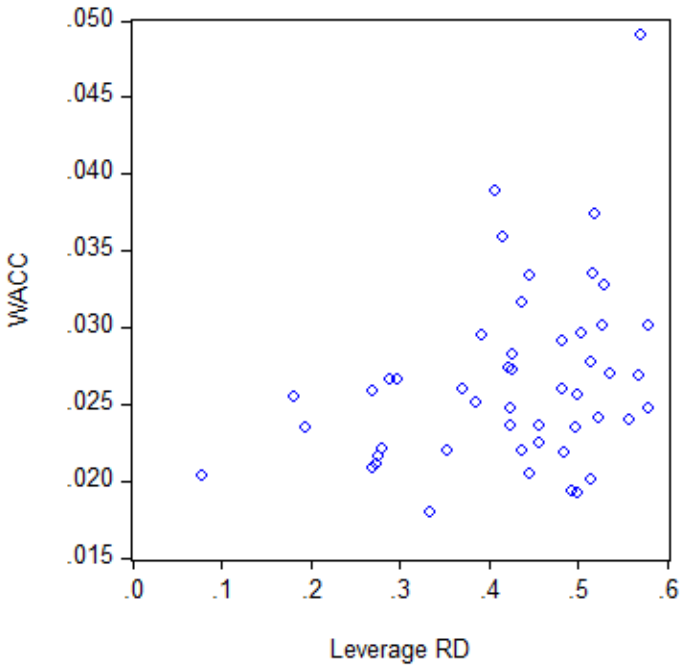

Figure 8: Leverage - WACC scatter

When the three lowest leverage figures (by Immo Moury) are excluded, following scatter is obtained. It is amazing to see how observations from one company succeed in influencing the whole picture. It's clear that in this scatter diagram, no clear relation is present.

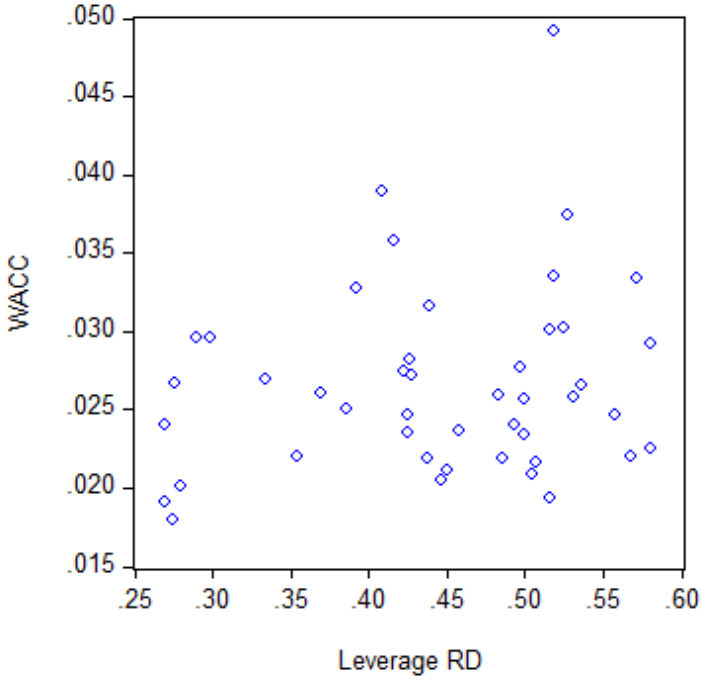

Figure 9: Leverage - WACC scatter excluding Immo Moury

6.3.3.2. Hypothesis II

The correlation table when Immo Moury is included shows that only leverage, growth and the dummy 'social' are significantly correlated with P/B. When Immo Moury is excluded, no significant correlations are present in my sample.

