**Master's Thesis**

Customer satisfaction and future financial performance

*An empirical investigation of the effect of customer satisfaction on future financial performance for different economic periods.*

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**Abstract -** This research investigates the relationship between customer satisfaction and future financial performance. More specifically, it is studied whether customer satisfaction positively affects future financial performance, whether consistently high customer satisfaction will lead to more stability in future financial performance and whether these relations are moderated by an asymmetry effect (i.e. losses loom larger than gains) and competitive influences (i.e. the more competitive a sector, the weaker the relations). For four identified periods from 1994-2012 these relations are investigated, by using customer satisfaction data of the American Customer Satisfaction Index. As proxies for financial performance, net income and earnings per share are used. The results show that concerning the entire sample period, customer satisfaction seems to positively influence future financial performance and that the asymmetry effect exists when earnings per share is used as proxy for financial performance. The period specific results show that supportive evidence for the reputation theory is found in economic booming periods, while the asymmetry effect and competitive factors seem to influence the satisfaction-performance relationship in more severe economic periods. In addition, firm sector analysis reveals that the relation between customer satisfaction and future financial performance is strongest for the consumer discretionary and consumer staples sectors.

# Preface

I would like to thank various people for their support and assistance during the writing process of my thesis. I appreciate the critical view and helping comments of my supervisor Prof. dr. E.A. de Groot, which gave me the opportunity to structure my thesis and improve the quality of it. Without this help I would not be able to produce the thesis as it is now. The comments not only made me improve several parts of the thesis, but also encouraged me to be critical about the other pieces I still had to write.

Besides, I would like to thank friends and family who supported me to work on my thesis. They encouraged me not to waste time in the writing process and often were interested in my progress. This involvement made me feel that I am not only writing this thesis for myself, but also for family and friends who are willing the best for me.

This in-depth support of Prof. dr. E.A. de Groot and moral support of friends and family resulted in the final version of my thesis which is now lying in front of you. I am happy and proud to present it to you all.

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# 1. Introduction

The last decades it has become increasingly popular to focus on customer satisfaction in order to increase (future) financial performance. It is more and more believed that satisfied customers will increase future revenues and help to attract new customers. Recent examples in practice also show that low customer satisfaction could seriously harm companies. For example, the presence of horsemeat in beef products in Europe, which is known as the horsemeat scandal, led to the bankruptcy of the French lasagna manufacturer Fraisnor [[1]](#footnote-1). Although no horsemeat was found in their products, the negative publicity on this sector led Fraisnor to have substantial lower revenues than the 20 million EUR of previous year. Therefore they were unable to survive on its own. Another example has to do with the Dutch Railways, which got a fine of 2,75 million EUR from the national authorities because for two years in a row customer satisfaction was too low[[2]](#footnote-2). Besides, a temporarily penalty of 2,75 million EUR has been imposed, which could be remitted if the customer satisfaction of 2013 is on an acceptable level. Customers particularly are unsatisfied about the high number of train delays and the low number of seats during peak hours. These examples show that customer satisfaction could seriously have an impact on future financial performance, through for instance diminishing sales turnover or legal fines. Even your or my satisfaction with a company could lead to flourishing financial results or, on the other side, bankruptcy. It all has to do with keeping customer satisfied by constantly delivering products or services which meet expectations and positively influence the corporate image of the company.

Existing research already dealt a lot with the relation between customer satisfaction and financial performance, in which several characteristics of the relationship are examined. This study extents this research by investigating whether consistently high customer satisfaction will lead to more stability in future financial performance. In addition, it will be tested whether the asymmetry effect is present, which means that losses loom larger than gains. Also, competitive influences on the relationship will be examined. It might be that the more competitive a market is, the weaker the relation will be between customer satisfaction and (stability in) future financial performance. Finally, sector analysis will be performed to distinguish the relationship between customer satisfaction and future financial performance between several industrial sectors. The general research question therefore is: Does customer satisfaction positively influence future financial performance and is this relationship moderated by the asymmetry effect and competitive influences?

It is important to investigate above mentioned questions, because it could highlight the importance of customer satisfaction. If indeed customer satisfaction will lead to a good reputation which leads to stable and high future financial performance, companies could behave accordingly by focusing more on keeping customer satisfied. Besides, if the asymmetry effect holds, the importance of keeping customer satisfaction on a stable or growing level is shown. Finally, competitive influences and the sector analysis could give an indication of which firms should focus most on customer satisfaction. It could be that some companies are less sensitive to changes in customer satisfaction than others, because of different levels of competition or a different nature of the sector in which they operate. So, company managers could benefit from this research by getting an insight in how customer satisfaction affects future financial performance.

It is argued that customer satisfaction might improve future financial performance in three ways (Ittner and Larcker, 1998). First, existing customers will be more loyal, and therefore they will for instance be more likely to repurchase and to do this in greater volumes. Second, satisfied customers could serve as a way of advertising to attract new customers. Positive word-of-mouth and recommendations, but also positive media-attention, could turn potential customers into real customers. Lastly, also firm specific advantages will exist, which are mostly characterized by reduced costs. As an example, because of a more loyal customer base advertising and replacement costs might be saved.

Besides this general effect of customer satisfaction on future financial performance, it is argued that consistently high customer satisfaction will lead to more stability in future financial performance. It is believed that experienced customers will be less sensitive to short-term fluctuations in quality and satisfaction. Therefore, if firms are able to provide consistently high satisfaction, a single transaction drop in this satisfaction will not directly affect future financial performance that much as it would have been if a customer is not that experienced. (Anderson and Sullivan, 1993)

The asymmetry effect follows findings from Kahneman and Tversky's (1979) Prospect Theory, in which is found that people are more sensitive to losses than to the same amount of gains. Applying this to the satisfaction-financial performance relationship, it might be expected that losses in customer satisfaction will lead to a larger drop than gains will lead to an increase in future financial performance. Lastly, it is argued that the relation between customer satisfaction and future financial performance will be weaker for firms operating in competitive markets. This will be the case because these firms are less likely to retain customers, because of more attractive next best alternatives and efforts of competitors to attract their customers (Lambert, 1998).

To test the research questions, customer satisfaction data are used from the American Customer Satisfaction Index (ACSI), complemented with financial data of COMPUSTAT for the period 1994-2012. As a proxy for financial performance both net profit divided by total assets and earnings per share are used. Since earnings per share will be only available for listed companies, this study focuses on S&P 500 US listed companies which are present in the ACSI database. Least squares regressions are used to test the different hypotheses, in which, after the general and reputation effects variables are added, the asymmetry effect and competitive influences are also taken into account. A unique feature of this research is that it focuses not only on the entire sample of 1994-2012, but also distinguishes four periods based on the S&P 500 and US GDP growth development. For each period the hypotheses are tested separately as well.

The results indicate that no support is found for the notion that consistently high customer satisfaction will lead to more stability in future financial performance. However, for almost each period and for the entire sample it is found that customer satisfaction has a positive significant effect on future financial performance. In addition, the sector analysis reveals that this link is strongest for the consumer discretionary and (to a lesser extent) the consumer staples sectors. Less support is found for the asymmetry effect, but the results with earnings per share as dependent variable show that this effect might definitely exist. Lastly, no supportive evidence is found for competitive influences that moderate the satisfaction-performance relationship.

In addition, the results of the second and third period reveal some interesting results. For the booming economic period 2003-2007, significant results are found for the reputation theory, while for the severe economic period 2000-2002, competitiveness seems to lead to a weaker relation between customer satisfaction and future financial performance, and the asymmetry effect seems to hold. This might indicate that during positive economic times, competitive influences are weaker so that companies could build a reputation and stabilize their financial performance, while during a recession customers are more likely to switch to an alternative supplier. Competitiveness then seems to weaken the relation between customer satisfaction and future financial performance.

These results implicate that company managers should definitely take customer satisfaction into account. If they are able to provide high satisfaction, future financial performance might be improved. Although consistently high customer satisfaction will not directly lead to more stability in future financial performance, companies might still consider trying to keep customer satisfaction stable. Namely, losses in satisfaction could possibly lead to bigger drops in future financial performance than gains will lead to increases. This implies that fluctuating customer satisfaction scores might still lead to fluctuating and lower financial performance in the long run. Thus, although no evidence is found for the reputation theory, the partial evidence for the asymmetry effect still highlights the importance of providing stable customer satisfaction scores. Additionally, the sector analysis show that firms operating in the consumer discretionary and consumer staples sectors should take customer satisfaction into account mostly. Also, positive reputations can most easily be built during economic growth, while care of competitive influences should be taken during economic downturn.

This research contributes to existing literature in two main ways. First, many of the prior articles focus on one or two specific items concerning the relationship between customer satisfaction and future financial performance. This article includes not only the general relation, but also the reputation theory and the asymmetry effect, two items which have not been investigated a lot before. In addition, the competitive influences and sector analysis provide additional specific information for firms operating in different sectors. The second distinctive feature is the time range of nineteen years, which is divided in four different periods. In this way, it is not only possible to examine the main effects of the different hypotheses, but also to take a period specific look on these effects by taking the business and economic context into account.

The remainder of the article is organized as follows. In the second section the business and economic context will be described. In this section, the four relevant periods will be identified. Before turning to the literature review about the consequences of customer satisfaction in section four, the antecedent will be described. This will be done in the third section, to get an additional insight into how customer satisfaction is formed. Hypotheses are developed in section five. Sections six and seven describe the data and methodology, respectively, and in turn the results are provided in the eighth section. The sector analysis is described in section nine, followed by the general conclusions in sector ten. Limitations of this research and suggestions for future research can be found in section eleven. To conclude, sections twelve and thirteen consist of the references and appendices, respectively.

# 2. Business and economic context

When investigating the relationship between customer satisfaction and future financial performance, care should be taken that other factors influencing future financial performance are taken into account. Therefore, in this section the business and economic context will be described. Since data will be used from the United States (US), it will provide an overview of percentage GDP growth of the US[[3]](#footnote-3) and the development of the S&P 500 index[[4]](#footnote-4). General trends can be found in figure 1.

Since customer satisfaction data are available from 1994 till now, this is used as the relevant time range. As the figure shows, in this range four periods can be identified from the S&P 500 and GDP growth movements.

Figure 1. S&P and GDP development

The first one is 1994-1999. In this period, S&P 500 rates went up rapidly, while GDP remained more or less stable around five or six percent. Especially from 1997 on, the stock market grew explosively partly because of the dotcom bubble. The introduction of internet and many internet-based companies led investors see a very bright view of technological development, leading to rapidly growing market values of listed companies. In the meantime, GDP grew steadily and unemployment was low as a result of the internet development. Together, this makes the 1994-1999 recognizable by explosively growing stock market prices and steady GDP growth.

In 2000 it turned out that the introduction and development of internet did not only make investors optimistic of technological development, it even made them overconfident. Traditional valuation methods and ratios were overlooked, leading to too high stock market rates. The collapse came in 2000 and lasted till 2002. Stock market prices dropped substantially and GDP growth followed this pattern by a reduction to almost three percent. Besides, the September 11 attacks in 2001 worsened US' trust and economy as well. The period 2000-2002 is therefore identified as the second period of interest. In this period, both the S&P 500 index and GDP growth dropped significantly.

During 2003-2007, the stock market recovered and steadily grew, fed by a flourishing house market. This led to optimism on the stock market and also GDP growth increased to over six percent again. However, the flourishing house market was created by many risky mortgages, which turned out to be too risky from 2007 on. GDP growth already started to decline, which characterizes 2003-2007 as a growing stock market and a growing and later declining GDP growth period.

The S&P 500 index followed the decline in GDP growth in 2008. A major drop in stock market prices introduced the subprime mortgage crisis in the US, when it turned out that many mortgages were too risky and could not be repaid. This crisis evolved into the Eurocrisis in Europe. Although Europe is still trying to recover from this crisis, the US were able to recover already within two years, starting in 2010. Together with the stock market index, also GDP growth went up again. Therefore, the last period from 2008 till 2012 is recognizable by a huge drop in both stock market prices and GDP growth in the US and a recovery afterwards.

The four periods identified will help getting a better insight into the results of my research. Care will be taken in the methodology by estimating all effects for each period separately. Otherwise no significant effects might be found because of counterbalancing results from these periods. It can be said that by doing so, the results will be controlled for S&P 500 and GDP growth development.

# 3. Getting an insight into customer satisfaction

Before turning to the effect of customer satisfaction on future financial performance, an insight will be given into the antecedents of customer satisfaction. This will complement the research in such a way that it might help getting a clear view of customer satisfaction and understand differences between sectors in the satisfaction-performance link.

The three most mentioned antecedents of customer satisfaction are expectations, disconfirmation of expectations and performance. Churchill and Surprenant (1982) found that for nondurable goods, these three factors all influence customer satisfaction, but that for durable goods, only performance seems to affect this satisfaction. In contrast, Anderson and Sullivan's (1993) results suggest that only performance and disconfirmation are antecedents of customer satisfaction, whereas expectations seem to have no significant impact. Finally, Baerden and Teel (1983) focused on expectations and disconfirmation and found both to have an influence on customer satisfaction. In an overview provided by Szymanski and Henard (2001), these three antecedents are complemented by affect and equity. I will mainly follow their structure and theories to elaborate on the causes of customer satisfaction mentioned above, complemented by other literature.

First, consistent with the real performance of a product or service, expectations are formed which serve as the basis of customer satisfaction. Szymanski and Henard (2001) argue that this will reduce (future) volatility in satisfaction scores. Therefore this is the anticipative part of expectations. Based on existing literature, Churchill and Surprenant (1982) distinguished several types of expectations. On the one hand, ideal, expected, minimum tolerable and desirable expectations stand for different values of initial satisfaction. On the other hand, expectations are not formed about the product or service in total. Rather, expectations will be formed about the nature of the product or service, the costs to obtain the benefits of it and the trade-off between the social benefits and costs. This together will form an overall anticipated satisfaction level based on expectations.

Second, the comparative part of expectations deals with disconfirmation. Based on the expectations set, customers will be dissatisfied when there is negative disconfirmation of expected performance and satisfied when there is positive disconfirmation. In other words, if actual performance is (significantly) different from prior expectations, satisfaction is likely to be influenced (Churchill and Surprenant, 1982). This implies that based on the expectations set, the same level of performance might lead to other levels of satisfaction when initial expectations were different. Also, this highlights the interdependency of expectations and disconfirmation, since disconfirmation is the difference between expectations and actual performance (Churchill and Surprenant, 1982). These two antecedents might therefore counterbalance or reinforce each other.

Third, actual performance might also directly influence satisfaction. So, both actual performance and relative performance compared to expected performance are taken into account. When the benefits of the product or service (i.e. whether it fulfills the customers' needs, wants or desires) exceed the costs of it, customers are more likely to be satisfied. However, as Churchill and Surprenant (1982) claim, differences in performance are more likely to affect customer satisfaction indirectly via differences in disconfirmation than directly via the actual level of performance.

Furthermore, emotional factors play a role in assessing customer satisfaction. This is known as affect. When people are consuming the product or service, 'traces' are left in their minds which influence the decision about customer satisfaction. Thus, besides the cognitive performance judgment, affective judgments also influence satisfaction.

Lastly, whereas the above mentioned antecedents focus on the personal use of the product or service, equity goes about relative performance of the product or service compared to other people. In general, people tend to be satisfied when they receive more than a peer group or person and dissatisfied when they receive less.

So, it can be said that customer satisfaction depends on actual performance, performance compared to expectations and performance compared to others. In addition, emotional judgments and initial expectations play a role.

# 4. Literature review

Existing literature already dealt a lot with customer satisfaction and its consequences. The main focus lay on the relationship between customer satisfaction and future financial performance, but also competitive influences and reputation theory are described multiple times. The asymmetry effect is treated to a lesser extent. Below, an overview will be provided of the main theories and results.

## 4.1 Relation between customer satisfaction and future financial performance

Often a positive relation between customer satisfaction and different proxies of future financial performance is found. By using the Swedish Customer Satisfaction Barometer (SCSB), a database including many firms’ customer satisfaction indices, Anderson et al. (1994) found a positive impact of customer satisfaction on ROI. Using the same database and (partly) the same time period, logically similar results are found by Anderson et al. (1997). In addition, their findings also suggest that there is a significant difference between goods and services. A simultaneous change in both customer satisfaction and productivity (measured as sales per employee) will have a bigger impact on profitability for goods than for services.

Anderson et al. (1994) already recognized that ROI is not a perfect measure of economic performance. Therefore, this measure of financial performance was quickly abandoned. Anderson et al. (2004) investigated the effect of customer satisfaction on shareholder value, which should be a better, forward-looking, measure of economic firm value. As a proxy, they used Tobin’s Q, which equals the ratio of a firm’s market value to the current replacement costs of the firm’s assets. Based on data of the American Customer Satisfaction Index (ACSI), a database quite similar to the SCSB, during the years 1994 to 1997, they found a positive association between customer satisfaction and shareholder value. As was done by Anderson et al. (2004), Schneider et al. (2009) also took a deeper look at the relation between customer satisfaction and shareholder value, by using ACSI and Tobin’s Q, with 2003 till 2005 as relevant timeframe. They studied whether customer satisfaction mediates the relation between organizational service climate and Tobin’s Q and found a strongly positive result. In a similar fashion, a strong relationship between customer satisfaction, based on ACSI scores, and the market value of equity is found by Fornell et al. (2006) for 1994-2002 and Ittner and Larcker (1998) for both 2004 and 2005. Using the same database, Gruca and Rego (2005) reported a positive association between customer satisfaction and cash flow growth for the years 1994 through 2002. The authors argue that this, together with their finding that customer satisfaction leads to less future cash flow variability, creates shareholder value.

Contradictory results are found by Rostan and Rostan (2012). By examining five financial (ROE, ROA, ROI, gross profit margin and price to sales) and seven market (book value, dividend yield, price to cash flows, price-to-earnings ratio, Tobin’s Q, annual return and volatility) indicators they showed that price-to-earnings ratio is a better predictor of these twelve indicators than customer satisfaction. Again, to measure customer satisfaction the ACSI database is used. However, customer satisfaction follows second and seems to be superior to predict Tobin’s Q, volatility, ROE and ROI. By taking a look at the economic context it appears that these findings could also be explained because of the decline in GDP growth during 2004 to 2009, which equals the sample period. Because of this, the relation between customer satisfaction and future financial performance might be weaker, since people have less to spend but still could be satisfied. At the same time, the price-to-earnings ratio and the financial and market indicators are more likely to behave in a similar fashion, because these will both be influenced by the declining GDP growth. Therefore this relation could look stronger during this period.

