Stock Repurchases – A Fashion in the Corporate Wardrobe?

A Quantitative Study of Institutional Isomorphism within the Swedish Industrial Sector
We would like to express our gratitude to all who have contributed with their professional and personal support to the success of our Master thesis.

“Honor to whom honor is due.”

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ABSTRACT

In May 2000 share repurchases were legalized in Sweden, with the purpose to provide companies with an efficient and flexible way to distribute capital. To buy back shares gives companies several benefits which are discussed in our study. The lack of academic research about this topic for Swedish companies gave us an incentive to provide knowledge specifically for this market. When companies announce a share repurchase program they are subject to uncertainty about the society’s reaction and economic consequences. Individuals within a well established organizational field deal rationally with uncertainty by adjusting to their institutional environment. The institutional environment can be defined as an abstract structure of regulations and behavioral norms that guide human’s decisions. This often leads to homogeneity in companies’ culture, structure and output. We ask the question if companies are realizing repurchase programs in a similar way over time, and if share repurchases have been developed as a more common used financial instrument since 2000. Our second question is if companies that decide to buy back shares pursue this under similar economic conditions as a result from becoming homogeneous.

The purpose of this study is to describe how institutional pressures in form of coercive, normative and mimetic isomorphism have affected companies’ decision to repurchase shares. We want to explain if there is an upward going trend of share repurchases, a standardized way to repurchase over time and if this decision can be determined by similarities in certain financial indicators of a company’s economic situation. To answer our purpose we used a quantitative research strategy with a deductive approach. The collected data was analyzed in a logistic regression analysis and by interpretations of descriptive statistics. We decided to examine for mimetic isomorphism public companies listed within the industrial sector on Stockholm Stock Exchange from the years 2000-2006. For the test of coercive and normative isomorphism with a logistic regression analysis we had to limit ourselves to investigate the years 2001-2003.

In reality the three institutional pressures are working simultaneously and should together lead to a common perception about share repurchases among companies. For our testing we separated institutional isomorphism based on our theoretical preconceptions. This allowed us to analyze each individual institutional pressure and how they interact together. We defined mimetic isomorphism as companies adjusting their repurchase behavior to other companies within the industrial sector. Our result has not shown any indications of such a behavior concerning time, amount or frequency of the buybacks. Testing if certain financial indicators such as excess cash, liquidity, solvency, dividends, volatile operative income, prior year return, growth opportunities, companies’ size, ownership concentration, institutional and individual shareholders could explain stock repurchase activity gave us the possibility to evaluate coercive and normative isomorphism. But the question how institutional isomorphism affects companies’ repurchase decisions still remains unanswered. We have not found any certain financial indicator which motivates companies’ decision to buy back their own shares. The decision might therefore be carried out under very different economic conditions and with different objectives. In the industrial sector and generally in the whole Swedish market only a relatively low proportion of companies buy back shares. The stated findings for the Swedish market imply a need for further investigations over a longer time horizon and for a larger population. Further investigations in this topic which has the potential to provide recent insight into the stock repurchase decision for Swedish companies would enhance and verify our statements.

Keywords: stock repurchases, payout policy, institutional theory, mimetic, normative and coercive isomorphism, Swedish industrial sector.
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1. INTRODUCTION

“The cure for boredom is curiosity. There is no cure for curiosity.”

Dorothy Parker

1.1 Choice of Topic

Our master program “Accounting and Finance” has given us the theoretical knowledge about corporate finance and investment issues. This gave us the incentive together with our practical experience to write our master thesis in this field. Writing a master thesis which is seen as an intensive and self-dependent research could strengthen our knowledge of financial topics. This research area is consistent with our personal interests and our wish to work in the scope of corporate finance.

Payout policy has been a highly debated financial decision among researchers. Since almost every corporation is paying out capital in one way or another it is important to understand the underlying reasons for this. The knowledge can be adopted by managers, stakeholders, researchers and basically everyone who has an interest in corporate finance. Companies’ decision for a proper cash disbursement is influenced by several internal and external factors. This reflects the need for an individual and sensitive evaluation of possible reasons and effects. For making this thesis feasible we had to narrow down our research area and therefore we decided to focus on cash disbursement in form of stock repurchases*. Since 2000 Swedish companies are legal authorized to repurchase own outstanding shares**. The legal change created the possibility for using a new financial instrument. This makes the discussion about repurchases interesting because little research has been done on this topic for the special market conditions in Sweden. Furthermore the time horizon of the last 7 years gives us a good observation period after the legalization in March 2000. We felt that we could

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* Stock repurchases in our study are defined as a company buying back their own shares. In Sweden it is permitted to repurchase shares at an authorized or other regulated stock market. Another possibility is an offer to all shareholders or to all shareholders that hold a certain kind of shares.

** We regard outstanding shares in our study equal to the shares which are traded on the stock market. For this fact we do not separate between “free float”shares that are public traded and shares that are not publically owned.
provide new knowledge for the actual discussion about the evaluation of repurchases activities after our tests.

The topic has been discussed and developed in many academic studies focusing on the US market. Since we could find many possible explanations for stock repurchases we saw a great opportunity to complement these previous findings with our own perspective. We found that the arguments from institutional theory would be an interesting aspect for determining reasons and effects of buybacks. The theory has earlier been used to explain organizational behavior within sociological, political and economic studies. To understand the managers’ decision to repurchase, institutional theory can be used to find new cause and effect relationships. Referring to a theory that has not been developed within our context gave us the possibility to critically examine earlier studies and improve how to interpret findings theoretically. Our knowledge and perception of corporate finance issues gave us the chance to define connections for theoretical interpretation and argumentation. We know this has to be done carefully to make sure that we can provide accurate and logical explanations.

The choice of our topic should identify the possible gaps between theory and company’s practical behavior. A better understanding of corporations’ financial decisions could have great importance for both managers and investors. Managers could enlarge their knowledge in which way individual circumstances repurchase programs could be an accurate decision. This would also strengthen managers’ experience to develop their perceptions of repurchases over time and become sensitive to important influencing aspects. Moreover investors could be more aware of their decision to invest in companies. From a broader knowledge it would be possible for investors to evaluate managers decisions individually based on their own self-interest and preferences. We suggest our study could be of high interest for both groups and those interested in corporate finance especially in the stated circumstances in Sweden.

1.2 Problem Background

Making accurate financial decisions is meaningful for companies to be successful over time. It is a necessity for satisfying the stakeholders, keeping a competitive advantage and future prosperity.

Companies’ financial decision to distribute their excess cash to shareholders is commonly referred to as the corporate payout policy.2 There exists the opportunity to either pay out dividends or to repurchase own shares.3 Stock repurchases of publicly traded shares is often seen as an alternative to dividend payments. However several other incentives could motivate companies to prefer to buy back their own shares. Both alternatives have the effect that corporate capital is distributed to the shareholders. For that reason it would be comprehensible that repurchase activities are more likely to be implemented in times of excess cash.

The choice of distributing excess capital is important because it prevents managers from making non-value adding investments and allows investors to invest their money in more promising sectors.4 In US there has been a growing trend of repurchasing shares since the

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1980s, which seems to have gone global during the latest years. It has spread to countries like Canada, UK, Japan and Germany where stock repurchases were not authorized until recently.\(^5\)

Stock repurchases have been allowed in Sweden since March 2000,\(^6\) and during the recent years more companies have announced repurchase programs. A combination of a high amount of excess cash and little debt could be the leading factor for this. When the uncertainty of the economic cycle increases, companies would get more sensitive for making new investments. In this market circumstance they might instead prefer to buy back their outstanding shares.\(^7\)

Companies always have to consider their financial flexibility when deciding their individual payout policy to avoid overinvestment or to loose profitable investment opportunities. Besides distributing excess cash corporations often repurchase when they estimate that their stock price is undervalued. Companies can use this treasury stock for future acquisition and might therefore gain profits if their stock price rises. It has been argued that the market incorporates the belief that repurchase announcement is a sign of undervaluation. Therefore managers will have an incentive to buy back shares as a way to signal their future prospect about the company.\(^8\)

Furthermore the most common explanations for why corporations’ repurchase are due to capital structure and stock options. Public companies have the chance to optimize their capital structure in an individual way, by withdrawing equity from the market (Bagwell and Shoven, 1988; Opler and Titman, 1996; Dittmar, 2000). When managers and employees exercise their stock options the company has to issue equity. Repurchases is a way to finance these rewarding programs and avoid the dilution effects that is caused from an increased number of outstanding shares (Jolls, 1996; Fenn and Liang, 1997). With an increasing level of leverage it could be harder for other companies to carry out an unmeant takeover.\(^9\) This shows the importance that companies should always take into consideration different long term consequences of a changing leverage.

Both the company and shareholders see repurchases as a more tax efficient way to distribute cash. The different tax situation among investors can have an impact how they perceive and valuate repurchases. For that reason it has been argued that companies would adjust their payout policy based on the tax situation for the different identities of owners.\(^10\) Large investors are considered to be keener on taking the cost of information gathering about the consequences of the implementation of repurchase programs.\(^11\) Well informed block holders should be more trusty in the accurateness of managers’ payout decision. This reduction in uncertainty between the groups could shape managers behavior to repurchase as the concentration of owners increase.

\(^5\) Ibid.
\(^6\) Proposition 1999/2000:34
\(^7\) Lucas, Dan. ”Återköp – en märklig modevåg på aktiemarknaden”. *Dagens nyheter*, 2004-11-06.
Repurchases is often used to pay out more temporary cash flows while dividends is paid in a more stable manner.\textsuperscript{12} Lintner (1956) found that companies try to avoid lowering dividend because it would result in a negative stock price reaction.\textsuperscript{13} Keeping a stable dividend is in many cases the primary prerequisite for managers within their payout decision. This implies that buybacks would be favorable when a smoothing dividend payout over time can be observed.

Brav, Graham, Harvey and Michaely (2004) found that the decision of payout policy can be described by managers following certain generally accepted rules. These believes include to not lowering dividends, to not be too different from competitors, defend a good credit rating, to prefer a diverse base of investors, maintain flexibility and to avoid taking actions that can lower earnings per share.\textsuperscript{14} Managers’ individual decisions about payout policy and other financial issues could be strongly influenced by their corporate environment. Individual companies within the same scope of business have to deal with similar expectations from the society. Could the decision to repurchase shares be affected by expectations from their corporate environment?

DiMaggio and Powell (1983) argued that organizations become homogeneous in the long run, referred to as isomorphism, by adjusting to their institutional environment.\textsuperscript{15} The institutional environment according to North (1993) is the abstract structure of regulations and behavioral norms that reduces uncertainty by guiding human behavior.\textsuperscript{16} According to these arguments we would expect that similar companies within the same scope of business make homogeneous decisions about repurchases as a result from adjusting to their institutional environment. This is a result from following regulations and behavioral norms. Uncertainty about the market and changing preferences and influences of stakeholders within their scope of business could be responsible for isomorphism. For that reasons companies are keen to adopt similar activities and to make similar decisions.

DiMaggio and Powell (1983) identified that organizations become homogeneous because of the pressures from normative, mimetic and coercive isomorphism. The normative isomorphism refers to the norms and mutual perceptions that have been sanctioned for determining what attitude and manner that is admissable. Mimetic isomorphism is the result from organization modeling them self after other organizations they perceive as successful, as a way to respond to an environment of uncertainty. Coercive isomorphism is the formal and informal restrictions that occur because of legislative, economic and ethical forces.\textsuperscript{17}

Responding to the institutional pressures might be a way for organization to achieve legitimacy or in other words social and economic success. The three pressures of isomorphism would stimulate the process of an organization becoming homogeneous within

\textsuperscript{12} Jagannathan, Murali; Stephens, Clifford P. & Weisbach, Michael S. (2000). Financial flexibility and the choice between dividends and stock repurchases. University of Missouri, Columbia, USA & University of Illinois, Champaign, USA.


\textsuperscript{14} Brav, Alan; Graham, John R.; Harvey, Campbell R. & Michaely, Roni (2004). Payout policy in the 21\textsuperscript{st} century. Duke University, Durham, USA; National Bureau of Economic Research, Cambridge, USA; Cornell University, Ithaca, USA; The Inter-Disciplinary Center, Herzelia, Israel.


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their environment.\textsuperscript{18} Repurchases would be seen as a legitimized behavior if companies would perceive it as socially and economically accepted. This is reached if managers evaluate buybacks as profitable and stakeholders observe it as a reasonable or efficient decision. The acceptance of announcing repurchases can change over time and can be based on stakeholders’ expectations and managers’ experience. The different forces of isomorphism could be the underlying reason for determining if this financial procedure is seen as successful.

Every factor of isomorphism has its own process, understanding and effects but it is possible that two or all three can occur and happen simultaneously.\textsuperscript{19} For an overall understanding of how companies adjust to their institutional environment it is essential to define and analyze how all three forces operate and interacts. We consider mimetic isomorphism as a tendency of modeling the own repurchase decision after previous established programs from other companies within the same business sector. One possible explanation for this is that stakeholders view companies that repurchase as more financially strong. For this reason manager would have an incentive to copy competitive companies for achieving social acceptance among the stakeholder without valuation of the economic consequences.

Personal experiences, education and personal background can be build up and change individual’s perception about economic decisions. For us these professional and social determinations could have an impact on how managers evaluate buybacks. Within one scope of business it can be argued that managers’ perceptions are influenced by similar external factors. Manager often have similar professional knowledge and understanding of financial issues based on their education, training and working experience. Within our quantitative study we can not measure how their social setting shapes managers activities. For that reason we define normative pressure theoretically as both professional and social influences. We see professionalization in comparison to social background as a stronger pressure for repurchasing. This means that managers know in which certain economic situation it is motivated to repurchase shares and which possible consequences can be occur. Similar pre-understanding among managers in one business sector should support normative isomorphism of buybacks.

To fully understand why organizations become homogeneous one has to understand the restrictions in the institutional environment that organizations base their decision on. These restrictions can be both formal and informal.\textsuperscript{20} Coercive isomorphism is created on one side from the legal regulations in form of laws and rules. On the other side from socially unwritten restrictions like norms and standards. During managers consideration to repurchase they are subjects to these given restrictions. By defining the legal regulations and the norms in society that influence stock repurchases we can understand coercive isomorphism.

Institutional theory has been used in several economic researches for explaining how organizations act in conformity with their environment. Previous studies have provided knowledge about isomorphic tendencies of companies’ structure and managers’ decision. Still we have not found any conclusive explanation for how managers decide about repurchases within their payout policy. For further understanding of corporate finance and organizational behavior institutional theory could contribute with a meaningful explanatory value. It give us

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\textsuperscript{18} Covaleski, M. A. and Dirsmith, M.W., 1988, Institutional perspective on the rise, social transformation and fall of a university budget category, Administrative Science Quarterly, 33, 562-587.
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\textsuperscript{20} North, Douglass C.(1993). Institutionerna, tillväxten och välståndet. 54-95
\end{flushright}
a broad range of arguments for understanding what influence companies repurchase decision. Our intention is to state comprehensible and actual knowledge about repurchase activities in Sweden since the legal permission.

Isomorphism is expected to be stronger visible when companies are facing a more similar field of business. We examine institutional isomorphism within the Swedish industrial sector for demonstrating our findings more clearly. Isomorphism as institutional pressures for adjusting a certain behavior should be stronger in a smaller and bounded institutional environment which can seen as a organizational field. These arguments lead us to our two research questions:

- How does institutional isomorphism lead to similarities in companies repurchase realization and how has it influenced companies to repurchase over time?
- Which financial indicators can explain stock repurchases, as a result from institutional isomorphism?

1.3 Purpose

For our first objective we want to explain in the Swedish market if isomorphism is present for influencing companies’ decision to repurchase shares within the industrial sector. We want to describe this by discovering if there is an increasing trend and if we can observe if stock repurchase is realized in a homogeneous way over time.

In addition we want to identify for our second objective if financial indicators that reflects similar economic conditions can explain when companies are likely to announce stock repurchase programs. Our aim is to provide knowledge about how institutional isomorphism can lead to this decision.

1.4 Delimitations

Our intentions is to provide an overall knowledge about stock repurchases and isomorphic pressures in the economic environment but we are forced to set a few limits for our research questions. We think it is necessary to point out our delimitations for an understanding of how we approach our purpose.

All possible financial indicators for stock buybacks have been included because they give a theoretical importance. It was not duable to take every possible influence factor into account in our testing procedure, for different reasons. We are for example not testing companies market performance, economic cyclical changes and managerial shareholding. In our study we are assuming that managers have developed a similaar understanding of stock repurchase programs. Our quantitative research strategy motivated why we do not take social background, education, traning and other personal perceptions in consideration, which all can be part for explaining isomorphism. Unfortunately we have not accomplished to test a dividend smoothing trend in an accurate test due to our restricted time and therefore we decided to disregard our initial measurement.
1.5 Thesis Operation Flow

**Pre-phase, Chapter 1-2**

1. Choice of Subject Area and Research Perspective
2. Definition of Purpose and Objectives
3. Information Gathering About Theories and Actual Problem Issues

**Research and Collection Phase, Chapter 3-4**

1. Research About Underlying Theories and Findings of Previous Studies
2. Choice of Survey and Population or Sample
3. Research of Databases and Other Financial Data Access
4. Decision for Statistical Measurements and Models
5. Data Collection from Different Data Sources

**Main Phase, Chapter 5**

1. Formulation of Hypothesizes
2. Testing Hypothesises
3. Description of Statistical Measurements and Explanation for Hypothesises

**Analyses Phase, Chapter 6-8**

1. Analyses of Empirical data, Conclusion, Discussion and Future Outline

*Figure 1: Thesis Operation Flow*
2. THEORETICAL METHOD

"If I have seen further than others, it is because I have stood on the shoulders of giants"

Isaac Newton

2.1 Preconceptions

Academic science can be described as a mental production from the society focused on rational reproduction of general, substantial and necessary relations of the subjective and objective reality as well as the interrelation between the both.\(^{21}\) These environmental factors cause our preconceptions for our study. In this chapter we will develop a further understanding of its meaning and how it has influenced us.