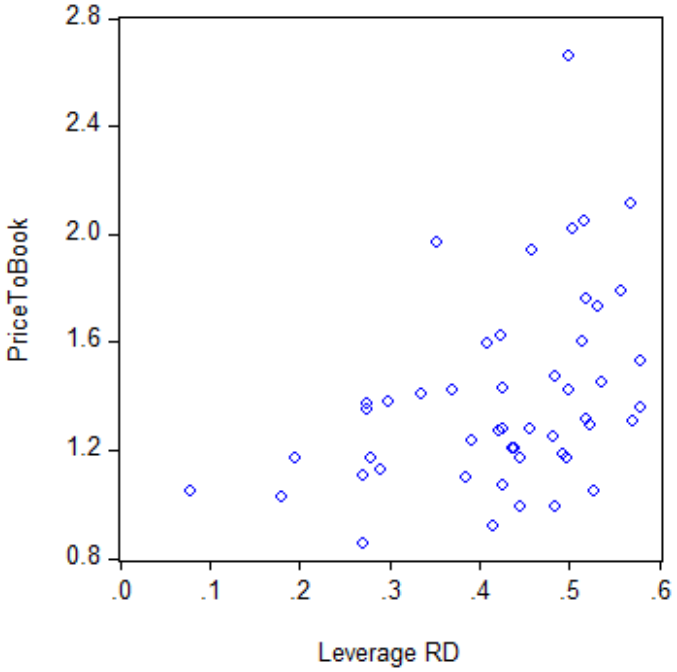

Figure 10: Leverage - P/B scatter

When Immo Moury is excluded, underneath scatter is obtained. It seems like the relationship we found above was driven by the Immo Moury observations, because in this scatter no relationship can be found. All observations seem to be random, no line can be drawn.

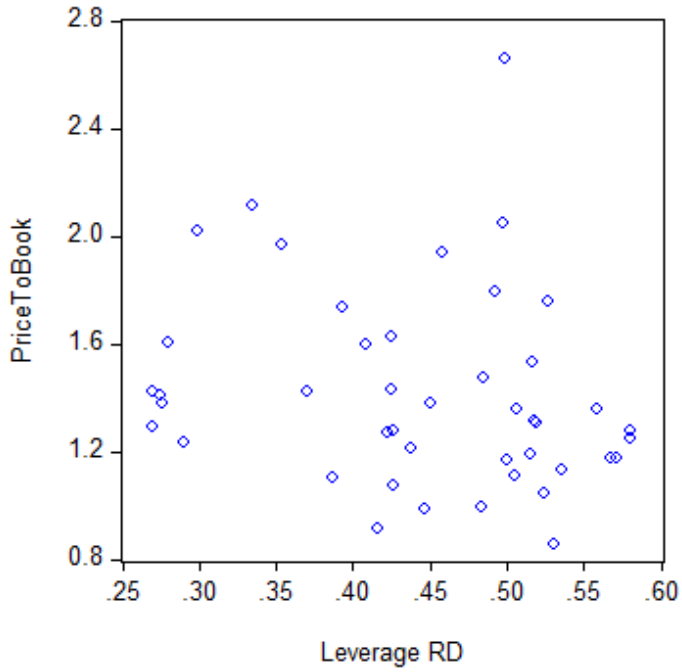

Figure 11: Leverage – P/B scatter excluding Immo Moury

6.3.3.3. Conclusion

It is clear that the observations for Immo Moury will steer the results of the quantitative research in one or the other direction. However, it was stated above that suboptimal leverage figures might not be present in this dataset, so that we could come to the conclusion that 'financing decisions do not matter' because around the optimum (which is firm specific), they don't. Immo Moury conveys some essential information because it might be the only REIT with a suboptimal leverage figure. In this regard, keeping it in the sample is very useful. I stress strongly that we have to keep in mind that the regression results are driven by this REIT, and this reduces the possibilities for inference.

6.3.4. Methodology & Regression Analysis

In order to fully understand the impact of the influential case explained above, four separate regression analyses are conducted.

Panel data[11] asks for specific analysis. There are two different models that can be applied, the 'pooled' model and the 'individual effects' model. Within the individual effects model, a distinction between fixed and random effects has to be made.

The pooled model functions by running a regression analysis just like in a normal one, it does not account for the specific structure of longitudinal data. Often, this type of analysis is not suited because it does not account for heterogeneity in cross-sections. What is meant by this is that the model does not account for the fact that individual firms pop up multiple times in data.