As can be seen, the national customer satisfaction indices are popular databases to access customer satisfaction data. However, other studies used more industry specific customer satisfaction data, collected by surveys. Concerning a sample of 250 three and four star hotels located on five different destinations, Chi and Gursoy (2009) found a positive direct relation between customer satisfaction and financial performance. In addition, the results show that customer satisfaction is also a mediator of the relationship between employee satisfaction and financial performance, whereas employee satisfaction on its own has no direct effect on financial performance. Supportive evidence is found by Williams and Neumann (2011) in a business to business context, whose results suggest that satisfaction is positively correlated with total revenue, net income and earnings per share at the firm level. Additionally, satisfaction is also found to positively affect the stock price, Tobin’s Q and the price/earnings ratio at the firm level. Bernhardt et al. (1999) used collected data of a national chain of fast-food restaurants during March 1992 to March 1993. Results showed that customer satisfaction has no impact on performance, which is measured by among others sales and profitability, in the same period, but that there is a positive relation between customer satisfaction and performance in a future period. This implies that customer satisfaction has a delayed effect on financial performance. Therefore it is time to take a closer look at the mediators and moderators of this relationship to get a better understanding.

### 4.1.1 The mediating effect of customer loyalty

One of the most mentioned consequences of customer satisfaction is that satisfied customers are more loyal, which in turn should lead to increased profitability. Aydin et al. (2005) argue that customer satisfaction will lead to less price sensitivity and less customer loss when service quality fluctuates in the short run, which will ultimately lead to loyalty. By measuring loyalty as a weighted average of questions asking whether customers would re-buy the product or service and recommend it to others, they indeed found a positive effect of customer satisfaction on customer loyalty for 1662 GSM users in four Turkish cities. Using the SCSB, Fornell (1992) found similar results, where loyalty is defined as a function of repurchase intention and price tolerance. This same definition is used by Yang and Peterson (2004). Based on a random sent solicitation letter by e-mail, which was answered by 235 people (response rate of 8,1%), they also concluded that customer satisfaction has a positive impact on customer loyalty. Grønholdt et al. (2000) supported above mentioned findings, by looking at the Danish part of the European Customer Satisfaction Index (ECSI), which is developed according to the SCSB and ACSI. Loyalty is measured by the customer’s intention to repurchase and cross-buy, to switch to a competitor and to recommend the brand to other people. Also Williams and Naumann (2011) supported this relationship, by taking a look at a business to business context.

Contrary to previous results, Andreassen and Lindestad (1998) did not find a positive relationship between customer satisfaction and loyalty for complex and infrequently purchased services. Instead, according to their study, corporate image seems to be the main driver of customer loyalty for both customer with a high and low level of service expertise.

Some authors chose to specify either customer satisfaction, loyalty or both in more detail. Bloemer and Kasper (1995) recognize spurious and true brand loyalty. True brand loyalty is a result of psychological processes of decision making and evaluating, resulting in brand commitment, whereas spurious loyalty is a result of inertia. Also, the authors differ between manifest brand satisfaction and latent brand satisfaction. Manifest satisfaction means that the consumer made an explicit comparison of expectations and performance, leading to a known level of satisfaction. In contrast, latent satisfaction implies that the customer did not make proper comparisons, leading to a not fully known level of satisfaction. The findings suggest that manifest satisfaction has a greater effect on true brand loyalty than latent satisfaction has. Lam et al. (2004) distinguish between ‘recommend’ and ‘patronage’ as two aspects of loyalty. They found support that customer satisfaction has a positive impact on both dimensions. They could not support the hypotheses that both relationships follow an increasing returns-to-scale relationship, based on the notion that very satisfied customers are more likely to stick to the company than normal satisfied customers and that satisfaction will lead to positive word-of-mouth, leading to new customers. So, this does not support the idea that customer satisfaction has a non-linear effect on customer loyalty. However, relying on data of The Lenox Hotel in Boston, USA, Bowen and Chen (2001) found that there exists a non-linear relationship. More specifically, on the one side loyalty increases substantially when satisfaction reaches a certain threshold, while on the other side loyalty will decrease substantially when satisfaction drops under a certain threshold. This implies that extremely satisfied or dissatisfied customers are relatively more loyal or disloyal than normal satisfied or dissatisfied customers.

There are, in addition, some studies which find moderator variables that intervene the relationship between customer satisfaction and loyalty. These studies also show that this relationship could be more complex than just a linear one. For instance, with a sample of 943 prior clients of a German car manufacturer, Homburg and Giering (2001) found that satisfaction with the product, sales process and after-sale service all lead to increased loyalty, but that these relationships are moderated by several personal specific characteristics. Especially age and income seem to have a big influence on the relationship. Younger people tend to focus more on the sales process satisfaction, whereas older people focus more on the satisfaction with the product itself. The association between customer satisfaction and loyalty appears to be weaker for high income. In addition, gender and involvement also moderate the relationship, whereas variety seeking even has a logical negative impact on the relation, suggesting that people switch suppliers only for the sake of variety. Following a similar approach, Walsh et al (2008) also found support for a positive relation between satisfaction and loyalty, which is moderated by several personal specific characteristics. Their sample consists of customers of a German do-it-yourself retailing chain. However, they did not find a moderating role of age and gender, as was found by Homburg and Giering (2001). Similar to Andreassen and Lindestad (1998), they also did not find a moderating effect of expertise. Nor did they find a moderating effect of loyalty card membership (i.e. the effect is not stronger for loyalty card holders than for non-holders). However, in line with Homburg and Giering (2001), they found that income moderates the relationship between customer satisfaction and loyalty. Finally, in general, the relationship appears to be stronger for customers which successfully recovered from a critical incident, than for customers who did not face a critical incident.

Since customer loyalty mediates the relation between customer satisfaction and future financial performance, customer loyalty in turn should lead to better financial performance. Indeed, a case study of Hallowell (1996) supported this by finding a positive relation between customer satisfaction and loyalty and in turn profitability, concerning 12,000 retail-banking customers at 59 divisions. Loyalty was measured as a function of retention and cross selling behavior of the customers. Two profitability measures were used, which are ROA and the ratio of non-interest expense and total revenue. Additionally, Bowen and Chen (2001) found that loyalty in the hotel industry leads to more repeat business and less ‘shopping around’, which, as the authors argue, leads to increased profits. In addition, loyal customers seem to be more likely to spread positive word-of-mouth. In a similar fashion, Srinivasan et al. (2002) found weak support for their hypothesis that loyalty will be negatively related to search for alternatives (i.e. ‘shopping around’) and strong support that loyalty leads to positive word-of-mouth behavior and willingness to pay more, which, according to the authors, should increase profits. These findings concern a sample of 1,211 online customers.

As can be seen, loyalty consists of many different aspects and consequences. By following Ittner and Larcker (1998) and Rust et al. (1995), three ways can be identified how loyalty leads to better future financial performance. These are via 1) existing customers, 2) new customers (Ittner and Larcker, 1998; Rust et al., 1995) and/or 3) firm-specific advantages.

### 4.1.2 Increased revenues of existing customers

Following Anderson et al. (1994), loyalty is characterized by several issues. First, loyal customers are more likely to repurchase from the same company and thus have higher retention rates. They will less quickly be convinced to switch to a competitor. Indeed, a positive relation between satisfaction and repurchase intention is generally found. Anderson and Sullivan (1993) used the SCSB to assess satisfaction and repurchase intention data and found that satisfaction positively influences repurchase intention, implying that satisfied customers are more likely to repurchase from the same company. Similar results are found by Kumar (2002), who investigated the relationship for IT products customers and by Szymanski and Henard (2001), who performed a meta analysis of existing literature. In this meta study, the results of 50 studies including 517 correlations regarding customer satisfaction are collected and analyzed. These studies all relate to antecedents, consequences or moderators of customer satisfaction. Concerning the consequences of customer satisfaction, 17 studies are included, of which nine directly relate repeat purchasing to customer satisfaction. 15 out of 17 correlations in these studies are significantly positive, while the two remaining ones are nonsignificant. By taking these correlations together, the authors found that the relation between customer satisfaction and repurchase behavior is among the strongest correlations in the study, with a general correlation of 0.52. This research did not take different economic periods into account. Neither is another meta-analysis performed that shows the general results including recent studies. This opens up opportunities for future research.

Also, Boulding et al. (1993) found a positive association between perceptions of quality and behavioral intentions, concerning a laboratory experiment in which a hotel visit was simulated. Since Andreassen and Lindestad (1998) found a positive relation between perceived quality and customer satisfaction for the tour operator industry in Norway and for customers with high service expertise in this industry, it can be argued that the relationship found by Boulding et al. (1993) can be mediated by customer satisfaction.

Anderson and Mittal (2000) mention the distinctive characters of repurchase intent and repurchase behavior. Supportive evidence for this notion comes from Seiders et al. (2005). Regarding customers of a national specialty retail chain, they showed that the relation between satisfaction and repurchase intention are not moderated by any variables, whereas the relation between satisfaction and repurchase behavior is moderated by customer involvement, convenience and income and competitive intensity. Mittal and Kamakura (2001), in addition, found that women, older people and people without children are more loyal given an equal satisfaction level, based on a large sample of automotive customers. Rust and Williams (1994) investigated the moderating effect of length of patronage (i.e. how long a customer already is a customer), based on a sample of season ticket holders of an arts center. Their results suggest that the relationship between customer satisfaction and repurchase intent weakens when length of patronage increases. This implies that new customers are more sensitive to low satisfaction, whereas existing customers might be more forgiving when satisfaction is low for a certain moment of time.

In a similar fashion, Gustafsson et al. (2005) found a positive effect of customer satisfaction on retention, which is very related to repurchase intent and behavior for a Swedish telecommunication company. Surprisingly, Verhoef (2003) did not find a significant relation between customer satisfaction and retention for a Dutch financial services company. According to the author, this might be due to the fact that his study uses behavioral data, in contrast to other research which often uses self-reported, intentional data. However, Gustafsson et al. (2005) also used behavioral data, leaving room for uncertainty. A possible explanation from my side is that if the data of Verhoef (2003) are collected in the economic downturn period of 2000-2002, while the data of Gustafsson et al. (2005) are from the blooming period of 2003-2007, this might influence the results significantly. It is, however, unclear for both studies when the data are exactly collected.

Second, unmentioned by Anderson et al. (1994), but also important is that loyal customers might spend a larger 'share of wallet' on the company (Cooil et al., 2007), which stands for the share of total customer's spending on a specific product or service a company captures. Cooil et al. (2007) claim that this is an even more important aspect than retention, since retention could also imply that a customer from time to time buys from the same company but in the meanwhile also buys from a competitive firm. Focusing on customer spending can increase value of a company ten times more than focusing only on retention (Coyles & Gokey, 2002). Supporting this view, Cooil et al. (2007) found customer satisfaction indeed having a positive effect on share of wallet, using data of Canadian bank customers. In addition, income and the length of relationship seem to be moderators of this relationship. They negatively influence the relation between customer satisfaction and share of wallet, meaning that a drop in satisfaction will have less influence on share of wallet for long lasting customers and lower income customers.

One could argue that share of wallet ultimately is about not how many clients you have, but about how much these clients spend at your company as a part of their total spending. Tarasi et al. (2013) found that satisfied customers spend more money on average in the financial and telecommunication service industry. This research also showed that satisfied customers have less volatile cash flows. Findings of Fornell et al. (2009) also showed that, based on the ACSI, satisfaction leads to growth in future spending.

Third, loyalty might imply that customers are willing to pay more (i.e. they have lower price elasticity) for a product or service, because they are satisfied with the benefits of the product or service. Anderson et al. (2004) claim that companies are at least better able to resist downward pressure on prices. Surprisingly enough, by using data from the SCSB, Anderson (1996) did not find supportive evidence for this relation. However, the author was already cautious when stating the hypothesis. Customer satisfaction generally is found to be greater in competitive industries, while price tolerance might be lower in these industries, since the next best alternative will be more attractive than was the case if the market was less competitive. The authors also argue that the findings might be due to a lack of control for unobserved events. After controlling for these events, the initial hypothesis is supported. It is important to mention that these differences might be due to differences in industry characteristics. More about this will follow later when I will focus on the competitiveness of firms.

Furthermore, satisfied customers are more likely to buy more frequently and in greater volumes. Lemon and Wangenheim (2009) proposed that satisfied customers will make more use of the core service of a company, and tested this by taking a look at airline customers. Their results suggest that this relationship indeed exists. Also, loyal customers might buy other products or services of the same company, which is known as cross-buying behavior. Lemon and Wangenheim (2009) supported this notion as well. Anderson et al. (2004) argue that this cross-selling behavior not only enhances the volume of future cash flows, but also accelerates the timing of these cash flows. Lemon and Wangenheim (2009) found evidence for both of these consequences.

Finally, firms providing high customer satisfaction might have a better reputation than other firms, which helps introducing new products to existing and potential customers. In addition, a good reputation might insulate firms from short term fluctuations in customer satisfaction. This means that customers are less likely to switch supplier when quality falls below expectations (Anderson et al., 1997). More about this will follow in the subsection about reputation theory.

### 4.1.3 Increased revenues through new customers

Besides maximizing revenues of existing customers, also new customers could be attracted which add to the future financial performance of a company. By following Anderson et al. (1994) again, two characteristics of satisfaction help to get an insight in this. First, loyal customers are more likely to spread positive word-of-mouth. Brown et al. (2005) found support for this notion by making use of an automobile customer dataset. Both intentional and behavioral word-of-mouth follow positively on customer satisfaction. In contrast, and maybe even more important, loyal customer are less likely to engage in negative word-of-mouth. By conducting a meta-analysis of existing empirical findings, Szymanski and Henard (2001) found supportive evidence. Related to positive word-of-mouth is that satisfied customers might recommend the product or service to other people (Anderson et al., 2004). Second, media are more likely to spread positive information of firms with high satisfaction than of firms with low satisfaction. Lastly, high satisfaction firms might be more successful in advertising and claiming the quality of their products or services, which could attract new customers.

### 4.1.4 Firm-specific advantages

To increase future financial performance, it is not only necessary to look at the revenue side. Increased satisfaction might also lead to cost savings of the firm. Again, this will be explained by complementing theoretical arguments of Anderson et al. (1994) with arguments and findings of other studies. First, a direct result of retention is that firms have to make less costs to replace customers (e.g. think of administrative costs, initial set-up costs etc.). In addition, another result is that customer acquisition costs will be lower compared to firms with lower satisfaction because of a stable customer base. Here one could think of marketing costs, since loyal customers will promote the company by providing positive word-of-mouth, references and recommendations (Bowen and Chen, 2001).

Second, future transaction costs might be reduced because of satisfied customers placing greater orders on a more frequent basis and these customers know the product or service and thus require less information (Bowen and Chen, 2001).

Third, failure costs could be lower. Firms with satisfied customers are less likely to have to deal with returned products, defective products or complaints. This is complemented by Anderson et al. (1997), who argue that also warranty costs and field service costs will be lower. Concerning complaining behavior of automobile service and repair customers, Baerden and Teel (1983) found supportive evidence that satisfied customers complain less. Szymanski and Henard's (2001) meta-analysis also drew the same conclusion. The objective of firms could be to turn complainants into loyal customers. With SCSB data, Fornell (1992) found that some sectors (e.g. computer related, clothing and newspaper industries) are more successful in doing so than others.

To conclude, based on the reputation effect shortly described in the existing customers section, a good reputation might help firms maintaining a good relation with its key suppliers, distributors and potential allies. Anderson et al. (2004) elaborate on this by arguing that companies with a loyal and satisfied customer base have more bargaining power on these stakeholders, because such a customer base can be seen as a valuable asset.

### 4.1.5 Concluding remarks

Above mentioned results and theories imply that customer satisfaction might lead to better future financial performance because of loyalty. This loyalty might help firms maximize existing customers' revenues, attract new customer and reduce operational costs. More specifically, loyal existing customers appear to repurchase more, spend more at a company, cross-sell more and buy in greater volumes. In positive economic periods, loyal customers are also more likely to retain to the company. In economic downturn, however, this seems not to be the case. When accounted for competitiveness, loyal customers are willing to pay more. Without accounting for this, loyal customers' willingness to pay is not higher, because competitive firms tend to have higher customer satisfaction scores, but customer are more likely to switch supplier when prices rise.

Loyal customers could also attract new customers because of positive word-of-mouth and recommendations. This could also be achieved via positive media attention. Finally, loyalty leads to firm-specific advantages because of lower replacement costs of customers and marketing costs to attract new customers. Also future transaction costs and failure costs will be lower because loyal customers are better known by the company and complain less.

## 4.2 Reputation theory

Besides the level of future financial performance, it is also important to know something about the stability of future financial performance. Anderson and Sullivan (1993) argue that 'firms that consistently provide high satisfaction have customers with low variance of expectations about the firm's quality' (p.132) and that this variance can be interpreted as the firm's reputation. This reputation makes customers less sensitive to short-term quality and satisfaction fluctuations. In every transaction satisfaction is expected to be revised. When satisfaction is lower than expected, overall satisfaction will decrease and vice versa. However, as the authors argue, the more experienced a customer is with the product or service, the less will a single transaction influence the total satisfaction of a product, implying that there will be smaller adjustments in expectations when experience increases. Consequently, the authors argue that firms providing consistently higher satisfaction will have less elasticity of retention, which means that those firms will have a more stable customer base. The results of their research confirm this point of view. By using data from the SCSB, the authors found that firms with highly satisfied customers are less sensitive to changes in satisfaction. Consistent with these findings and by using the same database, Anderson (1994) found that the effect of quality on satisfaction is lower when average satisfaction is higher. This implies that a one-time change in quality will affect satisfaction less when the customer is more satisfied.

The underlying theory of reputation theory is that customers use a so-called Bayesian-like updating process (Boulding et al., 1993). This means that customers both assess prior and new information when forming expectations about a product or service. In other words, satisfaction is based on judging cumulative experiences instead of just one transaction (Homburg and Giering, 2001). One dissatisfying transaction is unlikely to make a customer switch when prior satisfaction was high. On the other hand, one single transaction is also unlikely to make a customer very loyal. Instead, the aggregation of all transactions will lead to a long term satisfaction score that will only be slightly influenced by new single transactions. This process is also known as the anchoring and adjustment process (Bolton, 1998). Bolton (1998) argues that as customers gained more experience with a product or service, perceived quality of a new transaction will adjust the 'anchored' satisfaction less. A case study in the telephone industry supported this view, since the results suggest that customers with more experience with the company weigh their prior satisfaction more heavily, which in turn leads to longer duration times. These results thus also imply that high prior cumulative satisfaction can lead to a reputation effect.

Concerning season ticket holders of an arts center, Rust and Williams (1994) found similar results. Besides a strong positive association between customer satisfaction and repurchase intent, also a positive relation is found between length of patronage and this repurchase intent, suggesting that people who are already longer customer, will have more intention to repurchase. Also related to repurchase intent, Yi and La (2004) found that adjusted expectations as a result of disconfirmation (i.e. products perform worse/better than expected) have less impact on repurchase intent for loyal customers than for non-loyal customers, based on a sample of Korean family-restaurant customers.

