

The Performance of Generic Strategies after the Financial Crisis of 2008 in the Retail Industry

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Abstract

The purpose of this thesis is to discover how differentiation and cost leadership strategies have performed after the financial crisis of 2008 in comparison to each other and the control group that does not engage in either strategy. Differentiation refers to selling differentiated, unique produce typically for higher price whereas cost leadership concentrates on selling standardized, low-priced produce. The hypothesis assumes that cost leaders outperform differentiators in the post-crisis period due to declining consumer purchasing power which supports the sales of produce in the lower price range. The objective of this thesis is to provide new information on strategy performance during recession, a current topic which has received little coverage in prior research.

Panel data consists of 197 American and Canadian companies in the retail industry during 2006-2009. The data are derived from WRDS's Compustat database. Company sorting to cost leaders and differentiators relies on theories of the DuPont disaggregation of return on assets (ROA): companies with relatively high asset turnovers were categorized as cost leaders and companies with relatively low asset turnovers as differentiators. Performance in the regression is measured by ROA. The regression analysis is run with OLS using a difference-in-differences method.

The regression analyses fail to provide statistically significant results on differentiators' or cost leaders' performance both before and after the crisis. The regression coefficient analysis suggests that both differentiation and cost leadership strategies have outperformed the control group during the pre-crisis period, with 0.5% and 1.0%-units, respectively. In the post-crisis period, cost leadership outperformed the control group with 0.5%-units while differentiators had a ROA ratio 2.0%-units smaller than that of the control group. Against the findings of prior studies in retail industry, this study suggests differentiation to clearly have underperformed in a recession-economy in comparison to companies with other strategies.

However, due to the lack of statistically significant results, the relationship between strategy and performance remains unclear and is left for future research. The regression did indicate a statistically significant positive correlation between ROA and firm size (2.5%).

Keywords generic strategies, Porter, differentiation, cost leadership, financial crisis, recession, performance measurement, return on assets, difference-in-differences

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Tutkielman tarkoituksena on tarkastella miten differointi ja kustannusjohtajuus ovat strategioina pärjänneet vuoden 2008 finanssikriisistä toisiinsa verrattuna sekä kontrolliryhmän yrityksiin nähden, jotka eivät ole sitoutuneet kumpaankaan strategiaan. Differointi strategiana viittaa erilaistetun, ainutlaatuisen tarjoaman myyntiin tyypillisesti keskivertoa kalliimmalla hinnalla kun taas kustannusjohtajat myyvät tyypillisesti standardisoidumpia tuotteita tai palveluita alempaan hintaan. Tutkielman hypoteesi olettaa kustannusjohtajuuden pärjänneen finanssikriisin jälkeen differointia paremmin, koska ostovoiman pieneneminen taantumana seurauksena kannustaa halvempien tuotteiden ostoon. Tutkielman tarkoituksena on tarjota uutta tutkimustietoa ajankohtaisesta aiheesta, joka on saanut vain vähän huomiota aikaisemmissa tutkimuksissa.

Tutkielma hyödyntää paneeliaineistoa 197 yhdysvaltalaisesta ja kanadalaisesta yrityksestä vähittäiskauppa-alalla ajanjaksolla 2006-2009. Data on kerätty WRDS:n Compustat-tietokannasta. Yritysten jakaminen eri strategioihin perustuu teoriaan pääoman tuotto –tunnusluvun erittelystä DuPont-menetelmällä. Pääoman tuottoa on käytetty myös mittaamaan yritysten kannattavuutta. Regressioanalyysi on toteutettu difference-in-differences –menetelmällä. Tutkielman teoriaosuus perustuu pitkälti Porterin strategiaoppeihin.

Regressioanalyysin perusteella differoinnille ja kustannusjohtajuudelle ei saada tilastollisesti merkitseviä tuloksia finanssikriisiä edeltävällä tai sitä seuranneella ajanjaksolla. Regressioanalyysin mukaan sekä differointi että kustannusjohtajuus ovat ennen finanssikriisiä pärjänneet kontrolliryhmää paremmin niiden pääoman tuoton ollessa 0,5 ja 1,0%-yksikköä kontrolliryhmää korkeammat. Finanssikriisiä seuranneella ajanjaksolla kustannusjohtajuus on pärjännyt kontrolliryhmää paremmin sen pääoman tuoton ollessa 0,5%-yksikköä korkeampi. Sen sijaan differoijilla sama luku on 2,0%-yksikköä kontrolliryhmän pääoman tuottoa alhaisempi. Tulokset ovat päinvastaisia aiemman tutkimuksen kanssa, jossa löydettiin viitteitä differoinnin paremmuudesta taloudellisessa taantumassa.

Tilastollisesti merkittävien tulosten puuttuessa kannattavuuden ja strategian välinen yhteys jää epäselväksi ja tulevan tutkimuksen varaan. Regressioanalyysissä löydettiin tilastollisesti merkittävä positiivinen suhde pääoman tuoton ja yrityksen koon välillä (2,5%).

Avainsanat Geneerinen strategia, Porter, differointi, kustannusjohtajuus, finanssikriisi, lama, kannattavuuden mittaaminen, pääoman tuotto, difference-in-differences

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1 INTRODUCTION

1.1 Background and motivation

Since their initial introduction to the business world in the 1980's by Michael Porter, generic strategies importance in pursuing competitive advantage has been widely recognized in business literature, research and education. Generic strategies refer to three strategy types which are, according to Porter (1980, 1985), the only ways for a company to achieve competitive advantage over its competitors. Essentially, it is only through attaining competitive advantage by positioning correctly within an industry can a firm obtain above-industry profitability. Generic strategies consist of differentiation, cost leadership and focus, the first two dominating strategy literature while focus is generally left under lesser attention. Differentiation means the strategy in which company chooses to sell somehow differentiated, unique products or services no matter which part of the value chain uniqueness originates from. Unique offering allows a company to charge a substantial price premium that covers for lower volumes and typically higher manufacturing costs. Cost leadership (also overall cost leadership, low-cost strategy) refers to a company pushing down prices to attain the lowest price position within the industry. Even though cost leaders have small margins, large volumes allow them to attain high profitability.

While there are many research papers that concentrate on proving the existence of generic strategies, their performance in relation to other strategies and the possibility to combine generic strategies into one superior strategy, few research papers discuss the performance of generic strategies under various economic climates. The purpose of this paper is to fill in this research gap and examine the performance of generic strategies under a recession economy to determine which strategy, differentiation or low cost, performs relatively better in recession. *Performance* can be defined in various ways but in this paper its primary use is to demonstrate financial performance, especially in the form of return on assets ratio.

There has been some previous research on the topic, however it cannot be considered extensive. A very similar topic was covered by Little et al. (2011) who researched the effect that the crisis of 2008 had on company performance, measured by RONO (return on net

operating assets), depending on whether the company followed cost leadership or differentiation strategy. Their research is used as a benchmark for this paper and kept alongside for comparison in the results. Their research left the research question unanswered as they were unable to receive statistically significant results for post-crisis time period. However, they were able to derive answers for the pre-crisis time period in which they discovered differentiation to substantially outperform cost leadership in retail industry. This paper attempts to redo their research also in retail industry but with noticeable alterations despite otherwise similar characteristics. Firstly, this study has a bigger sample, dependent variable ROA instead of RONO and a different method for handling and analyzing data. Additionally, Little et al. did not specify on the use of any control variables to control for other, non-strategy related aspects that might have driven their results, unlike done in this research.

Still living in the aftershock of the extremely severe financial crisis of 2008, the topic is current and informative. The information on the resilience of a strategy to external factors, such as a crisis, can be beneficial to many. Firstly, companies can better prepare for the future crises by adapting their strategies if they know how consumer behavior impacts their profitability. Secondly, investors and creditors may want to use this information in decision-making during economic downturns while assessing risk. The thesis will be cross-sectional as it reflects on marketing and management accounting while still representing financial accounting with a financial ratio analysis.

1.2 Research objectives and questions

As stated, the objective of this research is to discover which generic strategy, cost leadership or differentiation, has performed better during the financial crisis. Since the assumption is for the financial crisis to create a challenging environment for all companies to operate regardless of strategy, the research question refers to relative changes in performance in relation to absolute figures. The research question is put as follows:

R1. Which strategy, cost leadership or differentiation, has survived relatively better from the financial crisis of 2008 in retail industry?

This is the main research question that the thesis is attempting to provide an answer for. However, additionally to the research question the thesis contains three hypotheses that further clarify and base the topic. These hypotheses are more accurately presented in Chapter 4. *Research Methods and Hypotheses* but generally consist of strategies' performance before the financial crisis. The levels of pre-crisis performance enhances the ability to understand and explain the changes that occur after the crisis.

1.3 Methodology and data description

The recession under observation in this thesis is the recent financial crisis of 2008. As the GDP in the United States plummeted sharply during 2008, it was selected as the cut-off to present the first year of crisis. Data are analyzed both before (2006-2007) and after crisis (2008-2009) to convey results on true changes. Return on assets (ROA) is used as the dependent variable in the regression to describe company performance.

The thesis utilizes panel data that are sorted to strategy groups based on companies' asset turnover and profit margin ratio in 2006. Companies are then tracked throughout the observation period with the same companies always presenting either differentiators, cost leaders or members of the control group. Sorting follows a double sort method in which observations are first sorted according to their ROA ratio to eliminate the phenomenon in which all negative profit margins (and thus negative ROAs) would automatically be recorded as cost leaders, skewing the results of the research. The double sort is done based on asset turnover and in robustness checks with a profitability measure, *gross profit*. Sorting is selected as a target of sensitivity analysis for its vitality for the results but especially because strategy group categorization involves subjectivity and can be performed with various methods using various variables.

The data are gathered from WRDS's Compustat database and consist of 197 American and Canadian companies operating in retail sector. The sample size is noticeably bigger than that used in previous research e.g. by Little et al. (2011) where the sample is only 111 companies. Regression is run on a difference-in-differences method which is later introduced more in-depth. Independent control variables include size, leverage and operating leverage.

1.4 Structure

This thesis will start with the introduction of firm performance measurement in chapter 2. In this chapter, DuPont method along with ROA disaggregation are thoroughly introduced as they provide the foundation for both the sorting as well as performance measurement. From performance measurement the thesis will proceed to introducing company strategy narrowing the focus down to generic strategies, cost leadership and differentiation. The chapter explains the general concept behind generic strategies, their impact on company performance and importance in generating competitive advantage as well as the source for deriving uniqueness for differentiation and cost efficiency for cost leadership. The strategy-related section of theoretical framework much relies on theories and research by Porter (and especially his two famous books¹) who on his part has much shaped the strategic literature to what it is today.

Chapters 4 and 5 lead to the empirical part of the thesis, former of which introduces the previous research, hypotheses of the study, the dataset, sorting and the research method while the latter consists of the actual descriptive statistics, regressions and robustness checks.

Chapter 6. *Conclusions and Discussion* summarizes the results of the regression analysis and answers to the hypotheses and the research question. Additionally, the last chapter proposes suggestions for further research.

¹ *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (1980) and *The Competitive Advantage: Creating and Sustaining Superior Performance* (1985) by Porter, M.

2 ROA AND THE DUPONT METHOD

This chapter provides an understanding of the financial measure ROA and its disaggregation, also known as the DuPont method. An entire chapter has been dedicated to the topic as the DuPont method lies in the core of the thesis because it provides the foundation for sorting companies into strategy groups i.e. it has the ability to capture strategy. Additionally to sorting abilities, ROA is a measure for firm performance and it is used as the determinant of how well strategies have survived from the financial crisis.

2.1 ROA

Performance is ambiguous in its meaning and multiple characteristics, i.e. obtaining market share, can be interpreted as improved performance. Brealey, Myers and Marcus (2012 p. 150) list popular performance measures which include market-to-book ratio, market value added, economic value added and return on assets. Market value based performance measures are challenging because they reflect investor expectations of future performance and are thus forward-oriented. Additionally, they require the use of market values which are not found for privately held companies. This restriction exists in the making of this research and thus an accounting-based measure, ROA, is selected.

ROA and its modifications have been used to measure performance in a variety of strategy-related studies (e.g. Selling & Stickney 1989; Little et. al. 2011; Banker, Mashruwala & Tripathy 2014) and are also commonly used among managers for evaluating company performance (Brealey, Myers & Marcus 2012, p. 143; Revsine et al. 2005, p. 263-269). The advantage of ROA is how it not only presents a profitability measure but combines it with an efficiency measure. Profitability in general is focused on measuring earnings whereas efficiency ratios measure how well assets are being utilized (Brealey, Myers & Marcus 2012 p. 141, 143). ROA indicates how well a firm is able to utilize its assets to generate profits. ROA, depending on which variation of the equation is used, divides net income with total assets.

In multiple textbooks ROA is defined as follows:

$$ROA = \frac{\text{after-tax operating income}}{\text{average total assets}} = \frac{\text{net income} + (1 - \text{tax rate}) \times \text{interest expense}}{\text{average total assets}} \quad (1)$$

where

$$\text{Average total assets} = \frac{(\text{beginning-of-year assets}) + (\text{end-of-year assets})}{2} \quad (2)$$

As Brealey, Myers and Marcus describe (2012, p. 143), the above equation is formed to exclude the effect of company capital structure by adding after-tax interest expenses back to net income. Without the adjustment, companies with leverage would receive lower ROA ratios because they have to direct part of their revenue stream to debtholders as interest payments. The adjustment of adding interest expenses back is preferable in many cases because capital structure can often be considered irrelevant when measuring company profitability. Modigliani and Miller (1958) gained evidence that supports the irrelevancy of capital structure for investors. Additionally, they claim that for investors the value of operations rises far above the questions of how those assets are being financed. Selling and Stickney (1989) argue that to achieve an illusion of an all-equity financed company and to get a measure of operating performance alone, interest expense deductibility must be also taken into account making it necessary to subtract tax shield from interest expenses. In this paper, capital structure effect is eliminated with the mechanism described above to keep the focus in observing strategies, not in the source of financing.

Calculating the tax rate for capital structure adjusted net income presents a challenge as Compustat database does not give out firm-specific, actual tax rates. For further complication, in the U.S. there exists no single tax rate that would bind all companies but tax rates in the United States are dependent on multiple variables, such as state legislation. Even federal corporate income taxes are graduated. Tax rates are difficult to estimate because of the differences in financial and tax reporting (Plesko 2003). Plesko notes, that net income and income subject to tax are not always equivalent for two reasons. One, companies are not

obligated to pay taxes for negative income. Two, net operating loss deductions (among others) may be carried out when net income is positive. Thus, as the tax rate in this study is calculated by dividing paid taxes by pre-tax income, it is important to notice that tax rates used in this study are estimates, not actual tax rates. While not being completely specific, the influence of capital structure should still remain fairly small. This study does not contribute to the discussion of whether some capital structures systematically exist with certain generic strategies.

Since the nominator of ROA indicates net income from a certain period, the denominator of the equation needs to reflect assets used in that equivalent period which argues for the use of average total assets (Selling and Stickney 1989). Furthermore, Isberg (1998) advises that whenever combining items from the balance sheet and income statement, averages must be taken from balance sheet items due to difference in time capture. Using year-end total assets would lead to a bias if a company made substantial investments in assets at the end of a fiscal year. According to Isberg, year-end balance sheet measures do not represent the actual asset stock that the company has had in its possession throughout the year, and could either falsely balloon or reduce asset turnover ratio. While using averages does partly correct biases, Isberg notes that even average assets do not give a fully accurate result due to the assumption of investments having taken place evenly throughout the year which in most cases is unrealistic.

2.2 The DuPont method

Disaggregation of ROA i.e. the DuPont Method refers to dividing ROA into two separate financial measures. The invention of DuPont analysis dates back to 1918 when an engineer at *E. I. du Pont de Nemours and Company* was responsible for analyzing a company targeted for acquisition. The engineer came up with the idea of combining two frequently used ratios, profit margin measuring profitability and asset turnover measuring efficiency, to form ROA. Depending on its purpose, ROA can be aggregated to profit margin and asset turnover using altering variables. In this research, the aggregation is identical to the one used by Selling and Stickney (1989) due to the similar nature of the study objectives. Selling and Stickney used ROA to measure profitability and to uncover the relationship that strategy has on ROA.

DuPont disaggregation of ROA is presented below:

$$\begin{aligned} ROA &= \frac{\textit{after-tax operating income}}{\textit{average total assets}} && (3) \\ &= \left(\frac{\textit{after-tax operating income}}{\textit{sales}} \right) \times \left(\frac{\textit{sales}}{\textit{average total assets}} \right) \\ &= \textit{profit margin} \times \textit{asset turnover} \end{aligned}$$

The equation shows how ROA is the product of two terms, profit margin and asset turnover. There are two ways for a company to increase profitability and thus ROA which are by either increasing profit margin or asset turnover, or both (Revsine et al. 2005, p. 263-269). Prior research has proved that changes in both asset turnover and profit margin can be linked to changes in future profitability (Fairfield and Yohn 2001).