A better statistical technique exists in the forms of fixed (FE) and random effects (RE). The crucial difference between FE and RE is whether the unobserved individual effects are correlated with the independent variables (Torres-Reyna, 2007).

[11] Also referred to as longitudinal or cross-sectional time-series data. This type of data exists when observations are made across time. In this sample, multiple measurement points exist for the REITs in my sample (2015, 2016 and 2017).

The FE model assumes that some firm specific characteristics might influence the dependent variable and that we need to control for this. The FE model achieves this by removing this effect from the equation. As such, the estimated regression coefficients can not be influenced by firm specifics. FE models do not allow to generalize inferences because the effects measured are specific for a given sample (Torres-Reyna, 2007).

Random effects models assume no correlation between firm specifics and independent variables, so these can be included in regression analysis. Resulting from this is that omitted variable bias might be present (Torres-Reyna, 2007).

The software program that is used for the data analysis is EViews. This platform allows to easily analyze panel data and test what model (pooled, FE or RE) is best suited. First, the likelihood ratio is tested to decide whether a pooled model can be used. If the null hypothesis is rejected ($p<0,05$), a pooled model can not be used. Second, the Hausman test is used to show whether the FE or RE model has to be applied. If the null hypothesis is rejected ($p<0,05$), a fixed effects model has to be used. Otherwise, the random effects model is recommended (Van Cauwenberge & Beyne, 2018). Last, the Breusch-Pagan test is included to estimate whether a pooled or random effects model is to be used.

Test	**H_0**	**H_A**
Likelihood Ratio	Pooled Model	Individual Effects Model
Breusch-Pagan	Pooled Model	Random Effects Model
Hausman	Random Effects Model	Fixed Effects Model

Regressions analysis are structured as follows: First, the significantly correlated variables are included. Second, the likelihood test is done to determine whether a pooled or an individual effects model is best suited. If the individual effects model is chosen, the Hausman test is used to choose between FE or RE.

When a fixed effects model is estimated, a dummy is created for every cross-section (firm). When a lot of cross-sections are present for a limited amount of observations, this model can not be estimated because too much independent variables are present. In EViews, an error message saying “error, near singular matrix” pops up because of this reason. This is problematic

since running a FE model is necessary to calculate the likelihood ratio, hence in some regressions this will not be possible. This problem is solved by running the Breusch-Pagan test.

In order to assess heteroskedasticity problems, the Durbin-Watson value is included. A rule of thumb for this metric is that values between 1.5 and 2.5 are a sign that no problematic heteroskedasticity is present.

6.3.4.1. Model I: WACC – Immo Moury Included

The correlation table (cfr attachment 4) shows us that only leverage and the dummy 'professional' are significantly correlated with WACC. As such, only these variables are included. Following from following table, a random effects model is chosen.

Test	**P-Value**	**Conclusion**
Likelihood Ratio	NA	NA
Breusch-Pagan	0.4084	Pooled Model
Hausman	0.8763	Random Effects Model

This regression however, does not produce significant β estimators. Consequently, the dummy 'professional' is dropped and the following regression output is generated.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.019015	0.003269	5.816420	0.0000
LEV_RD	0.017425	0.007417	2.349132	0.0231

Effects Specification	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.005872	1.0000

Weighted Statistics			
R-squared	0.116905	Mean dependent var	0.026438
Adjusted R-squared	0.098116	S.D. dependent var	0.005823
S.E. of regression	0.005530	Sum squared resid	0.001437
F-statistic	6.221910	Durbin-Watson stat	1.753505
Prob(F-statistic)	0.016191		

This regression puts a positive sign on leverage, so higher leverage results in a higher WACC. The β coefficient can be interpreted as follows: a 0,01 or 1%-point increase in leverage leads to a 0,0174%-point increase in WACC. At 11.69%, this model does not explain a lot of the variability in WACC, but the positive influence is significant, which is most important for this research. As far as heteroskedasticity problems are concerned, no problems are present.