As mentioned, firms with higher reputation will have a more stable customer base. It is argued that this will lead to less risk and volatility in future cash flows, since these customers are more likely to repurchase and will be less influenced by competitive efforts and environmental shocks (Anderson et al., 2004; Srivastava et al., 1998). Tarasi et al. (2013) argue that if cash flow variability can be reduced without decreasing cash flows, it is favorable to do so. Their research showed that satisfied customers are indeed having both higher average cash flows as well as lower variability in these cash flows. Similarly, by using ACSI data, Gruca and Rego (2005) found that customer satisfaction has a positive impact on cash flow growth, and negatively impacts cash flow variability.

A consequence of high cash flows and low cash flow variability is that the concerned company might be a safe investment object, as is argued by Fornell et al. (2006). They found support for this notion when they investigated the impact of ACSI satisfaction scores on the market value of equity. Specifically, the results suggest that investments in companies providing high customer satisfaction generate high returns with low additional risk. The authors argue that this implies that satisfied customers are assets with high returns and low risk. Related to this, Tuli and Bharadwaj (2009) investigated the effect of ACSI satisfaction scores on systematic and idiosyncratic risk. Systematic risk relates to market risks. In economic downturn, competition between firms will be more intense, but, as the authors argue, satisfied customers are less likely to switch company. This leads to lower vulnerability of a firm to systematic risk. Idiosyncratic risk is largely caused by the firm's actions and will also be lower when there is a more satisfied customer base. Namely, the authors argue that a stable customer base will lead to reduced inventory volatility, service costs, more positive word-of-mouth and more repurchasing behavior, which in turn lowers firm-specific risks, because of more knowledge about its customers and more stability in future cash flows. The authors found support that both kinds of risk are lower when satisfaction is higher.

### 4.2.1 Concluding remarks

To conclude, the above mentioned findings suggest that a reputation effect might exist concerning the relation between customer satisfaction and future financial performance. Consistently satisfied customers appear to be less sensitive to short term fluctuations in quality and satisfaction, which means that new information will be less heavily weighted than the aggregated old information. Also, due to a more stable customer base, firms will have higher and more stable cash flows. Thus, a good reputation could lead to better, and more stability in, financial performance.

## 4.3 Asymmetry effect

With their Prospect Theory, Kahneman and Tversky (1979) found that losses loom larger than gains. More specifically, 'the aggravation that one experiences in losing a sum of money appears to be greater than the pleasure associated with gaining the same amount' (p.279). Following this, some authors argue that negative disconfirmation has a bigger negative impact on satisfaction than positive disconfirmation will have a positive impact. For example, Anderson and Sullivan (1993) found support for the latter, by using the SCSB database.

However, for this research it is more interesting to take a look at the satisfaction-performance link. As far as I could find, no articles exist which directly examine the relationship between these two variables. However, research exists which focuses on the asymmetry effect, regarding the association between satisfaction and some of its consequences. For example, Anderson and Mittal (2000) mention that a negative change in negative satisfaction has a much larger effect on overall satisfaction than an equal positive change in positive satisfaction. Also, Bolton (1998) developed a model of the duration of the relation between customer and supplier, in which customer satisfaction plays a central role. The author argues that in the anchoring and adjustment process losses are weighted more heavily than gains. Results from the telephone industry supported this view, since perceived losses seemed to reduce duration times, whereas perceived gains did not have any significant impact on duration times. Similarly to this, Kumar (2002) found that in the IT sector, unfavorable disconfirmation has a significant negative effect on repurchase intent, whereas favorable disconfirmation has no positive effect.

### 4.3.1 Concluding remarks

These theoretical arguments and statistical findings imply that an asymmetry effect might exist in the relationship between customer satisfaction and future financial performance. Drops in customer satisfaction are found to have a bigger negative effect on overall satisfaction, duration times and repurchase intent than increases have a positive effect. It is worth investigating whether this effect also holds in my sample, to complement existing literature or open the discussion when contradictory items will be found.

## 4.4 Competitive influences

Lastly, it is interesting to investigate whether the competitive nature of companies mediates the relation between customer satisfaction and future financial performance. Obviously, the main issue with competitors is that they try to attract customers of other firms. The more competitive a market is, the more difficult it will be to retain customers (Anderson et al., 2004). There are many ways through which this can be achieved.

First, Lambert (1998) argues that the presence of substitutes made by competitors influences the satisfaction-performance relationship. The more alternatives there are, the easier it will be for customers to switch. Based on the Danish ECSI database, Grønholdt et al. (2000) found that the relationship between customer satisfaction and loyalty is more sensitive for competitive firms. This implies that loyalty reacts more sensitive on satisfaction when competition is more severe. Supportive results are also found by Kumar (2002), who found that the repurchase intent is not only dependent on absolute satisfaction levels, but also on relative satisfaction compared to competitors of the firm.

Second, the performance and price of these substitutes are very important (Lambert, 1998; Kumar, 2002). While one might expect that customer satisfaction leads to lower price sensitivity, Anderson (1996) found the opposite by using the SCSB. According to the author, this is due to competitive forces. On the one hand, competitiveness might force companies to compete on providing satisfaction, which might higher overall satisfaction levels (this is also supported by Fornell et al., 1996). On the other hand, the attractiveness of the next best alternative is on average higher when there are more substitutes of competitors. Therefore, an increase in price will more likely make customers switch supplier in competitive than in noncompetitive markets. Additional statistics supported this idea.

Furthermore, a higher degree of competitiveness will lower the bargaining power of firms, since customers and suppliers of a firm will have more alternatives to buy or offer their products or services (Anderson et al., 2004). Therefore, Anderson et al. (2004) hypothesized that the impact of customer satisfaction on shareholder value is lower in a competitive environment. Indeed, analysis of the ACSI data suggests that this hypothesis holds. Contrary to these results, Gruca and Rego (2005) did not find evidence that the relation between ACSI satisfaction and future cash flow growth is moderated by the level of competition. However, Gruca and Rego (2005) did find support that competition leads to more variability in future cash flow growth.

Lastly, it is important to mention that switching to another supplier brings switching costs. Fornell (1992) mentions that switching barriers will make it more costly for a customer to switch. These barriers vary from searching for alternatives, learning about alternatives, transaction costs, the loss of loyal customer discounts to emotional restraints. Switching might also bring financial and social risks, because of more uncertainty. Finally, some barriers are more present in business-to-business markets, such as the need of retraining personnel, acquirement of new equipment or different capital structures. Generally, firms will make it more difficult for their customers to switch. Following Yang and Peterson (2004), switching barriers will be lower in competitive markets, because competitors often try to help potential customers overcome switching barriers or provide them incentives to attract them to their company. For example, cash premiums or membership gifts could provide financial incentives for potential customers to switch, whereas demonstrations and trainings could help customers overcome searching and training costs. All together, this implies that the degree of competitiveness will also weaken the relationship between customer satisfaction and future financial performance by lower switching costs.

Evidence of an influence of switching costs on the link between customer satisfaction and future financial performance is mixed. Lee et al. (2001) found that customers with higher switching costs appear to be more loyal, by using data from the French mobile phone market. Similar results are found for the Turkish mobile phone market by Aydin et al. (2005). Their results suggest that switching costs moderate the relationship between satisfaction and loyalty. In contrast, however, Lam et al. (2004) and Yang and Peterson (2004) both did not find support for an impact of switching costs in the courier service industry and an randomly sent survey, respectively. In sum, based on prior research, there is no unambiguous moderating effect of switching costs.

To see the importance of competitiveness influencing the relation between customer satisfaction and future financial performance, Jones and Sasser (1995) claim that completely satisfied customers are much more loyal than normally satisfied customers. This implies that a slight drop in satisfaction can already result in a major drop in loyalty.

### 4.4.1 Concluding remarks

The findings mentioned above suggest that in competitive markets it will be more difficult to retain customers when satisfaction drops. Customers are more likely to switch to a substitute, since these will have a relatively higher quality compared to its price than in less competitive markets. Besides, the bargaining power of firms operating in a competitive sector is lower. Also switching costs are lower, because of competing firms help to overcome these barriers. Prior research, however, did not find unambiguous evidence that switching costs moderate the relation between customer satisfaction and future financial performance. Taken this together, it is important to take competitiveness into consideration in this research.

## 4.5 Literature overview summary

Table 1 presented below gives an overview of all articles used and its contents. For each article the research question, variables, time period and outcomes are shown. The main findings concerning my four areas of focus will be briefly discussed. Many authors have found a positive link between customer satisfaction and future financial performance (e.g. Anderson et al., 1994; 2004; Chi and Gursoy, 2009; Hallowell, 1996; Ittner and Larcker, 1998; Schneider et al., 2009; Williams and Naumann, 2011). Only Bernhardt et al. (2000) could not confirm this relationship. A possible explanation might be that this is due to tough economic circumstances in their sample period 1992-1993. This period, however, lies outside my sample period and therefore it is unclear whether the economic circumstances indeed were tough. The growth during 1994-1999 with a low initial S&P 500 value in 1994 might indicate that this was the case.

Concerning the reputation theory, both Gruca and Rego (2005) and Tarasi et al. (2012) found that customer satisfaction not only leads to higher future cash flows, but also to more stability in these cashflows. Related to this, Anderson and Sullivan (1993) found that the link between customer satisfaction and repurchase intent is less elastic when firms provide higher customer satisfaction. These examples imply that a reputation could be built which leads to less volatility in future financial performance. Fornell et al. (2006) and Tuli & Bharadwaj (2009) found that this also has a positive effect on the market performance. Companies providing high customer satisfaction appear to have high stock returns with low risk. These are considered as save investment objects.

Similar to Kahneman and Tversky's finding that losses loom larger than gains, Bolton (1998) found that there is an asymmetric effect on the relation between customer satisfaction and duration times. Disappointing customer satisfaction appears to have a stronger negative effect on duration times than positive customer satisfaction has a positive effect. Finally, competitive influences are found to weaken the relation between customer satisfaction and future financial performance. Grønholdt et al. (2000), for example, found that the more competitive a market is, the more sensitive customer loyalty reacts on customer satisfaction.

Together with the literature review the here mentioned literature provides rationale to expect to find a positive relationship between customer satisfaction and future financial performance, a reputation and asymmetry effect and an influence of competitiveness on the relation between satisfaction and performance. The next section will rely on these findings to develop hypotheses.