The preconceptions determine the “behavior in the activity” and the “behavior to the activity”. In other words they affect the aim and the method of the study, but also the intention and motivation of the researcher. Therefore for the overall understanding of the study it is necessary to point out the awareness which has led to the researchers actions. The two crucial factors for the awareness are cognition and valuation. Cognition leads to what and how something can be done. Valuation is defined how the researcher determines the usefulness of doing one thing in one way or another. The valuation by the researchers build up his cognition, therefore both interacts with each other.\(^{22}\)

Cognition and valuation is strongly affected by individual interest and the social and historical background of the subjects.\(^{23}\) The researcher always has to pay attention to their subjective interpretations and perceptions of general accepted statements, data and facts. It is within the researcher’s task to explain critically and explicitly their background for understanding the individual preconceptions based on cognition and valuation. The best form of scientific basis is reached when subjectivity and own interests are perceived in an objective way.\(^{24}\)


\(^{23}\) Ibid.

\(^{24}\) Ibid, 88.
Preconceptions have affected our choice of topic, purpose, methodology, theoretical framework, statistical approaches and how we have interpret results. It is therefore important to clarify how this has affected us during our study. Our intention is to make it possible for the reader to evaluate the objectivity of our statements.

Knowledge and experience in finance alternatives and accounting methods are the basic for our theoretical preconception, which we have acquired during our studying time. Our interest for finance and investment strategies arose from lectures in corporate finance and investments. Literature and case studies provided us further information and insight of companies’ benefits through rational investment decision making and the importance for value maximization issues in a general way.

The decision to analyze companies’ cash disbursement decision is mainly a result from our literature study. The cash disbursement decision was widely debated among other researchers. This along with our personal interests made it an interesting study object for us.

We had not studied payout policy before more than in a very general way, which allowed us to approach the problem with an open mind. The theories that we have used, have therefore been chosen based on the research we have done during our thesis. Institutional theory was pointed out to us at the beginning of the research process. As we searched for other studies we found no one who had used institutional theory in the context of stock repurchases. We saw this as a great opportunity to provide a unique study with new knowledge.

Cash disbursement decisions are very sensitive operations which requires a detailed understanding of financial market instruments and accepted methods. To make sure to withhold our objectivity we have approached the problem carefully. This is done by critically examining earlier research and making sure to not base our theoretical arguments around our subjective perceptions.

Earlier basic statistic courses and our studies in economics gave us an overview of the most common used statistical models in economics. During our literature study we enlarged our knowledge and could derive it more into our context. This gave us the possibility to evaluate a few statistical models and their strengths and weaknesses. The aroused interest about statistics and our mathematical skills made it possible to point out empirical support in a quantitative way for our research purpose. In addition the offered research methodology lecture was good to strengthen the knowledge and to get clear about the research philosophy, method and scientific approach.

For our study the practical preconceptions are given by our private equity trading on the Swedish and German stock exchange. Therefore it is a significant incentive for us to remain well informed and updated about financial issues. From this background we can insert our basic practical knowledge about financial information and connections in this study.

The internship experience in the scope of audit and internal accounting was responsible for our better understanding about companies reporting norms and companies organizational structure. Therefore we have acquired additional information and a general understanding of the structure and measured figures in the annual reports. Furthermore it is for us a good learning and accepting process to write the thesis within a team of different previous study experience and professional views from the Swedish and German study system and professional objectives. This teamwork of partners from a similar but different cultural background improved our social skills of argumentation and communication. Therefore we
have a broader way of thinking and analysis of our purpose due to our individual background and previous education.

Our decision to write this study in English should avoid information gaps and misunderstandings of primary used research articles and studies in English. Moreover the chosen language should improve the acceptance and target audience of the study which provides further information about Swedish market conditions and activities worldwide.

### 2.2 Perspective

Our purpose is to explain why corporations repurchase shares based on arguments using institutional theory. This gives us the opportunity to approach our problem from different perspectives. The choice of perspective is very important for the decision of approach and how result should be interpreted. It may therefore have a major impact on the knowledge that is gained from the study. We have decided to see the problem from a **macro perspective**. This gives us the possibility to evaluate results based on the interests of stakeholder. We found that this would provide the most interesting result due to our choices of methodology.

For our purpose, our data collection process and analysis we observed repurchasing activities and financial data over a certain time horizon. The complexity of our research question demanded us to approach it in both a macro and insider perspective. To explain isomorphism we needed to take into account both the external events and managers individual decision. These two perspectives have followed us simultaneously during our whole research process. It demanded a flexible way of thinking, where our preconceptions have been a great help for understanding our stated problem.

The risk of choosing a perspective is that the researcher makes an unconscious choice. This can be due to subjective values that should not influence the study. By adopting a perspective that was not intended for the study the objectivity might suffer. It is therefore important that we clarify our perspective and that it is consistent with our stated research question and purpose. This perspective should be every time noticeable and hold over our whole study.

We can not say that we have chosen a company or a management perspective because we only try to evaluate their performance and behavior without any direct personal contact to the observations. However we hope to provide further knowledge for managers to identify and evaluate their most important influence factors for this investment decision. Furthermore managers can also understand how their decision is affected from isomorphism within the business sector and how other competitive corporations act in similar situations.

From the reversal view of an investor who can give incentives to company’s management the argumentation and discussion would be different due to varying goals of satisfaction and shareholder’s wealth maximization. In spite of this an investor has the opportunity to get a better understanding “when”, “how” and “why” companies react in certain circumstances and under particular restrictions.

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2.3 Scientific Approach

To be able to answer our purpose it was necessary for us to construct a theoretical understanding by reading earlier studies and literature. This understanding is the fundament for the development of our hypothesizes. It points out the importance for us to critically examine what has been written earlier. Our developed hypothesizes will later be tested by examining our empirical data. From this we can draw conclusions if our theoretical framework can be adopted in our selected circumstances. In other words we have used a deductive approach to answer our purpose.

**Deductive theory** starts from the theoretical knowledge and its considerations. Based on this the researcher formulates hypothesizes that should be approved or rejected based on the empirical tests. An alternative to deductive theory is **inductive theory**. It means that the researcher draws conclusions from the observations of the empirical data. We saw many benefits from using the first approach. Based on our preconceptions it provided for us a lot of new knowledge which is not based on our subjective perceptions. It allowed us to remain objective as we formulated our hypothesizes. By careful consideration we could develop a theoretical model that is based on a variety of professional opinions. This fundament will give us the tools for making good and reliable conclusions.

An alternative to deductive theory is **inductive theory**. It means that the researcher draws conclusions from the observations of the empirical data. We saw many benefits from using the first approach. Based on our preconceptions it provided for us a lot of new knowledge which is not based on our subjective perceptions. It allowed us to remain objective as we formulated our hypothesizes. By careful consideration we could develop a theoretical model that is based on a variety of professional opinions. This fundament will give us the tools for making good and reliable conclusions.

For using an inductive approach we would choose a special example or a defined problem as starting point to result in a general perception. In that case we would not use our developed theoretical understanding in the same way. We realized after having done our literature study that inductive theory probably only could provide a minor amount of new knowledge if any at all. The biggest problem of this approach is that we would lose the generalization of our study, and we probably could not derive any conclusions about a sample or a population. We saw that testing existing theories would provide a great understanding of our problem, because of their high explanatory value.

There also exists a combination of the inductive and deductive approach, called abductive theory. We have found very different explanation of what it is. For us it means stating hypothesizes and then testing them. If they do not hold you go back to the theory and state new ones. We have considered this approach, but as mentioned above deductive theory fitted best in our context.

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27 Ibid.
2.4 View of Knowledge

Our purpose of this study is to understand how companies confirm to isomorphism. The underlying thought for testing this can be found in our ontological questions. It assumes that our research objects actions can be explained by their organizational environment.

When human actions are determined by rules and routines of an organization and culture it is referred to as **constructionism**. The alternative is **objectivism** which means that human actions are independent of outside factors. The biggest benefit from using positivism is that we can point out clear relations of variables within a large population. Since we will present our findings in measurements we can remain objective. However the interpretation of our findings is determined from our theoretical knowledge and considerations. This mean our subjective perception plays a major role for the ending result. We will take this into consideration for our analysis to remain as objective as possible.

The alternative to positivism is **hermeneutics**. It focuses on interpretations of the meaning of text, symbols, and experiences and so on. The earlier decisions of which method to use made a positivistic view of knowledge an obvious choice. This determines what kind of data that we need to collect. We observe facts and empirical data which are visible like market data and reporting figures. These facts are not based on individual and subjective awareness and perceptions.

2.5 Research Strategies

To answer our purpose it should be observed in an objective way so the findings can be valid for generalization. Generalization is reached if we can make reliable observations about our population. The best way to do this is to use a quantitative method. It gives us the opportunity to examine a population or a representative sample. From this we can point out clear cause and effect relationships which were the intention for us to choose a positivistic view of knowledge. These basic prerequisites can be hard to reach in some cases since the interpretation depends our theoretical knowledge. However we assert to provide as much knowledge as possible that can be general accepted from all recipients.

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Quantitative research focus on the quantity of the data while qualitative research focus on the meaning of the words within the data. A qualitative research in our case could provide more detailed and individual information, and could be used for a partly or completely inductive study. After considering which method to use the benefits of a quantitative research clearly outweighed the benefits of a qualitative. We suggest that interviewing corporate decision makers would be an interesting complement to our study.

Our data collection and analysis emphasizes quantification from the reporting figures and numbers of the companies based on disclosure rules. This is a standardized and structured procedure which leads to exactly quantifiable results. Therefore it is possible to guarantee comparability of results, like comparison of measured variables of several companies within our population and to use these measurements for further studies. Furthermore this quantitative procedure leads to point out statistical correlations and the opportunity to test larger sample for higher representativeness and validity.

Our argumentation and findings will be discussed and compared with company’s general statements and published reasons for repurchasing. This legal requirement to disclose these facts in the annual reports in Sweden is valid since 2006 and many corporations have done it voluntarily before. We consider this qualitative influence small for our study because these published statements are given in a general way and they are not revisable. For this reasons we consider our study to have a deductive approach, positivistic view and a quantitative strategy. It will provide a more representative study due to numerical quantities in comparison to a qualitative research strategy due to meanings and subjective interpretation.

We argue that using different financial data that are available to the market gives the study an interesting dimension. If we were able to predict repurchases based on this data this would be possible for other stakeholders as well. For example if investors had a further understanding why corporations repurchase it could have an impact on their investment decision.

2.6 Collection of Secondary Data

Secondary data are “data that have been previously collected for some purpose other than the one at hand”. Available secondary data are mostly historical which provides basic and further experience and data of other business researchers according to the current research. Therefore we have been able to achieve a “body” of more general business knowledge which can be seen as a fundament and development for our own individual and specific business research.

Secondary data have the advantage that they are faster and cheaper to gather than primary data. The used secondary sources were scientific literature in form of printed books, e-books, articles and previous studies from the university library and databases. We used the databases: Emerald Fulltext, Business Source Premier, Blackwell Synergy and Web of Science. Moreover we used Google Scholar to find other databases of research articles and studies to receive the full version we have not got from the our main databases we mentioned before. Reference lists of other research papers which refer to other studies and books are also used to find helpful secondary sources.

33 Ibid.
34 Ibid.
We searched in our secondary data process within the main databases for following keywords in different orders and combinations: institutional theory, isomorphism, payout policy, dividends, stock repurchases, stock options, ownership structure, institutional investors, individual investors, foreign investors, financial structure.

The main disadvantage of secondary data is that they are not goal-orientated and specific to researcher’s purpose. Therefore we want to explain our way “how” we found our business articles with the above stated keywords and databases before we follow with a general valuation of our secondary sources. We collected secondary data from other studies with different objectives. For that reason we think this description is necessary to ensure that these sources still provide good knowledge for our special purpose due to the ability to narrow down hits. We choose Business Source Premier which is seen as the largest database as representative database to show how we minimized our hits to end up with the best appropriate articles.

<table>
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<td>Sweden</td>
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Table 1: Keywords in secondary data collection

We did not found any relevant results of “Institutional Theory” and “Isomorphism” within our context of repurchases. It go quickly clear that the underlying theory is not really developed to our special purpose. However we found a lot of different articles which provided us with

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useful information to determine financial indicators for repurchases together with more general papers about isomorphism and institutional environment.

The key words “Payout Policy” and “Stock Repurchase” together with several other key words in different combinations lead to increase our knowledge about the overall context beside the underlying theory. It was not possible for us to find articles which describe the background of stock repurchases in the Swedish legal and market environment. For that reason it was our challenge to combine our minimized findings of secondary data to develop knowledge piecewise for our specific purpose.

2.7 Critique against Secondary Data

In our literature study we focused on fundamental scientific articles and papers which are often referred in other studies for our collection of secondary sources. The main part of our theory is due to the original studies about institutional theory from Meyer and Rowan (1977), DiMaggio and Powell (1983) and North (1993). Scott (1995) is also often referred to in other studies about institutional theory. We found that his work could not provide any further information to our study so we decided to leave it out.

Furthermore we have used other scientific articles to complete the understanding of our theory part with further research findings in our study context. In search of secondary sources we often refer to published journals and magazines such as Journal of Finance, Business, Financial Economics, Economic Behavior & Organization, Applied Corporate Finance, Financial And Quantitative Analysis, American Sociological Review, American Economic Review, Administrative Science etc. We consider these kinds of sources to have a high quality because the prerequisites to get published are strict in these professional journals. Therefore these studies are proved for creditability and are well evaluated.

Moreover we included up-to-date and non-published studies and working papers which do not have the same credibility in comparison to published literature and could be regarded as questionable. However the fact that convinced us is that they are from reputable business schools and universities like University of Cambridge, Harvard, Chicago, Missouri, and Vancouver etc. and placed in databases used from well-known educational institutions.

Finally we referred to academic business, methodology and statistic course books from publishing companies such as McGraw-Hill/Irwin, Blackwell, Thomson, Liber AB, Studentlitteratur etc. which are used as educational literature either in US, UK or Sweden. For the discussed reasons we can assure to present findings and knowledge from secondary sources with a high reliability.
3. THEORETICAL FRAMEWORK

"Economics is all about how people make choices, sociology is all about how people don’t have any choices to make."

James Duesenberry

3.1 Institutional Theory

Institutional theory has been developed within organizational research. It focuses on analyzing the interdependence of organizations and their environment, and it became to be one of the mainly accepted perspectives within this field. The theory was first adopted in sociological science but has been further developed in a political and economic context. We use this theory for explaining and understanding organizational behavior. Our arguments will be mainly based on the statements from the Nobel Price rewarded North (1990) and DiMaggio & Powell (1983).

3.1.1 Discussion of Theories

After our determination of the subject area and research perspective we gathered information about existing theories in the context of stock repurchases. During this process of extending our knowledge for this special issue we investigated the subject of institutional theory. It was not possible to find previous studies which had developed this theory in the scope of our purpose. The basic assumptions and its effects created a personal interest to get well-informed about this theory. The reasons and explanations for why companies repurchase were contradictory and insufficient in previous studies. These two factors motivated us to focus on institutional theory to investigate our topic of stock repurchases. We saw that it could provide us with strong arguments for explaining companies repurchase activities and reasons.

Many US and UK studies refer in their theoretical explanation of corporations’ buybacks to agency theory. Agency theory is widely defined and can be tailored to almost every topic where a “conflict of interests between managers and shareholders” exists. For this reason we think the theory has less authenticity and can only provide a weak explanation for our purpose.
Agency theory points out the cost of assurance and monitoring that managers do not act selfish such as only supporting companies’ size and growth instead of creating shareholder value. We suggest that these arguments can be applied in institutional theory as well. The stakeholders’ uncertainty about managers’ interest is due to asymmetric information which will lead to an increase in transaction costs.

In a situation where the transaction costs are high it is more likely that organizations will get homogenous because they would model themselves after their institutional environment. Therefore it might motivate managers who want to become legitimized from the market to repurchase shares to lower transaction costs from the background of companies’ value maximization. We see North’s statement that transaction costs which occurs from asymmetric information between managers and stakeholders are the crucial factor for explaining isomorphism. Asymmetric information is therefore responsible for higher pressures within the institutional environment which lead to a stronger trend of isomorphism.

In our study we tried consciously to disregard agency theory. However we used findings and reasons from studies based on agency theory and developed them in our context of institutional theory due to the lack of comparable secondary sources in our information gathering process. We could use similar explanations that were used in these studies but in a stronger and more meaningful way.

3.1.2 The Development of an Institution

From a general view institutional theory is based on the environments’ expectations on organizations. Meyer and Rowan (1977) suggest that organizations have the aim to become with their elements legitimated by the environment. Legitimacy can be created by implementing myth about the own organization by protection of "symbolic and ceremonial activities and stories about their activities“ which make an organization to become institutionalized. In other words organizations have to develop behavior guidelines which are consistent with what the social environment dictates and that are generally socially accepted. These guidelines should have a symbolic character to reassure the influencing environment because these descriptions do not show real activities. However their existence has a respectable nature which is necessary for organizations to survive within their competitive environment.

DiMaggio & Powell (1983) stated that the ambition for legitimacy is the essential reason for a certain organizational behavior, rather then the competition or pursuit of efficiency.