6.3.4.2. Model II: WACC – Immo Moury Excluded

Since no significant correlations were found and the goal is to compare results, the same variables as in model I were used. Based on underneath table, the random effects model was chosen.

Test	**P-Value**	**Conclusion**
Likelihood Ratio	NA	NA
Breusch-Pagan	0.5001	Random Effects
Hausman	0.6235	Random Effects

Underneath regression output shows that the initial feeling based on the scatter plot was right, no significant effect of leverage on WACC can be found.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022301	0.004482	4.975938	0.0000
LEV_RD	0.007684	0.010211	0.752575	0.4558
PROFESSIONAL	0.002883	0.001979	1.456799	0.1524

Effects Specification		
	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.006019	1.0000

Weighted Statistics			
R-squared	0.083456	Mean dependent var	0.026656
Adjusted R-squared	0.040826	S.D. dependent var	0.005923
S.E. of regression	0.005801	Sum squared resid	0.001447
F-statistic	1.957678	Durbin-Watson stat	1.711058
Prob(F-statistic)	0.153567		

6.3.4.3. Model III: P/B – Immo Moury Included

From the correlation table, we concluded that the variables leverage, growth and the dummy 'social' were significantly correlated with P/B. As such, these are included in this model.

Again, tests showed that the random effects model was best suited to run this regression model.

Test	P-Value	Conclusion
Likelihood Ratio	NA	NA
Breusch-Pagan	0.0000	Random Effects
Hausman	0.4561	Random Effects

First, the regression was estimated without the use of the White period covariance method. This resulted in a problematic Durbin-Watson value of 0.5425. As such, the White estimation is added. This resulted in a changed Hausman p-value (0,7440). However, the choice for the random effects model can remain unchanged.

Underneath regression output provides some interesting results. A positive effect of leverage on P/B can be expected. Also, the dummy 'social' is significantly positive, indicating that social REITs are in general higher valued. This might be explained by the tax benefits on the personal level. This model is capable of explaining 25% of the variance in P/B, which is not bad given the limited number of explanatory variables in the model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.809262	0.176006	4.597930	0.0000
LEV_RD	1.271509	0.471534	2.696536	0.0098
SOCIAL	0.578046	0.244901	2.360332	0.0227
GROWTH	-0.192550	0.210813	-0.913372	0.3659

Effects Specification		
	S.D.	Rho
Cross-section random	0.253488	0.7473
Idiosyncratic random	0.147409	0.2527

Weighted Statistics			
R-squared	0.249935	Mean dependent var	0.448618
Adjusted R-squared	0.199931	S.D. dependent var	0.169156
S.E. of regression	0.146820	Sum squared resid	0.970021
F-statistic	4.998272	Durbin-Watson stat	2.031778
Prob(F-statistic)	0.004465		

6.3.4.4. Model IV: P/B – Immo Moury Excluded

The same variables as in the previous regression are included. The tests show that the random effects model is best suited to model this regression.

Test	**P-Value**	**Conclusion**
Likelihood Ratio	NA	NA
Breusch-Pagan	0.0000	Random Effects
Hausman	0.2266	Random Effects

The regression output shows that whereas leverage is no longer significant, social REITs still have higher P/B ratios. There are no heteroskedasticity problems (D-W < 2.5) and this model has a determination coefficient of 11.9%

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.393705	0.288083	4.837867	0.0000
LEV_RD	-0.034350	0.605518	-0.056729	0.9550
SOCIAL	0.544200	0.227032	2.397016	0.0211
GROWTH	-0.205128	0.242777	-0.844926	0.4029

Effects Specification		
	S.D.	Rho
Cross-section random	0.283338	0.7747
Idiosyncratic random	0.152817	0.2253

Weighted Statistics			
R-squared	0.119575	Mean dependent var	0.425577
Adjusted R-squared	0.056688	S.D. dependent var	0.167064
S.E. of regression	0.157605	Sum squared resid	1.043248
F-statistic	1.901420	Durbin-Watson stat	2.116813
Prob(F-statistic)	0.144052		

6.3.5. Conclusion of Quantitative Research

As assumed before, whether or not Immo Moury is included in the sample alters the results completely. Without Immo Moury, no significant impact of leverage can be found on either WACC or P/B, leading to the acceptance of both the hypotheses. When Immo Moury is included, leverage increases WACC and P/B.