Profit margin (net income/sales) describes how many dollars in profit each dollar of sales has generated for a company (Fairfield & Yohn 2001). Profit margin can be calculated for various levels of operation, including gross, operating and net profitability, the most comprehensive of which is net profitability as it includes all others (Isberg 1998). High profit margin roots typically from pricing power created by product innovation, positioning, branding, first mover advantage as well as targeting market niches. Companies with strong brand identity have an opportunity to charge a price premium because the products are hard for competitors to imitate (Soliman 2008). Also companies big in size can improve profit margins by reducing operating expenses because they are typically able to negotiate better deals with suppliers lowering the cost of goods which leads to higher profits (Revsine et al. 2005, p. 244).

Asset turnover (sales/average total assets) reflects how many dollars in sales each dollar of investment in assets has generated for a company (Fairfield & Yohn 2001). Basically the term measures how well a company is able to use its assets to create sales (Isberg 1998). By utilizing assets more efficiently, a company can generate more profits for fewer assets.

Revsine et al. (2005) give an example of expanding opening hours to increase asset utilization. While assets remain intact, sales increase and lead to higher profitability. Consistently high asset turnover ratio is a sign of a talented and effective management (Bernstein & Wild 1997, p. 546). For more specific analysis, asset turnover can be narrowed down to observe certain asset groups, like fixed assets, to reveal how efficiently they participate in generating sales (Brealey, Myers & Marcus 2012). Total assets is the most comprehensive term as it represents the total of all asset groups (Isberg 1998). The ability to increase ROA with asset turnover is contingent on having a positive profit margin (Isberg 1998). In the case of a negative profit margin, increasing asset turnover will only create further losses.

FIGURE 1: THE ROA CURVE

The figure below illustrates the relationship that exists between ROA, profit margin and asset turnover at three constant ROA levels: 5%, 7% and 9%. All ROA levels can be achieved with multiple profit margin and asset turnover combinations. ROA levels in the figure are portrayed by the southwest-northeast line. The higher the ROA ratio, the further away the company would locate from the axis. On the contrary, if companies move in the figure along the southeast-northwest line, it suggests that a company has changed its emphasis between profit margin and asset turnover (Selling and Stickney 1989). Originally the figure depicts research results by Selling & Stickney (1989) who investigated a large sample of companies in 1977-1986 whose average ROA was around 7% and most companies fell between the 5-9% gap. (Redrawn figure from Selling & Stickney 1989)

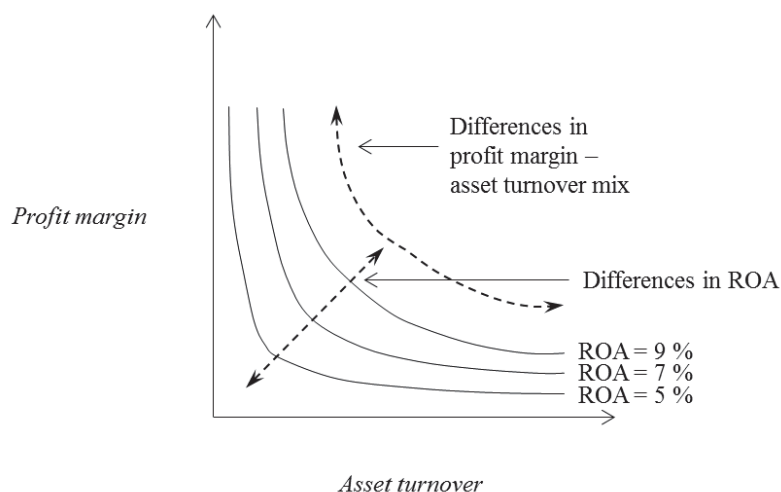


Figure 1 by Selling and Stickney (1989) clearly showcases the relationship between ROA level and how it is built from profit margin and asset turnover. ROA disaggregation shows the term of the equation that the company relies more on in its strategy, profit margin or asset turnover. The same level of ROA can be yielded with various combinations of profit margins

and asset turnovers (Brealey, Myers & Marcus 2012, p. 145). As profitability remains the same between companies with identical ROAs, the strategy of these companies may differ substantially (Bernstein & Wild 1997, p. 542). Differentiation is linked to having a high profit margin while maintaining a modest asset turnover while cost leadership relies on high volumes and a high asset turnover while operating on tiny margins. Therefore, companies that engage in differentiation are expected to locate to the northwest tail of the ROA curve while cost leaders would find themselves in the southeast tail. As an example, Fairfield and Yohn (2001) compared a discount store and a high-end luxury store. Discount stores (cost leaders) sell for low profit margins and heavily rely on a higher asset turnover to maintain profitability whereas luxury stores (differentiators) sell less for higher margins. Hambrick's (1983) research provides further evidence for the existing theory that high profit margins in fact do relate to differentiation whereas high asset turnovers are linked to cost leadership.

Selling and Stickney (1989) emphasize that the direction to which companies move in Figure 1 is highly informative. Movements that take place in the northeast-southwest line directly change the absolute level of ROA. These could be caused by factors external to business that may root from fluctuating economic conditions such as recession. On the other hand, movements along the northwest-southeast line indicate a change in company's internal factors and especially a change in company strategy as it shifts its positioning in the industry. In this paper, the interest is in how the positioning on the northwest-southeast line (differentiation vs. cost leadership) impacts a firm's position on the northeast-southwest line (ROA) during a recession.

Many financial ratios can be used to observe a company's strategic position. However, ROA decomposition in particular provides useful information on strategy (e.g. Bernstein & Wild 1997; Selling & Stickney 1989; Fairfield & Yohn 2001; Soliman 2008) and is thus selected for this thesis.

2.3 Applicability of ROA and the DuPont method

ROA's advantage is in its ability to combine efficiency and profitability measures (Little, Little & Coffee 2008). A company may reach very high profitability without being efficient (Isberg 1998). According to Damodaran (2007) an analysis has to be performed on returns in

relation to assets to measure the quality of firm's investments and whether the returns from investments exceed the cost of their funding i.e. returns need to be reflected at the cost of generating them. Modigliani and Miller (1958) state that investing in a physical asset is only worthwhile if it increases owner's profits. It is possible simply to create profits by continuously pumping new capital in the company even though it would not be efficient nor in the interest of owners. A company that has a net income of \$1M and assets worth \$5M has a ROA of 20%, whereas a company with a higher net income of \$1.5M and assets of \$10M has only a ROA of 15% because it is less efficient in turning investments into profits.

ROA can provide useful information when observing trends within one organization over a period of time but that trend only truly makes sense when being benchmarked against competitors or best practices within the industry (Isberg 1998). However, ROA comparison and more generally financial ratio comparison across industries is unproductive as different industries cannot be expected to have similar ratios due to their divergent structures and therefore financial statement analysis should be limited to one industry only (Brealey, Myers & Marcus 2012 p. 147-148; Selling and Stickney 1986).

According to Banker, Mashruwala and Tripathy (2011) one of ROA's drawbacks is its sensitivity to accrual accounting. Management has the ability to use discretion in many parts of accounting which would affect the outcome of ROA. Fairfield and Yohn (2001) note that increases in profit margin may root from a change in operating efficiency and increased cost efficiency in which case current profit margin should have explanatory power to future profit margins. However, if changes in profit margin are caused by decreasing accounting conservatism, no explanatory power to future profit margin should exist. An example of diminishing accounting conservatism is a decision to defer expenses to the following fiscal year causing the profit margin ratio of the current year to increase. This makes profit margin less reliable in forecasting future returns compared to asset turnover as Fairfield and Yohn discover in their research.

Even though previous research claims asset turnover to have a higher prediction power, also asset turnover can be substantially influenced. Brealey, Myers and Marcus (2012, p.147) note that asset valuation, especially the valuation of intangibles, is highly sensitive to management discretion. Not only is management discretion a pitfall of ROA but the problem extends to

financial statement analysis on a more general level. Banker, Mashruwala and Tripathy (2011) suggest that selecting cash flow based measures would eliminate biases caused from decreased accounting conservatism as cash flows are resilient to accounting discretion. Brealey, Myers and Marcus (2012, p.153) simply note that ratio analysis requires usually additional qualitative judgement to provide a more reliable foundation for analysis that cannot be attained by looking at financial data alone. Additionally, since ROA combines the two most general measures possible in the income statement (net income) and balance sheet (total assets) it does not alone provide a profound foundation for in-depth analysis of performance (Isberg 1998). Isberg continues that while a thorough financial statement analysis ought to contain measures for liquidity, leverage, operating efficiency and profitability, ROA fulfils only two of these requirements.

ROA decomposition does not always imply differences in strategic choices but reflects prevailing microeconomic factors in the industry. For instance, balance sheet structure has a substantial impact on ROA ratio and a heavy balance sheet does not always mean that a company is engaging in cost leadership. Balance sheet structure is often related to industry demands. For instance, oil drilling would require a heavy balance because entering oil drilling business calls for heavy initial investments in machinery and licenses and these assets remain in the balance sheet (with depreciations) causing a high ROA denominator.

Selling and Stickney (1989) introduce two reasons that may influence the absolute level of ROA for a firm. These are *operating leverage* and *product life cycle*. Industries with high fixed costs in relation to variable costs typically enjoy high profits as sales increase. Once the number of produced goods increases, fixed costs can be divided to more units lowering costs per unit and creating cost savings. This advantage is called operating leverage. Vice versa, as sales decrease in capital-intensive industries such as steel and oil, these companies experience a steep decrease in profits. Typically companies that undertake a lot of operating leverage experience heavier fluctuations in ROA if consumer trends change influencing revenue. Profits of companies with less operating leverage are not as vulnerable to changes in consumer demand and do hence experience less fluctuations in ROA. In their research, Selling and Stickney discovered that industries with a high fixed assets to total assets ratio

had also higher standard deviations of ROA. Oil exploration, glass and steel industries had the highest ratios of fixed assets to total assets matched with the most variable ROAs.

Product life cycle may be another factor to determine the absolute level of ROA. According to Selling and Stickney (1989) introduction and growth phases where products have recently been introduced to the market require heavy investments in R&D, marketing and capacity enlargement. With relatively low levels of incoming revenue streams, ROA typically remains low. Once the product reaches maturity, the focus shifts to capacity utilization and efficiency. At this stage, asset turnover improves and sales increase causing ROA to peak. In decline, sales start slowly going down dragging ROA downward with it. Product life cycle theory extends beyond individual products to apply to entire industries and industry life cycle. For instance, food-processing industry is mature regardless of new products being introduced constantly.

3 COMPETITIVE STRATEGY

This chapter forms the core literature review of the thesis. In this chapter generic strategies, with an emphasis on differentiation and cost leadership, are presented. These strategies are tied to a larger context of corporate strategy formation which acknowledges the demands and limitations set by industry structures and competitiveness.

Strategy can be defined in numerous ways but according to Mintzberg (1978) the common understanding in literature is that strategy sets conscious guidelines or behavioral patterns that establish the frame for decision-making in the future. Mintzberg claims that literature has typically set three contingencies that a strategy ought to fulfil: a strategy should be explicit, it should be formed consciously and it should be developed in advance – before the decisions emerge to which it applies to. However, he notes that intended and realized strategies are not always one and the same.

The selection of strategy is dependent on two matters. Firstly, there is the question about the level of profitability an industry can attain in the long-term as well as industry-specific characteristics and structures (Porter 1985, p. 1-2). White (1986) describes industry-centered stage as *corporate strategy making*. It is about selecting appealing industries and deciding which industries to compete in. Porter (1985, p. 1-2) underlines the importance of adapting a company to its environment. Industry structure strongly determines strategies available to companies and the structure relates to competitive forces that put pressure on strategies. The second step in strategy formation includes all the attributes which define or limit competitive advantage. White (1986) labels this more detailed layer as *business strategy* which addresses how competition within an industry takes place. Successful corporate and business level strategies are transitory in nature as best practices and ways to achieve above-industry profitability are continuously reshaped by competition (Porter 1985, p. 1-2).

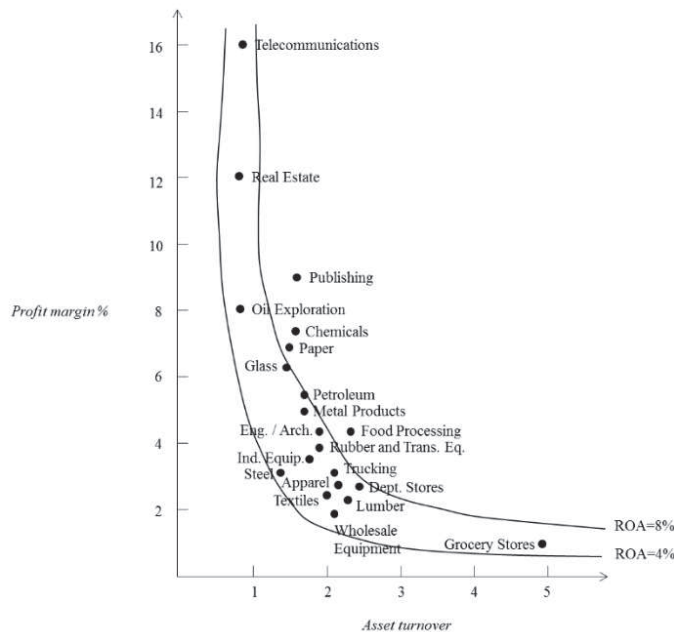
Because strategy selection is dependent on the industry structure as well as company's positioning, part 3.1 introduces the limits that industry sets on strategy while 3.2 focuses on company's internal strategic choices. The emphasis will be on the latter part due to higher relevance to this thesis while the first chapter creates the foundation and context.

3.1 Industry structure

A company needs to adjust to fit its environment. According to Porter (1985 p. 3-6) the structure and nature of an industry strongly determine the set of strategies a company can choose from. Underlying characteristics of an industry determine the level of competition and possible profitability. Not all industries have the potential for the same profitability when measured in terms of return on invested capital. This is also visible in Figure 2 by Selling and Stickney (1989) which shows the results of their study on industry profitability during 1977-1986. The figure illustrates average ROAs across industries. While paper industry has yielded consistently high returns during the observation period, steel and grocery stores have been unable to do so.

FIGURE 2: AVERAGE PROFITABILITY AND POSITIONING OF INDUSTRIES

The figure below introduces the research results by Selling & Stickney (1989) who studied ROA ratios of different industries and industry positioning in the profit margin-asset turnover axis during 1977-1986. (Redrawn figure from Selling and Stickney 1989).



Not only does Figure 2 reveal differences in ROA levels, but it also makes a statement on how companies within certain industries position themselves on the profit margin-asset turnover axis. During the observation period telecommunication had the highest profit margin (16%) of all industries and an asset turnover of 1. Grocery stores are located to the

opposite end of the ROA curve with a profit margin of 1% and an asset turnover of 5. According Selling & Stickney (1989) factors determining companies' positioning on the profit margin – asset turnover axis may root from microeconomic or business strategy inputs. Some companies can freely select a strategy to implement but for others strategy may be somewhat given rather than it being a completely independent choice.

Competition is a major factor when determining profit potential of a company or an industry (Porter 1985, p.6). If the absolute level of ROA is limited by industry structure and competition, a firm must make a trade-off between asset turnover and profit margin (Brealey, Myers & Marcus 2012, p. 145). Profit potential is dependent on five competitive forces which are 1) threat of new entrants, 2) threat of substitute products or services, 3) bargaining power of buyers, 4) bargaining power of suppliers and 5) rivalry among existing competitors. Competition created as the aggregate of the five forces, or *extended rivalry*, shapes industry structures. One or two most important competitive forces that most define the intensity of competition in an industry limit the strategies companies can adopt. Industries that are subject to intense competition (e.g. airlines) have few opportunities for major profits whereas more benign competition (software) allows many companies to achieve even high profitability. (Porter 2008).

In threat of entry, new entrants pursue to push their way to the market adding pressure for incumbents to cut prices and overall costs limiting the profit potential of the industry. The intensity of the threat of entry is dependent on how high the industry's entry barriers are and what reaction can new entrants expect from incumbents. Power of suppliers refers to suppliers that are able to negotiate good terms of transaction due to their differentiated produce, limited number of suppliers for the same product or high switching costs. Thus, by increasing prices or limiting service quality, suppliers are able to capture a bigger part of the value. Power of buyers, which is the power of suppliers in reverse, allows buyers to negotiate lower prices or demand better quality. Negotiating leverage can be attained if there are few buyers in the industry or if purchases are done in large volumes, the products in the industry are fairly standardized or switching costs are low. The intensity of the threat of substitutes describes the extent to which different products or means can be used to achieve the same end result. The better the price-to-quality ratio of the substitute, the greater the threat. Lastly,

the intensity of rivalry among incumbents is high if there are many, equally-sized companies in an industry that suffer from slow growth and where exit barriers are high. (Porter 2008).