Table 1. Literature overview

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Author | Year | Title | Research question | Variables | Time period | Outcomes |
| Anderson | 1994 | Cross-category variation in customer satisfaction and retention. | Does systematic variation exist in the level of customer satisfaction, its antecedents and consequences and their relationships across product categories? | Customer satisfaction, quality, expectations, positive & negative (dis)confirmation, repurchase likelihood | 1989-1990 | Several variations are found across product categories. In general, products have stronger antecedents and customer satisfaction levels, but repurchase likelihood is higher for services. |
| Anderson | 1996 | Customer satisfaction and price tolerance. | To what extent does improving customer satisfaction increase customer willingness-to-pay or price tolerance, and decrease price sensitivity? | Price tolerance, customer satisfaction | 1989-1994 | There is a negative association between the level of customer satisfaction and the degree of price tolerance, but a positive association between year-to-year changes in customer satisfaction and price tolerance. |
| Anderson and Fornell | 2000 | Foundations of the American Customer Satisfaction Index. | *Description of the methodology of the ACSI and discussion of many of its key findings.* | - | - | - |
| Anderson, Fornell and Lehmann | 1994 | Customer satisfaction, market share, and profitability: findings from Sweden. | Does higher customer satisfaction lead to superior economic returns? | Expectations, quality, satisfaction, price, profitability, ROI, market share | 1989-1990 | There is a positive impact of quality on customer satisfaction and, in turn, profitability. |
| Anderson, Fornell and Mazvancheryl | 2004 | Customer satisfaction and shareholder value. | Does a positive association between customer satisfaction and long-term financial performance exist? | Tobin's Q, satisfaction, advertising-to-sales ratio, market share, concentration level | 1994-1997 | There is a positive association between customer satisfaction and shareholder value. |
| Anderson, Fornell and Rust | 1997 | Customer satisfaction, productivity, and profitability: differences between goods and services. | Are there differences for the tradeoffs between customer satisfaction and productivity for goods and services? | Customer satisfaction, productivity, dummy (good = 0, service = 1), ROI | 1989-1992 | The tradeoff between customer satisfaction and productivity seems to be more present in the service industry. |
| Anderson and Mittal | 2000 | Strengthening the satisfaction-profit chain. | *Discussion of why the links in the satisfaction-profit chain are often asymmetric and non-linear* | - | - | - |
| Anderson and Sullivan | 1993 | The antecedents and consequences of customer satisfaction for firms. | What are the antecedents and consequences of customer satisfaction and how do these differ across firms? | Perceived quality, expectations, disconfirmation, ease of evaluating quality, satisfaction, perceived quality, repurchase intentions | 1989-1990 | Perceived quality and disconfirmation are the main antecedents of customer satisfaction. In addition, the relation between repurchase intention and satisfaction is less elastic for firms providing high satisfaction, which implies a reputation effect. |
| Andreassen and Lindestad | 1998 | Customer loyalty and complex services: the impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. | What is the impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise? | Customer loyalty, corporate image, customer satisfaction, value, perceived quality | - | For complex and infrequently purchased services, corporate image rather than customer satisfaction is the main predictor of customer loyalty. |
| Aydin, Özer and Arasil | 2005 | Customer loyalty and the effect of switching costs as a moderator variable: a case in the Turkish mobile phone market. | What is the effect of customer satisfaction and trust on loyalty and how is loyalty effected by switching costs? | Customer loyalty, customer satisfaction, trust, dummy (low switching costs = 0, high switching costs = 1) | - | Switching costs directly affect loyalty and also moderate the impact of customer satisfaction and trust on loyalty. |
| Baerden and Teel | 1983 | Selected determinants of consumer satisfaction and complaint reports. | Does complaining behavior have an effect on customer satisfaction? | Expectations, attitudes, intentions, satisfaction, complaint reactions | - | In addition to expectations and disconfirmation, complaining behavior also has an impact on customer satisfaction. |
| Bernhardt, Donthu and Kennett | 2000 | A longitudinal analysis of satisfaction and profitability. | Does satisfaction lead to increased profitability? | Customer satisfaction, employee satisfaction, sales, customer counts, profitability | 1992-1993 | There is no significant relation between customer satisfaction and performance, but there is a significant relation between changes in customer satisfaction and changes in performance. |
| Bloemer and Kasper | 1995 | The complex relationship between consumer satisfaction and brand loyalty. | Does consumer satisfaction lead to increased brand loyalty? | Satisfaction, repurchase likelihood, brand commitment, brand choice involvement, brand deliberation | 1992 | The positive impact of manifest satisfaction on true brand loyalty is bigger than the impact of latent satisfaction on true brand loyalty. |
| Bolton | 1998 | A dynamic model of the duration of customer's relationship with a continuous service provider: the role of satisfaction. | Is there a link between customer satisfaction and retention? | Duration, satisfaction, experience, new loss, new gain, value | 1991 | Customer satisfaction has a positive impact on the duration of a relationship. Besides, negative experiences appear to be weighted more heavily than positive ones. |
| Boulding, Kalra, Staelin and Zeithaml | 1993 | A dynamic process model of service quality: from expectation to behavioral intentions. | How are perceptions of service quality formed and what are the consequences of these perceptions? | Expectation, (dis)confirmation, perception of service quality, behavioral intention | - | There are mixed effects of expectations on perceived service quality and perceived service quality positively affects intended behaviors. |
| Bowen and Chen | 2001 | The relationship between customer loyalty and customer satisfaction. | Does customer satisfaction increase customer loyalty? | Loyalty, satisfaction | - | There is a nonlinear relationship between satisfaction and loyalty. |
| Brown, Barry, Dacin and Gunst | 2005 | Spreading the word: investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. | Is commitment a mediator of the satisfaction-positive word-of-mouth relationship and of the relation between identification and word-of-mouth? | Satisfaction, commitment, identification, ownership, word-of-mouth intentions and behaviors | - | Commitment moderates the relationships between satisfaction and word-of-mouth and between identification and word-of-mouth. |
| Chi and Gursoy | 2009 | Employee satisfaction, customer satisfaction, and financial performance: an empirical examination. | What is the relation between employee and customer satisfaction and their impact on financial performance? | Profitability, ROI, net profit, customer satisfaction, employee satisfaction | - | There is a direct effect of customer satisfaction on financial performance and an indirect effect of employee satisfaction, via customer satisfaction, on financial performance. |
| Churchill and Surprenant | 1982 | An investigation into the determinants of customer satisfaction. | Does disconfirmation influence customer satisfaction? | Expectations, performance, disconfirmation, satisfaction, | - | For nondurable goods, disconfirmation positively affects satisfaction. For durable goods, there is no relation. |
| Cooil, Keiningham, Aksoy and Hsu | 2007 | A longitudinal analysis of customer satisfaction and share of wallet: investigating the moderating effect of customer characteristics. | Does customer satisfaction positively affect share of wallet and is this relationship moderated by several customer characteristics? | Satisfaction, age, income, education, tenure, share of wallet | 2000-2004 | There is a positive relation between satisfaction and share of wallet and this is moderated by income and length of the relationship. |
| Coyles and Gokey | 2002 | Customer retention is not enough. | *Descriptive article about customer retention.* | - | - | - |
| Fornell | 1992 | A national customer satisfaction barometer: the Swedish experience. | *This article describes general results of customer satisfaction.* | Customer satisfaction, expectations, perceived performance, switching barriers, voice | 1989-1991 | Satisfaction is lower in industries where supply is more homogeneous and industries which are dependent of customer satisfaction for repeat business tend to have higher satisfaction scores. |
| Fornell, Johnson, Anderson, Cha and Bryant | 1996 | The American Customer Satisfaction Index: nature, purpose, and findings. | *The ACSI database is explained and some general results are given.* | - | - | Satisfaction depends more on customization than on reliability. Customer expectations are more important in sectors where consumption is relatively low. Satisfaction is more based on quality than on price or value. |
| Fornell, Mithas, Morgeson III and Krishnan | 2006 | Customer satisfaction and stock prices: high returns, low risk. | Does customer satisfaction lead to excess returns and higher stock market risk? | Market value of equity, book value of assets, book value of liabilities, ACSI | 1994-2002 | Customer satisfaction leads to high returns and low risk. |
| Fornell, Rust and Dekimpe | 2010 | The effect of customer satisfaction on consumer spending growth. | Does satisfaction lead to spending growth? | Consumer expenditures, satisfaction, demand on current income of servicing debt, consumer price index | 1994-2006 | Satisfaction has a positive impact on spending growth and this relation is moderated by household DSR (what should be paid on debt) |
| Grønholdt, Martensen and Kristensen | 2000 | The relationship between customer satisfaction and loyalty: cross-industry differences. | What is the relation between customer satisfaction and loyalty and are there cross-industry differences? | Satisfaction, loyalty | 1999 | Customer satisfaction positively affects customer loyalty. The more competitive a market is, the more sensitive this relation is. |
| Gruca and Rego | 2005 | Customer satisfaction, cash flow, and shareholder value. | How does customer satisfaction affect future cash flows? | Cash flow, earnings, satisfaction, market share, advertising, brands, segments, demand growth, demand instability | 1994-2002 | Customer satisfaction leads to higher future cash flows and reduces its variability. |
| Gustafsson, Johnson and Roos | 2005 | The effects of customer satisfaction, relation commitment dimensions, and triggers on customer retention. | Do customer satisfaction and commitment affect customer retention? | Situational trigger, reactional trigger, customer satisfaction, affective commitment, calculative commitment, churn | - | Satisfaction and calculative commitment both have an effect on retention, and prior churn moderates the satisfaction-retention link. |
| Hallowell | 1996 | The relationships of customer satisfaction, customer loyalty and profitability: an empirical study. | Does customer satisfaction has a positive effect on loyalty and does loyalty in turn positively affects profitability? | Customer satisfaction, retention, cross sell, ROI, NIE/Rev, household income, bank contact | - | Customer satisfaction positively affects retention which in turn leads to higher profitability. |
| Homburg and Giering | 2001 | Personal characteristics as moderators of the relationship between customer satisfaction and loyalty - an empirical analysis. | Do certain personal characteristics moderate the relationship between customer satisfaction and loyalty? | Customer loyalty, satisfaction, involvement, variety seeking, age, income, gender | - | Variety seeking, age and income appear to moderate the satisfaction - loyalty link. |
| Ittner and Larcker | 1998 | Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. | Does customer satisfaction indicate accounting performance and does it give information to the stock market? | Customer satisfaction, age, total revenue, expenses, margins, ROS, retail customers, business and professional customers, retention, past performance, market value of equity, book value of assets and liabilities | 1995-1996 | Customer satisfaction positively affects accounting performance and it is relevant to the stock market. |
| Jones and Earl Sasser, Jr. | 1995 | Why satisfied customers defect. | *Research on why customers defect.* | - | - | - |
| Kahneman and Tversky | 1979 | Prospect theory: an analysis of decision under risk. | *Overview of prospect theory.* | - | - | Important for my research: losses loom larger than gains. |
| Kumar | 2002 | The impact of performance, cost, and competitive considerations on the relationship between satisfaction and repurchase intent in business markets. | Do competitive, cost and satisfaction considerations affect repurchase intent? | Satisfaction, repurchase intent, cost gain, cost loss | - | In deciding about repurchase competitive suppliers are taken into account. |
| Lam, Shankar, Erramilli and Murthy | 2004 | Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context. | Does customer satisfaction mediates the relationship between customer value and loyalty and is there an interaction effect between switching costs and satisfaction? | Service quality, price, customer satisfaction, switching costs, loyalty | - | Customer satisfaction mediates the customer value-loyalty relationship. |
| Lambert | 1998 | Customer satisfaction and future financial performance. Discussion of 'Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction.' | *Discussion of the article mentioned in the title.* | - | - | - |
| Lee, Lee and Feick | 2001 | The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. | Do switching costs moderate the satisfaction-loyalty link and are there differences in segments? | Customer satisfaction, loyalty, switching costs | ±1999 | Switching costs moderate the relationship between customer satisfaction and loyalty. |
| Lemon and Wangenheim | 2009 | The reinforcing effects of loyalty program partnerships and core service usage. | Does loyalty leads to more cross-buying behavior? | Cross buying, core service usage, duration, satisfaction, gender, share of wallet | - | Users of the core service of a company tend to cross-buy more products/services of the same company. |
| Mittal and Kamakura | 2001 | Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effects of customer characteristics. | Do several customer characteristics moderate the relationship between customer satisfaction and repurchase behavior? | Satisfaction, repurchase behavior/intent, sex, education level, marital status, age, number of children, area of residence | - | Repurchase rates are systematically different among different customer groups due to different customer characteristics. |
| Rao, Agerwal and Dahlhoff | 2004 | How is manifest branding strategy related to the intangible value of a corporation? | How are different manifest branding strategies related to the value of a firm? | Tobin's Q, focus, concentration, operating margin, leverage, R&D, advertising, age of firm, number of acquisitions, growth rate | 1996-2000 | Corporate branding strategies lead to higher values of Tobin's Q, whereas mixed branding strategies lead to a lower Tobin's Q. |
| Rostan and Rostan | 2012 | Assessing the predictive power of customer satisfaction for financial and market performances: price-to-earnings ratio is a better predictor overall. | What is the best predictor of market and financial performance? | ROE, ROA, ROI, gross profit margin, price to sales, book value, dividend yield, price to cash flows, price-to-earnings ratio, Tobin's Q, annual return, volatility, customer satisfaction | 2004-2009 | Price-to-earnings ratio is a better predictor of financial and market performance than customer satisfaction. |
| Rust and Williams | 1994 | How length of patronage affects the impact of customer satisfaction on repurchase intent. | Do customer satisfaction and length of patronage influence repurchase intent? | Repurchase intent, satisfaction, length of patronage | - | Repurchase intent is higher when satisfaction is higher or length of patronage is longer. |
| Rust, Zahorik and Keiningham | 1995 | Return on Quality (ROQ): making service quality financially accountable. | *Description of the Return on Quality approach.* | - | - | Improved quality will make it easier for firms to attract new customers and existing customers are more likely to become repeat customers. |
| Schneider, Macey, Lee and Young | 2009 | Organizational service climate drivers of the American Customer Satisfaction Index (ACSI) and financial and market performance. | Does customer satisfaction have a positive influence on financial and market performance and does it mediate the relationship between service climate and financial and market performance? | Organizational service climate, customer satisfaction, Tobin's Q | 2003-2005 | Customer satisfaction positively affects financial and market performance and also mediates the relationship between service climate and financial and market performance. |
| Seiders, Voss, Grewal and Godfrey | 2005 | Do satisfied customer buy more? Examining moderating influences in a retailing context. | Is the relationship between satisfaction and repurchase behavior moderated by customer, relational and marketplace characteristics? | Repurchase visits, repurchase spending, repurchase intentions, satisfaction, involvement, household income, relationship age, relationship program participation, convenience, competitive intensity | - | The relationship between satisfaction and repurchase behavior is moderated by convenience, competitive intensity, customer involvement and household income. The results are different for the effect of satisfaction on repurchase intent. |
| Srinivasan, Anderson and Ponnavolu | 2002 | Customer loyalty in e-commerce: an exploration of its antecedents and consequences. | What are the antecedents and consequences of customer loyalty in e-commerce? | E-loyalty, customization, contact interactivity, care, community, cultivation, choice, character, convenience, word-of-mouth, willingness to pay | - | Customization, contact interactivity, care, community, cultivation, choice and character cause e-loyalty. Positive word-of-mouth and willingness to pay more are consequences of it. |
| Srivastava, Shervani and Fahey | 1998 | Market based assets and shareholder value: a framework for analysis. | *Development of a conceptual framework that links marketing to shareholder value.* | - | - | Marketing should develop and manage market-based assets which in turn should influence shareholder value. |
| Szymanski and Henard | 2001 | Customer satisfaction: a meta-analysis of the empirical evidence. | *Meta-analysis of relationships between customer satisfaction and its antecedents and consequences.* | Customer satisfaction, expectations, disconfirmation, performance, affect, equity, complaining behavior, word-of-mouth, repeat purchasing | - | Equity and disconfirmation are most strongly correlated to customer satisfaction. Many method and measurement factors moderate the relationships between customer satisfaction and its antecedents and consequences. |
| Tarasi, Bolton, Gustafsson and Walker | 2012 | Relationship characteristics and cash flow variability: implications for satisfaction, loyalty and customer portfolio management. | What are the predictors of variability in individual customers' cash flows? | Customer satisfaction, loyalty, relationship breadth, share of customer, length of relationship, age, income, share of income | 1999-2001, 2003-2006 | Customer satisfaction leads to higher cash flows and lower cash flow variability. |
| Tuli and Bharadwaj | 2009 | Customer satisfaction and stock returns risk. | What is the impact of customer satisfaction on stock returns risk? | Systematic risk, customer satisfaction, R&D, idiosyncratic risk | 1994-2006 | Customer satisfaction reduces stock returns risk. |
| Verhoef | 2003 | Understanding the effect of customer relationship management efforts on customer retention and customer share development. | What is the influence of customer relationship perceptions and relationship management instruments on customer retention and customer share development? | Commitment, satisfaction, payment equity, direct mail, loyalty program, customer share | - | Affective commitment and loyalty programs positively affect customer retention and customer share development and direct mailings also influence customer share development. |
| Walsh, Evanschitzky and Wunderlich | 2008 | Identification and analysis of moderator variables. Investigating the customer satisfaction-loyalty link. | What are moderators of the link between customer satisfaction and loyalty? | Satisfaction, repurchase intention, positive word-of-mouth, age, gender, income, tenure, critical incidents recovery, loyalty cards, expertise | 2003-2005 | Critical incidents and income are important moderators of the customer satisfaction-loyalty link. |
| Williams and Naumann | 2011 | Customer satisfaction and business performance: a firm-level analysis. | What is the relationship between customer satisfaction and several company performance metrics? | Customer satisfaction, repurchase intentions, willingness to recommend, revenue, contract renewals, net income, earnings per share, price earnings ratio, stock price, Tobin's Q | - | Customer satisfaction influences retention, revenue, earnings per share, stock price and Tobin's Q. |
| Yang and Peterson | 2004 | Customer perceived value, satisfaction, and loyalty: the role of switching costs. | Do switching costs moderate the relationships between customer satisfaction and loyalty and perceived value and loyalty? | Customer loyalty, perceived value, customer satisfaction, switching costs, sex, education, age, income, internet usage frequency, length of using the internet channel, service usage frequency | - | Switching costs moderate the relationships between customer satisfaction and loyalty and perceived value and loyalty. |
| Yeung, Ging and Ennew | 2002 | Customer satisfaction and profitability: a reappraisal of the nature of the relationship. | To what extent is the customer satisfaction-profitability link non-linear? | Satisfaction, profit | 1994-1998 | It is acceptable to assume a linear relationship between customer satisfaction and profitability. |
| Yi and La | 2004 | What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty. | How does loyalty influence the relationship between customer satisfaction and repurchase intention? | Disconfirmation, customer satisfaction, adjusted expectations, repurchase intention | - | The direct route from satisfaction to repurchase intention has a greater impact for loyals, whereas the route from customer satisfaction to adjusted expectations to repurchase intention has a greater impact for nonloyals. |

# 5. Hypotheses

Following the same sequence as during the literature review, now hypotheses will be developed which are of interest for this study.

## 5.1 Relation between customer satisfaction and future financial performance

As can be seen in the literature review, often a positive relation between customer satisfaction and future financial performance is found. Generally, this is the case because satisfied customers tend to be more loyal. By mainly following Ittner and Larcker (1998), Rust et al. (1995) and Anderson et al. (1994), I argue that this influences future financial performance in three ways. First, firms will attract more revenues from existing customers when they are loyal. They will be more likely to repurchase the product and provide more share of wallet to the firm they are satisfied with. Besides, they might buy more frequently and in greater volumes, including cross-buying behavior. They might even want to pay more for the product or service.

Second, new customers might be attracted more easily when loyal customers spread positive word-of-mouth or recommend the product or service to other people. Also, media will be more likely to show positive news items about the firm. Lastly, loyal customers might make firms safe costs on operational issues, since e.g. replacement costs, customer acquisition costs, future transaction costs and failure costs will be lower, because of a more stable customer base, more standardized and bigger orders and less complaints of customers.

Bringing this together, I hypothesize that:

*H1: Customer satisfaction will be positively related to future financial performance.*

## 5.2 Reputation theory

As Anderson and Sullivan (1993) argue, firms can build a reputation by providing consistently high customer satisfaction. This will make customers less sensitive to short-term fluctuations in experiences with the product or service. Boulding et al. (1993) describes the underlying process of this theory. Due to Bayesian-like updating, new experiences will influence the overall satisfaction less when a customer has more experience with the firm. One transaction which fluctuates from the normal satisfaction level will be unlikely to influence overall satisfaction a lot. Therefore I hypothesize the following:

*H2: Consistently high customer satisfaction will have a positive effect on the stability of future financial performance.*

## 5.3 Asymmetry effect

Kahneman and Tverksy's (1979) Prospect Theory already decades ago showed that people in general feel more harmed when incurring a loss than they feel happy when they won the same amount. This is also known as the asymmetry effect. As was done by Bolton (1998), I argue that this will also exist in the relationship between customer satisfaction and future financial performance. A drop in customer satisfaction will have a bigger influence on performance than an increase of the same amount will have.

So, I reason that both hypothesis 1 and 2 are affected by the asymmetry effect, with the general notion that decreases in customer satisfaction have bigger effect on future financial performance than increases. It will also have a more destabilizing effect. This leads to the following hypotheses:

*H3a: The effect of customer satisfaction on future financial performance will be bigger for decreases in customer satisfaction than for increases in customer satisfaction.*

*H3b: The effect of consistently high customer satisfaction on the stability of future financial performance will be lower for decreases in customer satisfaction than for increases in customer satisfaction.*

## 5.4 Competitive influences

For my final hypotheses, I will focus on competitive influences on the relationship between customer satisfaction and future financial performance. When a market is more competitive, customers will be more likely to switch from supplier (Anderson et al., 2004). Lambert (1998) for example, argues that competitiveness leads to more alternatives which in turn will also be more attractive in performance and price. This means that the next best alternative will be better in competitive markets than in noncompetitive markets, making it more likely that customers switch supplier. Besides, the bargaining power of firms will decline because of higher competitiveness, because customers and suppliers can more easily do business with other firms and switching costs will be more difficult to retain. Therefore competitiveness will make customers switch earlier, which weakens the relation between customer satisfaction and future financial performance.

Using the argumentation provided above, the following hypotheses are in place:

*H4a: The effect of customer satisfaction on future financial performance will be weaker for competitive firms.*

*H4b: The effect of consistently high customer satisfaction on the stability of future financial performance will be weaker for competitive firms.*

In order to test these hypotheses, data and methodology are necessary. These will be described in the next two sections.

# 6. Data

In order to perform statistical analysis, data are required for different variables. These include customer satisfaction data, numbers about financial performance of firms and other firm-specific data. In this section it will be described which data are used and how they are attracted. Consequently, descriptive data analysis will be presented with general information about the used data items.

## 6.1 Data description

As a starting point for this research, customer satisfaction data were found of 374 companies, ranging from 1994 till 2011[[5]](#footnote-5). These data are attained from the American Customer Satisfaction Index (ACSI). This database started in 1994 and nowadays includes customer satisfaction scores of 374 different US companies, dispersed over more than 43 industries and ten economic sectors. For each firm, approximately 250 current firm's customers were surveyed about their satisfaction. Fifteen questions give an overview of the ACSI score itself, three of its antecedents (customer expectations, perceived quality and perceived value) and two of its consequences (customer complaints and customer loyalty). Ultimately, this leads to a customer satisfaction score on a 0 to 100 scale, which gives an indication of satisfaction of a firm's product or service. In addition, industry and national customer satisfaction scores are given by using a weighted average of firm scores and industry scores, respectively. (Fornell et al., 1996)

Anderson and Fornell (2000) tested the ACSI methodology on several properties to be sure that ACSI is a useful tool for measuring customer satisfaction and using it in statistical research. In terms of precision, validity, reliability, predictive power, coverage, simplicity, diagnostics and comparability they found that the ACSI is a proper measure of customer satisfaction. Especially the predictive power to predict economic returns is of interest in this study. Based on existing literature the authors conclude that '[the] evidence indicates that the ACSI methodology produces a reliable and valid measure for customer satisfaction that is forward-looking and relevant to a company's economic performance' (p.S876). This validates the use of ACSI as a proxy for customer satisfaction.

Next, company-specific data were collected to complement these scores. As a proxy for future financial performance, I will use net income. By doing so, I follow Gruca and Rego (2005), who used net income before extraordinary items. Because of too little available data I did not exclude the extraordinary items, but I argue that the positive and negative extraordinary items will counterbalance each other over the years. A common problem with net income is that it can be influenced by accounting decisions and distortions. Concerning this, I also argue that negative and positive distortions will counterbalance each other over the years. To control for firm size, I will divide net income by the total assets of a firm, as was done by Gruca and Rego (2005).

However, as was found by Rostan and Rostan (2012) and is commonly more and more found, measures like ROI, ROA, EVA, net income etc. are not the best predictors of future financial performance. Earnings per share turn out to be the best predictor of future financial performance. Rostan and Rostan (2012) supported this by finding that price-to-earnings (EPS) ratio best predicts market and financial performance. Here, price-to-earnings ratio is defined as the ratio between market value per share and earnings per share. Hence, the importance of earnings per share as predictor of future financial performance is shown. Therefore, I will also do the same analyses with EPS as proxy for future financial performance as will be done with net income. These data are also collected from COMPUSTAT.

Rostan and Rostan (2012) also found that for the effect of customer satisfaction on future financial performance, a time lag of one year is appropriate. This is justifiable, since the effect of customer satisfaction on future performance will not be immediate. It will take time before customers become repeat customer or before new customers will buy the product or service. Therefore both the net income and EPS data are collected for the years 1995-2012.

Following various authors (e.g. Anderson, 1994; 1996; Anderson et al., 2004; Gruca and Rego, 2005; Rao et al., 2004), I use the degree of concentration as a proxy for the level of competitiveness. High concentration means that a few companies dominate the industry, indicating that competitiveness is low, whereas a fragmented industry with low concentration indicates high competitiveness. More specifically, the Herfindahl-Hirschman Index (HHI) is used to measure the degree of concentration. This equals the sum of the squared market shares, which in turn will be estimated on the basis of sales data (Anderson et al., 2004). These data are also collected from COMPUSTAT. The lower the HHI is, the more competitive an industry will be. To identify the relevant industry for each company, the Global Industry Classification Standard (GICS) is used, as will be described in more detail at the end of this subsection. To match with the customer satisfaction data, the data are collected from 1994 to 2011.

For sake of simplicity and the use of earnings per share in the methodological analysis, only S&P 500 (ex-)listed companies were selected, reducing the relevant number of companies to 113. Because during matching the data it appeared that the customer satisfaction data of one company were matched with the financial data of another company, this one was removed from the sample. Also, for two companies no financial data were found at all by using COMPUSTAT. All together, this leaves me with a sample size of 110 US (ex-)listed companies, with customer satisfaction and competitiveness data from 1994-2011 and matching one year lagged financial data from 1995-2012.