In a perfect political and economic environment every decision should be efficient. However actors often act on incomplete information and their subjective thoughts, which can result in inefficient decisions. The uncertainty of market behavior, supplier delivery, shareholder attitudes, competitors’ behavior, and future actions of governmental agencies and so on is a reality that organizations have to deal with. Cyert and March (1992) found that organizations

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handle this by responding to short-term pressures rather then develop long-term strategies. They respond to these pressures by adopting plans, following standard operating procedures or the tradition of the industry and other contracts that can absorb uncertainty. It provides a more reasonable environment for making decisions, which avoids prediction of future uncertainty.40

North (1990) has defined that an institution is the restrictions or “the rules of the game“ that people have constructed to guide human behavior. It gives structure to everyday life which decreases uncertainty by limiting the amount of choices for individuals.41 Individuals within a well established organizational field deal rationally with constraints and uncertainty which often leads to homogeneity in their culture, structure and output, even if it is not the most efficient decision. In other words organizational fields get institutionalized. One of the reasons for this is that participants within an organizational field tend to develop a mutual awareness and strategies become normatively sanctioned.42 “The actors, making rational decisions, construct around themselves an environment that constrains their ability to change further in later years“ .43

An organizational field is a collection of organizations that can be recognized as an institution. DiMaggio and Powell (1983) observed that organizational fields arise from a diversity of approaches and forms. However once the field has been established then powers will operate which lead to a process that organizations in the same business sectors or in the same branch will become homogeneous. Institutional elements of the organizational field restrict the direction and the context of changes which are mutually dependent that homogenization will be stimulated.44

Institutions evolve and are developed by humans over time, at the same time their restrictions influence every single decision. Organizations exist to utilize the possibilities that exist from institutions and common economic theory and during the evolvement process the decision to use these possibilities will get institutionalized. North defines “long-run economic change is the cumulative consequence of innumerable short-run decisions by political and economic entrepreneurs that both directly and indirectly (via external effects) shape performance”.45 The process of organizations becoming homogeneous is referred to as isomorphism.46 Hawley defined isomorphism as (quoted from DiMaggio & Powell, 1983)“...a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions”.47

43 Ibid.
44 Ibid.
47 Ibid.
3.1.3 Institutional Isomorphism

Homogenization can occur in a horizontal form which means that organizations adopt structural elements and behavior pattern of other competitive organizations within the branch, but also from organizations which have a vertical relation to the branch. DiMaggio and Powell (1983) identified three mechanisms that create institutional isomorphism: coercive, mimetic and normative isomorphism.\(^{48}\)

**Coercive isomorphism** is driven by formal and informal factors in form of pressures from other organizations which depend on and are pressured by cultural expectations of the society that shape organizations. The legal environment but also the institutionalized rules that have not been decided by the government, affect behavior and structure in many ways. This lets organizations adopt “standard operating procedures and legitimated rules and structures”.\(^{49}\) The dimension of adjustment varies from their dependence. Coercive isomorphism is much more important for institutions which are more dependent on legislative power or economic and ethical force.\(^{50}\)

An environment of uncertainty occurs if no clear advice and knowledge of activities is available or if organizations have ambiguous goals or unclear means to an end relation of organizations technologies which are used in the environment. In this environment organizations tend to model themselves after other organizations that are perceived as successful or legitimated. Organizations have a cognitive perception to gain benefits from this adjusting behavior which should lead to a risk reduction of uncertainty. In a reversal argumentation more powerful organizations which have relatively higher effectiveness and performance have not so much motivation for imitating. However they are not overall satisfied because they are worried about suffering from a change within the institutional environment and hence having to defend their outstanding and superior role. These organizations could also have an incentive to become more similar in their decision making in the long run through copying structural parts and mimicking others performance. Homogenization through this cognitive level of institution is referred to as **mimetic isomorphism** as a response to uncertainty.\(^{51}\)

**Normative isomorphism** is a result of professionalization. Individuals within an organization have a mutual perception what attitude and manner is admissible, based on similar education, training, working experience and similar cultural and economic setting. Even if a person has different professional and personal background the socialization works as a powerful isomorphic force. Therefore individuals within a profession “tend to view problems in a similar fashion, see the same policies, procedures and structures as normatively sanctioned and legitimated, and approach decisions in much the same way”.\(^{52}\) This normative level of an institution is created in other words through the obligation of a „state of the art“ of a profession as a common cognitive fundament which establish perceptions of norms and models of organization and operations which can change over time.


\(^{49}\) Ibid.

\(^{50}\) Ibid.

\(^{51}\) Ibid.

\(^{52}\) Ibid.
The outline of DiMaggio and Powell’s statements suggest that the organization setting will be continuously improved because institutions which pursuit to gain power and legitimacy (social and economical success) are under the pressure of isomorphism and this leads to irresistible homogenization of institutions in a similar environment. This trend is based on the motivation for change of individuals which act in a rational way and end up with a similar behavior. To reach this social and economic success organizations have to compete within their environment in the same way which increases the isomorphic trend in the three processes. Furthermore the authors emphasize that the three characteristics of institutional isomorphism are distorted which mean that an empirical test is possible but not required because each characteristic has its own process, understanding and effects, but it is possible that two or all three can occur and happen simultaneously and then it is difficult to identify and separate the effects of each to the results.

One commonly misunderstood assumption about actors’ behavior is that their perception can be explained by models of their environment. Individuals perceive information differently and therefore behavioral models differ from one individual to another. To fully understand the institutional environment that influences the decision to repurchase shares we would have to do in-depth interviews with the decision makers to determine the cognitive component of an attitude. It would be necessary to explain their differences on how they perceive information. Because we want to do a more quantitative study which should lead to a more general accepted representation, we will only try to explain the decision for repurchasing stocks based on an environmental model which includes all three equal significant factors of isomorphism. It is a necessary delimitation, but one has to keep in mind that subjective perceptions can play a major role on the decision to repurchase.

### 3.1.4 The Role of an Institution

Asymmetric information means that different actors have a different level of information about merchandise, service, or an agent’s performance. In some circumstances one may also gain by concealing this. This leads to a need to measure and monitor the transaction. These costs of acquiring information are referred to as transaction costs. In a market with asymmetric and imperfect information no transaction would take place because investors could not know if they would get a sufficient return on their invested capital and companies payout would be the same as the opportunity cost of their other possibilities of financing. A market can only exist if this uncertainty can be diminished or eliminated. The purpose of an institution is therefore to lower these transaction costs.

To construct an institutional environment that people trust, there has to exist a combination of formal restrictions, informal restrictions and monitoring. Formal restrictions can be

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divided into political rules, economic rules and contracts. The political rules determine the hierarchical structure of the board, how they make decisions and for what they can authorized to decide about. The economic rules determines the right of ownership, in other word the rules that is related to the ownership of property. Contracts consist of the rules that are used in a special agreement of a trade. Formal restriction can be a good complement to informal restrictions by lowering the cost of information and monitoring, and thereby make it possible for informal restrictions to be more efficient.\textsuperscript{60}

In the modern West we tend to assume that life and economy is organized by formal rules and ownerships. On second thought we realize that informal restrictions on how to act, behavioral norms and conventions has a big impact on our behavior whether it is within family, social life or in business. Our culture lets us structure and interpret information which is the key for understanding the patterns of our behavior. Informal restrictions are developments and modifications of formal rules, socially sanctioned behavioral norms and internal monitored norms of conduct. The first two informal restrictions should support wealth maximization. However internal monitored norms of conduct means that persons give up their own wealth to create value in other ways.\textsuperscript{61}

If the value would be maximized for every part when the transaction is completed no monitoring would be needed. However this is seldom in the case and monitoring is a way to make sure that transactions are carried out as intended. This can be done by punishment, internal rules of conduct, social sanctions or a third part with compulsory power like the government.\textsuperscript{62} In more complex societies the profitability of opportunistic behavior, frauds and slow-downs has increased. Even if huge resources are spent on monitoring and self-regulation to try to construct behavioral rules, they can never be fully successful.\textsuperscript{63}

When looking into different factors in an institutional environment it is easy to realize that they can differ dramatically between different countries. Often the cultures differ from each other which would have an impact on how regulations, norms and beliefs arise. When the institutional environment differs between countries it is clear that this has an impact how individuals make economic decisions. Different disclosure standards, regulations, socially sanctioned norms and so on have an impact on the transaction costs. If transactions costs would be higher for example in US because of higher uncertainty and asymmetric information then it is more likely that those companies would adjust to certain informal restrictions that Swedish corporations do not see as important. Because a lot of our arguments are based on US studies it is important to remember that a different result can occur due to the differences of the institutional environments.

\textsuperscript{60} North, Douglass C. (1993).\textit{Institutionerna, tillväxten och välståndet}. 78-79.
\textsuperscript{61} Ibid, 64-71.
\textsuperscript{62} Ibid, 54-95
\textsuperscript{63} Ibid, 62-63.
3.1.5 A Model of the Institutional Environment

Institutional theory states that organizations’ economic decision making has a significant interdependency with institutional isomorphism. Individuals’ behavior and perception within an organization is strongly influenced from normative, mimetic and coercive isomorphism. From the reverse point of view organizations decision could lead the isomorphic pressures to develop and change within the institutional environment.

To fulfill the force to become institutionalized through a general accepted decision making, it is essential for organizations to act in line with all three isomorphic pressures. These three forces to become homogeneous in the organizational field are often operating simultaneous and might be hard to separate or avoid.

Normative and mimetic forces are based on individuals cognitive perceptions created by normatively sanctions seen as generally accepted guidelines and by mimicking the behavior of successful and superior evaluated organizations. Coercive isomorphism is in a weaker form influenced from cognitive awareness but mainly predetermined from formal and informal restrictions seen as legal regulatory and unwritten social rules. Both restrictions lead together to the same effect but their origins which can be summarized as expectations of the institutional environment have different strong characteristics and potential impacts.

All interest groups of an organization are part of constructing an institutional environment, in a political, economic and social fraction. Each group can have individual demands, preferences and claims which is the fundament for the common institutional expectations that an organization has to satisfy with their upcoming economic decision.

3.2 Why do Corporations Repurchase Shares?

Isomorphism is responsible for organizations approaching decisions in much the same way. For our argumentation we consider professionalization or normative isomorphism to be the underlying reason that companies identify similar benefits about share repurchases. From earlier studies we have been able to construct a theoretical model under which circumstances companies would withdraw outstanding equity. Our purpose is to test if we can find significant influencing variables and if they hold over time. Understanding this economic decision is the fundament for our argumentation how normative isomorphism and the other pressures force companies to become homogenous.
Companies with lot of excess cash could face the risk for over investing or making non-productive investment. To solve this problem a corporation should pay out the excess cash in the disbursement form of dividends or repurchases.\(^{64}\) It is likely that companies repurchase when they think it is their best investment, and therefore when their investment opportunities are few.\(^{65}\) By repurchasing shares the asset base shrinks. If a company would fail to get a return above their cost of capital on their marginal investments, then repurchases would prevent the company from loosing value.\(^{66}\)

Stock repurchases gives managers the flexibility to repurchase when they think that their stock price is low. Stock buybacks are seen as an additional investment tool within the payout policy which is more rentable if shares can be retired for a cheaper market price.\(^ {67}\) When corporations have repurchased they can use their treasury stock to acquire other companies or assets. If they have managed the market timing right, they can take advantage of the undervalued stock to make cheaper acquisitions. Earlier studies have shown that companies often announce stock repurchase programs when their prior stock returns have been poor.

Financial economists have argued that stock repurchases can be used by managers to signal the existence of an undervaluation of their stock price to the market. There are two different types of signaling that have been discussed. On the one hand buybacks of shares signal the managers’ expectations of future earnings. The other explanation is that instead of providing new information to the market, managers want to express their disagreement of how their performance is priced.\(^ {68}\) Furthermore it can attract different types of investors by reflecting a profitable investment in the own company due to further growth and return opportunities from the background of opportunity costs for other investment possibilities.\(^ {69}\)

Several researchers have found that companies tend to repurchase shares as a way to increase the level of leverage (see Bagwell and Shoven, 1988; Opler and Titman, 1996; Dittmar, 2000). Repurchasing own shares is lowering the amount of equity which can be seen as a useful way for companies to approach a more optimal capital structure.\(^ {70}\) An open market repurchase activity is typically smaller in its scope and would not adjust the capital structure dramatically. For this reason it can be argued that share repurchases can be used as a tool to fine-tune the level of leverage to avoid necessary larger adjustments later on.\(^ {71}\) Bagwell (1991) test results support the possible consequence from a changing leverage that it would be harder for other companies to make an unmeant takeover.\(^ {72}\)

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\(^{67}\) Ibid.

\(^{68}\) Grullon, Gustavo & Ikenberry, David L. (2000). “What do we know about stock repurchases?”.

\(^{69}\) Jagannathan, Murali; Stephens, Clifford P. & Weisbach, Michael S. *Financial flexibility and the choice between dividends and stock repurchases*. University of Missouri, Columbia, USA & University of Illinois, Champaign, USA. (2000).

\(^{70}\) Li, Kai & McNally, William (2005). *The information content of canadian open market repurchase announcements*. Sauder School of Business, University of British Colombia, Vancouver & Clarica Financial Services Research Centre, School of Business and Economics, Wilfrid Laurier University, Waterloo Ontario.

\(^{71}\) Grullon, Gustavo & Ikenberry, David L. (2000). “What do we know about stock repurchases?”.

Kahle (2002) stated that established stock options programs as stock-based remuneration systems might affect corporations’ payout policy. It has been argued that when stock options are exercised in the near future, the company will buy back shares to fund option programs. If managers and employees exercise their stock option it has the same effect as a smaller equity offering. An increase in total outstanding shares will decrease earnings per share, which is one of the main key ratios for investors and analysts. Therefore stock repurchases might be a way to respond to this earnings dilution effect (Jolls, 1996; Penn and Liang, 1997) by controlling the number of outstanding shares rather than paying out dividends.

Chan, Ikenberry and Lee (referred by Baker H. Kent, Powell, Gary E and Veit, E. Theodore, 2002). also support this statement that companies often buyback shares at the time executive stock options are exercised. Interesting is also that managers stock options often are not reduced to reflect the increases in dividends. This might motivate them to rather payout cash in the form of a repurchase then with dividends. Moreover executives’ options create incentives to buyback shares and not to pay out dividends. Dividends would decrease option values for exercisable and unexercisable options held by managers while repurchases would have an increasing effect.

It is argued that when companies retire their own stocks the “free float” defined as the amount of public traded stocks and investors’ capability of trading the stocks will be reduced and therefore decrease stock liquidity. A reduced liquidity could lead to a decrease in stock price. Brav, Graham, Harvey and Michaely (2004) found that about 50 percent of the interviewed companies thought that stock liquidity is an important factor that can influence the decision to repurchase shares. In this case companies would restrict their repurchases if it could decrease liquidity to an unacceptable low level.

3.3 Formal Restrictions

The institutional environment creates formal and informal restrictions that influence the actions of every company within an organizational field. We consider these restrictions to be a result from the different interests of society and stakeholders, which takes the form of both written regulations and unwritten norms. Both are creating expectations on companies that might be essential to follow to achieve social and economical success.

74 Ibid.
76 Kahle, Kathleen M.(2002):“When a buyback isn’t a buyback: open market repurchases and employee options”.
When companies are facing similar expectations they would deal rationally with these constraints and act in much the same way. For explaining coercive isomorphism we have tried to find out what institutional restrictions that could have an impact on companies’ decision to buy back shares. In this chapter we will discuss the formal restriction which are defined by the regulation of share repurchases in Sweden.

### 3.3.1 The Swedish Governance System

The governance of Swedish corporations is defined by laws, self regulation and practice in the area. The system is build upon a strict separation of powers and assignment of responsibilities among the owners (through the general meeting), board of directors, chief executive officer and the auditors. All these interest groups put formal restrictions on the company’s decision making process. Its fundamental structure is illustrated below. \(^{82}\)

![Figure 3: The Swedish governance system](image)

At the general meeting of shareholders the owners can directly use their powers to appoint a board of directors and when needed an auditor. The board of directors is appointed to run the corporation independently of the shareholders. However the owners always have the possibility to replace the board of directors. The chief executive officer is appointed by the board of directors to run the operations based on their instructions. The auditors’ task is to inspect the corporations annual report and accounts and the management from the board of directors and the chief executive officer. \(^{83}\) The determination of the structure and the interaction between the persons in charge is necessary to understand the decision making process of stock repurchases under formal restrictions from the company’s internal and external environment. The different governance systems throughout the world will construct different institutional environments. Regulations, disclosure and reporting standards are crucial factors that companies have to adjust to. This makes it important to look at how isomorphism has interacted with economic decisions specifically for the examined country.

### 3.3.2 Regulations of Stock Repurchases in Sweden

In March 2000 public companies in Sweden where allowed to repurchase shares of their issued equity. The motivation for this was that it would lead to a more efficient use of investment opportunities for a stimulation of society’s potential growth and wealth. Companies are generally trying to find a stable payout, because a temporary rise in dividends

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\(^{82}\) SOU 2004:47. Näringslivet och förtroendet.

\(^{83}\) SOU 2004:47. Näringslivet och förtroendet.
could give a false image of their long-term payout policy. To lower the amount of equity by reimbursements to the shareholders has also been an opportunity, but it is considered to be a relatively slow and complex process. Therefore the Swedish government argued that stock repurchases should be allowed, because there has been a lack of opportunities for companies to distribute excess cash in an efficient way. It was also argued that this would better meet the desires from investors and give the flexibility to acquire other companies and other assets.  

The decision of implementing a stock repurchase program is valid only after a special resolution. The Board of directors can also be delegated this authority by the general meeting of shareholders. After a company has repurchased the holdings of own shares may not exceed ten percent of total number of shares in the company. Companies also have to consider the amount of equity that is needed to meet the demands for their type of business, size, risks, needs of consolidation, liquidity and their economic situation in general. The shares that have been repurchased are reported in the balance sheet under treasury stock and should be disposed of or declare them invalid within three years.

The decision process for stock repurchases can be derived from the general governance system for legitimization of activities. We have stated the most important regulations which have to be adhered to repurchase for our study. However there exist other requirements which regulate mainly the transaction, disclosure and reporting process. It would not provide our study any relevant information by describing this further so we have decided not to present in detail. Since the legal reform in 2000 only the phrasing of the laws has been modified but the expressiveness and the context have not been altered. This motivates why we do not use this as a factor for isomorphic change.

3.4 Informal Restrictions

The stakeholders’ expectations are responsible for constructing behavioral norms for how companies should act. We have used earlier studies to try to identify possible informal restrictions. Within one scope of business we think companies are all facing almost the same expectations. This would pressure them to make similar decisions and become homogenous. We define informal restrictions for our arguments about coercive isomorphism.