While five forces shape the level of competition and overall profitability, Selling and Stickney (1989) introduce *capacity constraint* as a limitation for the range of profit margin-asset turnover combinations a company may choose from. Industries with capacity constraints possess heavy fixed capacity costs and adding additional capacity is typically slow. Companies operating in these industries thus have a ceiling to the size of asset turnover ratio they can attain. Therefore they must seek profitability in high profit margins. High profit margins, however, can typically be charged in industries which introduce some sort of an entry barrier. Steel is an example of an industry with capacity constraints and an entry barrier. Profit margins are high whereas asset turnover is low due to high number of fixed assets that are a prerequisite to participate in a capital-intensive industry (Bernstein & Wild 1997, p. 544). According to Selling and Stickney (1989) *competitive constraint* is another attribute that limits the strategies available to an industry. For companies operating in industries with standardized, commodity-like products and few barriers of entry, there is a maximum profit margin that can be achieved. Because of low entry barriers, competition easily invades the industry pushing prices down. To remain profitable, companies have to increase volumes i.e. asset turnover ratio. Increasing volumes can be achieved by aggressive cost reductions to gain market share and weed out competition. Retailers and wholesalers typically operate under competitive constraint.

Selling and Stickney (1989) underline, that even though industry average places in a certain point of profit margin-asset turnover axis, companies within industry may choose different strategies. Despite grocery stores typically prefer a strategy with a high asset turnover ratio, some grocery stores have engaged in alternative strategies such as bakeries and delicatessens.

3.2 Generic business-level strategies

Porter has presented various theories in his books and articles that have been widely acknowledged and that have gained popularity within business literature. One of his most important theories concerns generic business-level strategies. Hill (1988, p. 401) describes generic strategies as the “*dominant paradigm in the business policy literature*”. Porter’s

theory nullified the argument of all companies having a unique strategy while strengthening the idea that successful - and less successful - companies have combining factors that determine or explain their level of performance (David & Dess 1984). The introduction of generic strategies in 1980 inspired multiple researchers to tackle the theory to find supporting evidence. Much research was done within a few years of the introduction and thus also much of the previous research introduced in this paper dates back to 80-90's.

Porter emphasizes the inseparable relationship between strategy and competition. Generic strategies rely on building a position with competitive advantage. A competitive strategy is about finding a position in an industry that is advantageous vis-à-vis competitors. The ability and inability to create competitive advantage is why some firms become successful while others fail. (Porter 1985, p. 1-2). Another definition of competitive advantage is from Barney (1991, p.102), according to whom a firm has competitive advantage “-- *when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors.*” Sustainable competitive advantage described by Barney incorporates the same requirement but adds the assumption in which “-- *other firms are unable to duplicate the benefits of this strategy.*”

The most important variable, company performance, depends solely on the positing within an industry (Porter 1985, p.11). Even though industry sets pre-requirements and limits for profitability, most industries have a wide range of companies, part of which perform substantially above industry average while others fall below it and struggle to survive (Porter 1985, p.1-2). The conclusions of Hansen and Wernerfelt's (1989) study echoes Porter's claims. They were able to explain twice as much variance in profitability by internal variables compared to external variables, i.e. variables that exist in the industry or business environment.

Pursuing a generic strategy should always be in the core of a firm's strategic plan. Strategies that seek for other goals are falsely set. For instance, some companies may push for a larger market share. While market share is related to competitive position, it is not an independent strategy as much as it is an outcome of well implemented generic strategy. (Porter 1985, p. 25-26). Porter's generic strategies consist of three strategies that companies use to defend

themselves against competition and outperform others (Porter 1985, p. 34-35). The three generic strategies are:

1. Cost leadership
2. Differentiation
3. Focus

There is a vast bundle of attributes a company may combine to create competitive edge over its competitors but two main types rise above others, cost leadership and differentiation. (Porter 1985, p. 11). Focus, a strategy which typically receives less attention, can resemble both low-cost and differentiation depending on its orientation. The main difference with the other two strategies and focus is that focus typically addresses only a narrow target segment in the market and is thus *focused*. Due to serving a more limited public, revenue streams for focused companies typically lie on a lower level than those of their rivals because sales potential of narrowly targeted companies are typically lower. Breadth of assertion is typically an important factor for the other two strategies as they may serve multiple industry segments and even related industries. The existence of focused companies suggests that competitors who follow a “pure” strategy serve their segments poorly as otherwise there would be no room for focused firms to thrive in their territory. (Porter 1985, p. 11-17). Focus as a separate strategy is left outside this thesis because identification of focused companies is difficult based on financial statement data alone. Identifying a focused firm would require further qualitative analysis as focus becomes evident only in studying customer segments. Additionally, Porter clearly states that cost leadership and differentiation are the two main generic strategies. In this study possible focused firms in the sample are labelled as differentiators or cost-leaders if they possess a high asset turnover and low profit margin, or vice versa.

While the main theory of Porter’s generic strategies is widely recognized and accepted, the theory has received criticism on introducing mutually exclusive strategies even though many argue for the possibility of generic strategies to coexist and form a *dual strategy* (e.g. Hill 1988, Hall 1980, Miller 1992 and White 1986). Research has verified that not only could they coexist but even prosper (e.g. Hall 1980, White 1986) while others go even further and claim that adopting single strategies is unwise – even dangerous (e.g. Miller 1992). Miller

(1992) believes that both strategies alone are vulnerable to competition. For instance, it is fairly straightforward to cut costs and attain a low-cost position but it is much harder to cut costs when attempting to maintain a certain level of quality. Hence, Miller argues that the only strategy resilient to competition is that which combines both low cost and differentiation characteristics. Porter expresses that in most cases adopting only one strategy is viable or otherwise a company would become “stuck in the middle” and unable to generate above-industry profitability – in fact, such companies usually fall below industry-average (Porter 1985, p. 16-17). The reason for exclusivity lies in incompatible tradeoffs: Porter argues that differentiation and low-cost strategy are incompatible as differentiation is typically expensive and thus simultaneous cost leadership remains unattainable.

Consistent with Porter’s thoughts, Selling and Stickney (1989) discuss the cost of tradeoffs between profit margin and asset turnover with a concept called *marginal rate of substitution*. A company that is located in either end of the ROA curve (Figure 1) typically has a poor marginal rate of substitution making shifts to the opposite strategy costly. If a company with high asset turnover wanted to make a move towards high profit margins, it would have to give up a significant part of its volumes to achieve a more differentiated position. On the contrary, companies that are located in the middle can be more agile and have more versatile paths when seeking for increases in ROA. Even though literature argues for the possibility to combine both differentiation and cost leadership strategies, in this research the combination is not acknowledged as a separate strategy partially due to above-mentioned controversies.

Noteworthy concerning the upcoming chapters is that companies can utilize differentiation and cost leadership strategies to both products and services. To avoid repetition, the word *product* refers to both products and services.

3.3 Differentiation

Differentiation is about creating a product that is differentiated so that it is perceived unique in the industry. By creating uniqueness, differentiators are able to create buyer value and charge a *price premium*. Typically, differentiating is expensive or at least more costly than non-differentiating. Thus, the aim is to collect a price premium large enough to cover the

costs of more expensive production. (White 1986). Differentiation does not allow one to disregard the importance of cost efficiency. As Hambrick (1983) argues, differentiation strategy does not ignore costs but merely places costs as a non-key component.

White (1986) states that differentiation is responsive to variables that exist in the business environment rather than within the business itself. Outside variables include being responsive to and defining customer needs whether it means installing new technical features, managing premium distribution channels or delivery. Customer needs are truly at the core as they separate companies that are differentiated from those that are merely different (Porter 1985, p. 119). Different companies have products with unique features unasked for by the public and therefore not considered valuable by customers. On the contrary, differentiated companies provide an assertion that traces, or in best case even defines, customer needs. An average customer of a differentiator is unlike that of a cost leader. Miller (1992) describes customers that purchase differentiated produce as non-sensitive to price who may also value brand and thus be brand-loyal.

Even though differentiation is based on the assumption that customers are willing to pay a price premium for specialized products, this might not always be the case. According to Porter (1980, p. 46), there is a risk of setting the price too high which directs customers toward rivals' products because of attractive cost saving opportunities. This may be caused by companies becoming overly differentiated by setting product or service quality on an unnecessary high level, way exceeding customer needs (Porter 1985, p. 160). Additionally Porter suggests that differentiation is sensitive to imitation by rivals (1980, p. 46). As the industry matures, features that once were considered cutting edge may have been copied to the extent where they have become an industry standard, a commodity, for which consumers are no longer willing to pay a premium.

Due to higher prices rooted from extensive R&D, product design or high-quality raw-materials, differentiation typically has a negative impact on demand because not all customers are able or willing to pay for unique features (Porter 1980, p. 38). Thus, attaining a large market share in differentiation is complex due to tradeoffs between high price and high demand. However, Hill (1988) has a more optimistic view as he argues that successful differentiation strategy can have two positive effects on demand. Firstly, increased brand

loyalty decreases price elasticity of demand. Secondly, well-designed, appealing products may increase product demand and enable the company to conquer a higher share of the markets at the given price point. Porter (1980, p. 38) acknowledges that achieving a high market share may not even be in the interest of a differentiator as uniqueness may be tied to a sense of exclusivity which erodes with large popularity followed by a large market share. Whether a company sets to increase market share may be dependent on what type of differentiation strategy a company adopts: Miller (1987) makes a distinction between two types, *complex innovation* that is based on profound product innovation and *marketing differentiation* that relies on psychological appeal such as branding, advertisement and exclusivity. Companies that engage in complex innovation and are able to decrease price elasticity of demand and increase demand (as mentioned by Hill 1988) will not necessarily stand out in ROA disaggregation as differentiators. Instead, having a high profit margin and a high asset turnover, they may move further from the tail and locate somewhere in the middle of the ROA curve.

Porter (1980, p. 37-38) claims that differentiation performs well against all competitive forces. It shields the company against the threat of entry because differentiation requires high initial investments which themselves work as entry barriers but in addition investments must be made in uncertain intangible assets. Soliman (2008) undermines the role of entry barriers in differentiation because high profits attract new competition eventually pushing profits down to normal levels making benefits transitory. Porter (1980, p. 37-38) suggests the power of buyers (and threat of substitutes) to be smaller due to the difficulty of finding substitutes for differentiated products. Suppliers' bargaining power can be addressed with higher margins. Rivalry among existing competitors can be managed with brand-loyalty which decreases price sensitivity of customers.

SOURCES OF DIFFERENTIATION

Porter (1985, p. 119) claims that differentiation is oftentimes perceived too narrowly and uniqueness does not have to arise from product qualities or marketing, as oftentimes falsely believed. Instead, uniqueness can arise from any part in the value chain. White (1986), who

has collected important variables of differentiation from multiple previous research papers², argues that differentiation is generated from factor inputs, processing, products or services, allied services or distribution. Any or all of these can be at key for attaining competitive advantage.

Firstly, factor inputs that may be at key for differentiation include product technology and innovation (White 1986). This is consistent with Miller's (1987) complex innovation strategy. He argues that product innovation and strategies based on innovation are most likely found in industries that are dynamic in nature and experience constant, high technological change. Banker, Mashruwala and Tripathy (2014) noticed that the volatility of ROA is higher for differentiators, making it more risky as a strategy. The investments that enable differentiation, such as R&D and marketing, are uncertain investments in future profitability. Additionally, investments in building intangible assets are riskier because they have no salvage value in case of failed attempts (Porter 1980, p. 9-10). However, Porter notes that intangible assets have to be born only once after which they can be applied to different products and businesses over and over again. Intangible investments may also fight off future competition due to expensive, uncertain investments deterring away future rivals. Also more traditional inputs besides innovation and R&D can form uniqueness. Purchasing raw materials of higher quality than those of competitors can lead to competitive advantage if high-quality raw materials in the end product are valued by consumers (Porter 1985, p. 121).

Secondly, processing flexibility and quality may be decisive factors in differentiating (White 1986). Processing contains a large variety of different operations. For example, low rates of defects or short time to manufacture may be factors to create competitive advantage (Porter 1985, p. 121-123).

Thirdly, the product itself may be the target of differentiation when styling, options, quality, image or product variation is added (White 1986). Hill (1988) states that products are a combination of various characteristics and any of those characteristics can be chosen as a target for differentiation. The number of product characteristics creates the scope for differentiation which ranges from high for complex products to low for simple products, such as bulk chemicals. Also user characteristics can determine the range of differentiation if

² Porter (1985), Levitt (1980), Hambrick (1983) and Hall (1980)

different user groups have differing user needs. Commonly, such targeting is done between industrial and domestic users. While products can be physically differentiated by alternating several product attributes, image creation and brand management may distinguish the product (Miller 1987). However, Miller emphasizes the fact that differentiation based on marketing does not necessarily mean that the product is higher in quality or more high-tech. Branding is simply a matter of selling hard. Imitation is a risk in both cost leadership and differentiation. Over time, the knowledge behind proprietary products and processes tend to become widespread and diffuse in the society reducing competitive advantage (Porter 1980, p. 172). Porter mentions that even though erosion is inevitable, the time period in which diffusion takes place may vary noticeably. The more complex the product, processes and technology, the slower proprietary advantages erode.

Fourthly, the source of differentiation may lie in allied services, including delivery, financing and guarantees (White 1986). The product itself may be undifferentiated if allied services that complement it are valued by customers (Porter 1985, p. 121).

Last, distribution, including post-purchase services, sales support and credit, may be important (White 1986). Selective distribution can be especially important to those engaging in marketing differentiation. Selective distribution includes accepting those channels that are aligned with the company's strategy in terms of image, service quality or credit possibilities (Porter 1985, p. 123). However, differentiation in distribution can be driven by more simplistic factors, such as location of branches (Porter 1985, p. 126).

3.4 Cost leadership

Porter describes cost leadership as a strategy where a firm is the only cost leader in the market, not one of many low-cost companies. Between multiple low-cost players competition is typically fierce resulting in low profitability for all - usually making a low-cost position unfavorable (Porter 1985, p. 12-14). However, cost leadership and low-cost strategy are used as synonyms in literature and also in Porter's own books and hence they are used as synonyms here. The selling price is somewhat given by the market but cost leaders attempt to push prices lower than those of competitors to the level where competitors can no longer survive (Miller 1992). White (1986) claims that low-cost strategy focuses on controlling

costs since profit opportunity is in pushing costs as low as possible so that the company is able to generate a small margin. Even if cost leaders do charge lowest prices, the industry's cost leader may generate high returns due to more cost efficient processes (Porter 1985, p. 12-14). An embedded assumption in the strategy is that by setting low prices, cost leaders are able to increase their sales volume and thus compensate for small margins.

White (1986) states that opposed to differentiation, cost leaders' main interest is in variables that exist in internal operations of the business rather than in the business environment. According to him, the main interest is in enhancing efficiency whether it is by improving the productivity of labour, replacing inefficient equipment or maintaining low overhead costs. Hambrick (1983) agrees on the importance of efficiency which he says can be obtained in two ways: cost efficiency and asset parsimony. Cost efficiency depicts the level of costs required to produce one unit of output whereas asset parsimony measures the level of assets that are required to produce one unit of output. Both cost efficiency and asset parsimony impact the overall efficiency.

Customers of cost leaders are not searching for premium value. Instead, Hambrick (1983) describes customers as price-sensitive whose consumption behavior is mainly driven by price leading them to select products cheaper than the equivalent by competitors. Murray (1988) claims that price sensitivity acts as the pre-requirement for cost leadership but alone it is not a sufficient foundation to build a successful strategy on. Instead, he suggests that the cost structure must be divergent from other low-cost competitors within the industry. Differing cost structures may vary due to many reasons from managerial input to economies of scale.

Similarly to differentiation, also low-cost strategy is able to fight off competitive forces well. Porter (1980, p. 35-36) suggests that the threat of entry is contained by scale of economies which force entrants to make substantial initial investments to achieve profitability. Bargaining power of buyers is limited due to the company already occupying the lowest price position which is why the strategy also compares well to substitute products. Due to low costs, the company has a shield and flexibility against power of suppliers in case suppliers increase prices. Low costs also protect the company from rivalry among existing competitors because once companies start price warfare, the company with lowest costs has the ability to survive longer and better than the rest.

According to Porter (1980, p. 45), cost leaders typically rely heavily on their secured position that is achieved through economies of scale and entry barriers created by major investments on fixed assets and efficient production due to learning. Even if these characteristics help in the fight against the threat of rivals, Porter underlines that cost leadership is also vulnerable to risks. Firstly, technological development may help entrants to penetrate the industry while nullifying incumbents' benefits from learning and investing. Entrants may be able to imitate incumbents or invest in better production equipment. As the strategy's backbone is to hold expenses low, inflation on prices may balloon up costs and narrow down the price difference between cost leaders and differentiators. Additionally, in commodity or commodity-like products where purchase decisions are made solely on price, price warfare may force a company to reduce its margins because there is no insulation or protective factor that would allow the company to keep higher prices and still generate sales (Porter 1980, p.19).

SOURCES OF COST LEADERSHIP

Similarly as with differentiation, White (1986) has collected important sources of cost leadership from multiple papers³. Cost leaders' important variables lie in factor inputs, processing, products or distribution.