For the sector analysis, all companies are divided into different industry sectors. As was done by Rostan and Rostan (2012), I used GICS to do so. Nine out ten sectors are present in this sample. Only no companies are included of the materials sector. For the other sectors, 31 (consumer discretionary), 24 (consumer staples), 21 (utilities), 13 (financials), 8 (information technology), 4 (telecommunication services), 3 (energy), 3 (health care) and 3 (industrials) companies are identified. This shows that the sectors consumer discretionary, consumer staples and utilities might be overrepresented in the entire sample. Therefore, in interpreting the results this should be taken into consideration. An overview of the companies and its accompanying sectors can be found in Appendix A.

## 6.2 Descriptive data analysis

In table 2, summary statistics can be found of the data items included in my sample. After eliminating outliers and statistically useless data[[6]](#footnote-6), for every item at least 1,168 observations are available, divided over 110 different companies. The histograms of each variable can be found in Appendix B. Although most of these histograms seem to approximate a normal distribution, the Jarque-Bera test shows that all variables are not normally distributed. These data are the best available, so this cannot be directly solved. As a result, higher standard errors have to be accepted, because the tails on both sides of the distribution are bigger. As a consequence, the results might be more significant than they really are. Therefore this should be taken into consideration when interpreting these results.

As shown in the table, customer satisfaction scores of the companies range from a minimum of 54 to a maximum of 91, with a mean of 76.43. Another indication of a normal distribution for this variable is that the median is almost equal to the mean, indicating that it is less likely that this variable is skewed to either the left or the right. A similar story applies to the change in customer satisfaction. Here the mean and median are also about equal. Furthermore, the changes in customer satisfaction vary from -18 to 9, with an expected change of 0.08.

Table 2. Descriptive data statistics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | N | Mean | Minimum | Median | Maximum | Standard Deviation | Jarque-Bera |
| CS | 1,277 | 76.43 | 54 | 77 | 91 | 5.96 | 38.20\*\*\* |
| NP/TA | 1,836 | 0.05 | -0.22 | 0.04 | 0.22 | 0.05 | 604.46\*\*\* |
| EPS | 1,828 | 2.22 | -6.42 | 2.10 | 9.53 | 1.84 | 703.01\*\*\* |
| ∆CS | 1,168 | 0.08 | -18 | 0 | 9 | 2.69 | 830.09\*\*\* |
| ∆NP/TA | 1,819 | 11.11 | -774.93 | 1.31 | 866.91 | 119.60 | 19,250.79\*\*\* |
| ∆EPS | 1,811 | 12.64 | -658.82 | 7.64 | 785.71 | 99.91 | 16,713.29\*\*\* |
| HHI | 1,876 | 0.17 | 0.05 | 0.15 | 0.71 | 0.14 | 1,928.00\*\*\* |
| AHHI | 1,720 | 0.14 | 0.05 | 0.14 | 0.41 | 0.08 | 829.27\*\*\* |

1) CS = Customer satisfaction; NP/TA = Net profit / total assets; EPS = Earnings per share; ∆CS = the change in customer satisfaction; ∆NP/TA = the percentage change in net profit / total assets; ∆EPS = the percentage change in earnings per share; and (A)HHI = (Adjusted) Herfindahl-Hirschman Index.

2) \*\*\* = Statistically significant at a 1% significance level.

For the dependent variables in the different regressions, in first instance more extreme values were found. Especially for the change in earnings per share and in net profit divided by total assets the minimum and maximum scores were a lot bigger than the mean and median values. This might be due to extreme financial results because of extraordinary items. Also, the percentage change in scaled net profit and earnings per share might be extremely high when in one year the scaled net profit or earnings per share was close to zero and the other year a lot higher. To address for this problem, outliers were deleted from the net profit / total assets, earnings per share, change in net profit / total assets and change in earnings per share. For each of these variables, the top 1% of each side of the observations was deleted. It should be noticed, however, that this reduces the reliability of the results, because some objective data are deleted. The descriptive analysis now reveals that the mean of net profit divided by total assets is 0.05 and the mean of earnings per share equals 2.22. Unsurprisingly, the means of the percentage change in net profit divided by total assets and earnings per share are about equal (11.11% and 12.64%, respectively). This might indicates that both proxies measure financial performance in a similar way.

Finally, the HHI, as a proxy of competitiveness has a mean of 0.17 and a median of 0.15. The minimum of 0.05 and the maximum of 0.71 indicate that large differences in the competitiveness of industrial sectors and over time exist. However, it should be noticed that the HHI is also influenced by the number of firms included in the sample for each sector, which is both influenced by the availability of customer satisfaction scores and the inclusion on the S&P 500. If this is not representative of the actual number of firms in each sector, the HHI scores might be biased upwards when only little companies are present for a sector in a given year, and biased downwards when many companies are present. Therefore I also included a second, adjusted HHI variable (AHHI), which excludes the HHI scores of industry sectors in which less than four observations were found each year. By doing so, I account for unusually high HHI scores, because of very view observations for a specific sector. These sectors are energy, health care and industrials. The results of both regressions with the competitiveness proxies will be compared with each other. However, it should always be taken in mind that these sectors are excluded and therefore the AHHI is also not a perfect measure of competitiveness.

Table 3 gives an overview of the correlations between the variables used, in which the correlations which are relevant for the testing of the hypotheses are presented bolt. As a simple starting point for the statistical analysis, it can be seen that customer satisfaction and net profit divided by total assets are positively correlated with each other. Although this does not say anything about the direction of the relationships, it might indicate that a positive relation will be found when estimating the regression. The same counts for the correlations between the change in customer satisfaction and the change in net profit divided by net assets and earnings per share. In contrast, no correlation is found between customer satisfaction and earnings per share, which might indicate no significant relation will be found. Running the regressions will give a clearer insight.

Another interesting point is the correlation between (the change in) net profit divided by total assets and earnings per share, which is presented bolt and italic. The highly significant correlation indicates that there is a relation between the two variables. Since both variables are used as a proxy for financial performance and they have an influence on each other (the correlation does not reveal in which direction), they seem to be partly similar proxies for financial performance. This might increase the reliability of the results when similar results are found for both regressions.

Table 3. Correlations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | CS | NP\_TA | EPS | \_CS | \_NP\_TA | \_EPS | HHI |
| CS | 1 |  |  |  |  |  |  |
| NP\_TA | **0.355\*\*\*** | 1 |  |  |  |  |  |
| EPS | **0.040** | ***0.310\*\*\**** | 1 |  |  |  |  |
| \_CS | 0.228\*\*\* | -0.021 | -0.053\* | 1 |  |  |  |
| \_NP\_TA | -0.063\*\* | 0.144\*\*\* | 0.180\*\*\* | **-0.082\*\*\*** | 1 |  |  |
| \_EPS | -0.030 | 0.126\*\*\* | 0.251\*\*\* | **-0.052\*** | **0.765\*\*\*** | 1 |  |
| (A)HHI | **0.048** | **0.134\*\*\*** | **-0.099\*\*\*** | **-0.035** | **0.018** | **0.022** | 1 |

1) CS = Customer satisfaction; NP/TA = Net profit / total assets; EPS = Earnings per share; ∆CS = the change in customer satisfaction; ∆NP/TA = the percentage change in net profit / total assets; ∆EPS = the percentage change in earnings per share; and (A)HHI = (Adjusted) Herfindahl-Hirschman Index.

2) \*/\*\*/\*\*\* = Statistically significant at a 10%, 5% and 1% significance level, respectively.

# 7. Methodology

## 7.1 Models

To test the different hypotheses, Least Squares (LS) regressions will be used. Although some authors found the relationship between customer satisfaction and future financial to be non-linear (e.g. Anderson and Mittal; Bowen and Chen, 2001), Rostan and Rostan (2012) provided rationale for using LS to investigate this relationship. First, also literature exists in which a linear relation is found between customer satisfaction and financial performance (e.g. Yeung et al., 2002). Second, they argue that using LS to investigate the relationship keeps it simple and understandable, which is favorable for managers who could use it in daily practice. They will be more likely to be able to reproduce it for their own companies.

The first hypothesis, concerning the effect of customer satisfaction on future financial performance, is the one in the most basic form. For each of the four time periods identified in the economic and business context section, and for the entire sample of 1994-2011, the following model will be estimated:

Where NP/TA stands for net profit divided by the total book value of a firm's assets and CS for customer satisfaction based on the ACSI database. Since also earnings per share will be used as a proxy for future financial performance, the following model will be estimated as well:

Where EPS stands for earnings per share. In both LS regressions it can be seen that use is made of the time lag of one year as described previously.

To test for the effect of consistently high customer satisfaction on the stability of future financial performance, similar methodology will be used. More specifically, I argue that H2 is supported if both H1 is supported and a significant positive effect is found in the following LS model:

And hence:

As can be seen, here the effect of change in customer satisfaction (I did not take the percentage difference, since the ACSI database is already scaled on a 0-100 scale) on the percentage change of either net income divided by the book value of total assets or the earnings per share will be investigated. The rationale behind this is that stable customer satisfaction scores (implying that ∆CS is low) will lead to stable future financial performance scores, implying that the dependent variable is also low. Since the results of H1 will indicate whether customer satisfaction has a positive effect on future financial performance, the combination of these two items could suggest that consistently high customer satisfaction will lead to good and stable future financial performance.

The asymmetry effect will be tested by including a dummy in all of the above mentioned models. If customer satisfaction scores stayed equal or increased, the dummy will be 0, whereas it will be 1 if customer satisfaction declined. If a significant negative effect is found of the dummy, support is found for the asymmetry effect (H3). Namely, this implies that drops in customer satisfaction have a more negative impact on future financial performance than increases have a positive impact. This leads to the following models:

Where LOSS indicates the dummy variable in which it equals one if customer satisfaction has declined.

Lastly, the HHI, which is the proxy for competitiveness, will be included in the OLS regressions used to test H1 and H2. If a negative[[7]](#footnote-7) and significant effect is found of the HHI on the proxies for future financial performance, also H4 will be supported. This hypothesis says that the effect of customer satisfaction on future financial performance will be weaker in more competitive firms. Also, high customer satisfaction will lead to less stability in future financial performance for competitive firms than for noncompetitive firms. This leads to the following models:

Where HHI stands for the competitiveness of a firm.

As mentioned, all regressions will both be performed for all four periods identified and one time for the entire sample. It should be noticed that the periods refer to the financial performance. This implies that for instance for the period 2003-2007 customer satisfaction data will be used of 2002-2006 and financial performance data of 2003-2007. Also, to perform sector analysis, all hypotheses will be estimated for the different identified sectors separately.

## 7.2 Statistical estimation

When estimating the regressions using Eviews, several options need to be selected to get optimal results for panel data research. All LS regressions will have fixed cross-section effects. This makes sure that initial differences across companies are identified and taken into account by giving each company its own intercept. This is then aggregated in the overall estimation of the regression. In addition, to account for potentially unobserved heteroskedasticity, cross-section weights are assigned, as well as that white cross-section is used as covariance method.

# 8. Results

In this section the results will be discussed for each hypothesis. General results will be reported about the entire sample, as well as more specific results for the four identified periods. In addition, the results will be compared with existing literature and placed in the economic and business context.

## 8.1 Relation between customer satisfaction and future financial performance

In table 4, the statistical results can be found of the first hypothesis, concerning the general effect of customer satisfaction on future financial performance. Consistent with existing literature (e.g. Anderson et al., 1994, 1997, 2004; Fornell et al., 2006; Gruca and Rego, 2005; Schneider et al., 2009) a significant positive effect is found for the effect of customer satisfaction on both net profit divided by total assets and earnings per share. The effects of respectively 0.0003 and 0.031 seem pretty small, but with a mean of 0.05 for NP/TA and 2.22 for EPS an increase of one in customer satisfaction will lead to an increase financial performance by approximately one percent. Larger increases in customer satisfaction could make this effect stronger.

If a closer look is taken for the different periods, it can be seen that these small effects might be due to counterbalancing effects during the periods, as predicted before. Concerning NP/TA, the effect of customer satisfaction on future financial performance is even negatively significant in the first two periods. For earnings per share this is the case for the second period. This might be logical, since both the S&P 500 and GDP growth drastically declined in this second period. For the first period, the S&P 500 went up and GDP growth stayed more or less equal. The positive effect of CS on EPS is therefore more as expected, contrary to the negative effect of CS on NP/TA.

On the other hand, in the third and fourth period positive significant effects are found with the exception of the fourth period with NP/TA as dependent variable. These offset the negative effects in the first two periods and lead to a positive effect for the entire sample. It is not surprising that the third period provides the most significant and expected results, since the S&P 500 and US GDP growth both positively developed during this time period.

In general, a positive relation between customer satisfaction and earnings per share is found, with the exception of the second period. However, the results of the relationship between customer satisfaction and the scaled net profit indicate that some caution is necessary. On average, positive results are found for this relation as well, but the different time periods indicate that in some periods negative relations are found, which could not be totally explained by the economic and business context of those periods. Therefore, H1 is partially accepted.

Table 4. Results H1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | NP/TA | EPS | NP/TA 94-99 | NP/TA 00-02 | NP/TA 03-07 | NP/TA 08-12 | EPS  94-99 | EPS  00-02 | EPS  03-07 | EPS  08-12 |
| CS | |  | | --- | | 0.0003  \*\*\* | | |  | | --- | | 0.031  \*\*\* | | |  | | --- | | (0.0005)  \*\*\* | | |  | | --- | | (0.0005)  \*\*\* | | |  | | --- | | 0.0009  \*\*\* | | |  | | --- | | 0.0002 | | |  | | --- | | 0.089  \*\*\* | | |  | | --- | | (0.002)  \*\*\* | | |  | | --- | | 0.037  \*\*\* | | |  | | --- | | 0.031 | | \*\*\* | |
| R² | |  | | --- | | 0.96 | | |  | | --- | | 0.85 | | |  | | --- | | 0.99 | | |  | | --- | | 0.97 | | |  | | --- | | 0.98 | | |  | | --- | | 0.98 | | |  | | --- | | 0.89 | | |  | | --- | | 0.98 | | |  | | --- | | 0.95 | | |  | | --- | | 0.89 | |

1) NP/TA = Net profit / total assets; EPS = Earnings per share; and CS = Customer satisfaction.

2) \*\*\* = Statistically significant at a 1% significance level.

## 8.2 Reputation theory

The statistics for the second hypothesis, about the reputation effect, are presented in table 5, and should be read together with the results of H1. The results indicate that no support is found for H2. Whereas a positive effect of ∆CS on ∆NP/TA would be expected, even a significant negative effect is found. In addition, no significant effect is found for the influence on ∆EPS. The significant negative effect is counterintuitive, and might be caused by an inappropriate time lag. If the real time lag is shorter or longer and the increases and decreases in customer satisfaction fluctuate a lot, positive and negative values of customer satisfaction and financial performance might be incorrectly matched with each other. Also, the R² of almost each observation in these regressions shows that the change in customer satisfaction only for a small fraction explains the change in future financial performance.

When focusing on the four separate periods, only the results of the third period match with prior expectations. Both the change in and absolute level of financial performance are positively affected by the change in and absolute level of customer satisfaction, respectively. This might be due to growing S&P 500 values. It might indicate that during booming economic growth the reputation effect exists, but that in more uncertain economic times customers will be more critical and be less loyal, leading to less stability in financial performance. In other periods no significant effect, or negative significant effects are found.

All together, there is strong evidence that H2 should not be supported, since no evidence is found that stability in customer satisfaction scores lead to stability in future financial performance. Therefore, I conclude that consistently high customer satisfaction will not lead to more stability in future financial performance. This is inconsistent with research from Anderson and Sullivan (1993) and Gruca and Rego (2005), who both found support for the reputation theory. Only in positive economic periods, the reputation effect might be present. This is more consistent with above mentioned studies, since their samples are from 1989-1990 and 1994-2002, respectively. During 1989-1990 the GDP grew and the S&P 500 remained more or less stable, indicating normal to blooming economic times. During 1994-2002, the first six years the economy grew rapidly, while in the last three years the economy went down also pretty rapidly. On average, however, the economy grew. Therefore, the results of the third period of my study are more in line with existing literature and might indicate that during positive economic years a reputation effect might exist.

Because of the in general unsupportive data, it is not necessary anymore to investigate H3b and H4b, about the asymmetry effect and competitiveness combined with the reputation effect.

Table 5. Results H2

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ∆NP/TA | ∆EPS | ∆NP/TA 94-99 | ∆NP/TA 00-02 | ∆NP/TA 03-07 | ∆NP/TA 08-12 | ∆EPS  94-99 | ∆EPS  00-02 | ∆EPS  03-07 | ∆EPS  08-12 |
| ∆CS | |  | | --- | | (0.044)  \*\*\* | | |  | | --- | | 0.026 | | |  | | --- | | (1.337)  \*\*\* | | |  | | --- | | (0.226) | | |  | | --- | | 1.213  \*\*\* | | |  | | --- | | (0.052) | | |  | | --- | | (1.628)  \*\*\* | | |  | | --- | | (0.147)  \*\*\* | | |  | | --- | | 1.290  \*\*\* | | |  | | --- | | 0.130 | |  | |
| R² | |  | | --- | | 0.09 | | |  | | --- | | 0.10 | | |  | | --- | | 0.29 | | |  | | --- | | 0.55 | | |  | | --- | | 0.22 | | |  | | --- | | 0.23 | | |  | | --- | | 0.64 | | |  | | --- | | 0.42 | | |  | | --- | | 0.31 | | |  | | --- | | 0.34 | |

1) ∆NP/TA = the percentage change in net profit / total assets; ∆EPS = the percentage change in earnings per share; and ∆CS = the change in customer satisfaction.

2) \*\*\* = Statistically significant at a 1% significance level.

## 8.3 Asymmetry effect

Table 6 provides an overview of the findings concerning the third hypothesis, which deals with the asymmetry effect. Some interesting results are found. First, for the entire sample no significant asymmetry effect is found in the relation between customer satisfaction and future financial performance. Second, there are large differences between the regressions where net profit divided by total assets is used and the ones where earnings per share are used as dependent variable. Where NP/TA is used, only the expected significant negative effect is found for the period 2000-2002. In this period it appeared that a loss in customer satisfaction led to a bigger loss in future financial performance than a gain led to an increase. Concerning the same period for EPS, an interesting change occurred as compared to H1. The unexpected negative effect of customer satisfaction on future earnings per share has become a significant one. In addition, a significant negative dummy variable indicates that losses in customer satisfaction can lead to a potentially large loss in future financial performance. This is highlighted by the fact that the coefficient of the dummy variable is more than four times as big as the coefficient of customer satisfaction itself (0.062 and 0.015, respectively).