3.4.1 A Stable Dividend

Lintner (1956) was the first who observed that companies try to keep a stable payout rate, put up a long-term payout ratio, and only increase dividends when earnings growth is expected to be constant. He observed that companies that decrease their ordinary dividends will get a significantly negative reaction on the stock price. This was also confirmed by Ghosh and Woolridge (1988) who observed an average decrease in stock price of about six percent in the three days after the announcement. Brav, Graham, Harvey and Michaely (2004) confirmed

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84 Proposition 1999/2000:34
85 Proposition 1999/2000:34
that companies want to have a stable dividend payout and concluded that managers only would decrease dividends in extraordinary circumstances.\(^{88}\)

Jagannathan, Stephens and Weisbach (2000) showed that stock repurchases vary from the different economical cycles and explain a lot of the differences in total payout, while dividends are much more stable. This indicates that companies pay dividends when the cash flow is sustainable and repurchase shares when the cash flow is temporary.\(^{89}\) It seems like the existence of dividends can be derived from the fact that managers believe that earnings are sustainable and based on the demand from institutional investors.\(^{90}\)

The most common explanation for the fact that companies smooth dividends is that managers want to signal their view of companies’ economic prospects to less informed outsiders (Bhattacharyyya, 1979, Miller and Rock, 1985, Kumar, 1988). Brav, Graham, Harvey and Michaely (2004) provided a further explanation that managers tend to act based on a number of sanctioned beliefs on how outsiders and stakeholders will react. This beliefs related to payout policy include not to lower dividends to avoid a negative market reaction, not to be too different from competitors, to defend a good credit rating, to prefer a diverse base of investors, to maintain flexibility and to avoid taking actions that can lower EPS.\(^{91}\)

Further Cyert and Kang (1996) found that companies' dividends payment is much based on uncertainty avoidance. Companies’ dividend policy is a result from acting based on short-run feedback in the economic environment, not an optimal long-run model. They tend to use simple rules of thumbs for their level of dividends based on industry conventions, company history and so on. The level of dividends is not likely to change with shareholder attitudes if they are likely to change back. companies often act on possibly short-run changes like earnings prospects.\(^{92}\)

Aivazian, Booth and Cleary (2006) argued that companies with an ownership structure that is characterized by internal shareholders are less likely to keep a stable ordinary dividend because shareholders can directly observe earnings and management. They concluded that dividend smoothing is most relevant for larger companies which have mostly a high outside shareholder concentration. They also found a strongly significant relation for companies with debt ratings. The reason for this would be that the public debt market is uninformed compared to private banks and therefore this would motivate the companies to pay a stable dividend.\(^{93}\)

Further explanations about companies decision to pay dividends is out of the range of our thesis, because it is obviously more complicated and not only the fact that managers signal their beliefs about future prospects. Brav, Graham, Harvey and Michaely (2004) found that managers on the first hand will make sure that investment and liquidity needs are met before

\(^{88}\) Brav, Alan; Graham, John R.; Harvey, Campbell R. & Michaely, Roni (2004). *Payout policy in the 21st century*. Duke University, Durham, USA; National Bureau of Economic Research, Cambridge, USA; Cornell University, Ithaca, USA; The Inter-Disciplinary Center, Herzelia, Isreal.

\(^{89}\) Jagannathan, Murali; Stephens, Clifford P. & Weisbach, Michael S. (2000). *Financial flexibility and the choice between dividends and stock repurchases*. University of Missouri, Columbia, USA & University of Illinois, Champaign, USA.


\(^{91}\) Ibid.


deciding about payout. In our study we only include dividend policy as a result from uncertainty avoidance and sanctioned beliefs. The arguments can clearly be adopted in the context of institutional theory as well. The importance of paying ordinary dividend would restrict the corporations’ ability to repurchase shares.

### 3.4.2 Tax Clientele Effects

There has been a debate in Sweden about profitable companies and their choice between paying higher dividends and repurchasing shares. Mutual funds and investment companies favored repurchases while other institutional investors preferred higher dividends, but not any bigger difference among the alternatives was visible. These preferences can partly be explained by their different tax situation. In fact, the different tax situation for investors has an impact on how corporations decide to distribute excess cash. To get an understanding for the preferences of shareholders we discuss briefly their tax pressure on dividends. Our intention is to see if corporations’ decision to stock repurchases can be explained based on the tax situation for investors.

The Swedish taxation system consists of double taxation. This means that companies first pay tax on their profit and then shareholders pay tax on dividends. The table on the next page shows the tax situation for different types of shareholders.

<table>
<thead>
<tr>
<th>Investor group</th>
<th>Tax on dividends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals</td>
<td>• 30 %</td>
</tr>
<tr>
<td>Corporations</td>
<td>• Tax-free if holdings are in a non-listed company or exceed 10% of a listed company.</td>
</tr>
<tr>
<td></td>
<td>• Tax-free if holding are lower than 10% of the voting power but is considered to be a part of their business activity.</td>
</tr>
<tr>
<td></td>
<td>• 28% on investments in other listed companies and portfolio investments.</td>
</tr>
<tr>
<td>Mutual funds and investment companies</td>
<td>• The main rule is that they pay tax on dividends which is compensated with their dividend payout being tax-deductible.</td>
</tr>
<tr>
<td>Insurance funds and pension funds</td>
<td>• A standardized yield tax replaces tax on dividends</td>
</tr>
<tr>
<td>Government and publicly owned institutions</td>
<td>• Tax-free</td>
</tr>
<tr>
<td>Municipal foundations</td>
<td>• Tax-free</td>
</tr>
<tr>
<td>Foreign investors</td>
<td>• Tax-free if holdings exceed 10% of the voting power.</td>
</tr>
<tr>
<td></td>
<td>• 30 % coupon tax on other investments. Reduced depending on legal agreement of countries, in most cases to 15%.</td>
</tr>
</tbody>
</table>

*Table 2: Tax on dividend for different investor groups*

Perez-Gonzalez (2000) found that the dividend policy is much more affected by the tax situation when the largest shareholder is an individual investor rather than an institutional investor or when the company has no larger shareholder. Strickland (referred by Grinstein

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94 SOU 2004:47 Bilaga 7  
95 SOU 2004:47 Bilaga 7  
and Michaely, 2005) stated that institutional investors that pay tax on dividends preferred to invest in companies that paid out low dividends while institutional investors that did not pay tax on dividends showed no preferences for either high or low dividend yield stocks. Brav, Graham, Harvey and Michaely (2004) found as a result of their study that the tax consequence was a secondary question for managers when deciding about payout. They also found that managers tend to believe that individual investors prefer companies that pay dividends while institutional investors think both options are equally attractive.

We argue that the tax situation for individuals could be important when they are holding a large proportion of stock. In this situation they can probably directly observe management and earnings. This means that the information content of dividend is not important and the preferences of investors would therefore be more based on their tax situation. In most cases companies would prefer a diversified investor base. For this reason they would not adjust their dividends completely to a certain investor group. From the above arguments we have derived two suggestions. First we suggest that the tax situation of one investor will have a greater impact on payout policy when he/she holds a larger fraction of stock. Secondly we suggest that the probability of an impact for the payout will arise when the holdings of one investor group increases.

The underlying theories and previous findings of researchers are often contradictory to each other. Most of our referred studies are observed in the US market and for that reason we have to investigate the influence of ownership structure specific for the Swedish market. We deduce our argumentation mainly from the tax regulation which is seen as an essential factor from other studies abroad before we also prove non tax based factors.

### 3.4.3 Asymmetric Information Among the Owners

Asymmetric information can be used to explain the differences in relevant economic information held by outside investors who have provided capital to the company and the managers who control it. This asymmetric information may result in companies being disvalued by the market. Managers, who believe that the stock is undervalued, may repurchase as a way to signal this to the market and acquire shares that are mispriced. Several studies have observed a positive reaction on the stock price as a result from the announcement of a stock repurchase program. The conclusion is that the market interprets the information from stock buybacks as an indicator of the stock being undervalued. This might motivate managers in a world of asymmetric information to higher payout in both forms of repurchase stocks and pay dividends.

Amihud and Li (2006) stated that there has been a decline in dividends in US and that one of the reasons for this is that shareholders are getting more informed. Higher availability of information and higher institutional holdings that is considered better informed was stated as reason for this. In fact companies with higher institutional holdings experienced a lower stock

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price reaction after announcing an increase in dividends.\textsuperscript{102} Brennan and Thakor (1990) argued that collecting information about insider knowledge is a costly procedure. This would mean that the information content of a repurchase might be costly to get, and therefore only be significant for large investors. Therefore a repurchase is likely to act as a redistribution of wealth between smaller less informed and larger well informed investors. Due to the cost of information companies tend to use dividends for smaller distribution and repurchases for larger distributions.\textsuperscript{103}

It has been argued that institutional investors are better informed then individual investors because they put a lot of their resources into gathering information and sometimes have greater access to insider information.\textsuperscript{104} Ravi (2005) proved that individuals show a preference for high payout in the form of dividends and repurchases and that institutional investors prefer lower dividends and show only a weak tendency to invest in repurchasing companies. Interesting to notice is that this is contradictory to the theory that investors’ preferences are determined by their tax situation.\textsuperscript{105} Grinstein and Michaely found that institutional investors prefer dividend paying companies over non-dividend paying companies. However a higher dividend does not seem to attract more institutional investors. They also found that companies that repurchase had higher institutional holdings but that higher institutional holdings did not impact the repurchase policy. Companies that are more likely to be subject to asymmetric information did not show any difference between the relation of institutional holdings and repurchases.\textsuperscript{106}

In an environment of high asymmetric information comparing to an environment of low asymmetric information transaction costs would be higher.\textsuperscript{107} Because of the cost of acquire information about a repurchase we expect that repurchases are less likely where asymmetric information could be a significant problem, for example small companies and companies with a lot of growth opportunities. We also suggest, contradictory to what Grinstein and Michaely found, that repurchases are more likely when investors are considered to be well informed about the company. Because of the large investors’ incentive to monitor their investments and the institutional investors’ comparable advantage to collect information, we expect that repurchases are more commonly used when the concentration of ownership is larger and the company has higher institutional holdings.

This argument that shareholders have more knowledge about repurchases does not include an evaluation if they see the process of buying back shares in a positive or negative way. However we assume that managers are more likely to implement new forms of investment tools like repurchases when they feel the assurance that investors believe in the accuracy of their decision. When referring to studies from other countries it is important to remember that the result can differ because of different cultural and legal environments.


\textsuperscript{105}Ravi, Jain. (2005). Institutional and individual investor preferences for dividends and share repurchases. India School of Business, Gachibowli, India.


3.5 Own Theoretical Model

A company’s financial decision to repurchase own outstanding shares is decided on first hand on the general meeting of shareholders. On second hand the board of directors can be authorized directly from the general meeting of shareholders to announce stock buyback programs. The authorization is valid for repurchasing maximum ten percent of the outstanding shares or what is decided until the next meeting of shareholders. The general meeting as an independent decision making institution can assign for retiring issued shares directly.

The economic environment with the corporative’ stakeholders shape directors or shareholders’ perception and behavior in the decision-making process towards stock repurchases. Different claims, preferences and interests from several groups of stakeholders have an impact for companies’ financial decision and performance. For this fact we can state that stakeholders give strong incentives through predetermining and evaluating if the financial decision is accurate and economically rational and efficient within companies individual market and operating conditions. Both decision-making institutions would be keen to follow this accepted target for satisfying their stakeholders and for reaching a financial successful reputation. This accepted target is forced from the economic environment and is influenced from mimetic, normative and coercive isomorphism.

Mimetic and normative isomorphism only create direct incentives for both decision-making institutions to repurchase shares. Stakeholders monitor the effects and consequences of previous announcements of stock buybacks from competitive companies. If stakeholders perceive repurchasing companies as financial strong and efficient performing it could raise a pressure for a corporation to buy back shares as a way to mimic these pioneer companies.

Mimetic isomorphism could be responsible for a tendency of repurchasing activities since 2000 if repurchasing companies are seen as superior. With different analysis charts we want to identify pioneer companies in the Swedish market based on their time, amount and
frequency of established stock repurchases programs. This should give us the possibility to point out if other companies are keen on modeling their stock repurchase decision after these pioneer companies to achieve the accepted target.

For our purpose the normative force is created by a similar professional knowledge, experience and understanding of financial issues. This can be summarized as an individual professional background which influences the board of directors and the general meeting of shareholders. These factors lead to a similar and normatively sanctioned attitude and pre-understanding of both decision-making groups’ weather and how a stock repurchase should be implemented. In result companies are willing to repurchase own outstanding shares if they face similar or at least comparable economic conditions due to their professional background. These similar economic conditions should give direct incentives for stock repurchases.

The decision-makers are restricted within their decision towards stock buybacks in a formal and informal way. They are subject to restrictions if they want to reach their own perceptions and the accepted target determined by other stakeholders. Legal regulations are rules and laws about the process of stock repurchases and other financial circumstances. Norms and standards as unwritten restrictions from the economic environment can be seen as informal restrictions. Both restrictions have a different origin and enforcement power. However we consider both forms of restrictions to have the same importance because they have the same indirect effect on giving incentives to the stock repurchase decision. More precisely both restrictions change former perceptions of the decision-makers and also generate new incentives for the final stock repurchase decision.

We test several financial indicators simultaneously. This should provide us with significant financial factors which could explain economic conditions where companies are more likely to repurchase own shares. These influencing factors for the decision-making should be consistent to the incentives given from stakeholders’ expectations in form of informal and formal restrictions. We can state from our theoretical knowledge how the normative and coercive pressure of isomorphism have an impact on companies’ decisions to repurchase in certain economic conditions. Our regression analysis could identify which financial indicators have the most importance for explaining the motivation for stock repurchases. We want to test following hypothesizes:

**Null Hypothesis:** $H_0: \beta_n = 0$

Our null hypothesis states that stock repurchases are independent and do not vary due to one or more measured parameters $X_i$.

**Alternative Hypothesis:** $H_1: \beta_n \neq 0$

At least one measured factor has a significant effect on the decision for stock repurchases.

These three pressures of isomorphism could lead to homogeneous economic conditions. This would result that companies have to face similar accepted targets from their shareholders. Furthermore decision-making institutions have similar predetermined perceptions about financial issues from their professional background. For these facts the board of directors and the general meeting of shareholders could oblige for approving stock buybacks due to isomorphism pressures.
4. PRACTICAL METHOD

“You got to be careful if you don’t know where you’re going, because you might not get there”

Yogi Berra

4.1 Research Design

A research design has the purpose of providing relevant information that should answer the stated problem in an efficient way. To answer our research question if corporations’ decisions to repurchase own shares are a result of institutional isomorphism we need to approach the problem in two ways. First we need to explain the market situation within our population. This gives us the possibility to evaluate if there seems to exist a pattern of repurchase activity within the industrial sector. Possible observed pattern should provide us an argumentation base for institutional isomorphism, with focus on the mimetic force.

The process of collecting data to describe a situation is referred to as descriptive research. It gives the researcher the possibility to describe different business elements at a certain point in time, or describe business activities over time. In other words the researcher has the opportunity to do a cross-sectional or a longitudinal study. To be able to evaluate the conformity with institutional isomorphism we need to examine the repurchase activity over time. In our case only a longitudinal study could provide us the relevant information.

When a researcher has little information and do not want to test a specific hypothesis an exploratory research is motivated. This is useful when the researcher wants to “discover new relationships, patterns, themes, ideas and so on”. Trough our literature study we found relevant information to construct hypothetizes. Stock repurchases and payout policy has been widely debated among researchers which provided a strong platform for us to stand on.

In our theory we derived that institutional isomorphism is mainly a result from institutional restrictions. To be able to evaluate institutional isomorphism as complete as possible we need to examine these restrictions more closely. We define these restrictions by formulating several

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110 Ibid, 154.
possible events that could have an impact on the decision to repurchase. In our case the event is the change in a variable that we think can influence the stock repurchase decision.

When examining how events are related to each other, it is called a causal research design. In other words the researcher tries to explain if a change in one event can explain the change in another. This design has clearly the highest explanatory value in a quantitative study. It gives us the opportunity to explain how different variables interact with repurchase activities and with each other. Since we want to explain institutional isomorphism over time we examine causal relations separately for more than one year. It gives us the ability to evaluate if the same variables interact with repurchase activities over time. By combining causal research design with a descriptive design we can get a complete picture of how institutional isomorphism can influence the decision for repurchase activities.

4.2 Census

For our stated research questions we want to examine public companies that were listed on Stockholm Stock Exchange. Our data collection was partly very time-consuming. This fact leads to the consequence to choose another population or to make a sample. We decided to observe one business sector which should give us the most accurate results. The chosen industrial sector can be seen as a whole population or census we want to examine in our study.

The main content of institutional isomorphism implies that similar companies are becoming homogeneous over time. In our case we expect corporations to make corresponding decisions about stock repurchases when they face similar economic conditions. We suppose institutional isomorphism to be stronger within one business sector, compared to using a random sample. The argument for this is that corporations are grouped based on certain attributes that are equivalent and comparable to each other. This is the main factor why we decided to focus on one business sector.

The Stockholm Stock Exchange is a part of OMX Nordic Exchange and is grouped into ten business sectors. Each listed company is classified as a large cap, mid cap or small cap based on their market capitalization. It is evident that the highest numbers of companies that have repurchased shares were listed in the industrial sector. In addition this sector presents the most balanced number of stock repurchases between the three different size categories from OMX. For stating a reliable result with our quantitative study it is necessary to receive a certain amount of data about stock buybacks. After our consideration which sector could be most in line with our target in data collection, we found that only the industrial sector could provide us a satisfying amount of data.

Our first intention was to compare differences among the size categorization of corporations that could give us interesting results about several financial indicators derived from our theory. However as a result of the small amount of repurchasing companies within our census we are not able to observe our chosen sector in such a differentiated way as we have initially preferred.

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The OMX Nordic exchange groups industries based on the Global Industry Classification Standard (GICS). The development of this classification is made by Morgan Stanley Capital International (MSCI) and Standard & Poor’s (S&P). The industrial sector of Stockholm Stock Exchange consists of 64 companies in the beginning of 2007. We decided that this number of listed companies was sufficient for providing us reliable research results. If we were grouping the companies further the use of our study would suffer.

“The GICS Industrials Sector includes companies whose businesses are dominated by one of the following activities: The manufacture and distribution of capital goods, including aerospace & defense, construction, engineering & building products, electrical equipment and industrial machinery. The provision of commercial services and suppliers, including printing, employment, environmental and office services. The provision of transportation services, including airlines, couriers, marine, road & rail and transportation infrastructure.”

In our descriptive statistics we want to explain and evaluate how corporations have adjusted their repurchase decision to the pressures of isomorphism over the whole time horizon from 2000 until 2007. During our research process we have found out that we can not examine causal relations over all years. For this part of our study we only test the years 2001-2003. The reasons for this in fact unmeant restriction is discussed further in chapter 5.2.1 about the motivation for our chosen statistical model.