Firstly, efficient utilization of factor inputs is important (White 1986). According to Porter (1985, p. 89) reducing labour costs is overemphasized in relation to other inputs which may include anything from raw materials to professional services, office spaces and capital goods. Further he argues that the cost of inputs is affected by three measures all of which are important: unit price, utilization rate and their effect on other activities in operations. While the latter two are more tied to internal operations, unit cost is directly related to bargaining power of buyers. Economies of scale refer to increased efficiency and cost advantages that result from producing in volumes large enough to gain bargaining power (Porter 1985, p. 70-71, 92). Bargaining power may allow the buyer to set the terms of transaction whether it comes to price, quality or other terms of the purchase (Porter 2008). Porter suggests that if there are only few buyers in the industry or the buyers purchase in large volumes which are substantial in relation to the size of the vendor, the buyer may have leverage over the vendor

³ Porter (1985), Levitt (1980), Hambrick (1983) and Hall (1980)

and be able to set rules of the transaction thus shifting margins from the vendor to itself in the form of less expensive inputs. An industry becomes easily a subject to the power of buyers if it is fixed cost intensive. Due to high fixed costs and thin margins, it is in the interest of companies to maintain high capacity and high volumes by discounting and playing each other off.

Secondly as recognized by White (1986), efficient processing helps in managing expenses. Efficient processing may root from process engineering skills, low waste levels, work productivity or logistics. Banker, Mashruwala and Tripathy (2014) state that cost leaders tend to invest in tangible assets which are typically less risky and provide more certain returns than investments in intangible assets. To achieve economies of scale cost leaders must make heavy investments in capital expenditures (Banker, Mashruwala & Tripathy 2014). Initial investments are not enough as cost leaders must constantly substitute their fixed assets to ensure profitability and higher operational efficiency which are crucial in sustaining competitive advantage (Porter 1980, p. 9-10). Soliman (2008) agrees and believes efficient production to be a difficult target for imitation due to high demand of capital. However Banker, Mashruwala and Tripathy (2014) argue that in a business environment where knowledge diffuses rapidly, it is hard to maintain a position based on superior operational techniques and best practices. Additionally, being the first-mover in creating new processes will provide only transitory competitive advantage as imitation is bound to take place eventually even if the process is formally protected by patents or copyrights (Murray 1988). Even though proprietary knowledge may not always be sufficient to act as an entry barrier, Porter argues that heavy initial investments in fixed assets and the key role of economies of scale may deter competition away (1985, p. 112).

Thirdly, White (1986) argues that low-cost strategy may be embedded in the product or service itself. Typically, low-cost products are highly standardized (Miller 1987). Even though price is a decisive factor in purchase decisions, Porter (1985, p. 12-14) notes that differentiation aspect cannot be utterly ignored. *Parity* means that the product has to be similar in quality to those of competitors or it is built from different product attributes and is thus different but equally attractive to consumers. If products are equipped with poor and unappealing characteristics, customers switch to competitors. *Proximity* means that if a

product is not similar in quality, the company is forced to rely on discounting. So if products are equipped with poor or unappealing characteristics, a firm has to use discounting to boost sales. The discounts should not, however, be so large that they kill already small margins and thus nullify the low cost advantage displacing the firm from its above-industry profitability position. To maintain its competitive advantage, a cost leader and a differentiator, must achieve parity and proximity relative to its competitors.

Fourthly, White (1986) argues that efficient distribution may create competitive advantage for a cost leader in the form of efficient scale customers, a simple product line or price discrimination.

4 RESEARCH METHODS AND HYPOTHESES

This chapter introduces the hypotheses and objectives of the research in a more detailed manner. Following the introduction of previous research and hypotheses, the data sample and the sorting method are represented. The research method is thoroughly introduced including the difference-in-differences OLS regression.

4.1 Hypothesis development

There have been multiple studies on the link between generic strategies and performance, many that date back to 1980-1990 to the time Porter first introduced the theory of generic strategies. The ability to achieve superior performance by adopting either low cost or differentiation strategy have been supported by evidence (e.g. Hall 1980; Hambrick 1983; Dess & Davis 1984; White 1986). Even more recent studies like the one by Banker, Mashruwala and Tripathy (2014) support this view. However, not all studies share similar results of straightforward causalities. For instance, Miller and Freusen (1986a) who set out to test Porter's generic strategy types failed to discover any pure generic strategies in their sample. Instead, they found mixtures of those strategies. Miller and Freusen (1986b) attempted to verify the relationship between the adoption of generic strategies and performance. Companies that possessed capabilities in differentiation, cost leadership or focus substantially outperformed other companies. Yet, the researchers suggested that the results are more related to successful companies possessing many good characteristics whereas ill-performing companies only seemed to possess negative ones. The writers therefore concluded that the results rooted from companies having strategic advantages rather than having adopted generic strategies.

While many studies concentrate on proving the superiority of generic strategies in relation to other strategies, fewer studies explore actual sustainable competitive advantage that those strategies enable to create. According to Banker, Mashruwala and Tripathy (2014), sustainable competitive advantage refers to the ability to maintain competitive advantage and profitability over time. Companies with sustainable advantage would be more resilient to external shocks that typically tend to waver profitability. Many studies have proven the

contemporaneous superiority, but fewer the sustainability of superiority. Their study consisted of 12,849 firm-year observations over the period 1989-2003. According to the results, both strategies have positive correlations with ROA and outperform other companies in the sample. However, the research suggests that differentiation is able to clearly sustain and even improve company performance in the future compared to cost leadership. As an explanation, the writers suggest that efficient asset utilization as a creator of competitive advantage is transitory because it is easy to imitate. To maintain competitive advantage, cost leaders have to continuously improve asset efficiency. On the contrary, differentiation is often based on R&D, innovation, technology, advertising or brand, which are far more difficult to imitate, especially in short-term.

Only few papers have tackled the issue of what strategies can best survive in turbulent economies (Le & Nhu 2009; Gulati, Nohria & Wohlgezogen 2010). This topic is of particular importance considering this thesis. Le and Nhu (2009) did an in-depth case-study on competitive strategies in a recession economy. They selected one foreign discount store that operated in Finland in the food retail industry. By observing the food discount store, they noticed that during a recession the company intentionally shifted its strategy from low-cost to a more focused strategy that had both low-cost and differentiation elements embedded in it. For instance, the company aimed to increase efficiency in logistics, reduce waste and withdraw unprofitable products. In terms of differentiation, it enhanced its product selection to include a wider variety or differentiated produce. The strategy took off well and in a 4-month observation period it showed positive signs. However, one case company combined with a short observation period has low applicability in other contexts.

Gulati, Nohria and Wohlgezogen (2010) had a more extensive sample in their analysis of strategy selection in recession and performance. They studied 4,700 public U.S. companies over three recessions or economic slowdowns: 1980-1982, 1990-1991, and 2000-2002. For each period, the researchers included three years pre-recession, all years during recession and three years post-recession. According to their research, worst performers were prevention-focused, i.e. those companies that aggressively engaged in defensive cost-cutting. After recession, these companies were left with sales and earnings growth of 6% and 4% respectively. Companies that did perform slightly above average were promotion-focused

which embraced the opposite strategy and saw recession as an opportune moment to undergo major changes in the organization and heavily invest in R&D, talent and businesses. Promotion-focused companies were able to reach a post-recession sales and earnings growth of 8% and 6%, respectively. Progressive companies are most likely to perform well with sales and earnings growth of 13% and 12%, respectively. During recession, they do cost-cuts which mainly target at increasing operational efficiency. This strategy yields savings during the crisis but also supports long-term growth with permanent savings that boost profits in comparison to rivals. Cost-cutting and operational efficiency are not alone adequate remedies. Instead, they are typically combined with investments that spur future growth.

Additionally, and also interestingly in terms of this research, the results of Gulati, Nohria and Wohlgezogen (2010) underlined the severe effects that recessions had on companies. Out of all companies, 17% went either bankrupt, were acquired or went private. For the survivors, bouncing back was slow. Three years after the recession, 80% of the survivors had not regained the growth rate they had achieved prior to recession. Even more worryingly, only 40% had regained their absolute level of sales that existed prior to the recession. Only 9% were able to thrive during the recession and exceeded their pre-recession performance and beat their competitors by a minimum of 10% in growth of sales and profit.

Little, Mortimer and Keene have participated in the writing of multiple papers that study differentiation and cost leadership in retail industry. Their studies are relevant since the industry under observation in this thesis is retail. Little et al. (2011) did a research on how the recession of 2008 impacted profitability in retail companies depending on whether the companies embraced a low-cost or differentiation strategy. The dependent variable was selected consistently with modified DuPont model which uses return on net operating assets (RONOA) instead of ROA. 111 companies were selected from database Compustat. The sample was sorted into differentiators and cost leaders by the 40 highest and 40 lowest relative values for operating profit margin and asset turnover. Of those categories, 28 companies were selected as differentiators and cost leaders to the final evaluation. The research was conducted by one way ANOVA models run for each strategy revealing that differentiation yielded substantially higher RONOA ratios pre-crisis than cost leaders (25.1 % and 16.9 % in 2006, 23.9 % and 17.8 % in 2007, respectively). Post-crisis, RONOA ratios

of differentiators had lowered substantially more in relative terms in comparison to cost leaders (20.5 % and 16.6 % in 2008, 16.6 % and 16.5 % in 2009, respectively). However, post-crisis results were statistically insignificant. As a conclusion, the writers suggest that in their sample of retail space differentiation outperforms cost leadership measured by RONOA for non-recession years of 2006 and 2007. No such statement could be made for recession years. The evidence of Hambrick's (1983) study showed to the opposite direction. His sample suggested that differentiation strategy was more successful in weak or turbulent economies while cost strategies performed well in rather stable environment.

Little, Little and Coffee (2008) evaluated alternative strategies in retail industry and their impact on RONOA in 2007-2008. The data included 129 companies that were gathered from The Value Line Investment Analyzer. With similar method to Little et al. (2011), companies were sorted by the 50 highest and 50 lowest relative values for operating profit margin, asset turnover and RONOA and a one way ANOVA regression was run. The research confirmed that the companies in the sample that specialized in differentiation substantially outperformed retail firms with cost leadership strategy. Out of the differentiator sample of 31 companies, 23 ranked in the category of high RONOA ratio whereas zero of the cost leaders' sample of 27 companies received a high RONOA ratio. On the contrary, 18 cost leaders were placed under the low RONOA ratio category. The consistencies found in the studies of Little, Little and Coffee (2008) and Little et al. (2011) partly root from the same researchers who have studied the phenomenon in more or less the same period, with similar methods and an emphasis in retail industry. Even so, the results by Little, Little and Coffee (2008) suggest the impact that strategy has on RONOA to be even more drastic. Differentiators' average RONOA ratio was 29% meanwhile cost leaders' average ratio reached only 7%.

Little, Mortimer and Keene (2012) did a similar study to the one by Little et al. (2011). Instead of observing the impact that differentiation and cost leadership had on profitability, the researchers focused on the relationship between brand value and profitability in retail industry. Where Little et al. (2011) were unable to find a correlation between differentiation and higher performance in a recession economy, Little, Mortimer and Keene (2012) found evidence that suggests that high brand value does relate to higher performance during a

recession. The research observed pre-crisis years 2006-2007 and recession years 2008-2009. Performance was measured by return on net tangible assets (RONTA) and the retail industry company data were derived from Compustat database. The final dataset consisted of 72 companies which were sorted to high and low brand value categories based on Corebrand LLC 2006 database. ANOVA process was run on all companies. The results showed that high brand value is linked to greater financial performance. Retail companies with high brand value had a higher mean RONTA than companies with little or no brand value on three out of four years and in general experienced smaller downward trends during the observation period.

4.2 Research hypotheses

Three hypotheses were selected for this research.

H1. Pre-crisis, cost leadership and differentiation strategies in retail industry on average outperform in profitability those companies that have not engaged in either strategy.

The first hypothesis is primarily derived from Porter's literature and proved many times by various researchers (e.g. Hall 1980; Hambrick 1983; Dess & Davis 1984; White 1986). Generic strategies allow companies to generate competitive advantage and thus reach above-industry performance. This statement argues that generic strategies outperform other companies i.e. the control group in this study.

H2. Pre-crisis, differentiation strategy outperforms cost leadership in retail industry in terms of profitability measured by ROA.

The second hypothesis claims that differentiation strategy outperforms cost leadership in absolute terms in retail industry before the financial crisis. Study by Little et al. (2011) detected such behavior in retail industry during non-recession economy. Similar results were brought by Little, Little and Coffee (2008) as well as Little, Mortimer and Keene (2012). The industry specification in the hypothesis is vital as this statement cannot be applied to serve

other industries due to divergent industry structures. Additionally, for the same reason this study cannot be extended to apply to other industries.

H3. Post-crisis, cost leadership strategy in retail industry experiences smaller relative decreases in profitability, measured by ROA, than differentiation.

The third hypothesis answers the research question of which strategy outperforms during the recession. The assumption made here is that cost leadership outperforms differentiation because weak economic climate reduces consumers' purchasing power directing consumers toward low-price goods and away from more expensive, differentiated produce. Consumers might buy similar, substitute products from cost leaders or alternatively postpone their purchases and wait for more lenient times. Little et al. (2011) who examined the same topic discovered that while differentiation outperformed cost leadership during a non-recession economy, suggested that it may not necessarily do so in a recession environment. In fact, even though differentiation performed better in absolute terms, it experienced larger losses in relative terms.

It is noteworthy to mention that while the first and second hypotheses observe the phenomenon in absolute terms, the third hypothesis attempts to do so in relative terms. Relativity is necessary in this case because the underlying assumption is that on average all firms, independent of whether they adopted a generic strategy or not, suffer from declining ROAs during the crisis. The best performer in this case is the strategy with least relative decreases in ROA. The interest of this study lies in *changes* rather than absolute figures.

4.3 Data

The data is gathered from WRDS's Compustat database. The data represent retail industry, the sub industries of companies are listed in Table 1. Retail categorization is based on Standard Industrial Classification (SIC) codes. The codes used here are retail sector's SIC codes that range from 5200 to 5999. The reason behind selecting one industry only is based on the prerequisite of homogeneity of ROA. ROA comparisons are only possible between homogenous companies, a requirement which oftentimes only exists within the same

industry. Using one industry only makes the results more reliable and decreases the need to add control variables to exclude industry-driven biases in the results.

TABLE 1: INDUSTRY CATEGORIZATION OF THE SAMPLE

The table below presents how the sample of this research is divided to sub-categories within the retail industry. The columns under Total, Differentiators, Cost Leaders and Control Group represent the number of companies in units. In total, the sample consists of 197 companies, 45 of which are differentiators, 45 cost leaders whilst remaining 107 companies belong to the control group.

RETAIL INDUSTRY'S SUB-INDUSTRIES				
	Total	Differentiators	Cost Leaders	Control Group
Building materials, hardware, garden supply, and mobile home dealers	8	1	3	4
General merchandise stores	18	6	5	7
Food stores	16	2	3	11
Automotive dealers and gasoline service stations	15	2	6	7
Apparel and accessory stores	28	3	6	19
Home furniture, furnishings, and equipment stores	18	2	3	13
Eating and drinking places	37	15	3	19
Miscellaneous retail	57	14	16	27
Total	197	45	45	107

Table 1 presents how companies in the sample are divided into sub-industry categories within retail industry. As the table shows, the overall sample overemphasizes miscellaneous retail with 57 (29%) companies belonging in this group. Miscellaneous retail includes for example drug stores and other proprietary stores, liquor stores, used merchandise stores and fuel dealers. In addition, by looking at the table it is apparent that strategies do not emerge equally frequently in all sub-categories, the most noticeable difference being in eating and drinking where differentiation is overemphasized. As restaurant business is divergent in nature from for example fuel dealing, the requirement of homogeneity is not completely fulfilled within retail industry even if it provides a more common ground for operation.

As this research is based on panel data, i.e. the same companies are used in the sample throughout the observation period, a prerequisite exists for all companies to have data for each observation year. This causes a *survivor bias* in our results, as companies that have gone bankrupt, merged or in other ways changed their form during the observation period are automatically disqualified from the sample leaving us with companies that have survived. This might potentially distort the results especially if one strategy is more likely to lead in bankruptcies or takeovers during the financial crisis. Longitudinal panel data, however, allows to observe changes that occur within individuals over time rather than getting a

glimpse of the situation in a single time period for which repeated cross-sectional surveys are preferred (Yee and Niemeier 1996). Additionally Yee and Niemeier (1996) note that panel data has the ability to provide higher statistical power due to lower standard errors.

The data were narrowed down from Compustat's initial 568 companies that operated in retail industry during 2006-2009 and located in the U.S. and Canada. Since the paper studies the effect that the financial crisis of 2008 had on different companies dependent on strategy, the time periods of the research are divided into two: pre-crisis time period (2006, 2007) and post-crisis time period (2008, 2009). The reason for this cut-off is based on the changes in growth rate of the U.S. gross domestic product. During 2008, GDP growth in the U.S. turned negative and plummeted rapidly as a result from the financial crisis. The division is same to that of Little et al. (2011). To increase comparability, only firms whose fiscal years ended within a time period from November to February were included. Further, observations that did not have data for the entire period 2006-2009 or lacked other required data were dismissed from the sample reducing its size to 198 observations. The only anomaly erased from the sample was a company with a profit margin ratio of over 1. The final sample size consists of 197 companies which is 86 companies more than in the sample of Little et al. (2011). What is more, measured in firm-year observations the sample size increases to 788. Interestingly, the sample of this research is noticeably bigger than their sample despite both data being gathered from Compustat database for the same industry and for the same time period. Thus, the results of this study are, at least sample-wise, more reliable.