A positive influence of leverage on WACC might be explained by the risk perception of leverage by both banks and investors. The positive influence of leverage on P/B might be explained because investors appreciate leverage because it increases their return on equity.

The crucial dilemma in this conclusion is whether Immo Moury should be included or not. From the qualitative section, doubts on the possibilities to find suboptimal leverage ratios were raised. It is possible that Immo Moury is the only firm with a suboptimal leverage ratio, so that only the inclusion of this firm leads to significant effects of leverage. If this reasoning holds, keeping Immo Moury in the dataset is essential because otherwise key information might be deleted.

General Conclusion

The research question in this dissertation was whether evidence for M&M indifference theorems could be found in the context of Belgian Real Estate Investment Trusts. The qualitative section showed that this hypothesis could be rejected whereas the quantitative section gave birth to some more complex findings.

In the interviews, there was one narrative that was prominent and constant. Financial responsibles acknowledge the unique benefits of debt financing, even in a tax-exempt context. According to these people, debt financing can reduce WACC and increase yields to shareholders without increasing risk. Second, REITs have unique characteristics that explain why corporate leveraging is preferred over personal borrowing. Examples include banking relationships and the possibilities to provide collateral.

Financial responsibles often look at the problem from a simpler point of view. These people often rely on idioms that state that debt financing is good because it increases the return on equity. The fact that this increased return is combined with increased risk, is often not a part of the equation.

The quantitative section generated regression results that need a profound analysis. When Immo Moury was included in the sample, leverage had a positive influence on WACC and a positive influence on P/B. When Immo Moury was excluded, no significant effects of leverage on these variables was present. Another contribution of this dissertation is that social REITs are in general valued higher as their non-social colleagues, independent of whether or not Immo Moury is included.

The positive sign regressions put on leverage and the ‘social’ dummy are straightforward to interpret. Higher leverage results in higher yields and these yields boost market valuation. However, a separate regression analysis of leverage on yield was done, and no significant influence was found. Social REITs have a clear benefit in taxation, so their market values are higher.

The positive sign on leverage in explaining WACC can be interpreted as rising rewards for rising risk. However, there is a mathematical relationship between these concepts that would make it impossible to find any other result.

In essence, M&M propositions can be boiled down to underneath order of events. For rational investors, leverage signals financial risk and this risk has to be compensated for.

Figure 12: M&M Mechanics

This rationale is reflected in the calculations for 'levered β' coefficients, that implicitly raise risk for higher leverage. These coefficients determine the cost of equity, which in turn determines the WACC. Given this underlying mathematical relationship, it is not strange that a positive relationship is found.

In practice however, these relationships leave room for considerable margin. A lower WACC can be achieved when financial responsibles succeed in increasing leverage without increasing the financial risk perception of investors. This is possible because the perception of financial risk is not a fully rational concept. It is influenced by managerial reputation, feelings, gossip, stories and rumors.

Risk is defined as each deviation from expectation. In a REIT context however, lease contracts are often based on long-term triple net agreements[12] with solvent and liquid counterparties. Consequently, risk is estimated to be very low. Perhaps this creates unique opportunities to use debt financing without increasing risk.

The only element that needs further explanation is the case of Immo Moury. How is it possible that these relationships disappear when Immo Moury is excluded from data? From the qualitative review, it became clear that most REITs use a target leverage ratio that maximizes

[12] Triple net lease agreements put all responsibilities of maintenance, insurance and taxation at the lessee.

returns and does not increase risks substantially. In general, this was around 45-55%. In this regard, it's fair to state that the amount of debt financing Immo Moury uses is suboptimal. It can be assumed that for the other REITs, leverage figures are close to optimal. The odd fact that effects disappear when Immo Moury is included might be explained because around the optimum, where most REITs are, these financing decisions indeed have no influence. Consequently, including one suboptimal firm is enough to influence results.