4.3 Primary Data Sources

Primary data is the data which is collected for the specific project. To receive necessary information and data for answering our hypothesis we have used four different sources during our primary data collection process:

1. **OMX Nordic Exchange**: The data of which companies have established stock repurchase programs is collected from the web page of the Stockholm Stock Exchange. We tried to find alternative sources to gathering this data but this was not possible. To make sure that the data is reliable we made random tests for several corporations to check our collected data with the published figures in their annual reports.

2. **Annual reports**: We used annual reports to get reported reasons for stock repurchases and data about option programs. The reports were collected from each company’s web page and in cases annual reports were not public available we requested to receive a printed version.

3. **SIS Ägarservice**: The data about ownership was collected from the private database of SIS Ägarservice. SIS Ägarservice works with analyzing data about the ownership structure and the board of directors for companies listed on the Stockholm Stock Exchange and the Nordic Growth Market.

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4. **Thomson DataStream**: The financial key figures and key ratios that are used in our study were downloaded from Thomson DataStream. Thomson DataStream is a financial database that provides real-time and historical numerical data from over 60 markets and 175 countries over the world.

### 4.4 Measuring Primary Data

To be able to interpret our gathered information corresponding to our research questions our data has to be measured in an accurate way. Our causal and descriptive research design demands different measurements of the information. This includes both quantitative and qualitative data. For this reason we start to discuss our descriptive measurements and afterwards our used causal measurements. All our measurements for both research designs has been tested with statistical analysis of SPSS (Statistical Product and Service Solutions) combined with using Excel for further editing.

#### 4.4.1 Descriptive Measurements

One of our research questions is the attempt to discover patterns within corporations’ stock repurchase activities in the industrial sector. For answering this objective we have measured the number of companies that have repurchased, how often and the amount of repurchases. Moreover we have assorted the reasons they have published to the market. We got information about the number of shares repurchased, company name and the date of the repurchase announcement from the OMX Nordic Exchange web page. Therefore we could derive exactly when and how many companies have announced repurchase programs during the observed years.

The amount of buybacks is expressed as a percentage rate of repurchases shares relative to the total number of outstanding shares* at the beginning of the year. The total number of outstanding shares was downloaded from Thomson DataStream. We considered using cash flow figures for measuring stock repurchases which is reported in each company’s cash flow statement. The problem is that the cash flow of repurchases includes other business activities as well. By using cash flow the amount that is repurchased could clearly be overstated. Therefore it would not be an accurate measurement for our study. Using the percentage rate instead has the flaw that we are using beginning of year figures for outstanding shares. It does not take into account actions that have changed the number of outstanding shares during the year. We argue that in most cases the number of outstanding shares is relatively stable. For this reason we have considered the percentage rate of repurchases to be a reliable measurement despite its flaws.

The qualitative data about the reasons for and objectives of stock buybacks are collected from each repurchasing company’s annual report. The motivation for announcing stock repurchase programs have to be published since 2006. However almost all corporations have given statements in their annual reports in an optional form before this legal requirement. These published statements can be seen critically in focus on the qualitative value of information

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* We have not separated between A and B-shares due to their individual privileges. For this reason the amount of outstanding shares covers both forms of shares in our measurements on an average. We have observed that mostly B-shares has been repurchased however for our research question a differentiation would not provide any particular importance.
due to often fungous and general declarations. In fact we think this low qualitative influence could give us support for our explanation background.

However it exists several choices for managers to adjust capital flows and financial figures in their financial statements due to their corporative interests. This operating tolerance is allowed as long as it is motivated in the case and over time. Especially there are for public companies stricter legal rules and the obligation for an annual external audit.

### 4.4.2 Causal Measurements

We have discussed above our motivation to use a causal research design which aims to explain the change of one event from a change in another. For this we need to measure independent and dependent variables. There exists a causal relation if a change in one explanatory variable can explain the change in our response variable that is determined as corporations’ stock repurchases.

For examining causal relations between our measured variables which can be seen as proxies for financial indicators we want to use regression analysis. It would not be possible to observe repurchasing and non-repurchasing companies within the industrial sectors if we measure stock repurchases as a percentage rate. For this reason we saw the need for an alternative measurement except cash flow we have not considered as reliable. Conforming to our research question we have seen as the best solution for us to code our response variable as a dummy variable. It still gives us the opportunity to examine causal relations by assessing probabilities. We discuss this under chapter 5.2.2 in our statistical model more in detail.

During our literature study we have not found any sophisticated quantitative study about stock repurchases in Sweden. This lack or non-existing academic research has made it impossible for us to identify and evaluate which financial indicators could be responsible for the decision to repurchase. Therefore we only can measure financial indicators derived from our theory without any background knowledge about their significance in the Swedish market conditions. We have measured 13 and finally tested 11 financial indicators which are reflecting certain circumstances which companies might face in their financial decisions to repurchase. For this reason these indicators could give a response if they more apply to repurchasing or non-repurchasing companies. Measuring several variables should give us a great opportunity to evaluate later which factors have the greatest explanatory value.

We define and explain how we have appraised each financial indicator in the table below. The data for the first eight variables were downloaded from Thomson DataStream. All these explanatory variables are measured with end of year figures from the prior year.
Variable (Financial Indicator) | Measurements
--- | ---
Dividend Payout | Dividend per share
(Dividend Payout) | Earnings per share
Excess Cash (FCF) | Income before extraordinary items + depreciation expense
STD_OI) | Total assets
Volatile Operative Income | Standard deviation of operative income
(STD_OI) | Total assets
Solvency (LT_Debt) | Long term debt
Stock price change over the year | Total assets
Prior Year Return (Return) | Stock price beginning of year
Liquidity (Current_Ratio) | Current assets
Stock price change over the year | Current liabilities
Growth Opportunities (MB_Ratio) | Price per share x Total number of outstanding shares
Book value of equity
Size (Size_Dummy) | Companies are categorized as small (0) or large (1). A large company has a market capitalization over 5000 million Swedish kr. The market capitalization was extremely different between companies. This could provide distortions for our sample for that fact the size would not be determined in an optimal way. We are aware that coding size as a dummy can create an information loss of the sampled data. However in consideration of our few observations we have seen the only possibility to measure size as a dummy.

Table 3: Definition of explanatory variables used in regression analysis

The following three explanatory variables about ownership concentration and their identity are collected from SIS Ägarservice. We investigate the 50 largest investors for each observed company at the end of year. A large investor for our study is defined as an investor holding a voting power exceeding two percent. We grouped and coded this data if the investors’ identity was considered as an individual, institutional or a corporation with a voting power over ten percent. After adding the voting power of each investor group we determined investor’s identity in three different variables: “Individual”, “Institutional” and “Tax_Free”. The measured concentration for large investors is simply the sum of the voting power for each investor group and is named “Ownership”.

Annual reports were our only available data source for determining corporations’ outstanding stock option programs. We have measured this rewarding instrument for managers and employees as a dummy variable. We coded (1) for companies that have issued stock options to managers and employees in this certain year or established an ongoing option program over years. For corporations that have not used stock options in any term we put (0). We have to admit it exists a risk that we have missed a few existing programs due to an unclear and a lack of reporting. For these reasons we will not test stock options in our study. A more detailed examination could provide relevant information for explaining share buybacks.

Our revision with boxplots in SPSS for tax free investors has shown unusual extrem low and large values within our sample of observations. We checked this large number of outliers with published figures in the annual reports and we found that the outliers were correct. For avoiding distortions in our regression analysis we have decided to exclude this measured variable from our sample and do not test “Tax_free”.

Stock option programs which were running over several years were often only reported in the year of the establishment or in the expired year. Furthermore it was often unclear when the stock options were issued and in these cases only the holder of stock options was reported.
Moreover we think to test stock options in a reliable way it would be necessary to examine them more carefully and more in detail. For example some programs give the holder of an option the right to buy shares which are public traded at the market. This means that there would not be any dilution effect of shareholders’ equity, which is our main argument for testing option programs.

4.5 Errors of Primary Data

Our data collection was aimed for examine the whole population of the industrial sector and we are aware of any sampling errors which are mostly not avoidable. We concentrate on pointing out and discussing non-sampling errors which have occurred or difficulties which could lead to data distortions. The non-sampling errors could be a problem for this study due to our data loss and measuring errors.

In eight cases it was not possible for us to gain inside in corporations’ published annual reports neither in a digital nor a printed version. A more detailed description of these companies can be found in the appendix (p.73) in “Missing Data for Descriptive Statistic”. From this it follows for our descriptive measurements that we can not state for three repurchasing companies their individual reasons and their objective to establish stock repurchase programs. We also could not find out the amount of repurchased shares for one company in our sample. We think this information gap would only affect our result in a very minor way and should not be a significant problem for our study.

In many cases of our causal measurements we did not get the complete figures of at least one variable from DataStream. This could have several logical explanations but we have not proved the reasons closer. For a few companies we did not get the end of year figures about the ownership structure from SIS Ägarservice. We tried to find out reasons for this data loss from the used databases but several assumptions of the data editors made it impossible for us to state more clearly explanations.

For our causal statistics we decided to exclude these companies we had missing figures in our variables. We think this gives us a more appropriate comparison between the different variables and thereby a more reliable result. The table below summaries the number of observations used in our regression analysis for the examined years 2001-2003.

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
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<tbody>
<tr>
<td><strong>Target population</strong></td>
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<td>64</td>
<td>64</td>
</tr>
<tr>
<td><strong>Excluded Companies</strong></td>
<td>31</td>
<td>27</td>
<td>20</td>
</tr>
<tr>
<td><strong>Repurchasing Companies</strong></td>
<td>11</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td><strong>Non-Repurchasing Companies</strong></td>
<td>22</td>
<td>27</td>
<td>38</td>
</tr>
<tr>
<td><strong>Tested Companies</strong></td>
<td>33</td>
<td>37</td>
<td>44</td>
</tr>
</tbody>
</table>

*Table 4: Number of observed companies within the industrial sector*
5. RESULTS

“The ability to simplify means to eliminate the unnecessary so that the necessary may speak.”

Hans Hoffman

5.1 Descriptive Statistic

From the number of companies who have repurchased during the years 2000-2006 we can not identify any increasing or decreasing trend. This statement holds for both larger and smaller companies. The high repurchase activity during the first three years indicates that the acceptance of this financial opportunity is not something that has been developed over time. For that reason we can only point out that buybacks since 2000 could be explained by the micro and macro economic environment. There can exist a certain adjustment of companies’ behavior, but we can not identify this from our collected data.
Our graphical illustration in which years companies have announced their first repurchase programs supports our stated findings above. A high number of both larger and smaller companies have used this financial instrument for the first time during 2000 and 2001. This indicates that many companies saw it as an accurate opportunity and beneficial decision alternative to take advantage of their individual economic conditions in an early stage after the legal permission. We can not identify any clear differences between the size categorization. Our intention by using descriptive statistic was to observe prevailing indications of trends or patterns. This makes us careful of stating conclusion from interpreting our graphics because there could exist several other reasonable explanations.

Most companies within the industrial sector have repurchased one time during the years 2000-2006. Many of the companies have however announced more then one program or the programs have lasted over more then one year. The chart should be examined critically because it understates the importance of repurchasing more often compared to one time. For
interpretation it is not the absolute number of times companies have repurchased, rather if it used regularly or not that is of interest.

The chart shows that more companies have repurchased more then one time or at least have had continuing programs over one year. We would expect several reasons for this. First companies evaluate buybacks as an accepted financial tool after the first implementation that would lead them to consider individual advantages from their decision in the future. The decision about buybacks for following years can thereby be made upon a predetermined long-term goal. This could for example be to cover stock option programs or optimizing capital structure. Another possible reason is that repurchase programs are used as a standard operating procedure for decisions in a certain year, like distributing temporary excess cash to avoid overcapitalization.

In most cases companies do not use the possibility of repurchasing the maximum 10 percent of the outstanding shares. We have not been able to identify any trend within the amount that has been repurchased since 2000. This holds for both larger and smaller companies. It indicates that it is the need in the individual economic situation that determines the amount that is repurchased. When deciding about the amount making sure that the financial flexibility will not suffer may be one important consideration.

![Figure 5.4: The amount in percent of outstanding shares that has been repurchased by each company.](image)
We have been able to identify four different types of motivations that have been published in annual reports. A few companies have reported two reasons. In this case that company has been counted two times. Adjusting capital structure and acquire other companies or assets is the most common explanations for motivating repurchases in annual reports. It can be the actual reason for repurchases but one can also critically examine if it is true. There can exist several other underlying motives that are not published.

Capital structure and acquisitions might have become the most accepted reasons to report for companies and stakeholder. In this case following this rule would insure that the company does not get a negative response from its environment, only based on what they report. If buybacks has been used more then one time companies often report the exact same reason. We want to suggest that it supports the arguments for avoiding a changing perception from the stakeholder. It could also be used to interpret that repurchase programs are used over time to fulfill a predetermined long-term objective.

### 5.2 Causal Statistic

In addition to our presentation of our analysis findings the underlying formulas, calculations and original SPSS output tables will be included in appendix. This should give the possibility for readers to get an overall understanding for our. The process of testing our hypothesis is listed below.

1. Determine the response variable
2. Identify explanatory variables
3. Data Collection
4. Decision for the most accurate statistical model
5. Description of the model
6. Causal test
7. Estimation of the model
8. Control if necessary conditions are reached
9. Analysis of the results
Our choice for our statistical model is due to the question which statistical approach would provide the best prediction of our response (dependent) variable based on the explanatory (independent) variables. In this exploratory part of our research we want to give consideration to our research questions:

- How does institutional isomorphism lead to similarities in companies repurchase realization and how has it influenced companies to repurchase over time?
- Which financial indicators can explain stock repurchases, as a result from institutional isomorphism?

### 5.2.1 Choice of Statistical Model

To examine which variables can explain the amount of repurchased shares in our observed time horizon we wanted to use a regression analysis. With an linear regression it is possible to measure statistically the relationship of one or more explanatory variables with a continuous response variable\(^{116}\). For using only one explanatory variable \(X_i\) it is called a simple linear regression.\(^{117}\) For the case of evaluating more than one explanatory variables \(X_1, \ldots X_n\) one is using a multiple regression analyses.\(^{118}\) Our intention was to explain the decision towards stock repurchases for all repurchasing companies with a linear multiple regression. To point out the influence and effect of several variables we used as response variable the percentage rate of stock repurchases. Furthermore this model includes the opportunity to adjust one variable for another variable to reduce a bias in the prediction.\(^{119}\)

After first tests with the linear regression model we got extremely variable results and unreliable check variables. We realized that basic assumptions of the linear multiple regression model are not hold in our sample with the chosen variables.

Firstly we found out that our explanatory variables \(X_1, \ldots X_n\) are not completely independent in our tests over the whole time horizon. The number and time when our observed companies repurchased own shares have a different influence of their coefficients of explanatory variables over time. Therefore we only have the possibility to test single years within our sample. We have chosen the years 2001-2003 for our prediction of the financial indicators for stock repurchases because during this time the most repurchasing activity has taken place except starting years 2000. Repurchases were legal authorized in May 2000 and therefore explanatory variables from this year would loose expressiveness because the implementation was during the year and we used end of years figures from 1999 to measure financial ratios from 2000. Analyzing this three years in a single way should provide us knowledge about certain factors for isomorphism over the observed time horizon until 2007.

It would be possible to use multiple regression for a single year if we only would have looked at the repurchasing companies. The problem is that we would have too less observations. For that reasons we are using logistic regression. It gives us the opportunity to explain what could effect corporations to repurchase, by comparing repurchasing and non-repurchasing corporations.

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\(^{119}\) Ibid.
5.2.2 Description of Logistic Regression Analysis

The logistic regression is used to describe the influence of one or several explanatory variables $X_1,...,X_n$ to the response variable (Y) and is therefore similar to linear regression. The explanatory variables can be in the form of intervals (continuous and categorical), coded dichotomous (dummy variables) or in a mixture of these.

Compared to linear regression there exist differences in the essential assumptions in logistic regression. In logistic regression it is not necessary to assume linearity between explanatory and response variables, a constant variance and normal distribution of errors. In every regression model multicollinearity between explanatory variables could lead to wrong estimates and should therefore be avoided in logistic regression as well.

One of the main differences between both models is that the dependent variable has to be categorical or dichotomic. To answer our research questions we used a dichotomic response (dependent) variable (binary logistic regression). The response variable Y has two possible values $Y_{1/0}$. In our case it could take the outcome of “repurchasing” or “non-repurchasing company”.

The measure to predict by the regression is the probability (p) of an event to occur, in other words if an effect exists or not. The probability predicted by each explanatory variable indicates if it has an impact on the “repurchasing” or the “non-repurchasing” group of companies within our sample. This leads to an evaluation whether and how one of our measured $X_i$ could motivate repurchase activities.

\[
Y_{1/0} = \begin{cases} 
0, \text{ non-repurchasing companies} & p = P(Y_{i}=0) \\
1, \text{ repurchasing companies} & p = P(Y_{i}=1) 
\end{cases}
\]

The likelihood of an event relative to another can be calculated by the odds ratio. In the case of the logistic regression, the odd ratio between $Y_1$ (repurchasing company) and $Y_0$ (non-repurchased company) is computed which can be transformed to the odd of $Y_1$. The quantitative construction of the relationship between $Y_{1/0}$ and a single explanatory variable $X_i$ is then curvilinear in form of a S-shaped curve, and can have a number between 0 and 1.

\[
\text{Odds ratio } (Y_{1/0}) = \frac{P[Y_{i}=1]}{P[Y_{i}=0]} = \frac{P[Y_{i}=1]}{1 - P[Y_{i}=1]} = \frac{p}{1-p} \text{ with } p=P[Y_{i}=1]
\]

Both the probability and the odds ratio have an increasing or decreasing likelihood for repurchasing companies however with different numbers after transformation.

The odds ratio can take on any positive number of the set of numbers and gets larger when the probability gets closer to one. The interpretation of odds rather than probabilities

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reflects better the likelihood if an effect of one event will occur compared to another. It gives us the possibility to state the relationship for how many times each explanatory variable effect number of repurchasing companies compared to non-repurchasing.