The sorting of the sample to strategy groups is highly important as faulty sorting may lead to different results. Data are divided to nine deciles based on ROA in 2006. Decile 1 represents companies with lowest ROAs whereas decile 9 consists of firms with highest ROAs. Within these deciles, companies are sorted based on asset turnover: five companies with highest asset turnovers represent cost leaders whereas five companies with lowest asset turnovers represent differentiators. Once the same division is repeated for groups 1-9, cost leaders and differentiators from all groups are united.

Sorting first based on ROA is necessary to eliminate biases that categorizing solely on asset turnover and profit margin would create. Differentiators would experience an upward bias since only companies with the highest profit margins would be categorized as differentiators,

causing them only to have positive profit margins and thus positive ROAs. On the contrary, the sample includes 26 companies with negative ROAs in 2006, all of which would be categorized as cost leaders. Thus cost leaders would end up with an unproportioned number of negative ROAs which would skew the results and present cost leadership as a rather unsuccessful strategy. The purpose of cost leadership is under no circumstances to push profit margin below zero and make a loss. Thus, *double sorting* technique is necessary.

TABLE 2: DECILE RANKS

Companies were divided into nine deciles based on ROAs in 2006. All deciles consist of 22 observations except for Decile 9 which includes only 21 companies due to an uneven number of observations (197) in the sample. Decile 1 consists of observations with lowest ROA ratios in sorting year 2006 whereas Decile 9 contains companies with highest ROAs in 2006. Figures in (brackets) represent negative numbers. ROA ratios of the entire sample range from -34.7% to 51.3%. However, lengths of ranges are shorter in the mid-deciles indicating that most of our observations fall in the middle.

DECILE RANKS IN 2006				
Decile Rank		ROA Range	Length of Range	Number of Companies
1	<i>(lowest ROAs)</i>	(0.347) - (0.014)	0.333	22
2		(0.012) - 0.035	0.048	22
3		0.036 - 0.049	0.013	22
4		0.049 - 0.063	0.014	22
5		0.064 - 0.078	0.014	22
6		0.078 - 0.096	0.018	22
7		0.097 - 0.111	0.013	22
8		0.113 - 0.148	0.035	22
9	<i>(highest ROAs)</i>	0.151 - 0.513	0.362	21

Decile ranking presents one problem as seen in Table 2: the length of each decile measured by ROA is different and lengths may vary substantially. Within deciles 3-7 the difference between highest and lowest ROA is only around 1.5%-units. For deciles 1 and 9 variation is the strongest and the difference between highest and lowest ROA is over 30%. Companies with extremely high or low ROAs may act as outliers or leverage points causing biases.

TABLE 3: DIFFERENT DECILE RANKING METHODS

The two tables below represent the difference in outcome depending on decile sorting. In Panel A, observations are first sorted into nine deciles based on ROA: decile 1 consists of observations with lowest ROA ratios in sorting year 2006 whereas decile 9 consists of companies with highest ROAs in 2006. In Panel B, observations are sorted into nine deciles first based on asset turnover: decile 1 consists of companies with the lowest asset turnover ratios in 2006 whereas decile 9 consists of those with highest asset turnovers. Dechow, Richardson and Sloan (2008) note that the first sorting variable should have substantial variation while the second sorting variable stays relatively constant. This holds true with the sample of this research. When ROA is used for initial ranking (Panel A), it has large variation of 0.324 (high-low). On the contrary, when ROA is used as the secondary ranking variable (Panel B), it receives variation of only 0.081. The same phenomenon is visible with asset turnover. The comparison allows us to conclude that Panel A, which is the sorting method selected for this study, does create variation for ROA and keep asset turnover relatively constant as it should.

PANEL A: Decile ranking on ROA (ROA_{it}) after controlling for asset turnover (AT_{it})			
Decile Rank	ROA_{it} (mean)	AT_{it} (mean)	PM_{it} (mean)
1 (<i>lowest ROAs</i>)	(0.119)	1.886	(0.074)
2	0.014	1.776	0.016
3	0.043	2.207	0.029
4	0.057	2.132	0.030
5	0.070	2.267	0.035
6	0.087	2.078	0.047
7	0.105	1.985	0.058
8	0.130	2.118	0.069
9 (<i>highest ROAs</i>)	0.206	2.712	0.086
high-low	0.324	0.936	0.160

PANEL B: Decile ranking on asset turnover (AT_{it}) after controlling for ROA (ROA_{it})			
Decile Rank	AT_{it} (mean)	ROA_{it} (mean)	PM_{it} (mean)
1 (<i>lowest ATs</i>)	0.874	0.027	0.039
2	1.343	0.037	0.026
3	1.592	0.054	0.034
4	1.760	0.073	0.041
5	1.918	0.085	0.044
6	2.197	0.078	0.035
7	2.506	0.061	0.025
8	2.894	0.067	0.023
9 (<i>highest ATs</i>)	4.141	0.108	0.026
high-low	3.267	0.081	0.022

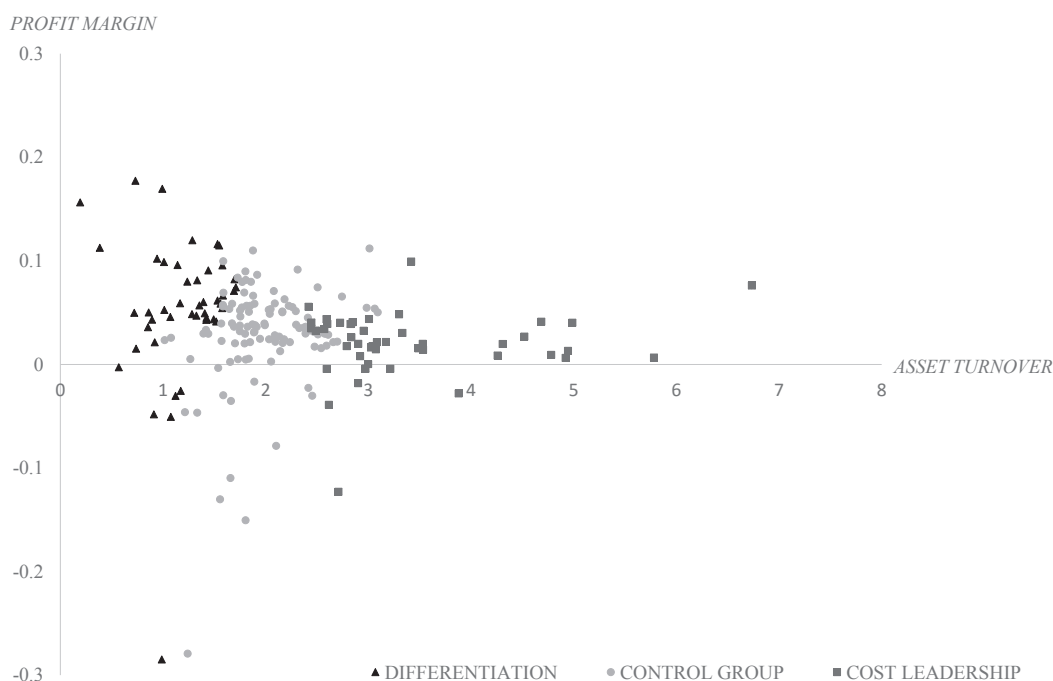
Table 3 shows different decile ranking methods. Panel A shows a version in which the initial sort is executed with ROA and double sort with asset turnover. Panel B conducts the initial sort with asset turnover and secondary sort with ROA. Sorting in Panel A is better because differentiation, cost leadership and the control group all receive observations with high and

low ROAs. Additionally, average asset turnover in each decile remains rather constant as it should. Sorting according to Panel B would allow cost leaders to have very different asset turnovers, some high and some low, violating the theory of cost leaders having high asset turnovers.

Figure 3 illustrates company positioning during the sorting year 2006. The figure suggests that the sorting done for this study makes sense once reflected against the theory. Companies in the figure are located in a similar curve as was seen in the ROA curve: differentiators are in northwest while cost leaders remain in southeast.

FIGURE 3: COMPANY POSITIONING IN 2006

The figure below represents the positioning of observations in sorting year 2006. A company in the figure is marked with a triangle (▲) if the company is a differentiator, a square (■) if the company is a cost leader and a circle (●) if the company belongs to the control group.



4.4 Variables

ROA is the dependent variable of this research and it, along with its multiple modifications, have been used in research that study the relationship between strategy and performance (e.g. Selling & Stickney 1989; Hansen & Wernerfelt 1989; Gleason, Mathur & Mathur 2000;

Little et al. 2011; Banker, Mashruwala & Tripathy 2014). While ROA is used in this research, there are many other financial ratios that can be combined to get an understanding of a strategic position. Balsam, Fernando and Tripathy (2011) use a set of six financial ratios to interpret strategy. These ratios include for example EMPL/ASSETS, the ratio of employees to total assets to measure input efficiency and R&D/SALES, the ratio of research and development to total sales to depict the extent to which the company engages in development activities.

Control variables have, to a large extent, been derived from previous research and are presented in the Table 4 below.

TABLE 4: CONTROL VARIABLES

The table below presents the control variables used in the regression model. The variables to be controlled are size of firm i in year t ($Size_{it}$), operating leverage of firm i in year t (Far_{it}) and leverage of firm i in year t (Lev_{it}).

CONTROL VARIABLE	DEFINITION	MEASURE
$Size_{it}$	Firm's size	Ln(sales)
Far_{it}	Firm's operating leverage	Fixed assets/total assets
Lev_{it}	Firm's leverage	Total debt/total assets

First control variable is firm size ($Size_{it}$) measured by the natural logarithm of sales. A study by Kim and Burnie (2002) concluded that small firms, on average, tend to have lower ROAs than their larger counterparts. Aligned with these results, Gleason, Mathur and Mathur (2000) also argue for large size to positively correlate with performance in European retail industry. For this reason, the writers suggest that retail firms should be looking for ways to increase their market share. Size was also used as a control variable in a research by Banker, Mashruwala and Tripathy (2014) who observe the ability to create sustainable advantage with generic strategies. As they have multiple industries, they calculate market share by dividing company sales by industry sales. However, in this paper the research consists of one industry only, making the denominator unnecessary. Gleason, Mathur and Mathur (2000), Balsam, Fernando and Tripathy (2011) and Little, Little and Coffee (2009) all use a logarithm of sales to describe firm size. However, many other variables can be used for controlling firm size. For example, Soliman (2008) uses a logarithm of market value of equity whereas Hansen and Wernerfelt (1989) use the logarithm of total assets.

The second control variable, operating leverage or fixed assets ratio (Far_{it}), is consistent with the research by Selling and Stickney (1989). They provided evidence that companies with high fixed costs to total costs (high operating leverage) experience high levels of volatility in ROA if revenues fluctuate. Since this thesis observes the impacts of the recession hitting the economy and lowering consumer demand, it is expected for companies with high fixed costs to suffer from larger decreases in ROA than other companies. The proportion of fixed assets to total assets provides a rough estimate of cost structure and whether it prefers fixed costs over variable costs. Operating leverage was used as a control variable by Gleason, Mathur and Mathur (2000) in their study on the relationship between culture, capital structure and performance in the European retail sector.

The third control variable is leverage (Lev_{it}) that was controlled with different measures also by Banker, Mashruwala and Tripathy (2014) and Gleason, Mathur and Mathur (2000). Contrary to those studies, this thesis has already excluded the effect of leverage in ROA by adding tax-adjusted interest expenses back to net income. However, a research by Opler and Titman (1994) that studies indirect costs of leverage found out that highly leveraged companies lost market share to their less-leveraged rivals during economic downturns. Indirect costs of debt could be customer, competitor or manager driven. Customers and stakeholders might abandon the company, competitors take on aggressive measures to gain more market share or managerial actions lead to further distress. The research concluded that financial distress has significant indirect costs and thus influences performance. Further, companies with specialized products (and high R&D) coupled with high leverage ratio during an economic downturn were most sensitive to financial distress. Leverage may increase shareholder returns under favorable economy but respectively lower them during economic downturns (Brealey, Myers & Marcus 2012, p.138).

4.5 Difference-in-differences method

Difference-in-differences method, often referred to as “DD” or “DID”, is a widely used research method in econometrics for examining causal effects, one typical form being studies that observe the effects of policy changes. DD can be used for repeated cross sections but also for panel data. (Imbens & Wooldridge 2007). The aim of the method is to discover causal

relationships and whether a treatment group has experienced a change because of the treatment or due to other factors.

A basic simple DD case described by Imbens and Wooldridge (2007) consists of two groups that are observed under two time periods. Groups are divided in two, the treatment group and the control group based on whether an individual is subject to a treatment. If an individual is subject to a treatment, it will fall under the treatment group, otherwise it will be included in the control group. The two time periods consist of the pre-treatment period and the post-treatment period. The treatment group is subject to a treatment during the second time period but not during the first. The control group is not a subject to any treatment in either first or second time period. The average gain of the control group is subtracted from the average gain of the treatment group revealing the part of the gain that was caused solely by the treatment or interference assuming no omitted variables exist.

The quality of the method is largely dependent on selecting an appropriate and comparable control group. One of the key assumptions in DD is the *parallel path assumption*. Meyer (1995) argues that in time-series research with two groups there has to be strong evidence that both groups would have been comparable over time and shared an identical time-trend in the absence of the treatment. A widely noted research with DD was done by Card and Krueger (1994). They evaluated the impact that a minimum-wage law amendment had on employment in New Jersey. In New Jersey minimum wage was risen from \$4.25 to \$5.05. As a treatment group, the researchers used fast-food restaurants in New Jersey that were subject to the new law. Control group consisted of similar restaurants in the neighboring state, Pennsylvania, where minimum wage remained unchanged.

Using a DD estimator reduces or eliminates biases that exist in other, simpler estimators (Saez 2004). DD estimator has benefits compared to ones that lack either a control group or two time periods. Absence of a control group creates a bias if a time-trend exists in the outcome because in that case time trends will be falsely interpreted as a part of the treatment effect. According to Pischke (2005), no need for a control group exists if there were no concurrent time trends. In this case, only a before-after measurement for the treatment group would be enough. However, if a control group is included but the design lacks two time periods, a bias emerges if there are permanent differences between the groups that cause a

difference in the outcome (Saez 2004). In this case, a permanent trend will be falsely interpreted as treatment effect. These permanent trends are called *fixed effects* (Pischke 2005).

While this thesis is using DD, the strict parallel path requirement does apply due to missing counterfactual i.e. not having an untreated control group. All companies, differentiators, cost leaders and members of the control group were subject to the financial crisis making it impossible to include a comparison group that would not have been affected by the crisis. Thus, in this research both treatment and control groups are subject to an interference. Since the aim of this thesis is to observe which strategy survived best after the crisis rather than studying the effect that the crisis had on companies, a counterfactual is not needed. Without an untreated counterfactual it is not possible to draw conclusions on how much of the ROA changes are actually caused by the crisis and what percentage is rooted from other unrelated factors. Even so, having a treated control group gives the study more foundation to build its assumptions on: now the question answered is how much better or worse did differentiation and cost leadership perform compared to them not having adopted a generic strategy. The purpose of counterfactuals is to showcase the trend that the treatment group would have followed, had it not been subject to a treatment (Meyer 1995). Similarly, inclusion of a control group traces the trend that differentiators and cost leaders would have followed had they not adapted a generic strategy.

Due to the fact that this research lacks a control group in a traditional DD meaning, the term control group does not refer to an untreated control group. Instead, control group is used as a synonym for all companies that have not adopted either a low-cost or differentiation strategy (i.e. $DIFF_i = 0$ and $LEAD_i = 0$).

REGRESSION MODEL

Consistent with Saez (2004), in the below equations, T expresses groups and T=1 individuals that are subject to a treatment while T=0 those who belong to a control group. Coefficient t indicates time periods with t=0 standing for pre-treatment time period and t=1 for post-treatment time period.

The general difference-in-differences regression model is the following:

$$Y_i = \alpha + \beta T_i + \gamma t_i + \delta (T_i \times t_i) + \varepsilon_i \quad (4)$$

where

- Y_i = outcome, dependent variable with observations $i = 1, 2, 3, \dots, n$
- α = intercept term
- β = average permanent differences between treatment and control groups
- γ = time trend common to control and treatment groups
- δ = true effect of treatment
- ε = error term for the i th observation

The estimation is carried out with a linear probability model, Ordinary Least Squares (OLS). The OLS regression measures the impact of independent variables on the dependent variable by minimizing the sum of squared error term $\sum_{i=1}^n \hat{\varepsilon}_i^2$.

Following is the regression equation:

$$\hat{Y}_i = \hat{\alpha} + \hat{\beta} T_i + \hat{\gamma} t_i + \hat{\delta} (T_i \times t_i) \quad (5)$$

The hat (“^”) represents an estimate for the regression coefficient. Slope coefficients $\hat{\alpha}$, $\hat{\beta}$, $\hat{\gamma}$ and $\hat{\delta}$ illustrate the estimated change in dependent variable \hat{Y}_i when the independent variable changes by one unit holding all other independent variables constant. For all observations, the residual is $\hat{\varepsilon}_t$ which shows the difference between the actual observation and the fitted line. Additionally, the intercept term depicts the value at which the regression line intercepts the y-axis (i.e. all independent variables are at zero). The interest of the study is in the interaction term, $\hat{\delta}$. Provided that no other variables affect the interaction term, $\hat{\delta}$ should depict the true effect of the treatment (Wooldridge 2013).