The goal of this thesis was to verify whether M&M propositions hold in the REIT context. Along this quest, the additional goal of bridging the gap between theory and practice was included. My research shows that the definition of risk is where the problematic differences between theory and practice arise. Theory proposes the usage of fixed mathematical relationships. In practice, risk perception is a lot more emotionally colored.

As Richard Thaler proved, humans are predictably irrational. For this research, he was awarded the 2017 Nobel Prize in Economics. This dissertation finds that in the field of finance, an influence from irrationalities is also present. The circle is now round, one Nobel Prize winning theory is contradicted by the other.

"Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as the result of animal spirits – a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities." – J.M. Keynes (1936)

Opportunities for Further Research

The quarterly valuation of assets in REITs is considered very hollow because estate agents are also value assessors. As such, a professional bias might be present. This duality is highly comparable with the role of rating agencies in the years prior to the crisis. Researching whether using different firms (CBRE, Cushman & Wakefield and others) for value assessment and commercial activities influences valuations might be interesting. Second, insights gathered might prove very relevant in bad economic times.

This research aimed to investigate whether evidence for Modigliani & Miller theorems could be found in the framework of real estate investment trusts. The conclusion was that these theories fail because of the irrational nature of men. Following from this insight, a link was drawn with behavioral economics. This discipline focusses on how certain irrationalities influence economic models. In my opinion, this methodology could be applied to corporate finance as well.

Attachments

Attachment 1: Multidimensional ranking of real estate types by liquidation value

	High	Intermediate	Low
Zoning	Industrial	Retail Office Hotel	Apartment
Physical Flexibility	Industrial	Apartment Retail Hotel	Office
Lease Maturity	Apartment Hotel	Industrial Office	Retail
Recovery Rate	Apartment	Industrial Office Retail	Hotel

Attachment 2: Leverage measures in literature

Measure	+	-
$\frac{Total\ Liabilities}{Total\ Assets}$	Proxy for what is left for shareholders in case of liquidation.	No risk or default indication. Includes accounts payable and pension liabilities so overstates leverage.
$\frac{Total\ Debt}{Total\ Assets}$	Indicates financial leverage in the strict sense of the word.	Increase in trade credit reduces leverage.
$\frac{Total\ Debt}{Net\ Assets}$ $Net\ Assets$ $= Assets$ $- Nondebt\ liabilities$	Not influenced by trade credit.	Influenced by other factors (e.g. assets held against pension liabilities).
$\frac{Total\ Debt}{Total\ Capital}$ $Capital$ $= Total\ Debt$ $+ Equity$	Effect of past financing decisions is best reflected in this ratio	None
$\frac{Interest\ payment}{EBIT}$ $\frac{Interest\ payment}{EBITDA}$	Indicates a level of distress and a loss of control.	It is assumed that short term debt will be rolled over, this is not necessarily true.

Attachment 3: Regression output Leverage RD on Net Debt to EV

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.090048	0.071282	1.263274	0.2169
LEVERAGE_RD	0.634148	0.168735	3.758254	0.0008

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.947935	Mean dependent var	0.357418
Adjusted R-squared	0.916325	S.D. dependent var	0.104565
S.E. of regression	0.030247	Akaike info criterion	-3.872647
Sum squared resid	0.025617	Schwarz criterion	-3.157092
Log likelihood	107.0709	Hannan-Quinn criter.	-3.604596
F-statistic	29.98783	Durbin-Watson stat	2.203433
Prob(F-statistic)	0.000000		

Attachment 4: Correlation Table including Immo Moury

Correlation Probability	WACC	PRICETOBO	LEV_RD	AGE	LNTA	GROWTH	COMMERCIAL	PROFESSIO	RESIDENTIAL	SOCIAL	MIXED	EPRA_DISCL
WACC	1.000000											