The third and fourth period in which EPS is used as dependent variable, have a shared characteristic. In both periods the expected significant negative sign of the dummy variable is found, being supportive for the asymmetry effect. Simultaneously, however, the effect of customer satisfaction on future financial performance became insignificant. This might indicate that not the actual level of customer satisfaction is important for future financial performance, but the relative change in customer satisfaction.

Lastly, it can be seen that, concerning EPS, in the first period a significant positive asymmetry effect is found. This is contradictory to prior expectations, and could also not be explained by the economic and business context. Namely, in this period the S&P 500 grew rapidly while the GDP growth stayed more or less equal. Why a significant negative dummy effect is found is therefore unclear for me.

In general, H3a cannot be accepted, but the regressions with earnings per share as dependent variable show that an asymmetry effect might exist and that losses in customer satisfaction can have a significant effect on future financial performance. The earnings per share results are therefore more in line with Bolton (1998) and Kumar (2002), who found that satisfaction losses lead to shorter duration times and lower repurchase intent, while increases did not affect these items.

Table 6. Results H3a

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | NP/TA | EPS | NP/TA 94-99 | NP/TA 00-02 | NP/TA 03-07 | NP/TA 08-12 | EPS  94-99 | EPS  00-02 | EPS  03-07 | EPS  08-12 |
| CS | |  | | --- | | 0.0003  \*\*\* | | |  | | --- | | 0.027  \*\*\* | | |  | | --- | | (0.0006)  \*\*\* | | |  | | --- | | (0.0013)  \*\*\* | | |  | | --- | | 0.0010  \*\*\* | | |  | | --- | | 0.0002 | | |  | | --- | | 0.129  \*\*\* | | |  | | --- | | 0.015  \*\*\* | | |  | | --- | | 0.016 | | |  | | --- | | 0.011 | |  | | |
| LOSS | 0.0005 | (0.040) | 0.0005 | (0.0039)  \*\*\* | 0.0009 | (0.0001) | 0.293  \*\*\* | (0.062)  \*\* | (0.081)  \*\*\* | (0.112)  \*\*\* | |
| R² | |  | | --- | | 0.96 | | |  | | --- | | 0.70 | | |  | | --- | | 0.99 | | |  | | --- | | 0.97 | | |  | | --- | | 0.97 | | |  | | --- | | 0.97 | | |  | | --- | | 0.90 | | |  | | --- | | 0.86 | | |  | | --- | | 0.94 | | |  | | --- | | 0.91 | | |

1) NP/TA = Net profit / total assets; EPS = Earnings per share; CS = Customer satisfaction; and LOSS = dummy for change in CS, where 1 stands for a loss and 0 for otherwise.

2) \*\*/\*\*\* = Statistically significant at a 5% and 1% significance level, respectively.

## 8.4 Competitive influences

For the last hypotheses, in which competitive influences are taken into account, results can be found in table 7. To recapitulate, a higher HHI score indicates lower competitiveness and thus a significant positive effect indicates that the relation between customer satisfaction and future financial performance is weaker for competitive firms than for noncompetitive firms. As can be seen, with the original HHI measure, no significant effect is found when NP/TA is used as dependent variable, whereas a negative effect is found when EPS is used as dependent variable. Also for the different periods more often a negative effect is found than a positive or no effect.

Table 7. Results H4a

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | NP/TA | EPS | NP/TA 94-99 | NP/TA 00-02 | NP/TA 03-07 | NP/TA 08-12 | EPS  94-99 | EPS  00-02 | EPS  03-07 | EPS  08-12 |
| CS | |  | | --- | | 0.0002  \*\*\* | | |  | | --- | | 0.035  \*\*\* | | |  | | --- | | (0.0005)  \*\*\* | | |  | | --- | | (0.0007)  \*\*\* | | |  | | --- | | 0.0015  \*\*\* | | |  | | --- | | 0.0002 | | |  | | --- | | 0.084  \*\*\* | | |  | | --- | | 0.008  \* | | |  | | --- | | 0.023  \*\*\* | | |  | | --- | | 0.027 | | \*\*\* | | |
| HHI | 0.000 | (5.30)  \*\*\* | (0.073) | 0.338  \*\*\* | (0.228)  \*\*\* | (0.137)  \*\* | (10.57)  \*\*\* | 20.03  \*\*\* | (16.14)  \*\*\* | (28.18)  \*\*\* | |
| R² | 0.96 | 0.78 | 0.98 | 0.99 | 1.00 | 0.97 | 0.97 | 0.98 | 0.96 | 0.87 | |
| CS | 0.0002  \*\*\* | (0.031)  \*\*\* | (0.0004)\*\*\* | (0.0007)  \*\*\* | 0.0015  \*\*\* | 0.0001 | 0.075  \*\*\* | 0.007  \*\*\* | 0.031  \*\*\* | 0.015 | |
| AHHI | (0.043) \* | (5.93)  \*\*\* | (0.073)  \*\* | 0.249 \*\*\* | (0.247)  \*\*\* | (0.177)  \* | (9.05)  \*\*\* | 13.68 \*\*\* | (15.91)  \*\*\* | (40.41)  \*\*\* | |
| R² | |  | | --- | | 0.89 | | |  | | --- | | 0.74 | | |  | | --- | | 0.96 | | |  | | --- | | 0.97 | | |  | | --- | | 1.00 | | |  | | --- | | 0.97 | | |  | | --- | | 0.93 | | |  | | --- | | 0.98 | | |  | | --- | | 1.00 | | |  | | --- | | 0.88 | | |

1) NP/TA = Net profit / total assets; EPS = Earnings per share; CS = Customer satisfaction; HHI = Herfindahl-Hirschman Index; and AHHI = Adjusted HHI.

2) \*/\*\*/\*\*\* = Statistically significant at a 10%, 5% and 1% significance level, respectively.

When taking the adjusted HHI into account, similar results are found, with the main difference that now also for the relation between customer satisfaction and scaled net profit for the entire sample a significant negative effect of competitiveness is found. So, the general results would indicate that the more competitive a market is, the stronger will be the relation between customer satisfaction and future financial performance. One possible explanation is that competitive firms could compete on customer satisfaction, and that this appears to be successful to retain customers and improve future financial performance. Another explanation is that the HHI proxy is not a sufficient measure of competitiveness in this sample, since the different sectors identified contain of different numbers of firms. Besides, these numbers will be influenced by the inclusiveness of firms in the ACSI database and the S&P 500, as discussed before. Some sectors might be overrepresented compared to others.

The only period that with both measures of competitiveness shows the expected results and is consistent with other research (e.g. Grønholdt et al., 2000; Kumar, 2002), is the second period. This might be explained by the economic and business context. During this period, the S&P 500 index and GDP growth declined, implying that economic times were tough. Therefore, customers might be more critical about the choice of their supplier and more actively search for the supplier which offers the best quality given a reasonable price. When competition is severe, customers will be more likely to switch. Thus, the combination of economic downturn and competition weakens the relationship between customer satisfaction and financial performance. The results of Grønholdt et al. (2000) could support this theory, since their findings are also found in an economically difficult year (1999). However, care should be taken that this year is part of the period in which I found similar results. Evidence from other economically severe periods could provide a deeper insight in these thoughts.

To conclude, H4a cannot be accepted. The results would earlier suggest that the more competitive a firm operates, the stronger the relation between customer satisfaction and future financial performance will be. The hypothesis is only supported in economic downturn.

## 8.5 Summary

Taken all results together, a relationship between customer satisfaction and future financial performance is found for the entire sample and most of the subsamples. In addition, almost no support at all is found for the reputation effect and that competitiveness leads to weaker associations between customer satisfaction and future financial performance. Concerning the asymmetry effect, no strongly supportive evidence is found, but the results with earnings per share as dependent variable highlight that an asymmetry effect might be present and should therefore seriously be taken into account.

When considering the different time periods more specifically, an interesting pattern is found. In the economic growth period of 2003-2007, evidence is found for the general impact of customer satisfaction on future financial performance, as well as for the reputation effect. On the other hand, the only supportive evidence for a weaker relation between customer satisfaction and future financial performance for more competitive firms is found in the second period, which is characterized by economic downturn. In the same period, the asymmetry effect is generally supported. These results might suggest that during blooming economic periods, people are more loyal if they are satisfied, which leads to more stability in the financial performance of firms. On the other hand, during more severe economic times, customers are more likely to switch supplier to search for cheaper alternatives, which is easier in more competitive markets.

# 9. Sector analysis

To complement and complete the statistical examinations, in this section differences between industrial sectors will be considered. First, the data selection procedures will be described briefly and some data statistics will be presented. Thereafter, an insight will be given in the distinctions between the sectors for the general relation between customer satisfaction and future financial performance. To do this, the same methodology is used as described in section 7.1 Models concerning the first hypothesis.

## 9.1 Sector data

Sector analysis will be performed for the sectors which include both more than five companies and more than 50 observations over the entire sample. The sectors satisfying these criteria are the consumer discretionary, consumer staples, financials, information technology and utilities sectors. For these sectors the effect of customer satisfaction on future financial performance will be estimated separately. Differences that might appear could give an additional insight in the importance of focusing on customer satisfaction for firms. Because of the limited number of observations, the relationship will not be examined for the four identified periods.

Table 8. Descriptive sector data statistics

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | N | Mean | Minimum | Median | Maximum | Standard Deviation | Jarque-Bera |
| Entire sample | CS | 1,277 | 76.43 | 54 | 77 | 91 | 5.97 | 38.20\*\*\* |
| NP/TA | 1,928 | 0.05 | -0.22 | 0.04 | 0.22 | 0.05 | 635.97\*\*\* |
| EPS | 1,921 | 2.22 | -6.42 | 2.11 | 9.53 | 1.82 | 753.32\*\*\* |
| Consumer Discretionary | CS | 274 | 75.92 | 58 | 77 | 88 | 6.36 | 32.75\*\*\* |
| NP/TA | 516 | 0.06 | -0.22 | 0.06 | 0.21 | 0.06 | 366.57\*\*\* |
| EPS | 515 | 1.77 | -6.05 | 1.68 | 8.24 | 1.84 | 177.42\*\*\* |
| Consumer Staples | CS | 346 | 80.71 | 68 | 81 | 91 | 4.64 | 11.39\*\*\* |
| NP/TA | 383 | 0.08 | -0.17 | 0.07 | 0.22 | 0.05 | 211.89\*\*\* |
| EPS | 386 | 2.18 | -6.02 | 2.11 | 6.68 | 1.36 | 777.13\*\*\* |
| Financials | CS | 136 | 72.64 | 61 | 73 | 82 | 4.61 | 4.22 |
| NP/TA | 218 | 0.02 | -0.03 | 0.01 | 0.18 | 0.02 | 3291.90\*\*\* |
| EPS | 214 | 2.70 | -6.42 | 2.62 | 8.89 | 2.46 | 2.22 |
| Information Technology | CS | 95 | 77.49 | 69 | 78 | 87 | 4.15 | 0.80 |
| NP/TA | 116 | 0.08 | -0.16 | 0.09 | 0.21 | 0.07 | 25.58\*\*\* |
| EPS | 116 | 1.48 | -6.41 | 1.23 | 9.22 | 1.59 | 362.45\*\*\* |
| Utilities | CS | 294 | 74.12 | 54 | 75 | 83 | 4.30 | 62.43\*\*\* |
| NP/TA | 377 | 0.03 | -0.20 | 0.03 | 0.10 | 0.02 | 17,610.87\*\*\* |
| EPS | 377 | 2.36 | -5.84 | 2.45 | 7.59 | 1.47 | 484.98\*\*\* |

1) CS = Customer satisfaction; NP/TA = Net profit / total assets; and EPS = Earnings per share.

2) \*\*\* = Statistically significant at a 1% significance level.

Table 8 provides an overview of the descriptive data of the different sectors. It reveals that concerning customer satisfaction, the consumer staples and information technology sectors have higher means than the entire sample, whereas the other three sectors score lower on average. Regarding to the scaled net profit, together with consumer staples and information technology also consumer discretionary scores higher than the full sample average. Interestingly, on earnings per share exactly the other two sectors score higher than average, whereas the three sectors that scored higher on net profit divided by total assets score lower.

Based on the Jarque-Bera test, not all variables appear to be normally distributed. Again, as was discussed in section 6.2 this is considered a problem which causes us to take care in interpreting the results. Significant results might look more significant than they really are and this should therefore always taken into account. Only in the financials and information technology sectors normally distributed variables are present, making these results more reliable. The associated histograms are presented in appendix B.

## 9.2 Sector results

The results of the sector analysis can be found in table 9. Recall the significant positive effects of 0.0003 and 0.031 with NP/TA and EPS as dependent variable, respectively. It can be seen that the relation between customer satisfaction and future financial performance is multiple times stronger for the customer discretionary sector than the other sectors and the entire sample, with significant positive effects of 0.0030 on NP/TA and 0.128 on EPS. Concerning earnings per share, also the consumer staples business scores significantly better than average. The association between customer satisfaction and financial performance is also positive for the financial and information technology sectors, but in this case it is less strong than for the entire sample. No significant effect is found for the utilities sector.

The NP/TA results indicate that no effect is found for the consumer staples and information technology sectors. Concerning the utilities sector, the expected significant positive sign is found. Also the relation appears to be stronger than average. In contrast, for the financial sector a negative significant effect is found. This might indicate that customer satisfaction in this sector will not lead to improved future financial performance.

Table 9. Results sector analysis

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CD  NP/TA | CD  EPS | CS  NP/TA | CS  EPS | FIN  NP/TA | FIN EPS | IT NP/TA | IT  EPS | UTI  NP/TA | UTI  EPS |
| CS | |  | | --- | | 0.0030  \*\*\* | | |  | | --- | | 0.128  \*\*\* | | |  | | --- | | 0.0000 | | |  | | --- | | 0.100  \*\*\* | | |  | | --- | | (0.0002)  \*\* | | |  | | --- | | 0.030  \* | | |  | | --- | | 0.0018 | | |  | | --- | | 0.050  \* | | |  | | --- | | 0.0005  \*\* | | |  | | --- | | 0.000 | |  | | |
| R² | |  | | --- | | 0.79 | | |  | | --- | | 0.76 | | |  | | --- | | 0.77 | | |  | | --- | | 0.52 | | |  | | --- | | 0.71 | | |  | | --- | | 0.75 | | |  | | --- | | 0.71 | | |  | | --- | | 0.33 | | |  | | --- | | 0.48 | | |  | | --- | | 0.70 | | |

1) CD = Consumer Discretionary; CS = Consumer Staples; FIN = Financials; IT = Information Technology; UTI = Utilities; NP/TA = Net profit / total assets; EPS = Earnings per share; and CS = Customer satisfaction.

2) \*/\*\*/\*\*\* = Statistically significant at a 10%, 5% and 1% significance level, respectively.

Taken the results together, the sector analysis reveals that the link between customer satisfaction and future financial performance is multiple times stronger for the consumer discretionary sector than average and other sectors. This implies that especially managers operating in this sector should consider customer satisfaction as an important measure of their firm performance. This strong relation is also present in the consumer staples sector if we consider earnings per share as the proxy for financial performance. Regarding to the remaining three sectors, customer satisfaction appears to have a weaker effect on future financial performance. In the financial sector, it might even have a counterproductive effect.

# 10. Conclusions

This research investigated the relationship between customer satisfaction and future financial performance. In addition, the reputation effect, asymmetry effect and competitive influences are investigated in more detail. Also sector analysis is performed to check for differences across sectors. For the period 1994-2012, customer satisfaction data are collected of US firms and complemented with proxies for future financial performance and the competitiveness of the different sectors. To get more insight in the business and economic background during the years in the sample, four periods are identified with all its own characteristics of S&P 500 and US GDP growth development. For each period the hypotheses are tested separately as well.

The entire sample results showed that, when net profit divided by total assets is used as dependent variable, supportive evidence is found for the relation between customer satisfaction and future financial performance. No supportive evidence is found for the reputation theory, asymmetry effect and competitive influences on this relationship. Considering earnings per share as dependent variable, similar results are found. However, the last three separate periods here are supportive of an asymmetry effect. Therefore, the results with earnings per share as dependent variable indicate that an asymmetry effect should at least be taken into account.

The period specific results gave some more insight in the general results. In the first period (1994-1999), none of the hypotheses could be accepted concerning net profits divided by total assets, while with earnings per share only the general positive effect of customer satisfaction on future financial performance could be supported. The second and third period gave some much more interesting insights.

The second period (2000-2002) was characterized by economic downturn. In this period, both the net profit / total assets results and the earnings per share results supported the existence of an asymmetry effect and also showed a significant effect that the more competitive a sector is, the weaker the relation between customer satisfaction and future financial performance. This reveals that in difficult economic times competitive influences should be taken into consideration. In these times customers appear to be more likely to search for cheaper alternatives and consequently switch supplier. This could also explain that the asymmetry effect holds in this period. Because customers are more likely to switch, a slight drop in customer satisfaction could already lead to substantial losses in financial performance, while it is more difficult to attract new customers.

In contrast to the second period, during the third period (2003-2007) the US economy was booming with S&P 500 growth and an increasing GDP growth on average. Interestingly, now support is found for the reputation theory for both the net profit divided by total assets and earnings per share. This indicates that during economic growth firms are able to build reputations and therefore stabilize financial performance. In addition, the general positive effect of customer satisfaction on future financial performance is supported for both dependent variables. Support for the asymmetry effect is only found when earnings per share are used as dependent variable.

The last period (2008-2012) did not give additional insights. With the scaled net profit as dependent variable none of the hypotheses is supported. Concerning earnings per share, only the general effect of customer satisfaction on future financial performance and the asymmetry effect are supported, as was already discussed at the beginning of this section. It seems that the asymmetry effect should be taken into account, but no consistent evidence is found that this always exists.

Finally, the sector analysis revealed that the link between customer satisfaction and future financial performance is especially strong in the consumer discretionary sector. This is supported by both taking net profit divided by total assets and earnings per share as dependent variable. The earnings per share results also indicate that customer satisfaction could have a strong impact on future financial performance in the consumer staples business.

To answer the research question, it could be concluded that customer satisfaction has a positive impact on future financial performance. However, no support is found that consistently high customer satisfaction will lead to more stability in future financial performance. There is no unambiguous evidence that the influence of customer satisfaction on future financial performance is moderated by competitive circumstances and the asymmetry effect. The results with earnings per share as dependent variable, however, show that the asymmetry effect should definitely be taken into account.

The period specific results shed some additional light on the relationship between customer satisfaction and future financial performance. This relationship seems to be moderated by competitive influences and the asymmetry effect in severe economic times. This could be due to customers looking for cheaper alternatives and thus more quickly switching customers. The asymmetry effect implies that a drop in customer satisfaction then could seriously harm the future financial results of a company. On the other hand, the reputation effect seems to hold in positive economic periods. This implies that reputations could be built which lead to more stability in financial performance when there is economic stability.