5 RESULTS AND ANALYSIS

This chapter represents the empirical part of the thesis where data are analyzed and hypotheses and research questions addressed. Firstly, the data are analyzed by tables illustrating descriptive statistics that indicate the changes in annual ROAs dependent on different strategies. The second part includes the regression analysis, the purpose of which is to interpret the data with difference-in-differences approach and reveal the statistical significance of the results. Regression analyses always require robustness checks that verify the results as also done in this research. Final conclusions are drawn and summarized in Chapter 6. *Conclusions*.

5.1 Annual descriptive statistics

Table 5 shows the descriptive statistics of each strategy group during each year and also concludes the average performances before and after the financial meltdown. For both differentiation and cost leadership there were 45 observations that were followed throughout the observation period leading to 180 firm-year observations. When looking at differentiators in Table 5, it is obvious that ROA ratios prior to the crisis were noticeably higher than directly after it. This pattern is visible for all strategy groups. In 2006-2007 average ROA for differentiators was 6.1% from where it fell down to -2.2% in 2008. Even though ROA experienced a sharp fall, standard deviation also grew during 2008 indicating that the performance between differentiators varied much more in comparison to the previous year. Within strategies there were companies that performed better than others. Same trend is visible for all strategies. Differentiators bounced back rather quickly after the initial shock to reach a ROA of 4.3% already in 2009. In fact for all strategies the last observation year 2009 is clearly better than 2008 indicating that the initial shock pushed profitability down tremendously but recovering started early.

Descriptive statistics indicate that similarly to differentiation, pre-crisis years 2006 and 2007 were solid and profitable for cost leaders as they had high and stable ROAs of 7.2% and 7.1%, respectively. Pre-crisis ROA is thus on a higher level for cost leaders than for their counterparts in differentiation which implies that low-cost strategy might have outperformed

TABLE 5: DESCRIPTIVE STATISTICS

The below table illustrates the descriptive statistics for differentiation, cost leadership and the control group for 2006-2009. The descriptive statistics show the mean (Mean), standard deviation (Std.Dev), lower quartile (Q1), median (Median) and the upper quartile (Q3). Additionally, average pre-crisis figures (ROA_PRE) and average post-crisis figures (ROA_POST) are presented for each strategy. Both cost leadership and differentiation have on average outperformed the control group during a non-recession economy with mean average ROAs of 7.1% and 6.1%, respectively. During recession period of 2008-2009, cost leadership had performed best with a decrease of -33.8% in average ROA whereas equivalent figures for differentiation and the control group are -82.3% and 51.7%, respectively. In the light of these figures, cost leadership has been the best strategy post-crisis whereas differentiation was outperformed by the control group.

PANEL A: Differentiation						
Variable	n	Mean	Std.Dev	Q1	Median	Q3
ROA_2006	45	0.066	0.077	0.037	0.069	0.109
ROA_2007	45	0.056	0.075	0.036	0.060	0.094
ROA_2008	45	-0.022	0.148	-0.101	0.042	0.075
ROA_2009	45	0.043	0.107	0.024	0.046	0.092
ROA_PRE	90	0.061	0.076	0.037	0.066	0.101
ROA_POST	90	0.011	0.133	-0.015	0.042	0.087
PANEL B: Cost Leadership						
Variable	n	Mean	Std.Dev	Q1	Median	Q3
ROA_2006	45	0.072	0.117	0.037	0.068	0.110
ROA_2007	45	0.071	0.115	0.037	0.068	0.113
ROA_2008	45	0.029	0.139	-0.016	0.047	0.093
ROA_2009	45	0.065	0.127	0.002	0.050	0.110
ROA_PRE	90	0.071	0.116	0.038	0.068	0.112
ROA_POST	90	0.047	0.133	-0.001	0.048	0.105
PANEL C: Control Group						
Variable	n	Mean	Std.Dev	Q1	Median	Q3
ROA_2006	107	0.063	0.092	0.040	0.072	0.109
ROA_2007	107	0.056	0.094	0.027	0.066	0.101
ROA_2008	107	0.010	0.127	-0.051	0.042	0.087
ROA_2009	107	0.047	0.076	0.007	0.060	0.087
ROA_PRE	214	0.059	0.093	0.035	0.067	0.104
ROA_POST	214	0.029	0.106	-0.013	0.046	0.087

during a non-recession economy contradicting the findings by Little, Little and Coffee (2009) who claim that differentiators in retail sector have higher RONOAs than cost leaders. Noticeable is, however, that even with a higher pre-crisis ROA, cost leaders belonging in the lower quartile have a mean ROA that is almost identical to the equivalent group of

differentiators (3.8% vs 3.7%). Thus it can be stated that the lower quartile is somewhat equally profitable whereas in the best performing companies in quartile 4, cost leaders outperform differentiators (11.2% vs 10.1%). However, also cost leaders had a challenging year in 2008 as ROA fell drastically to 2.9% but bounced back to 6.5% in 2009.

When comparing differentiation and cost leadership, it is evident that differentiation struggled more during the after-crisis period. Differentiators' ROA has dropped on average by -82.3% whereas the equivalent number for cost leaders is only -33.8%. The control group that consists of 107 companies and 428 firm-year observations had a pre-crisis average ROA of 5.9% which is lower than that of either differentiation or cost leadership. However, post-crisis ROA of control group is 2.9% which is clearly higher than that of differentiation but substantially lower than that of cost leadership. The control group experienced a noticeable fall of -51.7% indicating that not having any generic strategy has outperformed differentiation after the crisis but underperformed during a stable economy.

The purpose of Figure 4 is to more visually represent the same results already made in Table 5 but also to include positioning aspect of individual companies and how they have moved their positioning as a result from the crisis. Panel A in Figure 4 represents pre-crisis positioning measured by a two-year average (2006 and 2007) for each company. Panel B of illustrates the positioning of individual companies during the after-crisis period (2008-2009). It is clear that profit margins of differentiators in particular have fallen below zero causing negativity in ROA ratios. Additionally, it is noteworthy that not only have differentiators had slightly more negative profit margins but they have plummeted extremely steeply. Such behavior is not visible with cost leaders.

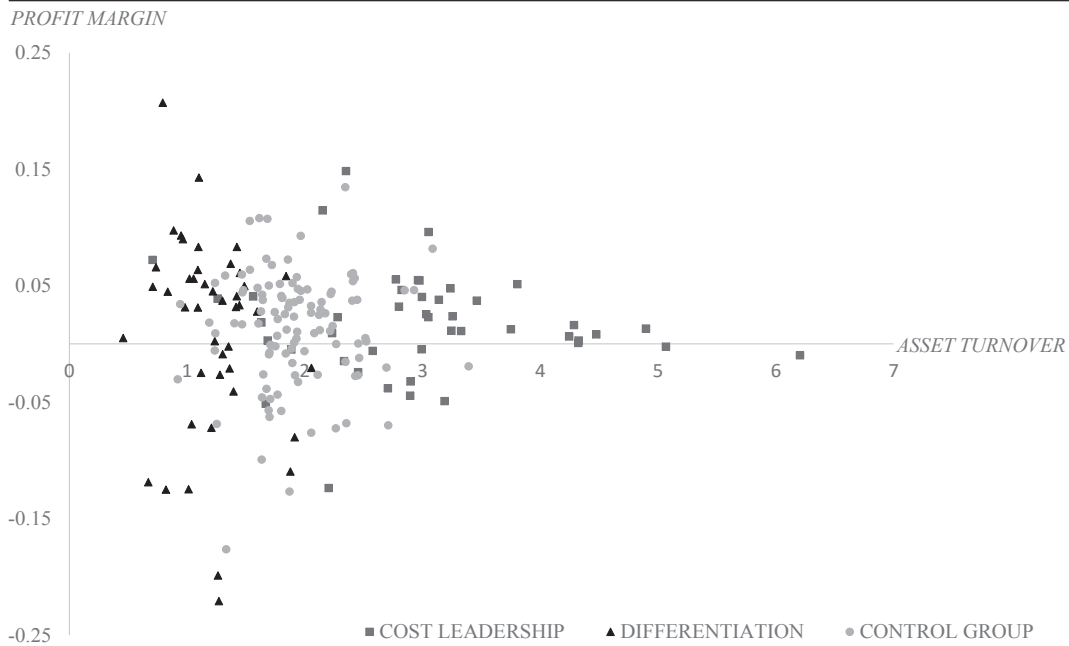
FIGURE 4: COMPANY POSITIONING BEFORE AND AFTER CRISIS

The figure below represents the average positioning of observations before (2006-2007) and after financial crisis (2008-2009). The categorization of the company in a strategy group is illustrated with a triangle (▲) if the company is a differentiator, a square (■) if the company is a cost leader and with a circle (●) if the company belongs to the control group. The outlier observations have been left out of the figures to allow more sensible scaling. From the pre-crisis figure (Panel A) a differentiator, Spyr Inc., with a profit margin of -31.1% was left out whereas in the post-crisis figure (Panel B) another differentiator, Liberty Intr Corp-Consol, with a profit margin of 62.3% was left out.

PANEL A – PRE-CRISIS



PANEL B – POST-CRISIS



Both the descriptive statistics in Table 5 and Figure 4 support the hypothesis H3 which makes an assumption of cost-leaders performing better after the crisis. However, these figures are not enough to reject the null hypothesis and statistical significance of these results need testing. That is done next with a difference-in-differences OLS regression analysis.

5.2 Regression analysis

To test the significance of the results, a regression analysis must be run. Difference-in-difference regression estimate is:

$$ROA_{it} = \beta_0 + \beta_1 POST_t + \beta_2 DIFF_i + \beta_3 LEAD_i + \beta_4 POST \times DIFF_i + \beta_5 POST \times LEAD_i + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 FAR_{it} + \varepsilon_i \quad (6)$$

where

ROA	= Return on assets, dependent variable
POST _t	= Dummy for post-crisis time period (2008-2009)
DIFF _i	= Dummy for differentiators
LEAD _i	= Dummy for cost leaders
POST x DIFF _i	= Differentiators post-crisis compared to the control group
POST x LEAD _i	= Cost leaders post-crisis compared to the control group
SIZE _{it}	= Ln(sales)
LEV _{it}	= Total debt / total assets
FAR _{it}	= Fixed assets / total assets

Betas and the error term are the same as in equation 4. Intercept β_0 represents the control group in the pre-crisis time period. The interest of the regression analysis lies on interaction terms $POST \times DIFF_i$ and $POST \times LEAD_i$ which represent how well differentiation and cost leadership strategies have performed in relation to the control group. These interaction terms represent the difference-in-differences method in the regression.

TABLE 6: DIFFERENCE-IN-DIFFERENCES REGRESSION

The table presents difference-in-differences regression results for years 2006-2009 for retail firms which in 2006 were sorted as differentiators (*DIFF*) or cost leaders (*LEAD*). The dependent variable in the regression is return on assets (*ROA_{it}*) of firm *i* in year *t*. *POST_t* represents a dummy which equals 1 for post-crisis years 2008-2009 and 0 for pre-crisis years 2006-2007. *DIFF_{it}* equals 1 if the firm *i* engages in differentiation similarly as *LEAD_{it}* equals 1 for the firm *i* if its strategy is cost leadership. Panel A represents a regression model without any control variables whereas Panel B includes the following: size (*SIZE_{it}*) which is the natural logarithmic value of sales for firm *i* in year *t*, leverage (*LEV_{it}*) that is total debt divided by total assets firm *i* in year *t* and operating leverage (*FAR_{it}*) that is calculated as fixed assets in relation to total assets for firm *i* in year *t*. All values are collected from WRDS's Compustat database. The parameters are estimated with RStudio.

***, (**, *, .) indicates two-tailed significance at 0.1% (1%, 5%, 10%) level.

PANEL A				
$ROA_{it} = \beta_0 + \beta_1 POST_t + \beta_2 DIFF_i + \beta_3 LEAD_i + \beta_4 POST \times DIFF_i + \beta_5 POST \times LEAD_i + \varepsilon_i$				
	Coef.	Std. Error	t value	p value
(Intercept)	0.059	0.007	8.019	0.000 ***
POST	-0.031	0.010	-2.932	0.003 **
DIFF	0.001	0.014	0.107	0.915
LEAD	0.012	0.014	0.889	0.374
DIFF:POST	-0.019	0.019	-1.007	0.314
LEAD:POST	0.007	0.019	0.342	0.732
(F= 4.988 , Adjusted R ² = 0.024, N= 788)				
PANEL B				
$ROA_{it} = \beta_0 + \beta_1 POST_t + \beta_2 DIFF_i + \beta_3 LEAD_i + \beta_4 POST \times DIFF_i + \beta_5 POST \times LEAD_i + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 FAR_{it} + \varepsilon_i$				
	Coef.	Std. Error	t value	p value
(Intercept)	-0.005	0.018	-0.292	0.771
POST	-0.030	0.010	-2.934	0.003 **
DIFF	0.005	0.013	0.367	0.714
LEAD	0.010	0.013	0.771	0.441
SIZE	0.025	0.004	5.674	0.000 ***
LEV	-0.017	0.009	-1.797	0.073 .
FAR	-0.019	0.019	-1.038	0.300
DIFF:POST	-0.020	0.019	-1.072	0.284
LEAD:POST	0.005	0.019	0.275	0.783
(F= 7.974 , Adjusted R ² = 0.066, N= 788)				

Table 6 presents the summaries of two regression analyses, Panel A which does not include any control variables and Panel B which takes into account company's size, operating leverage and leverage. The reason for including a plain regression without control variables is to test whether control variables (especially statistically significant variable *SIZE_{it}*) overpowers the effect of interaction terms. In neither of these panels do the interaction coefficients, *POSTxDIFF_i* nor *POSTxLEAD_i*, show statistically significant results which

eliminates the possibility of overly powerful control variables. Control variables mainly affect the intercept coefficient while others stay relatively unchanged.

Differentiation coefficient in Panel B shows that during 2008-2009 differentiation has underperformed in comparison to the control group by 2.0%. Similarly, the regression suggests that cost leaders have outperformed the control group by 0.5% during the equivalent time period. These results are similar to those already seen in descriptive statistics but in this case cost leaders' ability to outperform the control group is much narrower (0.5% vs 1.8%) and for differentiators the gap remains almost the same (-2.0% vs -1.8%). However, as p-values for both interaction coefficients stay clearly above 0.05 which is the critical level of alpha at a 5% significance level, we are unable to reject the null Hypothesis 3. In this case we are referring to hypothesis which states that in post-crisis period cost leadership experiences smaller relative decreases in profitability than differentiation when measured by ROA. Even though the regression provides evidence to support this, this evidence is not statistically significant making it impossible to draw such conclusions. Being able to reject the null hypothesis with a 5% significance level means that the probability of concluding a false difference remains at 5% i.e. the researcher would conclude a difference when no such difference in reality exists. This thesis uses alpha with a 5% significance level as the critical level as that is a commonly accepted level. In fact, the p-value of $POST \times LEAD_i$ is very high, 0.783. For $POST \times DIFF_i$ the equivalent value is 0.284 which is smaller but still substantially above the critical value.

Hypothesis 1 states that in the pre-crisis period companies with generic strategies have on average outperformed those companies in the control group. In Table 6, $DIFF_i$ and $LEAD_i$ variables present ROA ratios for differentiation and cost leadership during the pre-crisis era. Estimated ROA for differentiators is 0.5% higher than for companies belonging to the control group. Similarly, cost leaders' average performance in 2006-2007 was 1.0% higher when compared to the control group. Once again, this result as such would indicate that Hypothesis 1 holds but as neither of these variables hold statistical significance (p-value of $DIFF_i=0.714$ and $LEAD_i=0.441$), we are unable to reject the null Hypothesis 1.

Hypothesis 2 claims that before the crisis differentiation strategy outperforms cost leadership in retail industry in terms of profitability measured by ROA. For this statement there is no

evidence, statistically significant or not, to support it. In fact, the numbers as such indicate that in the pre-crisis period cost leadership would have performed better but as said, the results are not statistically significant. Hypothesis 2 was drawn from a survey by Little et al. (2011) and Little, Little and Coffee (2008) whose studies confirmed differentiation strategy to dominate cost leadership in retail industry during a non-recession climate. Having results that direct to the opposite direction is rather surprising considering the similarities in this thesis and those research papers. Little et al. (2011) used Compustat data to sort companies in retail industry to differentiators and cost leaders based on their 2006 relative operating profit margins and asset turnover ratios. Even with such an identical research setting they managed to get a different outcome. However, they have not enclosed a list of companies that would allow a comparison in the sorting methods.

Even though research null Hypotheses 1, 2 and 3 are rejected, the regression model does present some significant values. Firstly, the regression implies that there is a significant drop in ROA ratios post-crisis. The drop is equal to -3.0% and it is significant at 1% level. This means that there is a statistically clear fall in ROA ratios after the financial crisis. However, no conclusions can be made on how much of those changes can actually be allocated to the crisis and what part is caused by other factors. Additionally, control variable for size ($SIZE_{it}$) is statistically significant with a coefficient value of 2.5%. This means that firm size is linked to performance in a positive manner. This fits the theoretical framework and the research by Kim and Burnie (2002) who concluded that small firms do on average have lower ROAs compared to their larger counterparts.