The nonlinear and nonadditive relationship between \( X_i \) and the probability of \( Y_{1/0} \) can be adjusted by the “logit” transformation of the odds ratio (“log odds”). The natural logarithm of the odds of \( p \) (“logit”) have an unlimited range of all real numbers and symmetry around the probability of 0.5. Small differences in probabilities are shown as increasingly larger differences in logits by transformation.

The “logit” can relate linearly to changes in \( X_i \) and therefore we can calculate a linear relationship between \( X_i \) and the logit transformation. “Logits” can be translated into probabilities and vice versa.\(^\text{122}\) Therefore it is reasonable to assume a linear relation between the logit of the response variable and the explanatory variables \( X_i \):

\[
\text{Logit} \ (Y_{1/0}) = \log \frac{p}{1-p} = \alpha + \beta X_i
\]

For our multiple logistic model with more than one response variable the term \( \beta X_i \) are substituted by the linear combination of \( \beta_1 X_1 + ... + \beta_n X_n \)

\[
\text{Logistic Regression Model:}
\]

\[
\ln \left( \frac{Y_{1/0}}{1-Y_{1/0}} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n + \varepsilon
\]

The determination of \( Y_{1/0} \) can be calculated with the predicted probability of the event (\( \hat{y} \)). By computing estimated coefficients \( \beta^* \) it is possible to determine each explanatory variables’ weight in the logistic regression equation.\(^\text{123}\) Logistic regression uses the maximum likelihood procedure to obtain the estimated coefficients \( \beta^* \).\(^\text{124}\) This measurement finds the value of \( \beta^* \) which reflects the observed data in the best way. Therefore we can say that the value of the estimated log odds is determined by the changes in the explanatory variables, either in a positive or negative way.

If the estimated coefficients \( \exp(\beta^*) \) have a value over one, a increase in the explanatory variable will lead to an increase in the odds ratio. An value under one mean that an increase in the explanatory variable will lead to a decrease of the odds ratio. For \( \exp(\beta^*) \) equal to one the

\(^\text{123}\) Keller, Gerald (2005): Statistics for management and economics (7th ed.). 685
explanatory variable is completely statistical independent and it does not exist an estimated impact for the response variable. The probability can be calculated from the estimated odds and one can say that the probability of an influence for the repurchasing group is related for \( \beta_i \neq 1 \).

\[
\text{Logistic Regression Equotation:} \\
\ln (\hat{y}_{1/0}) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_n x_n \\
\hat{y}_{1/0}: \quad \text{Estimated odds ratio (estimated response variable)} \\
\ln (\hat{y}_{1/0}): \quad \text{Natural logarithm of the estimated odds ratio} \\
x_1, x_2, \ldots, x_n: \quad \text{Explanatory variables} \\
\beta_0, \beta_1, \ldots, \beta_n: \quad \text{Estimated coefficients of the explanatory variables (log odds)}
\]

The logistic regression equation states that each explanatory variable has an effect on the odds ratio for repurchasing companies. The odds ratio is helpful for explaining the likelihood of one event to occur compared to another. Using the probability gives us the benefit that we can evaluate the likelihood that the explanatory variable can predict only if the company will repurchase or not. For argumentation due to our purpose we will use both measurements.

The probability of an event can be predicted from the estimated odds ratio from the following formula:\textsuperscript{125}

\[
\hat{p} (\hat{y}_{i=1}|x_i=x_i) = \frac{\hat{y}_i}{\hat{y}_i + 1}
\]

### 5.2.3 Determination Explanatory Variables in the Model

From our 11 tested variables only the parameters of the estimated coefficients with the highest explanatory value for repurchases should be included in the model. This makes it possible for us to evaluate the effect of each variable \( X_i \) and the model as a whole in an accurate way. Our selection of which variables to include in the model is based on \textit{multicollinearity}.

The dimension of multicollinearity has to be reduced because it is responsible for error in the test statistic.\textsuperscript{126} Multicollinearity can occur when the explanatory variables \( X_i \) are highly correlated with each other. For this fact the corresponding estimated coefficients \( \beta_i \) are dependent from each other. In addition several other possible interrelations could also distort the result.\textsuperscript{127} It was not possible for us to evaluate which explanatory variables to include only due to their mutual correlation or theoretical importance.

Using the \textit{stepwise regression} method gives us the possibility to avoid statistic biases due of multicollinearity. This procedure evaluates how all measured explanatory variables interrelate with each other over several steps.\textsuperscript{128} It gives us the chance to identify the estimated coefficients and model that have the highest expressiveness for explaining repurchase activities.

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\textsuperscript{125} Keller, Gerald (2005): \textit{Statistics for management and economics} (7th ed.). 685
\textsuperscript{126} Ibid, 646.
\textsuperscript{127} Ibid.
\textsuperscript{128} Ibid, 691-692.
We set the criteria’s of which variables to include based on the *Forward Wald* selection method. It uses the *Score statistic* as a forward entry to include parameters in the model with a significant additional capacity in predicting. After an automatically adding of the intercept $\beta_0$ the parameter with the highest explanatory value enters the model over each step. This procedure is ongoing until no $X_i$ has a statistically significant contribution to the model. Significance is defined by a cutoff rate of 5 percent.

The included parameters in the model are tested over each step with a removal test of the *Wald statistic*. Under a removal probability of 10 percent the parameters will remain in the final model for hypothesis testing, otherwise they are loosing their attached importance for explaining the response variable.

The following table “Variables not in the Equation” presents the result from the forward entry from our stepwise regression for the year 2001.

<table>
<thead>
<tr>
<th>Variables not in the Equation</th>
<th>Step 0</th>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional</td>
<td>6,710</td>
<td>0,010</td>
<td></td>
</tr>
<tr>
<td>STD_OI</td>
<td>4,752</td>
<td>3,968</td>
<td>0,046</td>
</tr>
<tr>
<td>Size_Dummy(1)</td>
<td>1,970</td>
<td>0,082</td>
<td></td>
</tr>
<tr>
<td>Return</td>
<td>1,924</td>
<td>0,358</td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>1,857</td>
<td>0,301</td>
<td></td>
</tr>
<tr>
<td>LT_Debt</td>
<td>1,702</td>
<td>0,204</td>
<td></td>
</tr>
<tr>
<td>MB_Ratio</td>
<td>1,018</td>
<td>1,139</td>
<td></td>
</tr>
<tr>
<td>Current_Ratio</td>
<td>0,675</td>
<td>0,475</td>
<td></td>
</tr>
<tr>
<td>Dividend_Payout</td>
<td>0,260</td>
<td>0,400</td>
<td></td>
</tr>
<tr>
<td>FCF</td>
<td>0,058</td>
<td>0,125</td>
<td></td>
</tr>
<tr>
<td>Ownership</td>
<td>0,054</td>
<td>0,023</td>
<td></td>
</tr>
</tbody>
</table>

*Step 0: Initial model (no parameters included in the model, except constant)*  
*Step 1: Advanced model („Institutional“ included in the model)*  
*Step 2: Advanced model („STD_OI“ included in the model)*

*Table 5: Score test for 2001*

The result for 2001 shows that institutional ownership was the highest scored variable for explaining the model with a p of 0,010. After this parameter has been added to the model the forward stepwise tests in further steps if other variables could improve the model. During each step the correlation between the added and non-added variables is responsible for the change in the score of the remaining variables. The parameter „STD_OI“ changes from 4,752 to 3,968 at „Step 1“, but has still a statistically significant explanatory value for our model which is why it is included. At „Step 2“ no remaining variable has a p-value under 5 percent and is therefore not added to our model.

For a better understanding why the logistic model accept „Institutional“ and „STD_OI“ but no further variables it is necessary to discover the reasons for the changes of the significant levels between variables. The score test which can be compared to the first iteration of the likelihood ratio method is highly sensitive to multicollinearity. We can explain the variable selection and significance level change by the correlation between important explanatory variables.
Results

We are using a correlation matrix which can be found in appendix for giving possible explanations for the large changes in the scores over the steps. The first added variable „Institutional“ is correlated at a significance level of 5 percent with: Size_Dummy, Individual, Current_Ratio, Return and LT_Debt. These variables are moreover also correlated to each other. For that reason their scores are extremely changing after including „Institutional“ in the model.

If two or more highly correlated variables exists only one can enter the model due to its explanatory power for the equation.\textsuperscript{129} For that reason the forward stepwise exclude variables highly correlated to in our case „Institutional“. We can not give any suggestions about the relationship between each \(X_i\) to stock repurchases. We can however argue that „Institutional“ should have a higher explanatory value for the model compared to its highly correlated variables in the correlation matrix. The second added variable in our model „STD_OI“ is only correlated with „FCF“. This implies that „STD_OI“ has a higher explanatory value for repurchases relatively to FCF.

From our forward stepwise method for 2001 institutional ownership and volatile operative income was chosen to be included in our model. They have the statistically highest explanation value for repurchase activity due to their expressiveness and low interrelations with each other.

The following tables “Variables not in the Equation“ presents the result from the forward entry from our stepwise regression for the years 2002 and 2003. We have used the same statistical approach and interpretations for these two years as 2001.

<table>
<thead>
<tr>
<th>Variables not in the Equation</th>
<th>2002</th>
<th>Step 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional</td>
<td>3.054</td>
<td>0.081</td>
</tr>
<tr>
<td>LT_Debt</td>
<td>2.090</td>
<td>0.148</td>
</tr>
<tr>
<td>STD_OI</td>
<td>2.044</td>
<td>0.153</td>
</tr>
<tr>
<td>Dividend_Payout</td>
<td>1.009</td>
<td>0.315</td>
</tr>
<tr>
<td>FCF</td>
<td>0.616</td>
<td>0.432</td>
</tr>
<tr>
<td>Individual</td>
<td>0.553</td>
<td>0.457</td>
</tr>
<tr>
<td>MB_Ratio</td>
<td>0.261</td>
<td>0.609</td>
</tr>
<tr>
<td>Return</td>
<td>0.111</td>
<td>0.739</td>
</tr>
<tr>
<td>Size_Dummy(1)</td>
<td>0.074</td>
<td>0.786</td>
</tr>
<tr>
<td>Ownership</td>
<td>0.068</td>
<td>0.795</td>
</tr>
<tr>
<td>Current_Ratio</td>
<td>0.010</td>
<td>0.919</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables not in the Equation</th>
<th>2003</th>
<th>Step 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Score</td>
<td>Sig.</td>
</tr>
<tr>
<td>Dividend_Payout</td>
<td>2.503</td>
<td>0.114</td>
</tr>
<tr>
<td>Individual</td>
<td>1.139</td>
<td>0.286</td>
</tr>
<tr>
<td>FCF</td>
<td>0.805</td>
<td>0.370</td>
</tr>
<tr>
<td>Institutional</td>
<td>0.328</td>
<td>0.567</td>
</tr>
<tr>
<td>Return</td>
<td>0.295</td>
<td>0.587</td>
</tr>
<tr>
<td>MB_Ratio</td>
<td>0.285</td>
<td>0.593</td>
</tr>
<tr>
<td>Ownership</td>
<td>0.249</td>
<td>0.618</td>
</tr>
<tr>
<td>Current_Ratio</td>
<td>0.126</td>
<td>0.723</td>
</tr>
<tr>
<td>Size_Dummy</td>
<td>0.075</td>
<td>0.784</td>
</tr>
<tr>
<td>STD_OI</td>
<td>0.052</td>
<td>0.820</td>
</tr>
<tr>
<td>LT_debt</td>
<td>0.008</td>
<td>0.929</td>
</tr>
</tbody>
</table>

Table 6-7: Score test for 2002 and 2003

In both observed years no \(X_i\) was statistically significant for fitting into the model. Forward stepwise method has not included any of the measured variables in the logistic regression equation except the intercept because the p-value of all variables exceed the cutoff-level. The intercept has not importance for our testing to identify certain financial indicators and measuring a predicted probability for repurchase activity. Based on these facts we are not able to test any effects for buybacks in these years.

\textsuperscript{129} Keller, Gerald (2005). Statistics for management and economics (7th ed.). 691
In the year 2002 the table indicates that „Institutional“ has the highest score with a p-value of 0,081. This expressiveness is too low for any explanation quality of repurchases. The correlation matrix does not show any significant correlations for distortions due to multicollinearity. The first three variables „Institutional“, „LT_Debt“ and volatile operative income are not significantly correlated. It indicates that all three variables have an inadequate explanatory value for explaining stock buybacks.

For 2003 the results and the interpretation of the significance levels is consistent with the previous year. Multicollinearity is not responsible that „Dividend_Payout“, „Individual“ and „FCF“ have a low expressiveness for the model. Due to multicollinearity and changing expressiveness of the parameters over the years it makes it impossible to evaluate how their importance vary over time.

### 5.2.4 Testing Hypothesis

Besides the described stepwise procedure of the logistic regression, we tested the resulting $\beta_i^*$ for significance in a $\chi^2$ hypothesis test to ensure our results. The significance level for each estimated coefficient determines the critical probability for rejecting or supporting the null hypothesis.

**Null Hypothesis:** $H_0: \beta_n = 0$

Our null hypothesis states that stock repurchases are independent and do not vary due to one or more measured parameters $X_i$.

**Alternative Hypothesis:** $H_1: \beta_n \neq 0$

At least one measured factor has a significant effect on the decision for stock repurchases.

From our stepwise regression we were only able to identify significant parameters for 2001 and we will therefore only present the results from this year. The included explanatory variables are institutional ownership and volatile operative income.

### Variables in the Equation

<table>
<thead>
<tr>
<th>Variables in the Equation</th>
<th>$\beta_i^*$</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>p-value</th>
<th>$Exp (\beta_i^*)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 0 Constant</td>
<td>0,981</td>
<td>0,391</td>
<td>6,297</td>
<td>1</td>
<td>0,012</td>
<td>0,375</td>
</tr>
<tr>
<td>Step 1 Institutional</td>
<td>0,057</td>
<td>0,025</td>
<td>5,086</td>
<td>1</td>
<td>0,024</td>
<td>1,059</td>
</tr>
<tr>
<td>Constant</td>
<td>-2,333</td>
<td>0,787</td>
<td>8,778</td>
<td>1</td>
<td>0,003</td>
<td>0,097</td>
</tr>
<tr>
<td>Step 2 STD_OI</td>
<td>-1,067</td>
<td>0,561</td>
<td>3,613</td>
<td>1</td>
<td>0,057</td>
<td>0,344</td>
</tr>
<tr>
<td>Institutional</td>
<td>0,056</td>
<td>0,03</td>
<td>3,431</td>
<td>1</td>
<td>0,064</td>
<td>1,057</td>
</tr>
<tr>
<td>Constant</td>
<td>-0,137</td>
<td>1,254</td>
<td>0,012</td>
<td>1</td>
<td>0,913</td>
<td>0,872</td>
</tr>
</tbody>
</table>

| Variable(s) entered on step 1: “Institutional” |
| Variable(s) entered on step 2: “STD_OI” |
| $\beta^*$ = Estimated Coefficients ("log odds-ratios") |
| S.E. = Standard error |
| Wald = Wald statistic $z^2$ |
| $Exp (\beta_i^*)$ = Predicted Probability ("odds ratio") |

**Table 8: Wald test for 2001**
The applied **Wald statistic** tests our null hypothesis by computing each single estimated coefficients $\beta_i*$ relatively to its standard error in the model, expressed as a chi-square value $z^2$. The chart below shows the chi-square probability distribution.

![Chi-square probability distribution](image)

**Figure 6: Chi-square probability distribution**

We determined the critical value for rejecting our null hypothesis to 5 percent, which is consistent with a chi-square value of 3,8416.

The Wald statistic shows for the two included variables in our model after the 2nd step a $z^2$-value of 3,431 for institutional ownership and for volatile operative income 3,613. This implies both variables exceeding the critical significance value of 5 percent. These findings present that our measured explanatory variables neither institutional ownership nor volatile operative income have a statistically significant expressiveness for the response variable. The variables are kept in the model due to our removal rate of 10 percent. We accept them as a weak support for explaining our response variable. The correlation between institutional ownership and volatile operative income is −0,236 and this do not motivate that one of these two variables should be excluded from the model. It exists a risk that for a large estimated coefficient $\beta_i*$ the standard error could be incorrect due to a rounding error.\(^\text{130}\) We argue that our decision about the hypothesis is not suffering from this risk because of relatively low $\beta_i*$ for both parameters.

A further test of the null hypothesis should ensure that our findings are reliable for our relatively small sample of 33 observations in the year 2001. Small samples can result in insignificant variables. However they could be important and have a large effect on the response variable in reality. To avoid this problem we have used additionally the „**Baysian Information Criterion**“ (BIC). The BIC is based on the Wald statistic but takes also the size of the sample into account.\(^\text{131}\) We could reject our null hypothesis if the Wald $z^2$-value is larger then the logarithm of the sample size n. For institutional ownership the BIC value of -0,065 and -2,1316 for “Volatile Operating Income”. Both values of the BIC are below 0 which indicates support for our null hypothesis.

In resume all our significant tests provide a consistent result that we can not reject our null hypothesis.

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\(^{131}\) Pampel, Fred C. (2000): „Logistic regression“, Series: Quantitative Applications in the Social Science. 31
5.2.5 Motivation for Model Result Acceptance

In our stepwise regression we used the SPSS presetting of cutoff-level, remaining probability and entry probability. We expect this setting to be normalized and the most common used levels. A comparison with other business studies supported this procedure to reject p-values over 5 percent. Important for our study is which p-value we should accept as statistically significant. To provide knowledge that could be general accepted and comparable we decided to withhold the critical p-value on this common level for our statements.

With a critical p-value of 5 percent we would accept the model in Step 1, with only institutional ownership included. Even because of this we have decided to not reject volatile operative income when testing the model accuracy. It was for us the best approach for a further argumentation. We are not accepting the variables as statistically significant, but we realized that this would provide the most knowledge and give the opportunity to compare research study results. In a business context these argumentations can be valuable for the result as long as it is done with caution.

5.2.6 Generating and Interpreting Predicted Probability

Our logistic regression gives evidence that both included explanatory variables in the estimated model have a non-sufficient statistical explanatory value for stock repurchase activities because their significance level exceeds the critical value. We have decided to adhere to this critical value strictly. This fact does not allow us for declaring any statement about the predicted probability of repurchases.