PRICETOBOOK	0.039664	1.000000										
	0.7867	-----										
LEV_RD	0.341914	0.400417	1.000000									
	0.0162	0.0044	-----									
AGE	-0.002488	0.271366	-0.014610	1.000000								
	0.9865	0.0593	0.9206	-----								
LNTA	0.280599	0.087921	0.546121	0.407746	1.000000							
	0.0508	0.5480	0.0000	0.0036	-----							
GROWTH	-0.016035	0.340976	0.292196	-0.282762	-0.037101	1.000000						
	0.9129	0.0165	0.0416	0.0490	0.8002	-----						
COMMERCIAL	-0.208636	-0.062336	-0.214825	0.477514	-0.076298	-0.196789	1.000000					
	0.1503	0.6705	0.1383	0.0005	0.6023	0.1753	-----					
PROFESSIONAL	0.282754	-0.104798	0.467942	-0.159544	0.291351	-0.055947	-0.506129	1.000000				
	0.0490	0.4736	0.0007	0.2735	0.0422	0.7026	0.0002	-----				
RESIDENTIAL	0.015593	0.020306	0.171854	-0.227722	-0.086708	0.326865	-0.227185	-0.198030	1.000000			
	0.9153	0.8899	0.2377	0.1156	0.5536	0.0219	0.1165	0.1726	-----			
SOCIAL	0.011488	0.502298	-0.023041	-0.222725	-0.005766	0.334270	-0.284641	-0.248112	-0.111369	1.000000		
	0.9376	0.0002	0.8751	0.1240	0.9686	0.0189	0.0474	0.0856	0.4462	-----		
MIXED	-0.115227	-0.280242	-0.462484	-0.065005	-0.219233	-0.239223	-0.284641	-0.248112	-0.111369	-0.139535	1.000000	
	0.4305	0.0511	0.0008	0.6572	0.1302	0.0978	0.0474	0.0856	0.4462	0.3390	-----	
EPRA_DISCLOSUR	0.009125	0.024056	0.240262	0.077913	0.526876	0.118140	-0.320549	0.441176	-0.287143	0.248112	-0.157138	1.000000
	0.9504	0.8697	0.0963	0.5946	0.0001	0.4188	0.0247	0.0015	0.0455	0.0856	0.2809	-----

Attachment 5: Correlation Table: EPRA and Immo Moury figures included

Correlation Probability	WACC	PRICETOBO	LEV_RD	AGE	LNTA	GROWTH	COMMERCIAL	PROFESSIO	RESIDENTIAL	SOCIAL	MIXED	EPRA_COST	EPRA_VACA	EPRA_YIELD
WACC	1.000000 ----													
PRICETOBOOK	-0.007779 0.9652	1.000000 ----												
LEV_RD	0.301579 0.0830	0.301175 0.0835	1.000000 ----											
AGE	-0.102381 0.5645	0.096238 0.5882	-0.394199 0.0211	1.000000 ----										
LNTA	0.267965 0.1255	-0.128447 0.4691	0.137587 0.4378	0.426046 0.0120	1.000000 ----									
GROWTH	-0.089686 0.6140	0.320584 0.0645	0.235034 0.1809	-0.464181 0.0057	-0.292934 0.0927	1.000000 ----								
COMMERCIAL	-0.398480 0.0196	-0.223289 0.2043	-0.556571 0.0006	0.515189 0.0018	-0.209639 0.2341	-0.268998 0.1240	1.000000 ----							
PROFESSIONAL	0.348519 0.0434	-0.143298 0.4188	0.574147 0.0004	-0.261343 0.1354	0.104899 0.5549	-0.124903 0.4815	-0.533114 0.0012	1.000000 ----						
RESIDENTIAL	0.013463 0.9398	0.025268 0.8872	0.168234 0.3416	-0.294142 0.0913	-0.118459 0.5046	0.675179 0.0000	-0.104447 0.5566	-0.154672 0.3824	1.000000 ----					
SOCIAL	0.010685 0.9522	0.570896 0.0004	-0.121459 0.4938	-0.302206 0.0824	-0.225169 0.2004	0.326520 0.0595	-0.277746 0.1117	-0.411306 0.0157	-0.080582 0.6505	1.000000 ----				
MIXED	-0.012683 0.9432	-0.184197 0.2970	-0.076350 0.6678	0.237555 0.1761	0.515646 0.0018	-0.203990 0.2472	-0.186651 0.2905	-0.276407 0.1136	-0.054153 0.7610	-0.144005 0.4165	1.000000 ----			
EPRA_COST	0.303540 0.0810	-0.337850 0.0507	0.223402 0.2041	-0.546414 0.0008	-0.002704 0.9879	0.126883 0.4746	-0.391121 0.0222	0.087800 0.6215	0.423279 0.0126	-0.052594 0.7677	0.273206 0.1180	1.000000 ----		
EPRA_VACANCY	0.153954 0.3847	-0.407752 0.0167	0.008163 0.9635	0.106730 0.5480	0.298887 0.0860	-0.391759 0.0219	-0.220494 0.2102	0.448488 0.0078	-0.093295 0.5997	-0.424171 0.0124	0.183528 0.2988	0.151743 0.3916	1.000000 ----	
EPRA_YIELD	-0.006055 0.9729	0.031037 0.8617	0.442453 0.0088	0.382519 0.0256	0.561493 0.0006	-0.222333 0.2063	0.011046 0.9506	0.354346 0.0398	-0.110790 0.5328	-0.494107 0.0030	0.092606 0.6024	-0.300063 0.0847	0.431920 0.0107	1.000000 ----