Another control variable, leverage (LEV_{it}), is also significant though only with a 10% significance level which is typically considered inadequate for drawing statistically valid conclusions. Contrary to size, leverage has a negative link with ROA meaning that additional leverage decreases ROA ratio. This is as expected. Even though ROA was calculated to exclude the effect of leverage by adding interest tax shield back to net income, financial distress caused by leverage may have multiple indirect costs as proven by Opler and Titman (1994). Operating leverage (FAR_{it}) had no scientific significance with a p-value of 0.3. The coefficient for operating leverage is -0.019 indicating that the variable might have a negative impact on ROA. A negative relationship is aligned with the theory by Selling and Stickney

(1989) who argue that high operating leverage combined with decreasing demand causes high, negative volatility in ROA.

Adjusted R^2 stands for the model's ability to explain the changes in ROA. The regression model is able only to explain 6.6% of variation in ROA which can be considered rather low. Low ability to explain changes in ROA can be derived from multiple causes which typically root from other omitted variables that are excluded from the regression model and thus be a sign that there are other, more influential variables that explain changes in ROA. The regression model indicates that size and leverage might be more connected to changes in ROA and thus actually these kind of company-specific factors could be more dominant in forecasting company's performance. Another reason for low R^2 and inability to gain significant results may lie in the sorting method and its effectiveness. The results could indicate that ROA disaggregation does not capture strategy as well as it should. The sorting process was done solely based on one financial ratio which might not be enough to capture strategy of the company.

Overall based on regressions in Table 6, we are unable to reject null Hypotheses 1, 2 and 3. To check whether these results are reliable, robustness checks are performed in the following chapter.

5.3 Robustness checks

The purpose of robustness checks is to test the regression for its sensitivity against altered regressors through which the fragility of the regression model becomes evident. Robustness checks should be executed to avoid false interpretation and to receive verification for the assumptions made in the model. In general, the purpose of sensitivity analysis is to alter one independent variable to see how it affects the dependent variable while holding other variables constant. Robustness checks in this research concentrate on the definition and selection of strategy groups as they much define the outcome of the regression, especially since no statistically significant results were obtained. Sensitivity tests are performed on group size and group definition. Altering group size refers to shifting observations from differentiation and cost leadership groups to the control group and vice versa to see whether the regression model is sensitive to changes in group size and whether the group size in the

regression of Table 6 is reasonable. Secondly, the definition of strategy groups is tested i.e. whether the sorting process in which differentiators and cost leaders were determined is proper.

5.3.1 Sensitivity analysis on group size

Sorting is based on year 2006. Similarly as before, data were first divided into nine deciles based on ROA to allocate negative ROAs to all groups. Secondly, from each decile the companies with largest asset turnovers were labelled as cost leaders whilst companies with lowest asset turnovers remained differentiators. In the original regression 45 companies were categorized as differentiators and the same number as cost leaders but in the sensitivity analysis two more regressions are performed one of which has less differentiators and cost leaders (27 each) and one which has more (63 each). The regression results of the sensitivity analysis are presented in Table 7.

TABLE 7: SENSITIVITY ANALYSIS ON GROUP SIZE

The table presents difference-in-differences regression results for the years 2006-2009 for retail firms which in 2006 were sorted as differentiators (*DIFF*) or cost leaders (*LEAD*). The dependent variable in regressions is return on assets (*ROA_{it}*) of firm *i* in year *t*. The only differences between Panels A, B and C is in group sizes. Panel A has biggest observation groups (63 firms each) and Panel C the smallest (27 firms each). *POST_t* represents a dummy which equals 1 for post-crisis years 2008-2009 and 0 for pre-crisis years 2006-2007. *DIFF_{it}* equals 1 if the firm *i* engages in differentiation similarly as *LEAD_{it}* equals 1 for the firm *i* if its strategy is cost leadership. Control variables include size (*SIZE_{it}*) which is the natural logarithmic value of sales for firm *i* in year *t*, leverage (*LEV_{it}*) that is total debt divided by total assets firm *i* in year *t* and operating leverage (*FAR_{it}*) that is calculated as fixed assets in relation to total assets for firm *i* in year *t*. All values are collected from WRDS's Compustat database. The parameters are estimated with RStudio.

***, (**, *, .) indicates two-tailed significance at 0.1% (1%, 5%, 10%) level.

PANEL A: LARGE DIFFERENTIATION AND COST LEADERSHIP GROUPS				
<i>N (DIFF)=63, N (LEAD)=63, N(CONTROL GROUP)=71</i>				
	Coef.	Std. Error	t value	p value
(Intercept)	-0.008	0.019	-0.444	0.657
POST	-0.030	0.013	-2.424	0.016 *
DIFF	0.008	0.013	0.604	0.546
LEAD	0.012	0.013	0.936	0.349
SIZE	0.011	0.002	5.654	0.000 ***
LEV	-0.016	0.009	-1.724	0.085 .
FAR	-0.020	0.019	-1.056	0.291
DIFF:POST	-0.012	0.018	-0.654	0.513
LEAD:POST	0.003	0.018	0.145	0.885
(F= 7.813 , Adjusted R ² = 0.065, N= 788)				
PANEL B: MEDIUM DIFFERENTIATION AND COST LEADERSHIP GROUPS				
<i>N (DIFF)=45, N (LEAD)=45, N(CONTROL GROUP)=107</i>				
	Coef.	Std. Error	t value	p value
(Intercept)	-0.005	0.018	-0.292	0.771
POST	-0.030	0.010	-2.934	0.003 **
DIFF	0.005	0.013	0.367	0.714
LEAD	0.010	0.013	0.771	0.441
SIZE	0.011	0.002	5.674	0.000 ***
LEV	-0.017	0.009	-1.797	0.073 .
FAR	-0.019	0.019	-1.038	0.300
DIFF:POST	-0.020	0.019	-1.072	0.284
LEAD:POST	0.005	0.019	0.275	0.783
(F= 7.974 , Adjusted R ² = 0.066, N= 788)				
PANEL C: SMALL DIFFERENTIATION AND COST LEADERSHIP GROUPS				
<i>N (DIFF)=27, N (LEAD)=27, N(CONTROL GROUP)=143</i>				
	Coef.	Std. Error	t value	p value
(Intercept)	-0.008	0.018	-0.449	0.654
POST	-0.036	0.009	-4.042	0.000 ***
DIFF	0.006	0.016	0.356	0.722
LEAD	0.022	0.016	1.389	0.165
SIZE	0.011	0.002	5.791	0.000 ***
LEV	-0.015	0.009	-1.653	0.099 .
FAR	-0.019	0.019	-1.040	0.299
DIFF:POST	0.006	0.022	0.289	0.773
LEAD:POST	0.010	0.022	0.458	0.647
(F= 8.235 , Adjusted R ² = 0.069, N= 788)				

Based on the sensitivity analysis on group size, it can be stated that group size makes little difference in adding statistical significance to the interaction terms which remain clearly above the critical 5% significance level of alpha. However, in Panel C where there are least observations in generic strategic groups, differentiation has actually outperformed the control group in 2008-2009 contrary to previous results. This trend also vanishes when the group size is increased. This might be an implication of too few observations in the generic strategy groups and too many in the control group skewing the results in favor for differentiators.

Appendix 3 presents positions of companies in year 2006 on a profit margin – asset turnover axis for sensitivity analyses. As the figures imply, the validity of sorting methods seem to be independent of group size as all methods pick the “correct” companies for generic strategy groups. This means that sorting does detect and choose companies from both tails and leaves the ones “stuck in the middle” to the control group. Based on this sensitivity analysis group size does not provide more significance to the results already obtained. However, a decrease in group size might lead to a decrease in reliability of the model.

5.3.2 Sensitivity analysis on sorting method

SORTING BASED ON HIGH-LOW QUARTILES

First, the data are divided into nine deciles based on ROA. For deciles 3-9 we calculate limit values for quartile 1 (low) and quartile 4 (high) of asset turnover and profit margin. Based on these limits, a company that has a relatively high asset turnover (belongs to the asset turnover’s high quartile) and simultaneously has a relatively low profit margin (belongs to the profit margin’s low quartile) is sorted as a cost leader. Similar sorting method is used for differentiators with the exception of them having to possess a relatively high profit margin while staying in the lower quartile of asset turnover. For deciles 1 and 2 which contain negative values, four companies were selected of each decile based on highest asset turnovers (categorized as cost leaders) and lowest asset turnovers (categorized as differentiators). With this sorting a total of 38 observations were placed in each generic strategy category. However, contrary to the initial sorting, the number of differentiators and cost leaders chosen from each decile does not remain constant. Instead, only companies that fulfil the limit requirements are categorized under generic strategies. This sorting mechanism should fit the

theoretical framework the best since all companies have to fulfil the basic tradeoff often attached to generic strategies. As Porter claims (1985, p.16-17) differentiation and low-cost strategy are generally incompatible as differentiation is expensive and thus attaining simultaneously a low cost position is challenging.

TABLE 8: HIGH-LOW QUARTILE SORTING AND REGRESSION

The table below presents the limit values for high-low quartile sorting method. To be categorized as a differentiator, an observation must simultaneously fall in the high quartile (Q1) of profit margin (PM) and the low quartile (Q1) of asset turnover (AT) and vice versa for cost leaders. The lower table depicts a regression based on the high-low quartile sorting.

LIMITS FOR HIGH-LOW QUARTILE SORTING							
Decile Rank	AT		PM		DIFF	N	LEAD
	Q1	Q4	Q1	Q4			
1 (<i>lowest ROAs</i>)	-	-	-	-	4		4
2	-	-	-	-	4		4
3	1.313	2.641	0.017	0.036	5		4
4	1.554	2.748	0.021	0.040	5		5
5	1.627	2.666	0.028	0.041	5		5
6	1.581	2.434	0.035	0.056	4		4
7	1.587	2.420	0.044	0.067	4		5
8	1.722	2.324	0.054	0.080	3		4
9 (<i>highest ROAs</i>)	1.583	3.195	0.054	0.111	4		3

REGRESSION FOR HIGH-LOW QUARTILE SORTING				
	Coef.	Std. Error	t value	p value
(Intercept)	0.001	0.018	0.046	0.963
POST	-0.033	0.010	-3.444	0.001 ***
DIFF	-0.004	0.014	-0.277	0.782
LEAD	-0.006	0.014	-0.456	0.648
SIZE	0.011	0.002	5.667	0.000 ***
LEV	-0.015	0.009	-1.656	0.098
FAR	-0.024	0.019	-1.283	0.200
POST:DIFF	-0.017	0.020	-0.890	0.374
POST:LEAD	0.016	0.020	0.812	0.417

(F=7.904, Adjusted R²=0.066, N=788)

As the Table 8 implies, the limits for asset turnover's quartile 1 and 4 remain relatively stable around the averages of 1.57 and 2.63, respectively. On the contrary, quartile limits for profit margin are substantially less stable as for the lower quartile the limit differs up to 3.7%-units while for the quartile 4 the equivalent difference is 7.5%-units. Sorting based on upper and lower quartiles caused re-sorting of 14 companies in comparison to the initial regression in Table 6. This is not a major readjustment and proves that the initial sorting based on ROA ratio and asset turnover is fairly accurate. Appendix 3 presents the positioning of all

companies based on year 2006 with high-low quartile sorting method. Also this regression notes the significance of *POST*-variable and firm size. The interesting part is not in the interaction coefficients but in the *LEAD_{it}* and *DIFF_{it}* variables which imply that generic strategies have underperformed in comparison to the control group before the crisis. Even more interestingly so, the regression implies that low cost strategy has had a ROA lower than both the control group and differentiators. This is a very interesting result based on re-sorting of only 14 companies. This sensitivity analysis provides proof on how important sorting is in a research similar to this.

SORTING BASED ON A PROFITABILITY MEASURE

In this sensitivity analysis the double sort phase is executed based on gross profit instead of asset turnover. Gross profit is a profitability measure which is why sorting based on it might yield divergent results. In fact, sorting based on gross profit substantially changes the positioning on companies on asset turnover-profit margin axis as seen on Appendix 3. Differentiators and cost leaders no longer locate in their own tails on the ROA curve but they also penetrate the middle and even the opposite tail. This speaks for the use of asset turnover as the double sorting variable and against the use of profitability measures.

TABLE 9: SORTING BY PROFITABILITY MEASURE

The regression below depicts the same regression model as in Table 6, the only difference being that the sorting is done by dividing companies into nine deciles based on ROA after which the double sort is done based on gross profit margin. Five companies from each decile with highest gross profit margins are categorized as differentiators and five with the lowest as cost leaders.

REGRESSION FOR SORTING BY GROSS PROFIT				
	Coef.	Std. Error	t value	p value
(Intercept)	-0.006	0.019	-0.292	0.770
POST	-0.035	0.010	-3.470	0.001 ***
DIFF	0.003	0.014	0.194	0.846
LEAD	0.012	0.013	0.881	0.379
SIZE	0.011	0.002	5.681	0.000 ***
LEV	-0.016	0.009	-1.698	0.090 .
FAR	-0.025	0.018	-1.376	0.169
POST:DIFF	-0.007	0.019	-0.384	0.701
POST:LEAD	0.016	0.019	0.857	0.392

(F=8.234, Adjusted R²=0.069, N=788)

However, despite that profitability measure sorting provides a completely different set of groups, the impact it has on regression is very minimal. The regression in Table 9 indicates that applying different sorting methods makes little difference in the regression and it cannot find significant results in any of the variables except *POST* and *SIZE_{it}*.

6 CONCLUSIONS AND DISCUSSION

In this chapter, the research hypotheses are presented once more and in this case rejected due to lack of statistical significance as seen in Chapter 5. *Results and Analysis*.

The purpose of the thesis was to address a research gap in the research of generic strategies. Many studies concentrate on investigating the ability of generic strategies to outperform other companies that are “stuck in the middle” as phrased by Porter. Additionally, research has attempted to disprove Porter’s thoughts on the trade-off between generic strategies and the inability to combine both cost leadership and differentiation. This research attempted to take a less commonly addressed issue of generic strategy performance in a recession-economy and reveal which strategy has survived better from the financial crisis of 2008. Prior research has been conducted but not to an adequate extent. Porter’s focus-strategy was left out as the literature typically concentrates on the other two.

The data chosen for this thesis consisted of firms operating in retail industry in both the U.S. and Canada. Retail industry enables a comparison in strategy better than many other industries as companies typically tend to take a more direct stand in their strategic decision. For instance, luxury stores and discount stores typically concentrate on selling a more focused assortment in terms of price-quality ratio compared to manufacturers who may target multiple customer groups with products ranging from low to high-end. The data was collected from WRDS Compustat database and it included 197 retail firms during the period 2006-2009 adding up to 788 firm-year observations.

H1. Pre-crisis, cost leadership and differentiation strategies in retail industry on average outperform in profitability those companies that have not engaged in either strategy.

The first hypothesis addresses the topic oftentimes researched in generic strategy literature. Many prior papers have confirmed for the generic strategies to outperform firms that do not engage in either generic strategy (e.g. Hall 1980; Hambrick 1983; Dess & Davis 1984; White 1986). The descriptive statistics from the sample do support this claim. According to the descriptive statistics, the control group has had an average ROA of 5.9% during the period

before the crisis (2006-2007) while equivalent values for differentiation and cost leadership are 6.1% and 7.1%, respectively. The difference between the control group and differentiation is slim with only 0.15%-units. However, with cost leadership the difference is noticeably greater with 1.2%-units.

The regression coefficients for generic strategies do imply similar trends but with slimmer outperforming for cost leaders (1.0%) and bigger for differentiators (0.5%). However, no significant results were obtained in the regression with high p-values of 0.714 for $DIFF_{it}$ and 0.441 for $LEAD_{it}$. Thus, the null hypothesis cannot be rejected. This means that no significant evidence to support the claim was found and we *cannot* state that pre-crisis generic strategy companies would have outperformed those that had not engaged in either strategy.

H2. Pre-crisis, differentiation strategy outperforms cost leadership in retail industry in terms of profitability measured by ROA.

Hypothesis 2 assumes that differentiation has outperformed cost leadership in retail industry during the pre-crisis period as proved in previous research by Little, Little and Coffee (2008) and Little et al. (2011). Little, Little and Coffee revealed that not only do differentiators outperform cost leaders in retail industry but they in fact do so substantially with an average RONO of 29% compared to 7% for cost leaders. The dependent variable in their research was RONO and time period was slightly different than used in this thesis, 2007-2008.

The data in the research by Little et al. were derived from the same database (Compustat) for the same period (2006-2009) for companies in the same industry (retail) in mostly the same country (US and Canada vs. US). Despite all the similarities, a slightly divergent sorting method, difference in the dependent variable (ROA vs. RONO) as well as the sample size (197 vs. 111) are the causes for different results. In fact the results are quite the opposite. Whereas Little et al. claim for differentiation substantially to outperform before the crisis, this thesis found no such behavior. Cost leadership clearly outperformed both differentiation and the control group during 2006-2007 conflicting H2. Not only does the assumption in H2 seem false but the regression results with high p-values are not statistically significant. Thus, there is no evidence to support the claim of differentiation outperforming cost leadership.