Taken together, these results implicate that managers of companies should consider customer satisfaction as a proxy for future financial performance. Especially firms operating in the consumer discretionary and consumer staples are subject to this relation. In addition, during economic downturn competitive influences should be taken into account. At the same time, the asymmetry effect seems to hold, which might even worsen the financial performance of firms in tough economic circumstances. On the other hand, firm managers might be able to improve their reputation during economic growth, which could lead to better and more stable financial performance.

## 10.1 Literature review comparisons

Table 10 below presents the literature overview as was presented in table 1. This time, the conclusions of these studies are compared with my findings if possible. The general positive link between customer satisfaction and future financial performance is confirmed every time, except for the findings of Bernhardt et al. (2000). Their findings come from 1992-1993, in which economic circumstances might have been severe. This could explain that they did not find a relation between customer satisfaction and future financial performance.

Concerning the reputation theory, my findings are more different than the other authors’ findings. The results of this study indicate that a reputation effect could be present during positive economic times, while other studies also found supportive evidence for other time periods, in which I did not find evidence. These differences could be explained by two factors. First, it might be that some of the other authors’ findings are biased because of growing S&P 500 values during their sample period. The only time I found support for a reputation theory was also when S&P 500 values were increasing. Another explanation could be that the statistical methodologies are different. Because my methodology concerning the reputation theory is logical, but maybe not that much sophisticated, other results could be found which are more reliable.

The asymmetry effect and competitive influences are less directly examined in the used literature. The findings concerning the asymmetry effect are mixed in this study. No hard evidence is found for its presence, but when earnings per share are taken as dependent variable, its importance is shown. This is consistent with Bolton's (1998) finding that the asymmetry effect holds for the relation between customer satisfaction and duration times. My result that competitive influences should mainly be taken into account during tough economic periods relies on the finding of Anderson (1996) that competitiveness leads to lower price elasticity. Namely, due to more attractive alternatives, customers are more likely to switch when prices fluctuate. My results suggest that this is especially the case during severe economic times. Grønholdt et al. (2000) found that the relationship between customer satisfaction and customer loyalty is more sensitive in competitive environments. Their sample includes only 1999, which precedes the period 2000-2002, in which I found support for competitive influences on the link between customer satisfaction and future financial performance. It could be that this effect already arose in 1999.

In general, many of my findings are consistent with the findings of other authors. When differences appear, this is mostly due to periodical differences or methodological differences.

Table 10. Literature Overview Comparisons

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Author | Year | Title | Research question | Time period | Outcomes | Outcome comparisons |
| Anderson | 1994 | Cross-category variation in customer satisfaction and retention. | Does systematic variation exist in the level of customer satisfaction, its antecedents and consequences and their relationships across product categories? | 1989-1990 | Several variations are found across product categories. In general, products have stronger antecedents and customer satisfaction levels, but repurchase likelihood is higher for services. | - |
| Anderson | 1996 | Customer satisfaction and price tolerance. | To what extent does improving customer satisfaction increase customer willingness-to-pay or price tolerance, and decrease price sensitivity? | 1989-1994 | There is a negative association between the level of customer satisfaction and the degree of price tolerance, but a positive association between year-to-year changes in customer satisfaction and price tolerance. | The result that in severe economic times competitive influences could weaken the satisfaction-performance link relies on Anderson’s finding of a negative influence on price tolerance. |
| Anderson and Fornell | 2000 | Foundations of the American Customer Satisfaction Index. | *Description of the methodology of the ACSI and discussion of many of its key findings.* | - | - | - |
| Anderson, Fornell and Lehmann | 1994 | Customer satisfaction, market share, and profitability: findings from Sweden. | Does higher customer satisfaction lead to superior economic returns? | 1989-1990 | There is a positive impact of quality on customer satisfaction and, in turn, profitability. | My results confirm that customer satisfaction positively influences profitability. |
| Anderson, Fornell and Mazvancheryl | 2004 | Customer satisfaction and shareholder value. | Does a positive association between customer satisfaction and long-term financial performance exist? | 1994-1997 | There is a positive association between customer satisfaction and shareholder value. | My results point towards the same conclusion. It should only be taken in account that financial performance is not equal to shareholder value, but it could be indicative of it. |
| Anderson, Fornell and Rust | 1997 | Customer satisfaction, productivity, and profitability: differences between goods and services. | Are there differences for the tradeoffs between customer satisfaction and productivity for goods and services? | 1989-1992 | The tradeoff between customer satisfaction and productivity seems to be more present in the service industry. | - |
| Anderson and Mittal | 2000 | Strengthening the satisfaction-profit chain. | *Discussion of why the links in the satisfaction-profit chain are often asymmetric and non-linear* | - | - | - |
| Anderson and Sullivan | 1993 | The antecedents and consequences of customer satisfaction for firms. | What are the antecedents and consequences of customer satisfaction and how do these differ across firms? | 1989-1990 | Perceived quality and disconfirmation are the main antecedents of customer satisfaction. In addition, the relation between repurchase intention and satisfaction is less elastic for firms providing high satisfaction, which implies a reputation effect. | This reputation effect appears to be mainly present in positive economic periods. |
| Andreassen and Lindestad | 1998 | Customer loyalty and complex services: the impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. | What is the impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise? | - | For complex and infrequently purchased services, corporate image rather than customer satisfaction is the main predictor of customer loyalty. | - |
| Aydin, Özer and Arasil | 2005 | Customer loyalty and the effect of switching costs as a moderator variable: a case in the Turkish mobile phone market. | What is the effect of customer satisfaction and trust on loyalty and how is loyalty effected by switching costs? | - | Switching costs directly affect loyalty and also moderate the impact of customer satisfaction and trust on loyalty. | - |
| Baerden and Teel | 1983 | Selected determinants of consumer satisfaction and complaint reports. | Does complaining behavior have an effect on customer satisfaction? | - | In addition to expectations and disconfirmation, complaining behavior also has an impact on customer satisfaction. | - |
| Bernhardt, Donthu and Kennett | 2000 | A longitudinal analysis of satisfaction and profitability. | Does satisfaction lead to increased profitability? | 1992-1993 | There is no significant relation between customer satisfaction and performance, but there is a significant relation between changes in customer satisfaction and changes in performance. | My results do not confirm these findings. It could be that these results are found because of severe economic circumstances during the sample period. |
| Bloemer and Kasper | 1995 | The complex relationship between consumer satisfaction and brand loyalty. | Does consumer satisfaction lead to increased brand loyalty? | 1992 | The positive impact of manifest satisfaction on true brand loyalty is bigger than the impact of latent satisfaction on true brand loyalty. | - |
| Bolton | 1998 | A dynamic model of the duration of customer's relationship with a continuous service provider: the role of satisfaction. | Is there a link between customer satisfaction and retention? | 1991 | Customer satisfaction has a positive impact on the duration of a relationship. Besides, negative experiences appear to be weighted more heavily than positive ones. | My research found some support for the asymmetry effect as well when earnings per share was used as dependent variable. |
| Boulding, Kalra, Staelin and Zeithaml | 1993 | A dynamic process model of service quality: from expectation to behavioral intentions. | How are perceptions of service quality formed and what are the consequences of these perceptions? | - | There are mixed effects of expectations on perceived service quality and perceived service quality positively affects intended behaviors. | - |
| Bowen and Chen | 2001 | The relationship between customer loyalty and customer satisfaction. | Does customer satisfaction increase customer loyalty? | - | There is a nonlinear relationship between satisfaction and loyalty. | - |
| Brown, Barry, Dacin and Gunst | 2005 | Spreading the word: investigating antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context. | Is commitment a mediator of the satisfaction-positive word-of-mouth relationship and of the relation between identification and word-of-mouth? | - | Commitment moderates the relationships between satisfaction and word-of-mouth and between identification and word-of-mouth. | - |
| Chi and Gursoy | 2009 | Employee satisfaction, customer satisfaction, and financial performance: an empirical examination. | What is the relation between employee and customer satisfaction and their impact on financial performance? | - | There is a direct effect of customer satisfaction on financial performance and an indirect effect of employee satisfaction, via customer satisfaction, on financial performance. | There indeed is a direct effect of customer satisfaction on financial performance. |
| Churchill and Surprenant | 1982 | An investigation into the determinants of customer satisfaction. | Does disconfirmation influence customer satisfaction? | - | For nondurable goods, disconfirmation positively affects satisfaction. For durable goods, there is no relation. | - |
| Cooil, Keiningham, Aksoy and Hsu | 2007 | A longitudinal analysis of customer satisfaction and share of wallet: investigating the moderating effect of customer characteristics. | Does customer satisfaction positively affect share of wallet and is this relationship moderated by several customer characteristics? | 2000-2004 | There is a positive relation between satisfaction and share of wallet and this is moderated by income and length of the relationship. | - |
| Coyles and Gokey | 2002 | Customer retention is not enough. | *Descriptive article about customer retention.* | - | - | - |
| Fornell | 1992 | A national customer satisfaction barometer: the Swedish experience. | *This article describes general results of customer satisfaction.* | 1989-1991 | Satisfaction is lower in industries where supply is more homogeneous and industries which are dependent of customer satisfaction for repeat business tend to have higher satisfaction scores. | - |
| Fornell, Johnson, Anderson, Cha and Bryant | 1996 | The American Customer Satisfaction Index: nature, purpose, and findings. | *The ACSI database is explained and some general results are given.* | - | Satisfaction depends more on customization than on reliability. Customer expectations are more important in sectors where consumption is relatively low. Satisfaction is more based on quality than on price or value. | - |
| Fornell, Mithas, Morgeson III and Krishnan | 2006 | Customer satisfaction and stock prices: high returns, low risk. | Does customer satisfaction lead to excess returns and higher stock market risk? | 1994-2002 | Customer satisfaction leads to high returns and low risk. | These results are found when the S&P 500 grew on average. That is why these results might be found. It implies a reputation effect, which I did not find during this sample period. |
| Fornell, Rust and Dekimpe | 2010 | The effect of customer satisfaction on consumer spending growth. | Does satisfaction lead to spending growth? | 1994-2006 | Satisfaction has a positive impact on spending growth and this relation is moderated by household DSR (what should be paid on debt) | - |
| Grønholdt, Martensen and Kristensen | 2000 | The relationship between customer satisfaction and loyalty: cross-industry differences. | What is the relation between customer satisfaction and loyalty and are there cross-industry differences? | 1999 | Customer satisfaction positively affects customer loyalty. The more competitive a market is, the more sensitive this relation is. | I only found supportive evidence for an expected influence of competitiveness during 2000-2002. It might be that 1999 already showed some characteristics which could explain this finding in that year as well. |
| Gruca and Rego | 2005 | Customer satisfaction, cash flow, and shareholder value. | How does customer satisfaction affect future cash flows? | 1994-2002 | Customer satisfaction leads to higher future cash flows and reduces its variability. | I only found a reputation effect during 2003-2007. The difference might lie in the methodology. |
| Gustafsson, Johnson and Roos | 2005 | The effects of customer satisfaction, relation commitment dimensions, and triggers on customer retention. | Do customer satisfaction and commitment affect customer retention? | - | Satisfaction and calculative commitment both have an effect on retention, and prior churn moderates the satisfaction-retention link. | - |
| Hallowell | 1996 | The relationships of customer satisfaction, customer loyalty and profitability: an empirical study. | Does customer satisfaction has a positive effect on loyalty and does loyalty in turn positively affects profitability? | - | Customer satisfaction positively affects retention which in turn leads to higher profitability. | My results support the link between customer satisfaction and profitability. |
| Homburg and Giering | 2001 | Personal characteristics as moderators of the relationship between customer satisfaction and loyalty - an empirical analysis. | Do certain personal characteristics moderate the relationship between customer satisfaction and loyalty? | - | Variety seeking, age and income appear to moderate the satisfaction - loyalty link. | - |
| Ittner and Larcker | 1998 | Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. | Does customer satisfaction indicate accounting performance and does it give information to the stock market? | 1995-1996 | Customer satisfaction positively affects accounting performance and it is relevant to the stock market. | The results with earnings per share confirm the relation between customer satisfaction and financial performance in these years. |
| Jones and Earl Sasser, Jr. | 1995 | Why satisfied customers defect. | *Research on why customers defect.* | - | - | - |
| Kahneman and Tversky | 1979 | Prospect theory: an analysis of decision under risk. | *Overview of prospect theory.* | - | Important for my research: losses loom larger than gains. | - |
| Kumar | 2002 | The impact of performance, cost, and competitive considerations on the relationship between satisfaction and repurchase intent in business markets. | Do competitive, cost and satisfaction considerations affect repurchase intent? | - | In deciding about repurchase competitive suppliers are taken into account. | - |
| Lam, Shankar, Erramilli and Murthy | 2004 | Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context. | Does customer satisfaction mediates the relationship between customer value and loyalty and is there an interaction effect between switching costs and satisfaction? | - | Customer satisfaction mediates the customer value-loyalty relationship. | - |
| Lambert | 1998 | Customer satisfaction and future financial performance. Discussion of 'Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction.' | *Discussion of the article mentioned in the title.* | - | - | - |
| Lee, Lee and Feick | 2001 | The impact of switching costs on the customer satisfaction-loyalty link: mobile phone service in France. | Do switching costs moderate the satisfaction-loyalty link and are there differences in segments? | ±1999 | Switching costs moderate the relationship between customer satisfaction and loyalty. | - |
| Lemon and Wangenheim | 2009 | The reinforcing effects of loyalty program partnerships and core service usage. | Does loyalty leads to more cross-buying behavior? | - | Users of the core service of a company tend to cross-buy more products/services of the same company. | - |
| Mittal and Kamakura | 2001 | Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effects of customer characteristics. | Do several customer characteristics moderate the relationship between customer satisfaction and repurchase behavior? | - | Repurchase rates are systematically different among different customer groups due to different customer characteristics. | - |
| Rao, Agerwal and Dahlhoff | 2004 | How is manifest branding strategy related to the intangible value of a corporation? | How are different manifest branding strategies related to the value of a firm? | 1996-2000 | Corporate branding strategies lead to higher values of Tobin's Q, whereas mixed branding strategies lead to a lower Tobin's Q. | - |
| Rostan and Rostan | 2012 | Assessing the predictive power of customer satisfaction for financial and market performances: price-to-earnings ratio is a better predictor overall. | What is the best predictor of market and financial performance? | 2004-2009 | Price-to-earnings ratio is a better predictor of financial and market performance than customer satisfaction. | - |
| Rust and Williams | 1994 | How length of patronage affects the impact of customer satisfaction on repurchase intent. | Do customer satisfaction and length of patronage influence repurchase intent? | - | Repurchase intent is higher when satisfaction is higher or length of patronage is longer. | - |
| Rust, Zahorik and Keiningham | 1995 | Return on Quality (ROQ): making service quality financially accountable. | *Description of the Return on Quality approach.* | - | Improved quality will make it easier for firms to attract new customers and existing customers are more likely to become repeat customers. | - |
| Schneider, Macey, Lee and Young | 2009 | Organizational service climate drivers of the American Customer Satisfaction Index (ACSI) and financial and market performance. | Does customer satisfaction have a positive influence on financial and market performance and does it mediate the relationship between service climate and financial and market performance? | 2003-2005 | Customer satisfaction positively affects financial and market performance and also mediates the relationship between service climate and financial and market performance. | My results confirm that customer satisfaction indeed affects financial performance. The strongest results are found in the period which includes 2003-2005. |
| Seiders, Voss, Grewal and Godfrey | 2005 | Do satisfied customer buy more? Examining moderating influences in a retailing context. | Is the relationship between satisfaction and repurchase behavior moderated by customer, relational and marketplace characteristics? | - | The relationship between satisfaction and repurchase behavior is moderated by convenience, competitive intensity, customer involvement and household income. The results are different for the effect of satisfaction on repurchase intent. | - |
| Srinivasan, Anderson and Ponnavolu | 2002 | Customer loyalty in e-commerce: an exploration of its antecedents and consequences. | What are the antecedents and consequences of customer loyalty in e-commerce? | - | Customization, contact interactivity, care, community, cultivation, choice and character cause e-loyalty. Positive word-of-mouth and willingness to pay more are consequences of it. | - |
| Srivastava, Shervani and Fahey | 1998 | Market based assets and shareholder value: a framework for analysis. | *Development of a conceptual framework that links marketing to shareholder value.* | - | Marketing should develop and manage market-based assets which in turn should influence shareholder value. | - |
| Szymanski and Henard | 2001 | Customer satisfaction: a meta-analysis of the empirical evidence. | *Meta-analysis of relationships between customer satisfaction and its antecedents and consequences.* | - | Equity and disconfirmation are most strongly correlated to customer satisfaction. Many method and measurement factors moderate the relationships between customer satisfaction and its antecedents and consequences. | - |
| Tarasi, Bolton, Gustafsson and Walker | 2012 | Relationship characteristics and cash flow variability: implications for satisfaction, loyalty and customer portfolio management. | What are the predictors of variability in individual customers' cash flows? | 1999-2001, 2003-2006 | Customer satisfaction leads to higher cash flows and lower cash flow variability. | I only found supportive evidence for 2003-2006. My results reveal that a reputation effect might hold in blooming economic periods. Concerning 1999-2001, differences might be due to methodological differences. |
| Tuli and Bharadwaj | 2009 | Customer satisfaction and stock returns risk. | What is the impact of customer satisfaction on stock returns risk? | 1994-2006 | Customer satisfaction reduces stock returns risk. | During the sample period the S&P 500 grew on average, which might explain these results. I did not find supportive evidence, except during 2003-2007. |
| Verhoef | 2003 | Understanding the effect of customer relationship management efforts on customer retention and customer share development. | What is the influence of customer relationship perceptions and relationship management instruments on customer retention and customer share development? | - | Affective commitment and loyalty programs positively affect customer retention and customer share development and direct mailings also influence customer share development. | - |
| Walsh, Evanschitzky and Wunderlich | 2008 | Identification and analysis of moderator variables. Investigating the customer satisfaction-loyalty link. | What are moderators of the link between customer satisfaction and loyalty? | 2003-2005 | Critical incidents and income are important moderators of the customer satisfaction-loyalty link. | - |
| Williams and Naumann | 2011 | Customer satisfaction and business performance: a firm-level analysis. | What is the relationship between customer satisfaction and several company performance metrics? | - | Customer satisfaction influences retention, revenue, earnings per share, stock price and Tobin's Q. | Customer satisfaction indeed influences earnings per share (and net profit). |
| Yang and Peterson | 2004 | Customer perceived value, satisfaction, and loyalty: the role of switching costs. | Do switching costs moderate the relationships between customer satisfaction and loyalty and perceived value and loyalty? | - | Switching costs moderate the relationships between customer satisfaction and loyalty and perceived value and loyalty. | - |
| Yeung, Ging and Ennew | 2002 | Customer satisfaction and profitability: a reappraisal of the nature of the relationship. | To what extent is the customer satisfaction-profitability link non-linear? | 1994-1998 | It is acceptable to assume a linear relationship between customer satisfaction and profitability. | - |
| Yi and La | 2004 | What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty. | How does loyalty influence the relationship between customer satisfaction and repurchase intention? | - | The direct route from satisfaction to repurchase intention has a greater impact for loyals, whereas the route from customer satisfaction to adjusted expectations to repurchase intention has a greater impact for nonloyals. | - |

# 11. Limitations and future research

Like every research, this article has its limitations and possibilities for future research. These will be outlined below.