The significance for institutional ownership with 0,064 and volatile operating income” 0,057 gives no support for our model and a following interpretation. For further discussions and research about stock repurchases and also for users of logistic regression analysis we think it would be helpful to keep the two variables for interpretation and to determine the effect for predicted probabilities.

From the table “Variables in the Equation” above we can state an estimated $\beta_i^*$ of 0,344 for „STD_OI“ and 1,057 for „Institutional“. This means that a one unit increase in volatile operative income would lower the log odds for repurchasing corporations by 65,5 percent. A one unit increase in institutional ownership would increase the log odds by 5,7 percent.

From this estimated odds ratio we can calculate and present the predicted probability. We can conclude for an increasing unit in volatile operative income the probability that a company would repurchase decreases by 65,6 percent. A one percent rise in institutional ownership would increases the probability that companies become a repurchasing company with 5,4 percent.

5.2.7 Model Accuracy

It exists several formulas for measuring pseudo-$R^2$ in logistic regression which should express a similar meaning as the normal $R^2$ in a linear regression. There are little consensus of which measurement represents the model accuracy in the most accurate way.
The expressiveness of pseudo-$R^2$ is more advance if the researcher explains and intuitively interprets a single method rather than compare different measurements.\textsuperscript{132} We agree that is more meaningful to provide knowledge about what we have measured and explained our motivations and findings in detail. We choose to evaluate the fitting of the variables in the model and their explanatory power for the response variable over each step by one test measurement.

The pseudo-$R^2$ calculation can be used to interpret the expressiveness of the model and the variables’ fitting.\textsuperscript{133} For evaluating the model and calculating the accuracy we have used the \textit{likelihood ratio statistic} with a chi-square distribution.

The likelihood ratio is a “goodness of fit” test which reflects the unexplained variance of the response variable. The calculated $-2$ log-likelihood ratio makes it possible to state if variables improve the model or not. This “goodness of fit” test calculates the difference between two likelihood ratios. A decreasing likelihood ratio indicates a reduction of the unexplained variance, which lead to higher explanatory power due to less model errors. A greater negative difference between the change in the $-2$ log likelihood values implies that the used coefficients together with the explanatory variables in the estimated model reflect our observed sample better. The “Iteration History” table below shows the $-2$ log likelihood value and its change over each iteration of each step.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
\textbf{Iteration History} & \textbf{Iteration} & \textbf{-2 Log likelihood} & \textbf{Change} \\
\hline
\textbf{Step 0} & 1 & 38,71 & \\
\cline{2-4}
 & 2 & 38,67 & -0,03 \\
\cline{2-4}
 & 3 & 38,67 & 0 \\
\cline{2-4}
 & 4 & 38,67 & 0 \\
\hline
\textbf{Step 1} & 1 & 32,57 & -6,1 \\
\cline{2-4}
 & 2 & 32,01 & -0,57 \\
\cline{2-4}
 & 3 & 31,99 & -0,01 \\
\cline{2-4}
 & 4 & 31,99 & 0 \\
\cline{2-4}
 & 5 & 31,99 & 0 \\
\hline
\textbf{Step 2} & 1 & 29,62 & -2,38 \\
\cline{2-4}
 & 2 & 26,77 & -2,85 \\
\cline{2-4}
 & 3 & 26,13 & -0,64 \\
\cline{2-4}
 & 4 & 26,09 & -0,04 \\
\cline{2-4}
 & 5 & 26,09 & 0 \\
\cline{2-4}
 & 6 & 26,09 & 0 \\
\hline
\end{tabular}
\caption{Iteration history for 2001}
\end{table}

Method: Forward Stepwise (Likelihood Ratio)
Constant is included in the model.
Initial -2 Log Likelihood: 38,673
Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

\textbf{Table 9: Iteration history for 2001}

From the first iteration in step 0 is a continuous decreasing change visible in the $-2$ log likelihood. This means an improvement of the model over each iteration of each step. When adding „Institutional“ in Step 1 there is a huge improvement of the model. After including “STD_OI” the accuracy of the estimated model increases but to a lower level in step 2. We

\textsuperscript{132} Shtatland, Ernest S.; Kleinman, Ken & Cain Emily M. \textit{One more time about $R^2$ measures of fit in logistic regression}. Harvard Medical School, Harvard Pilgrim Health Care, Boston, MA

\textsuperscript{133} Shtatland, Ernest S.; Kleinman, Ken & Cain Emily M. \textit{One more time about $R^2$ measures of fit in logistic regression}.
can state that each variable have an explanatory value for the estimated model. For that reason we motivated not to stop after the first step. To evaluate the level of expressiveness we calculate the pseudo-$R^2$.

From the change in the $-2$ log likelihood ratio (chi-square of model) we can compute the pseudo-$R^2$ for determining the dimension and change of the explanatory power for the estimated model and for each added variable. The table below shows the chi-square value as numerator and with the initial $-2$ log likelihood as denominator we have calculated the Mc-Faddens pseudo-$R^2$.

<table>
<thead>
<tr>
<th>Step</th>
<th>$-2$ Log Likelihood</th>
<th>Change</th>
<th>Pseudo-R$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38,673</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>31,994</td>
<td>6,679</td>
<td>0,1727</td>
</tr>
<tr>
<td>2</td>
<td>26,091</td>
<td>5,903</td>
<td>0,3254</td>
</tr>
</tbody>
</table>

Table 10: Pseudo-$R^2$ for 2001

The estimated model with institutional ownership have an explanatory power of 17,27 percent which increased to 32,54 percent after step 2 and including volatile operating income. We can not compare exactly the relative increasing expressiveness of each included parameter because of their low but still existing multicollinearity. However we can say that we see the improvement of the model and the necessity of including both parameters in our model. This shows that “STD_OI” and “Institutional” improve the explanatory power of the estimated model over both steps and both variables together can explain more than one third of the response variable.

“,Unfortunately, low $R^2$ values in logistic regression are the norm and this presents a problem when reporting their values to an audience accustomed to seeing linear regression values…”.

In analogy to the $R^2$ in linear regression, the measured values in logistic regression often have no maximum of 1. Therefore an pseudo-$R^2$ between 0,2 and 0,4 can be seen as an indicator with high expressiveness. This fact is specially true for the most general used measurement the Mc-Faddens pseudo-$R^2$. This statement supports our choice to include both variables in our model and test them for significance. Furthermore both measured variables in the estimated model would show sufficient explanatory value for the response variable if we would not strictly hold on 5 percent significance level.

135 ILMES, Methoden der empirischen Sozialforschung. Keword: pseudo $R^2$
6. ANALYSIS

“The real voyage of discovery consists not in seeking new landscapes, but in having new eyes.”

Marcel Proust

6.1 Mimetic Isomorphism

All organizations are operating in an environment of uncertainty. This influences their decision-making. Lack of certainty can arise from the concern about market behavior, shareholders attitudes and competitors actions. In an environment of high uncertainty organizations tend to adjust their behavior over time to that of other organizations that they perceive as successful.

Companies which come to a conclusion to repurchase shares always have to consider the reaction of stakeholders. Unsatisfied stakeholders may have a direct negative influence on the company’s value. The clearest example is a negative reaction on the stock price. The uncertainty about the market is a result from asymmetric information between the company and their stakeholders. This may lead companies to avoid repurchasing shares because they are not well-informed about individual claims, preferences and interests of their stakeholders.

Organizations strive for making decisions which are seen as socially and economically successful. Companies that evaluate stock buybacks as an economically rational financial instrument and whose stakeholders perceive the use of them as accurate are more likely to announce stock repurchase programs. Therefore consistent perceptions between stakeholders and managers about financial decisions reduce asymmetric information.

Stakeholders’ perception of seeing repurchase activities as a sign for corporations financial strength might motivate companies to repurchase shares to only give a positive signal to the market about their financial situation. If one company starts to repurchase shares and receive a positive or neutral reaction from their stakeholders, it may lead other companies to consider buybacks as socially accepted. In these circumstances other companies will follow this pioneer company if its action is economically motivated.

138 Ibid.
We expected to be able to observe this mimetic isomorphism with the indicators of time, amount and frequency. In detail we tried to identify pioneer companies by comparing the time when repurchase activities had taken place, the amount being repurchased and how often companies announced buybacks. The implementation process for an economic decision to become socially accepted may require a longer period of time. For that reason we wanted to observe if there has been an upward going trend of companies buying back shares over the years since 2000.

The most repurchasing companies within our observed sector announced programs during the early years after the legal permission. Due to this fact it was not possible to identify any pioneer companies or an upward going trend. This implies that the uncertainty about the decision in the early years after 2000 did not restrict companies’ decision to buy back shares. Still this is a very strict interpretation and we need to develop our argumentation further. In fact only a low proportion of companies have repurchased their outstanding shares. The highest number of repurchasing companies was reached in 2001, when 11 out of 64 companies repurchased.

We think the low number of buybacks are a result from managers and shareholders’ perception of evaluating repurchases as not socially accepted, economically accepted or both. Companies may favor other financial solutions in their individual economic situation such as dividends that do not motivate to repurchase shares. In this case it would only be done in extraordinary circumstances. To change the awareness of share repurchases might be a longer process and can not be reached within our tested time horizon. Our observed companies in the first 7 years after the legal permission could perhaps be the pioneer companies that will participate in a more long-term change.

Stock repurchases may not be economically motivated for the companies that have not repurchased. Another possible reason for the low number of companies that have retired own shares might be due to the fact of a still existing uncertainty about the decision. Companies might restrict the decision because they do not know how stakeholders will react. The expectations from stakeholders may be something that has to be developed over time. When more companies repurchase the stakeholders’ knowledge about this financial tool will get enlarged. If they identify large benefits from the decision this could motivate companies to repurchase more in the future. It is not evidently that stock repurchases are perceived as something that is socially and economically accepted. Our observed time horizon might be too short to establish if there exists any trend or at least a pattern or not.

We have observed large differences in the amount that companies have repurchased. It is logical to argue that the individual economic situation is responsible for this. Every single company has to consider their individual need for retiring shares and making sure that their financial flexibility will not suffer. Another possible explanation for the differences in the amount is that many companies have repurchased more then one time. It seems like many of these companies have accepted buybacks as an efficient and economically rational financial tool to use for their objectives. It is also possible that companies put up long-term goals when they decide to announce a repurchase program.

Stakeholders often use annual reports or press releases to stay well-informed about a company. For that reason it is important for companies that they can report about repurchases in a positive way. The lack of knowledge how stakeholders would react on this news could lead to market uncertainty. A way to reduce uncertainty could be to report the same reasons
for their motivation of establishing stock repurchase programs as competitive companies which are perceived as successful. The most common published reasons were optimizing capital structure and use the own shares for future acquisition. The disclosure of the underlying factors for repurchases could be correct. However other or more important factors could be more crucial. Avoiding reporting this and adjusting to what seems to be already sanctioned might be a way for companies to give a positive signal to the market.

Both smaller and larger companies have acted in a similar way concerning time, amount and frequency of their repurchase activity. Smaller and larger corporations operate in very different organizations and economic conditions. If both groups have identified that the market conditions that they are facing are extremely different from each other there does not exist a necessity for smaller corporations to model themselves after larger corporations and vice versa. The changes in repurchase activity over the years may have an economically rational explanation. It still remains a open question how uncertainty has an impact on companies and if there exist some kind of adjusting behavior which could give any further explanation for a homogeneous trend.

### 6.2 Normative and Coercive Isomorphism

The industrial sector is generally an asset intensive field of business with a lot of capital and few new investment opportunities. This should motivate these companies for larger payouts compared to less capital focused field sectors. The fact that most repurchase activities are found in the industrial sector supports this argument.

The objective for the legal permission of share buybacks in Sweden was to give companies an efficient way to distribute excess cash, to meet the desires from investors and to have the flexibility to acquire other companies and assets. These strived aims from the legislator could create a common perception of companies which would result in a homogeneous decision making about stock repurchases. It is also possible that corporations have developed their own understanding of other benefits for their company.

Individuals within a profession tend to develop a similar understanding and therefore tend to approach economic decisions in the same way. This creates norms within a organizational field that works as an isomorphic pressure for companies to become similar. Derived from our quantitative study we have assumed that managers have a similar perception of stock repurchases. The effect of this would be that companies repurchase own shares if their economic situation becomes similar. We looked at one business sector because we expected that companies would have similar incentives to repurchase because they are facing a more similar economic environment. Normative isomorphism would create a common perception when buybacks are an economically successful decision.

Both normative and mimetic isomorphism would motivate companies to establish buybacks due to the expectations of the economic environment which determine socially and economically accepted decisions. These two pressures are working together with coercive isomorphism which is seen as the restrictions in the institutional environment.

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139 Proposition 1999/2000:34

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The informal and formal restrictions are necessary for understanding why organizations are becoming more similar over time.\textsuperscript{141} Organizations model themselves after rules constructed by other organizations and cultural expectations from the society.\textsuperscript{142} Since 2000 we have not been able to identify any changes in the set of legal rules and regulations for share repurchases. This makes it easier to understand the informal restrictions because formal restrictions should not have led to a change in how companies repurchase. The regulations are also a part if companies evaluate repurchases as economically efficient. If the cost of decision-making and its consequences is too expensive then companies will avoid to repurchase.

The stakeholders’ expectations cause uncertainty and incentives to which companies adjust. This could also be the underlying factor for mimetic isomorphism. It is not possible for us to evaluate in our quantitative study if a common perception in the society about repurchases exists at all. It is important to remember that this would be a crucial influencing factor on companies’ decision making.

All three isomorphic pressures create a perception among companies and their stakeholders on how to approach the decision to repurchase. From our result we have not been able to identify any significant factors that are related to the probability that companies repurchase. Due to our high data loss we can not state that our findings hold for the whole industrial sector, and we can therefore only evaluate the result for the investigated companies. Few observations in our regression can have contributed to the effect that we can not find any clear causal relationships. It is possible that our findings underrate the importance of each financial indicator for explaining buybacks. We still want to discuss our result to get an understanding of possible financial indicators. It is not possible to use the information for future predictions but it can be helpful for researchers undertaking a similar study in the future.

The score test gives us very different results for every year. For 2001 we found weak support that institutional ownership and volatile operative income have an influence on the probability for companies’ repurchase decisions. For 2002 and 2003 no possible financial indicators were significant to show some impact for buybacks. Interesting for 2001 is that volatile operative income has a negative influence on the probability of announcing buybacks. This means that there is a higher probability that a company repurchases if it has a more stable income from their operations. This is contradictory to what we expect from our theory. Institutional ownership also has the highest score statistic for 2002, but in 2003 the significance is lower. The extremely changing values make it impossible to reject the hypothesis that none of the measured financial indicators can explain under which conditions companies announce stock repurchase programs. In other words we do not see any relation between any financial indicator and companies repurchase activity.

The big change in the score statistics over the years might indicate that our variables can not be used to predict share repurchase activities for the industrial sector. Every single company’s economic situation may differ too much for us to be able to identify relationships between our measured variables and share repurchases. The differences in the economic conditions and objectives may cause that variables do impact repurchase decision in the same way. For that reason different financial indicators can have a explanatory value for individual situations.

\textsuperscript{141} North, Douglass C. (1993). Institutionerna, tillväxten och välståndet. 54-95.

58
We do not reject that normative or coercive isomorphism may play a role. There exist several other measurements that we have not taken into account for our study. It could also be possible that the reasons for why companies repurchase can not be measured quantitative. The best way to understand if a common perception among repurchasing companies exists would be to interview the decision-makers. Important to take into account is that the shareholders are responsible to decide about repurchases directly or indirectly via the general meeting of shareholders. Expectations and perceptions may therefore differ and it is not clear that the board of directors can accomplish their wish to repurchase shares. This makes stakeholder expectations even more important and they have to be taken into account.

6.3 A Changing Environment

Our result is hard to interpret since we can not get any reliable result due to our number of observations after splitting our data into separate years. The best solution for this would be to use data for the whole Stockholm Stock Exchange. This would ensure that the results can be generalized and are reliable. Institutional isomorphism might also exist for a whole market in this case.

A further difficulty is multicollinearity in our statistics. The mutual correlated variables have changed dramatically for every year. This made it impossible for us to pick out several variables which could be tested every year. We think that the problems with multicollinearity could be reduced by testing a larger sample with more observations. Before we conclude our findings from our observed reality we see a need for testing a larger sample and identifying uncorrelated variables. This could ensure to discover homogenization which is omnipresent in a clear and distinct way for our purpose in stock repurchases decisions.

Homogeneity often occurs within a well established organizational field when individuals deal rationally with constraints and uncertainty. This often leads to similarities in their culture, structure and output. We can question if small and large companies can be considered to belong to one organizational field. Their big differences in organizational structure and economic environment may motivate why it is not economically rational to act in the same way. For statistical testing we see a need to divide between small and large corporations. We see this as another possible factor why we can not identify any significant variables.

Short-run decisions by political and economic entrepreneurs shape organizations performance and are responsible for long-run economic change. If organizations will accept stock repurchases as a standard operating procedure, the process can be more long-term orientated then seven years. Every isomorphic pressure develops over time and it might be possible that we still are in a too early stage to see the consequences of the legalization of repurchases. The perceptions from companies and stakeholders may change a lot over time, and repurchases may become a more common used financial tool in the future. It is all determined by the development of the companies’ institutional environment.

The economic conditions for companies are always changing. The economic cycle and other macro economic changes always occur. The effect of this probably is not captured in our

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measurements. Furthermore micro economic changes within the organization which are not measured may impact if companies’ repurchase or not. The low number of repurchasing companies may be an indicator that buybacks are only carried out under special circumstances, which could be more difficult to identify in a quantitative study. Both the micro and macro economic changes could be responsible that the explanatory power of our measured financial indicators has dramatically changed over the years. This complexity may only be caught by a more careful examination of each company.