H3. Post-crisis, cost leadership strategy in retail industry experiences smaller relative decreases in profitability, measured by ROA, than differentiation.

Hypothesis 3 answers the research question *R1. Which strategy, cost leadership or differentiation, has survived relatively better from the financial crisis of 2008 in retail industry?* Hypothesis 3 places an assumption of cost leadership having outperformed during a recession economy. When consumer purchasing power decreases and consumption falls, the market is expected to be more favorable for low-price products. Research by Little et al. (2011) implied that differentiators might actually outperform in a recession-economy but no statistically significant evidence was obtained. Little, Mortimer and Keene (2012) on the other hand found evidence suggesting that high brand value relates to higher performance during a recession. High brand value typically emerges with differentiators to whom creating a position of marketing differentiation (concept by Miller, 1992) is highly important i.e. increasing psychological appeal of the products by branding, advertisement or exclusivity.

The descriptive statistics of the sample in this thesis oppose to those results obtained by Little, Mortimer and Keene (2012) but support the claim in H3. Average ROAs of cost leaders in this sample fell with -33.8% compared to differentiators and the control group with equivalent values of -82.3% and -51.7%, respectively. However, despite the trends in descriptive statistics, we are unable to find significance results in the regression for interaction terms $POST \times LEAD_i$ and $POST \times DIFF_i$ with p-values of 0.783 and 0.284, respectively.

We can address the research question by stating that based on this sample and these results, it is clear that the group of cost leaders have performed relatively better during the recession period. However, it would seem like strategy is not the cause for better performance and the general link that exists between strategy and performance remains unclear. Therefore, based on this research no statements on strategy and performance can be made. On the contrary, size would seem to be a strong determinant of performance. This supports the results by Gleason, Mathur and Mathur (2000) who reveal that in European retail industry larger size is positively correlated with higher performance. Therefore it can be said, that firms operating in retail industry should, based on this study, pursue high market share.

The reason for statistically insignificant results may root from two causes: either the link between generic strategy and performance could not be captured in this research despite its existence or alternatively it does not exist and therefore was not captured. Out of these alternatives, the former seems more likely since strategy literature surely expects to see a link between a choice of strategy and profitability. Therefore the question to ask is why the link was not captured in this research?

Firstly, sorting is essential in a research of this sort. If sorting of companies into strategy groups fails, the links would not be captured or they would be misleading. However, as robustness checks prove, alternative sorting techniques in this case do not lead to better results. Additionally, the initial sorting technique seems to locate the generic strategies correctly to the tails of the ROA curve which is aligned with the theories in literature. However, seeing fast food restaurant chains McDonald's and Wendy's in the list of differentiators (see Appendix 1) raises questions about how well the theory holds up. Maybe location on the ROA curve is not the only indicator of strategy and strategy is not captured by ROA disaggregation demanding the use of a more complex set of variables. For future research, the same study could be executed with a set of six variables introduced by Balsam, Fernando and Tripathy (2011) to discover strategy in their research.

Another issue might be related to the sample itself. Even though a sample consisting of 197 firms is larger than those used in prior research under the same topic, the sample size might demand increasing. Not only might there be a need to grow the number of observations but they could also be attained from different recessions in the past, from different regions or different industries.

The third corrective measure for future reference could be in conducting regressions with multiple dependent variables that measure profitability. There is a possibility that ROA is not the best, or at least the only, measure to capture profitability.

APPENDICES

APPENDIX 1: LIST OF DIFFERENTIATION AND COST LEADERSHIP COMPANIES

DIFFERENTIATION	COST LEADERS
Ann Inc	Appliance Recycling Ctr Amer
Belk Inc	Arden Group Inc -CI A
Brookstone Inc	Asbury Automotive Group Inc
Cabelas Inc	Bakers Footwear Group Inc
Canadian Tire Corp -CI A	Best Buy Co Inc
Cash America Intl Inc	Bidz.Com Inc
Cec Entertainment Inc	Big 5 Sporting Goods Corp
Cia Brasileira De Distrib	Big Lots Inc
Destination Xl Group Inc	Bioscrip Inc
Dillard's Inc -CI A	Bj's Wholesale Club Inc
First Cash Financial Svcs	Bon-Ton Stores Inc
General Nutrition Cntrs Inc	Calloway's Nursery Inc
Glacier Water Services	Carmax Inc
Granite City Food & Brewery	China Nepstar Chain Drug-Ads
Gsi Commerce Inc	Cvs Health Corp
Hearusa Inc	Dgse Companies Inc
J. Alexander's Holdings Inc	Dollar General Corp
Kingfisher Plc	Domino's Pizza Inc
Kohl's Corp	Dsw Inc
Kona Grill Inc	Einstein Noah Restaurant Grp
Landry's Restaurants Inc	Express Scripts Holding Co
Leon's Furniture Ltd	Freds Inc
Liberty Interactv Cp Qvc Grp	Great Atlantic & Pac Tea Co
Liberty Intr Corp -Consol	Grill Concepts Inc
Liquor Stores N.A. Ltd	Group 1 Automotive Inc
Macy's Inc	Iparty Corp
Mcdonald's Corp	Kirkland's Inc
Mens Wearhouse Inc	Kroger Co
Mortons Restaurant Group Inc	Lumber Liquidators Hldgs Inc
Omnicare Inc	Medco Health Solutions Inc
O'reilly Automotive Inc	New York & Co Inc
Panera Bread Co	Overstock.Com Inc
Penney (J C) Co	Pc Connection Inc
Prizm Income Fund	Pcm Inc
Red Robin Gourmet Burgers	Penske Automotive Group Inc
Retail Holdings Nv	Rite Aid Corp
Ruths Hospitality Group Inc	Ross Stores Inc
Saks Inc	Susser Holdings Corp
Signet Jewelers Ltd	Systemax Inc
Spyr Inc	Tjx Companies Inc
Superior Plus Corp	Tractor Supply Co
Texas Roadhouse Inc	Travelcenters Of America Llc
Tiffany & Co	Us Auto Parts Network Inc
Tim Hortons Inc	Wet Seal Inc
Wendy's Co	Yosen Group Inc

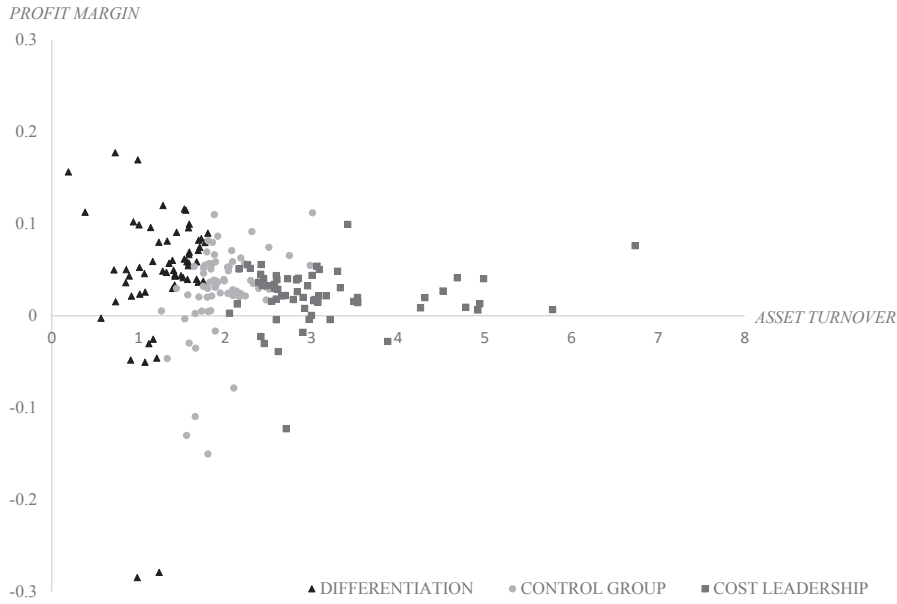
APPENDIX 2: LIST OF CONTROL GROUP COMPANIES

CONTROL GROUP

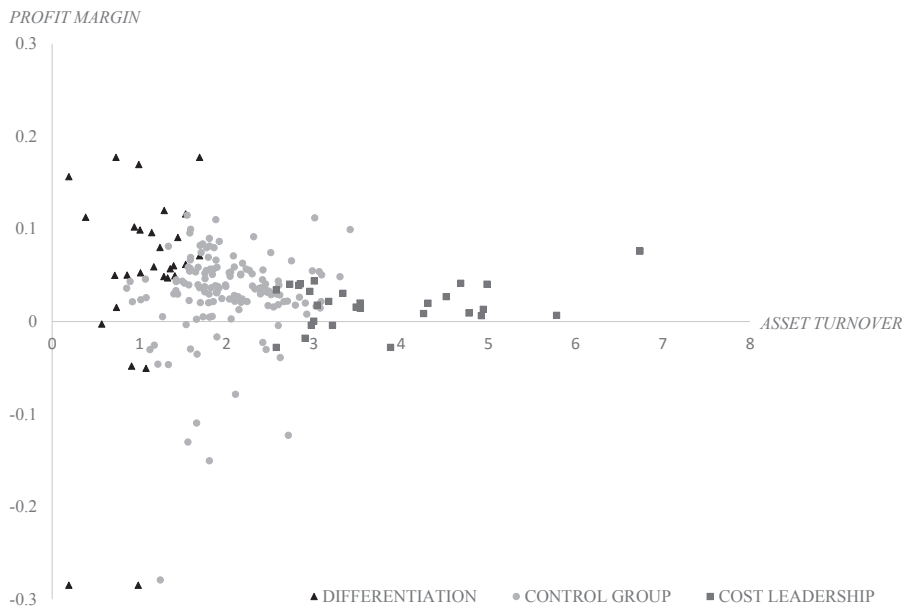
A.C. Moore Arts & Crafts Inc	Home Depot Inc
Acorn International Inc -Adr	J Crew Group Inc
Advance Auto Parts Inc	Jo-Ann Stores Inc
Affinity Group Holding Inc	Koninklijke Ahold Nv
Alco Stores Inc	Krispy Kreme Doughnuts Inc
Alon Blue Square Israel	L Brands Inc
Amazon.Com Inc	Le Chateau -CI A
Ascendant Solutions Inc	Lithia Motors Inc -CI A
Autonation Inc	Loblaws Companies Ltd
Bed Bath & Beyond Inc	Lowe's Companies Inc
Bluefly Inc	Meritage Hospitality Group
Bmtc Group Inc	Mexican Restaurants Inc
Books-A-Million Inc	Michaels Cos Inc
Borders Group Inc	Morgans Foods Inc
Bowlin Travel Centers Inc	Nordstrom Inc
Brick Ltd	North West Co Inc
Buffalo Wild Wings Inc	Npc Restaurant Holdings Llc
Cache Inc	O'charley's Inc
California Pizza Kitchen Inc	Office Depot Inc
Caribou Coffee Co	P F Changs China Bistro Inc
Carrols Corp	Papa Johns International Inc
Carrols Restaurant Group Inc	Pep Boys-Manny Moe & Jack
Cato Corp -CI A	Perkins & Marie Callenders
Charming Shoppes Inc	Petsmart Inc
Citi Trends Inc	Pier 1 Imports Inc/De
Cke Restaurants Inc	Publix Super Markets Inc
Coldwater Creek Inc	Reitmans (Canada) -CI A
Collective Brands Inc	Rona Inc
Conn's Inc	Rs Legacy Corp
Cost Plus Inc	Rubio's Restaurants Inc
Delhaize Group - Ets Dlhz Fr	Rush Enterprises Inc
Delias Inc	Safeway Inc
Dennys Corp	Sears Canada Inc
Dicks Sporting Goods Inc	Sears Holdings Corp
Dollar Tree Inc	Shoe Carnival Inc
Dover Saddlery Inc	Shoppers Drug Mart Corp
Drugstore.Com Inc	Sonic Automotive Inc -CI A
Dsw Inc-Old	Stage Stores Inc
Emerging Vision Inc	Staples Inc
Famous Daves Of America Inc	Star Buffet Inc
Fastenal Co	Supervalu Inc
Foot Locker Inc	Talbots Inc
Forzani Group Ltd -CI A	Tandy Leather Factory Inc
Gaiam Inc	Target Corp
Gamestop Corp	Toys R Us Inc
Gap Inc	Trans World Entmt Corp
Glentel Inc	Ultra Salon Cosmetics & Frag
Golfsmith Intl Holdings Inc	Wal-Mart Stores Inc
Groupe Bikini Village Inc	West 49 Inc
Hancock Fabrics Inc	West Marine Inc
Hart Stores Inc	Weston (George) Ltd
Hastings Entertainment Inc	Williams-Sonoma Inc
Haverty Furniture	Yum Brands Inc
Hibbett Sports Inc	

APPENDIX 3: ROBUSTNESS CHECKS

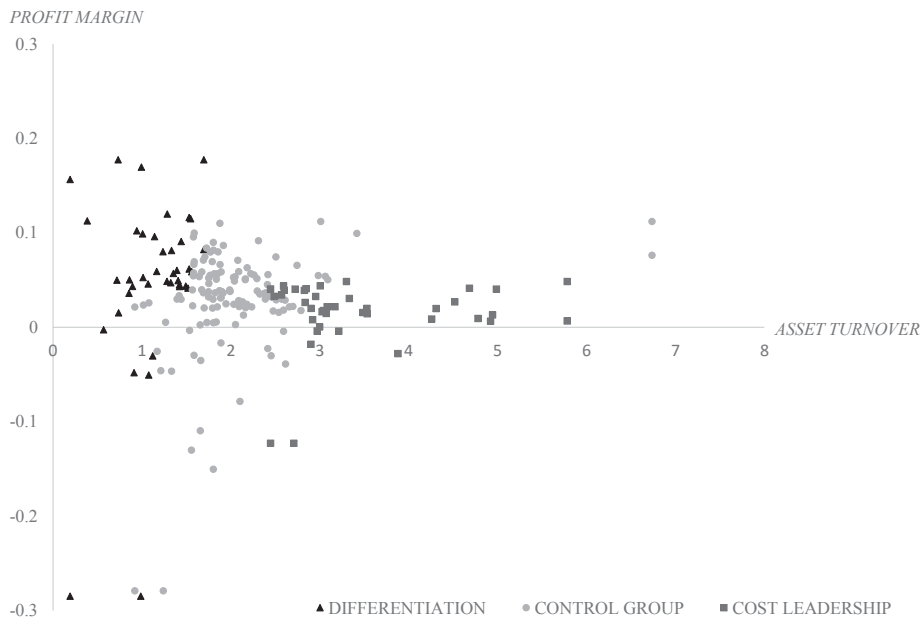
POSITIONING IN 2006 FOR LARGE DIFFERENTIATION AND COST LEADERSHIP GROUP SIZES



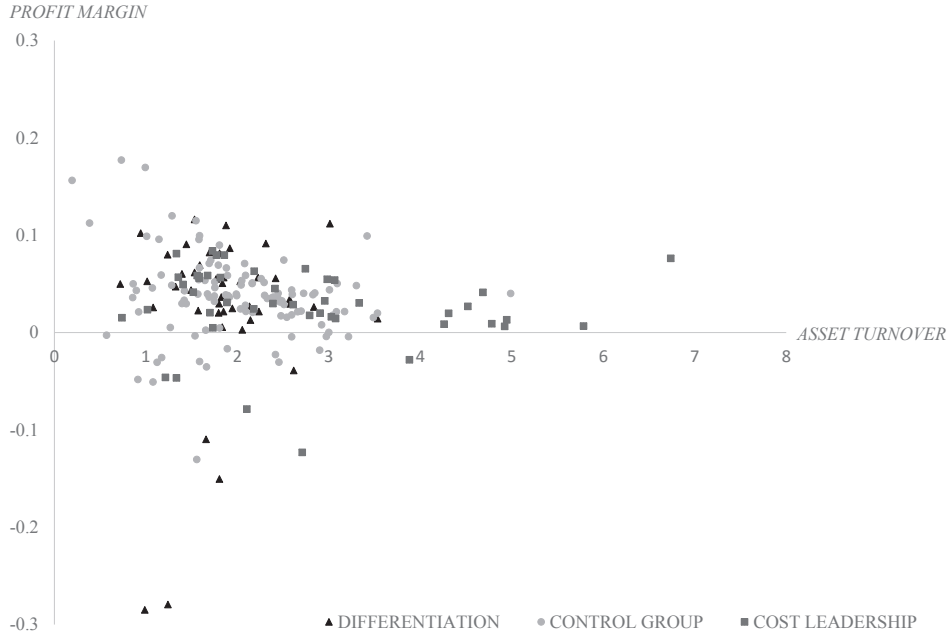
POSITIONING IN 2006 FOR SMALL DIFFERENTIATION AND COST LEADERSHIP GROUP SIZES



POSITIONING IN 2006 BASED ON HIGH-LOW QUARTILE SORTING



POSITIONING IN 2006 BASED ON DOUBLE SORTING BY GROSS PROFIT



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