## 11.1 Limitations

This research has several limitations which could reduce the reliability and validity of the results found. These limitations are all subject to data and methodology issues. First, the sample is limited to firms which are both present in the S&P 500 index and ACSI database. A sample selection bias might exist, because these firms are mostly large companies. Besides, several sectors might be overrepresented. Especially in the consumer discretionary, consumer staples and utility sectors are more firms included than in the other sectors. The materials sector is not included in the sample at all. Therefore, it should be taken into account that the results might be biased towards the above mentioned three sectors.

Second, this research does not make use of control variables. Instead, by describing the business and economic context and deriving four periods of interest from this, an alternative way to control for S&P 500 development and GDP growth is used. The disadvantage of this is that significant effects might become insignificant and vice versa, or that the volumes of the effects change when control variables are included. On the other hand, however, the advantage is that it allowed me to get more specific insight in the different periods with its own economic and business characteristics. This led to some interesting results concerning the second and third period with difficult and growing economic times, respectively.

Third, the methodology to test for the reputation effect might be too simplistic. Although the general idea behind this method is logic and clear, more sophisticated methods might give more reliable results. However, these are not within my abilities of statistical analysis.

Fourth, it appeared that many variables are not normally distributed. As was mentioned, this might lead to more significant results than they truly are. This should always be taken into account. Unfortunately, no data were available which could overcome this problem, but still the results give an insight in the relations between customer satisfaction and future financial performance. These should only be interpreted with caution.

Lastly, the proxy for competitiveness could be subject to several biases. As mentioned earlier, the HHI is influenced by the number of firms included in the sample for each sector. If a sector includes more firms, it is more likely that the HHI score will be lower, since it will look like the industry is more competitive. However, this might not be representative of the entire population of US firms. If sectors are overrepresented in my sample, this will also give an incorrect picture of the competitiveness of the sector compared to the others. Thus, both the absolute number of firms across the sectors and the relative number of firms compared to the actual population could influence the HHI scores. It is already tried to account for this by also making use of the adjusted HHI. Although this partially accounts for the limitations described, it does not eliminate these limitations.

## 11.2 Possibilities for future research

This research provided some interesting insights in differences across economic periods for the relationship between customer satisfaction and future financial performance. To my knowledge, prior research did not investigate this relationship, the reputation theory, asymmetry effect and competitive influences with the business and economic context as background. This research found evidence that during economic growth the reputation theory could hold, while during economic downturn competitive influences might play a bigger role and the asymmetry effect could be present. Future research could investigate whether these findings also hold in other periods which are characterized with the same economic development. In other words, it would be interesting to get a deeper understanding of the role that the economic situation of a country plays in the relationship between customer satisfaction and future financial performance.

It would also be interesting to perform a meta-analysis of existing literature as was done by Szymanski and Henard in 2001, but now also with more recent articles included. Differences between these two studies could reveal whether and how the relationship between customer satisfaction and future financial performance has changed over time. Besides, it would also be a good possibility to compare the articles with the economic and business context in mind, as was done in this study. This would allow the reader to get a greater insight into the period specific characteristics of customer satisfaction.

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# 13. Appendices

## Appendix A – Industry sector division of the 110 companies

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| --- | --- | --- |
| [**Company Name**](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=all&sort=Company&order=DESC) | **Ticker** | **Sector** |
| [Aetna](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Aetna+&i=Health+Insurance) | [AET](http://www.nyse.com/about/listed/aet.html) | Health Care |
| [Allegheny Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Allegheny+Energy&i=Investor-Owned+Utilities) | [AYE](http://www.nyse.com/about/listed/aye.html) | Energy |
| [Allstate](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Allstate&i=Property+and+Casualty+Insurance) | [ALL](http://www.nyse.com/about/listed/all.html) | Financials |
| [Amazon](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Amazon&i=Internet+Retail) | [AMZN](http://www.nasdaq.com/asp/quotes_reports.asp?symbol=AMZN&selected=AMZN&page=stockreports) | Consumer Discretionary |
| [Ameren](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Ameren+&i=Investor-Owned+Utilities) | [AEE](http://www.nyse.com/about/listed/aee.html) | Utilities |
| [American Electric Power](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=American+Electric+Power+&i=Investor-Owned+Utilities) | [AEP](http://www.nyse.com/about/listed/aep.html) | Utilities |
| [Apple](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Apple+&i=Personal+Computers) | [AAPL](http://www.nasdaq.com/asp/quotes_reports.asp?symbol=AAPL&selected=AAPL&page=stockreports) | Information Technology |
| [ATT](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=ATT&i=Fixed+Line+Telephone+Service) | [T](http://www.nyse.com/about/listed/t.html) | Telecommunications Services |
| [Bank of America](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Bank+of+America+&i=Banks) | [BAC](http://www.nyse.com/about/listed/bac.html) | Financials |
| [Best Buy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Best+Buy+&i=Specialty+Retail+Stores) | [BBY](http://www.nyse.com/about/listed/bby.html) | Consumer Discretionary |
| [Campbell Soup](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Campbell+Soup+&i=Food+Manufacturing) | [CPB](http://www.nyse.com/about/listed/cpb.html) | Consumer Staples |
| [CBS Broadcasting](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=CBS+Broadcasting&i=Network%2FCable+TV+News) | [CBS](http://www.nyse.com/about/listed/cbs.html) | Consumer Discretionary |
| [CenterPoint Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=CenterPoint+Energy&i=Investor-Owned+Utilities) | [CNP](http://www.nyse.com/about/listed/cnp.html) | Utilities |
| [CenturyLink [Fixed Line Telephone Service]](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=CenturyLink&i=Fixed+Line+Telephone+Service) | [CTL](http://www.nyse.com/about/listed/ctl.html) | Telecommunications Services |
| [Charles Schwab](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Charles+Schwab&i=Internet+Brokerage) | [SCHW](http://www.nasdaq.com/asp/quotes_reports.asp?symbol=SCHW&selected=SCHW&page=stockreports) | Financials |
| [Chevron](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Chevron+&i=Gasoline+Stations) | [CVX](http://www.nyse.com/about/listed/cvx.html) | Energy |
| [Citigroup](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Citigroup+&i=Banks) | [C](http://www.nyse.com/about/listed/c.html) | Financials |
| [Clorox](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Clorox+&i=Personal+Care+and+Cleaning+Products) | [CLX](http://www.nyse.com/about/listed/clx.html) | Consumer Staples |
| [CMS Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=CMS+Energy+&i=Investor-Owned+Utilities) | [CMS](http://www.nyse.com/about/listed/cms.html) | Utilities |
| [Coca-Cola](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Coca-Cola+&i=Soft+Drinks) | [KO](http://www.nyse.com/about/listed/ko.html) | Consumer Staples |
| [Colgate-Palmolive](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Colgate-Palmolive+&i=Personal+Care+and+Cleaning+Products) | [CL](http://www.nyse.com/about/listed/cl.html) | Consumer Staples |
| [Comcast [Fixed Line Telephone Service]](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Comcast&i=Fixed+Line+Telephone+Service) | [CMCSA](http://www.nasdaq.com/asp/quotes_reports.asp?symbol=CMCSA&selected=CMCSA&page=stockreports) | Consumer Discretionary |
| [ConAgra](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=ConAgra&i=Food+Manufacturing) | [CAG](http://www.nyse.com/about/listed/cag.html) | Consumer Staples |
| [Consolidated Edison](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Consolidated+Edison&i=Investor-Owned+Utilities) | [ED](http://www.nyse.com/about/listed/ed.html) | Utilities |
| [Costco](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Costco+&i=Specialty+Retail+Stores) | [COST](http://www.nasdaq.com/asp/quotes_reports.asp?symbol=COST&selected=COST&page=stockreports) | Consumer Staples |
| [CVS Caremark](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=CVS+Caremark+&i=Health+and+Personal+Care+Stores) | [CVS](http://www.nyse.com/about/listed/cvs.html) | Consumer Staples |
| [Dell](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Dell+&i=Personal+Computers) | DELL | Information Technology |
| [DIRECTV](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=DIRECTV&i=Subscription+Television+Service) | DTV | Consumer Discretionary |
| [Dominion Resources](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Dominion+Resources&i=Investor-Owned+Utilities) | D | Utilities |
| [Dr Pepper Snapple](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Dr+Pepper+Snapple+&i=Soft+Drinks) | DPS | Consumer Staples |
| [DTE Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=DTE+Energy+&i=Investor-Owned+Utilities) | DTE | Utilities |
| [Duke Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Duke+Energy+&i=Investor-Owned+Utilities) | DUK | Utilities |
| [E\*Trade](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=E%2ATrade&i=Internet+Brokerage) | ETFC | Financials |
| [eBay](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=eBay+&i=Internet+Retail) | EBAY | Information Technology |
| [Edison International](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Edison+International&i=Investor-Owned+Utilities) | EIX | Utilities |
| [Emerson Electric](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Emerson+Electric+&i=Televisions+and+Video+Players%2FRecorders) | EMR | Industrials |
| [Entergy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Entergy+&i=Investor-Owned+Utilities) | ETR | Utilities |
| [Exelon](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Exelon+&i=Investor-Owned+Utilities) | EXC | Utilities |
| [Expedia](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Expedia&i=Internet+Travel) | EXPE | Consumer Discretionary |
| [Exxon Mobil](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Exxon+Mobil+&i=Gasoline+Stations) | XOM | Energy |
| [Fidelity](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Fidelity&i=Internet+Brokerage) | FIS | Information Technology |
| [FirstEnergy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=FirstEnergy+&i=Investor-Owned+Utilities) | FE | Utilities |
| [Ford (Ford)](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Ford+%28Ford%29&i=Automobiles+and+Light+Vehicles) | F | Consumer Discretionary |
| [Gannett](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Gannett&i=Newspapers) | GCI | Consumer Discretionary |
| [Gap](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Gap+&i=Specialty+Retail+Stores) | GPS | Consumer Discretionary |
| [General Electric](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=General+Electric+&i=Major+Appliances) | GE | Industrials |
| [General Mills](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=General+Mills&i=Food+Manufacturing) | GIS | Consumer Staples |
| [Google](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Google+&i=Internet+Portals+and+Search+Engines) | GOOG | Information Technology |
| [H.J. Heinz [Food Manufacturing]](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=H.J.+Heinz+&i=Food+Manufacturing) | HNZ | Consumer Staples |
| [Hewlett-Packard](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Hewlett-Packard&i=Personal+Computers) | HPQ | Information Technology |
| [Home Depot](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Home+Depot&i=Specialty+Retail+Stores) | HD | Consumer Discretionary |
| [InterContinental](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=InterContinental&i=Hotels) | ICE | Financials |
| [JPMorgan Chase](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=JPMorgan+Chase&i=Banks) | JPM | Financials |
| [Kellogg](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Kellogg&i=Food+Manufacturing) | K | Consumer Staples |
| [KeyCorp](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=KeyCorp&i=Banks) | KEY | Financials |
| [Kohl's](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Kohl%27s+&i=Department+and+Discount+Stores) | KSS | Consumer Discretionary |
| [Kraft](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Kraft&i=Food+Manufacturing) | KRFT | Consumer Staples |
| [Kroger](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Kroger&i=Supermarkets) | KR | Consumer Staples |
| [Lowe's](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Lowe%27s+&i=Specialty+Retail+Stores) | LOW | Consumer Discretionary |
| [Macy's](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Macy%27s&i=Department+and+Discount+Stores) | M | Consumer Discretionary |
| [Marriott](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Marriott&i=Hotels) | MAR | Consumer Discretionary |
| [McDonald's](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=McDonald%27s+&i=Limited-Service+Restaurants) | MCD | Consumer Discretionary |
| [MetLife](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=MetLife&i=Life+Insurance) | MET | Financials |
| [Microsoft](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Microsoft&i=Computer+Software) | MSFT | Information Technology |
| [Molson Coors](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Molson+Coors&i=Breweries) | TAP | Consumer Staples |
| [New York Times](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=New+York+Times&i=Newspapers) | NYT | Consumer Discretionary |
| [Nike](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Nike&i=Athletic+Shoes) | NKE | Consumer Discretionary |
| [NiSource](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=NiSource+&i=Investor-Owned+Utilities) | NI | Utilities |
| [Nordstrom](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Nordstrom&i=Department+and+Discount+Stores) | JWN | Consumer Discretionary |
| [Northeast Utilities](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Northeast+Utilities&i=Investor-Owned+Utilities) | NU | Utilities |
| [Office Depot](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Office+Depot&i=Specialty+Retail+Stores) | ODP | Consumer Discretionary |
| [Pepco Holdings](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Pepco+Holdings&i=Investor-Owned+Utilities) | POM | Utilities |
| [PepsiCo](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=PepsiCo&i=Soft+Drinks) | PEP | Consumer Staples |
| [Philip Morris](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Philip+Morris&i=Cigarettes) | PM | Consumer Staples |
| [PNC Financial Services](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=PNC+Financial+Services+&i=Banks) | PNC | Financials |
| [PPL](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=PPL+&i=Investor-Owned+Utilities) | PPL | Utilities |
| [Procter and Gamble](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Procter+and+Gamble+&i=Personal+Care+and+Cleaning+Products) | PG | Consumer Staples |
| [Progress Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Progress+Energy&i=Investor-Owned+Utilities) | PGN | Utilities |
| [Progressive](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Progressive&i=Property+and+Casualty+Insurance) | PGR | Financials |
| [Prudential](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Prudential&i=Life+Insurance) | PRU | Financials |
| [Public Service Enterprise Group](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Public+Service+Enterprise+Group&i=Investor-Owned+Utilities) | PEG | Utilities |
| [Reynolds American](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Reynolds+American+&i=Cigarettes) | RAI | Consumer Staples |
| [Safeway](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Safeway&i=Supermarkets) | SWY | Consumer Staples |
| [Sears](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Sears&i=Department+and+Discount+Stores) | SHLD | Consumer Discretionary |
| [Sempra Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Sempra+Energy&i=Investor-Owned+Utilities) | SRE | Utilities |
| [Southern Company](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Southern+Company&i=Investor-Owned+Utilities) | SO | Utilities |
| [Sprint](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Sprint&i=Wireless+Telephone+Service) | S | Telecommunications Services |
| [Staples](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Staples&i=Specialty+Retail+Stores) | SPLS | Consumer Discretionary |
| [Starbucks](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Starbucks&i=Limited-Service+Restaurants) | SBUX | Consumer Discretionary |
| [Starwood](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Starwood&i=Hotels) | HOT | Consumer Discretionary |
| [Supervalu](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Supervalu+&i=Supermarkets) | SVU | Consumer Staples |
| [Target](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Target+&i=Department+and+Discount+Stores) | TGT | Consumer Discretionary |
| [Time Warner](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Time+Warner&i=Motion+Pictures) | TWX | Consumer Discretionary |
| [Time Warner Cable [Subscription Television Service]](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Time+Warner+Cable&i=Subscription+Television+Service) | TWC | Consumer Discretionary |
| [TJX](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=TJX+&i=Specialty+Retail+Stores) | TJX | Consumer Discretionary |
| [Tyson](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Tyson&i=Food+Manufacturing) | TSN | Consumer Staples |
| [UnitedHealth](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=UnitedHealth+&i=Health+Insurance) | UNH | Health Care |
| [V.F.](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=V.F.&i=Apparel) | VFC | Consumer Discretionary |
| [Verizon Communications](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Verizon+Communications&i=Fixed+Line+Telephone+Service) | VZ | Telecommunications Services |
| [Walgreens](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Walgreens&i=Health+and+Personal+Care+Stores) | WAG | Consumer Staples |
| [Wal-Mart [Supermarkets]](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Wal-Mart&i=Supermarkets) | WMT | Consumer Staples |
| [Walt Disney](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Walt+Disney&i=Motion+Pictures) | DIS | Consumer Discretionary |
| [WellPoint](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=WellPoint&i=Health+Insurance) | WLP | Health Care |
| [Wells Fargo](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Wells+Fargo+&i=Banks) | WFC | Financials |
| [Whirlpool](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Whirlpool+&i=Major+Appliances) | WHR | Consumer Discretionary |
| [Whole Foods](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Whole+Foods+&i=Supermarkets) | WFM | Consumer Staples |
| [Wyndham](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Wyndham&i=Hotels) | WYN | Consumer Discretionary |
| [Xcel Energy](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Xcel+Energy&i=Investor-Owned+Utilities) | XEL | Utilities |
| [Yahoo!](http://www.theacsi.org/index.php?option=com_content&view=article&id=149&catid=14&Itemid=214&c=Yahoo%21+&i=Internet+Portals+and+Search+Engines) | YHOO | Information Technology |

## Appendix B – Histograms of the variables

**Entire sample**

CS



NP/TA



EPS



ΔCS



ΔNP/TA



ΔEPS



HHI



AHHI



**Consumer Discretionary**

CS



NP/TA



EPS



**Consumer Staples**

CS

****

NP/TA

****

EPS

****

**Financials**

CS

****

NP/TA

****

EPS

****

**Information Technology**

CS



NP/TA

****

EPS

****

**Utilities**

CS

****

NP/TA

****

EPS

****

1. See <http://www.boerderij.nl/Home/Nieuws/2013/3/Paardenvlees-schandaal-kost-Frans-bedrijf-de-kop-1195198W/> [↑](#footnote-ref-1)
2. See <http://www.ad.nl/ad/nl/1012/Nederland/article/detail/3408085/2013/03/12/NS-krijgt-2-75-miljoen-euro-boete-om-onvrede-reiziger.dhtml> [↑](#footnote-ref-2)
3. Data received from http://www.bea.gov/national/index.htm#gdp [↑](#footnote-ref-3)
4. Data received from http://research.stlouisfed.org/fred2/series/SP500/downloaddata [↑](#footnote-ref-4)
5. Data for 2012 are not useful, since I will make use of a one-year time lag with respect to future financial performance. [↑](#footnote-ref-5)
6. As a result of too view observations per identified time period to use cross-section weights and white cross-section, as described in section 7.2 Statistical estimation. [↑](#footnote-ref-6)
7. Negative since a higher value of HHI indicates less competition. See the description of the HHI in section 6.1 Data description. [↑](#footnote-ref-7)