Attachment 6: Correlation Table: Immo Moury excluded

Correlation Probability	WACC	PRICETOBO	LEV_RD	AGE	LNTA	GROWTH	COMMERCIAL	PROFESSIO	RESIDENTIAL	SOCIAL	MIXED	EPRA_DISCL
WACC	1.000000 ----											
PRICETOBOOK	0.006627 0.9655	1.000000 ----										
LEV_RD	0.186361 0.2203	-0.204910 0.1769	1.000000 ----									
AGE	-0.050506 0.7418	0.232859 0.1237	-0.196231 0.1964	1.000000 ----								
LNTA	0.252674 0.0940	-0.102039 0.5048	-0.141967 0.3522	0.286333 0.0565	1.000000 ----							
GROWTH	-0.059504 0.6978	0.407785 0.0054	-0.172148 0.2582	-0.245567 0.1040	-0.218051 0.1502	1.000000 ----						
COMMERCIAL	-0.246635 0.1024	-0.109756 0.4729	-0.220399 0.1457	0.435185 0.0028	-0.319842 0.0322	-0.208737 0.1688	1.000000 ----					
PROFESSIONAL	0.267665 0.0755	-0.147939 0.3321	0.294008 0.0500	-0.259529 0.0851	0.240638 0.1113	-0.020902 0.8916	-0.577350 0.0000	1.000000 ----				
RESIDENTIAL	0.000905 0.9953	-0.005626 0.9707	0.092834 0.5442	-0.163688 0.2826	-0.189630 0.2122	0.000254 0.9987	-0.218218 0.1498	-0.188982 0.2138	1.000000 ----			
SOCIAL	-0.002251 0.9883	0.498109 0.0005	-0.107774 0.4810	-0.288957 0.0542	-0.108512 0.4780	0.487341 0.0007	-0.320256 0.0320	-0.277350 0.0651	-0.104828 0.4931	1.000000 ----		
MIXED	-0.019297 0.8999	-0.178046 0.2419	-0.068732 0.6537	0.193245 0.2034	0.510902 0.0003	-0.214935 0.1562	-0.218218 0.1498	-0.188982 0.2138	-0.071429 0.6410	-0.104828 0.4931	1.000000 ----	
EPRA_DISCLOSUR	-0.053405 0.7275	-0.071013 0.6430	0.147422 0.3338	-0.018476 0.9041	0.399425 0.0066	0.008434 0.9561	-0.430820 0.0031	0.426401 0.0035	-0.443203 0.0023	0.236525 0.1177	0.161165 0.2902	1.000000 ----

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