Experiences and perceptions develop over time. If norms are not present then human beings have nothing to guide their behavior from. In a quantitative study individual perceptions are overlooked. It is possible that a company’s repurchase decision is a result from non-collective shared thoughts, and can not be regarded as a similar and comparable situation. If companies do not suffer from uncertainty about the consequences of repurchases, isomorphic pressures exist in a weaker form. Even if a common theoretical perception exists it may lead to different practical actions of the companies. These two requirements could be an explanation that we were not able to identify that companies become homogeneous in their stock repurchase decision in spite of facing similar economic conditions.
7. CONCLUSIONS AND DISCUSSION

“It is a good thing to look ahead but you can’t look further than you can see.”
Winston Churchill

Institutional isomorphism based on the three institutional pressures can only be defined in an individual way due to different assumptions in our theory. However in practice these forces should operate together in a simultaneous way. We have determined for each institutional pressure the necessary requirements and conditions for observing homogeneity in companies’ decision-making process of stock repurchases.

Theoretical Determination

In our theory we defined mimetic isomorphism as a process of implementing repurchase programs by copying pioneer companies that are considered as economically successful from stakeholders and managers. Normative isomorphism influences the perceptions of managers based on their individual social and professional background which should be consistent to stakeholders’ expectations. We think that the awareness of how stakeholders evaluate stock repurchases can be seen as the strongest factor creating informal restrictions. Coercive isomorphism also includes formal restrictions like legal regulatory to protect societies’ interests where stakeholders might have the prime importance.

It is comprehensible that all forces have an own origin. However the perceptions of the business environment are inhered in each single institutional force. For this reason the result of a common perception of the society is stronger if all pressures are working together. Within a business sector we think knowledge, preferences and awareness of stakeholders and managers are responsible for similar decisions. For this fact the isomorphic pressures are theoretically mutually dependent and together have a stronger effect. This effect can be seen as an essential influence for corporations’ target to meet their own interests and to also adopt the values of their stakeholders. Our purpose to point out financial indicators that significantly impact the decision to repurchase shares should be a result from adjusting to these objectives.

If companies have less knowledge about stakeholders’ expectations the asymmetric information about stock repurchases would be higher. Therefore companies would identify the need to become more homogeneous to other competitors to reduce market uncertainty. Repurchasing own outstanding shares should be preferred if managers and stakeholders perceive buybacks as an economically efficient decision. In this case institutional
Conclusions and Discussion

isomorphism can be responsible for developing a similar understanding within our business sector and thereby lead to a tendency towards more stock repurchases. Companies within similar economic conditions could be more sensitive to certain financial indicators and thereby make the same decision based on their preferences of buybacks. This could stimulate companies to become more homogeneous over time and support an increasing use of stock repurchases.

Practical Testing

In reality all three operating pressures of institutional isomorphism should together force companies to make homogeneous decisions within a business environment. To explain an adjusted decision-making process due to the effect from institutional isomorphism a separation of the forces is not feasible in practice. However we tested the three forces in a separate way. Our decision for this procedure is acceptable and motivated by our theoretical preconceptions and assumptions. This way seemed to be logical for us. But we take into consideration that stating final results for our two research questions is only allowed from a general view of institutional isomorphism.

We are not able to point out any distinct findings for mimetic isomorphism that could result in identifying pioneer companies of our observed corporations in the industrial sector. Our analysis has not shown any reasons that tested companies have adjusted their repurchase activity to other competitive companies neither in time, amount nor frequency. This suggests that corporations decided self-sufficient and individual if they repurchase own outstanding shares during the years 2000-2006.

For argumentation of normative and coercive isomorphism our statistical result has shown that the established stock repurchase programs are independent of our measured financial indicators excess cash, liquidity, solvency, dividends, volatile operative income, prior year return, growth opportunities, companies’ size, ownership concentration, institutional and individual shareholders between 2000 and 2003. Our tests do not identify any particular economic situation in which financial influencing factors motivate to repurchase shares. We can not infer from our measurements that certain financial indicators have a stronger impact for repurchasing companies then other factors. Moreover it stands to reason that we can not predict if an increasing unit in one or more business coefficients would have an impact for establishing stock repurchases in any kind.

In our final conclusion of all three isomorphic pressures we want to give response to our research questions:

How does institutional isomorphism lead to similarities in companies repurchase realization and how has it influenced companies to repurchase over time?

We have not discovered any distinct findings that institutional isomorphism can explain a homogeneous decision-making of companies to repurchase their own shares either in a constant nor in an increasing way in the years 2000-2006. Our stated reasons for all three forces do not reflect similar perceptions, homogeneous decisions and an ongoing trend for stock repurchases in the industrial sector.
Conclusions and Discussion

Which financial indicators can explain stock repurchases, as a result from institutional isomorphism?

From our observed data, measured variables and basic assumptions we conclude that no financial indicators have been found which could significantly motivate stock repurchases. For this fact mimetic, normative and coercive isomorphism cannot be explained by the chosen financial indicators. Moreover we can derive that no similar economic conditions for companies have existed which would cause a higher repurchase activity in the years 2001-2003 for our observed companies. We cannot generalize that our measured financial indicators have no impact for stock repurchases in the industrial sector. This is because we have not examined the whole population due to our high data loss.

However, we want to critically discuss possible causes for the non-existence of an increasing stock repurchase trend due to institutional isomorphism and why we have not been able to identify significant financial indicators.

Discussion

Consequently one possible explanation could be different perceptions between companies and its stakeholders. The existence of a not common awareness about stock repurchases could be created by a different social and professional background of managers that shape their cognitions. Furthermore, the different awareness could also be responsible for varying interests, perspectives, and knowledge of stakeholders. This could show a need for a qualitative study of observing perceptions about repurchases in a subjective way. If managers are uncertain about how investors would evaluate their decision to repurchase shares, they are less likely to use this financial instrument. This uncertainty about stakeholders’ perception could be due to less experience and less possibilities of comparison to other companies. For observing a longer time horizon and several sectors or a whole market might reduce this uncertainty about the decision. Moreover, we have to question if retiring own shares really is seen as rational and accurate from a general business and social understanding. If this new allowed financial tool is not or at least not up to now economically and socially accepted under certain conditions it is impossible to point out any positive tendency for more repurchase activity. It would be also logical that companies prefer in general or in special circumstances an alternative such as dividends or investments in more accurate projects to distribute cash.

The fact that there does not exist the same perceptions about repurchases which have an impact on all three isomorphic pressures is understandable. We have not seen a homogeneous decision-making of the observed companies. The three forces together should theoretically lead to homogenization of corporations repurchase activity. This needs a long run implementation process. Furthermore, large and small companies in the industrial sector might face extremely different economic conditions and also changing economic conditions could be crucial. Therefore, companies would also have different economic and financial indicators that they have to take into consideration or that could restrict them in their decision.

The presented reasons for different perceptions, non-homogeneous decisions, different economic conditions, and financial indicators can be possible explanations for why we have not been able to discover any upward going trend of stock repurchases. Theoretically, many
logical reasons and factors can determine isomorphic pressures but the empirical testing in reality is a more complex challenge which has to be subject to several restrictions. We are reasoning that investigating a longer time horizon, a larger population or sample and mutual quantitative and qualitative measurements might support our findings or provide new views in a more distinct way. During our research process we have found that institutional theory offers a great opportunity to examine corporations’ decision-making. We are convinced that an alternative approach can provide much knowledge about share repurchases and other financial decisions.

**Stock Repurchases – A Fashion Style in the Corporate Wardrobe?**

Stock repurchases can be seen as a fashion style. You are interested to wear this innovative style when it enters the market. However you always consider the feedback from the society about your appearance and evaluate if the colors and the cut fits to your corporate body. If both support your attitude, you would wear this style more often. You can set a fashion trend based on your individual look and performance when others desire your appearance. In result you can set a fashion style that holds over time.

The question if stock repurchases are a fashion style on the Swedish market is still unanswered. It is possible that the need to complement corporations’ financial wardrobe is relatively low. We have not found which color and cut that would fit to the seasonal trend in Sweden. For this reasons we can not determine if certain body characteristics of corporations would give the fashion a more elegant appearance. We can not give any distinct response which fashion style promotes Swedish corporations in the most appropriate way for a graceful occasion.
8. SUGGESTIONS FOR FUTURE RESEARCH

“To predict the future we would have to know today what we will learn tomorrow which will shape our actions.“

Douglass C North

We think our investigation of the connection between institutional isomorphism and stock repurchases provides a basic knowledge for further academic research. Institutional theory gives an appropriate insight into any kind of corporations’ financial decision-making process. The theoretical statement and analysis of institutional isomorphism covers a broad range of social and economic explanations that gives the researcher a great opportunity for explaining organizational behavior. However we think it is absolutely necessary to pay attention to a distinct and logical interpretation of the individual research purpose. In practice we have often seen studies that empirically tested only mimetic isomorphism and only included the other two pressures in form of a discussion. The basic articles about institutional theory do not present any requirements for testing isomorphic pressures. For this reason one can individually decide which way of empirical tests gives the best expressiveness to capture institutional isomorphism. For a careful and specific analysis in regard to the individual objective we recommend to use both quantitative and qualitative measurements. The behavior of individuals and organizations within a institutional environment can be strongly predetermined from both subjective and objective perceptions. We have seen that especially for explaining financial decisions one should attend to cover qualitative and quantitative influences. Both forms built up the awareness and expectations that shape human’s behavior.

Share repurchases are still debated among researchers and different results often are presented, which makes it an interesting research topic. To get an understanding of the motivation why Swedish companies repurchase, we found it is necessary to investigate it specifically for this market. There is a lack of research for examining this reality and the perceptions about the effectiveness and consequences of buybacks in Sweden. The different economic environment compared to other countries can have a major influence how companies make their decision about stock repurchases. We can point out differences in asymmetric information, regulations, experience and corporate governance as factors that make it hard to compare results from one country to another. This is an important factor to take into consideration when adopting arguments from other studies.

We see a required need for a more longitudinal study of stock repurchases in the Swedish market. For further improvements we want to give a few hints in regard to practical methods. For generalization and more reliable results it is necessary to examine more observations in
Suggestions for Future Research

form of a larger population or sample. Moreover using regression analysis with less measured variables might avoid difficulties and distortions based on multicollinearity.
9. TRUTH CRITERIA

“Not everything that can be counted counts, and not everything that counts can be counted”

(Albert Einstein)

There exists several ways to describe the quality of a report in social science and sometimes the explanations for the different criterions differ. We have decided not to describe these differences but instead to use the explanations and criterions that we think are the best to describe the quality of our quantitative study.

9.1 Validity

The validity of a study is the absence of systematical errors in the measurements and can be divided into internal and external validity. **Internal validity** determines if the measurements cover what they intended to do and if words conform to the operational definition. The definitions considering share repurchases and the financial indicators are well established in the research community. We are using the same words that are used by others to make sure that no misinterpretations can occur. Share repurchases or buybacks are commonly used words that do not take into account which type of repurchase it is. In American studies different types of repurchases are sometimes discussed. To avoid misunderstandings for those not familiar with the regulation in Sweden we early defined in our context share repurchases. For these reasons we can say that our explanations conform well to the operational reality.

Institutional theory and isomorphism have not been developed in the context of share repurchases or dividend payout. We have constructed our own perception of how these theories can be implemented in our study. To avoid reducing validity, we have made sure that we keep the original definitions in mind as far as possible. This unique study makes it hard to know if our explanations are in line with others perceptions of isomorphism and institutional theory. Still it has improved our argumentation and understanding a lot and therefore we still feel that it has contributed with relevant and reliable knowledge.

Our measurements of financial indicators are in many cases proxies for what we want to measure. For example current ratio is only an estimation of liquidity based on accounting figures. We have tried to use the most accepted and commonly used key ratios for our

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measurements. Earlier studies and our own knowledge have been a big help for deciding this. Our impression is that we have been able to use variables that are seen as valid among researchers and financial economists. This supports our internal validity but for future research considering other measurements can be used to develop a further understanding of the financial conditions that occurs when companies repurchase shares.

**External validity** determines how well the measurements reflect the actual reality.\textsuperscript{146} We are using data from well recognized sources. Thomson DataStream, SIS Ägarservice and OMX Nordic Exchange are professional actors that work independently and therefore produce objective data. This should lower the risk of manipulations, unsystematically errors and should conform well with the actual figures that companies report or that get registered by other organizations. We see the risk of errors in accounting figures and other financial data as very low and it should not have any noticeable impact on our results. For that reason we also perceive annual reports as a reliable source to use.

Our data for our **causal statistics** was tested by a logistic regression analysis in SPSS. This should give us a result that correspond well to what is statistically accepted. We can therefore state that our result can be used to make reliable conclusions about our observed companies. Due to multicollinearity we had problems with evaluating the importance of how each possible financial indicator explains the influence for buybacks. We have chosen to focus on the most significant variables that have low multicollinearity to present a valid result. It is possible that our small number of observations is responsible for why we do not find any clear causal relationships, which show the real influence of each measured variable. We have taken this into account for our analysis when we realized that this could have a negative impact for the validity of our study.

Our **descriptive statistics** is a direct snap shot of reality. This allows us to evaluate the results in a reliable way. The problems with our statistics are that they only contains a small amount of information about a few companies. This gives space for a lot of speculations. We have taken this into account when stating our findings and have always examined it critically. The presented information from this part can therefore provide a good and reliable knowledge and we think it has a high internal and external validity.

### 9.2 Reliability

If there is an absence of random errors in the measurement the study has a high **reliability**. It determines the likelihood that the result would be the same if somebody else would repeat it. Reliability is a necessary quality for the study to have a high validity.\textsuperscript{147} Thomson DataStream gave us the ability to download figures directly to Excel for editing before copying and using in SPSS. This should minimize the risk that random errors exist in this data. The data from SIS Ägarservice was sorted into large investors and then coded into different owner categories. This manual monotone work could cause minor mistakes in our data. We undertook it as careful as possible and after a few cross checks we consider the data to have a high reliability.

The figures about the amount of repurchases from OMX Nordic Exchange were cross checked with annual reports and implied consistency. The reported reasons were collected

\textsuperscript{146} Lundahl, Ulf & Skärvad, Per-Hugo (1999). Utredningsmetodik för samhällsvetare och ekonomer. 150-151.

\textsuperscript{147} Ibid., 152.
separately and the information divided into four categories. We do not think that our personal perceptions have had an influence and that someone else would get a different result. A careful approach of handling data convinces us that our data overall has a high reliability.

9.3 Generalization

The generalization of a study describes how well the chosen sample can describe the situation of the whole population. Our intention was to describe the situation for companies within the industrial sector. Due to our high loss of data we could not examine the whole population. The small number of observations lets us question if our results would be consistent for examining every company within the sector. Therefore we argue that our findings can not be generalized.

We think that share repurchase decisions are very sensitive to the companies’ micro and macro economic environment. This environment is always changing and it can therefore be hard to identify a pattern in the company’s behavior. To examine a certain year could provide completely different results and it would be hard to generalize these findings for a longer time horizon. The changing results of our causal statistics to identify possible financial indicators for three years made it impossible for us to suggest and predict any statements for all 7 years.

We have not been able to find any clear causal relationships. If we were using data from every company in the industrial sector an impact on our result would be possible. We do not know if our results can be generalized due to the lowered validity of our statistical measurements. For our descriptive statistics we only had a few losses of data. In this case we can state that our findings hold for the whole population. We suggest that the result could be different if we were using another sector. For that reason we think that our descriptive statistics can only describe the situation for public industrial companies in Sweden.

REFERENCES

Books


Articles


Shtatland, Ernest S.; Kleinman, Ken & Cain Emily M. *One more time about $R^2$ measures of fit in logistic regression*. Harvard Medical School, Harvard Pilgrim Health Care, Boston, MA

Other References


Proposition 1999/2000:34

SOU 2004:47 Bilaga 7

SOU 2004:47. *Näringslivet och förtroendet*.
## APPENDIX

### Observed Companies Within the Industrial Sector

Examined Companies in Regression Analysis

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### Missing Data for Descriptive Statistics

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73
### Underlying Formulas and Calculations (2001)

#### Hypothesis Test after 2nd Step:

**Wald Statistic** $z^2 = \frac{\hat{\beta}^*_i}{SE}$

If $z^2$ exceed the critical value of 3.8416 from the chi-square distribution the null hypothesis would be rejected and vice versa.

**Institutional**: $|z| = 0.056/0.03 = 1.87$ $\Rightarrow z^2 = 3.431 < 3.8416$

**STD_OI**: $|z| = -1.067/0.56 = 1.90$ $\Rightarrow z^2 = 3.613 < 3.8416$

#### Baysian Information Criterion (BIC):

$\text{BIC} = z^2 - \ln(n)$

For a positive $\text{BIC}$ the null hypothesis would be rejected and vice versa.

**Institutional**: $3.431 - \ln(33) = -0.0655 > 0$

**STD_OI**: $3.613 - \ln(33) = -2.1315 > 0$

#### Model Accuracy:

**-2 Log Likelihood Ratio Test:**

$-2\log(L_0) = -2[LL_0 - (LL_1)] > 0$

For positive numbers of the change in the estimated model one would have a higher explanatory power for the response variable due to a reduction of model errors.

*After 2nd step*: $2[LL_0 - LL_1] = 38.673 - 26.091 = 12.582$

#### Percentage change in –2log likelihood ratio:

$pseudo R^2 = \frac{-2LL_0 - (-2LL_1)}{-2LL_0} = 1 - \frac{LL_1}{LL_0}$

Higher percentage rate implies more expressiveness of measured explanatory variables for the response variable.

*After step 1*: $\frac{(38.673 - 31.994)}{(38.673)} = 17.27\%$

*After step 2*: $\frac{(38.673 - 26.091)}{(38.673)} = 32.54\%$

$L_0 = \text{log-likelihood of the initial model (on paramters in model included, except constant)}$

$L_1 = \text{log likelihood of the estimated “final” model (included parameters in model after stepwise selection process)}$

#### Determining Predicted Probability

$\hat{p}(\hat{y}|X_i=x_i) = \frac{\hat{y}}{1 + \hat{y}} = \frac{e^{(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_n x_n)}}{1 + e^{(\beta_0 + \beta_1 x_1 + \beta_2 x_2 + ... + \beta_n x_n)}}$

Transformation of estimated coefficient ($\beta_i$) into estimated odds ratio $\hat{y}$ by using $\exp(\beta_i)$:

$\exp(\beta_i) > 1$ positive odds for the response variable

$\exp(\beta_i) < 1$ negative odds for the response variable

$\exp(\beta_i) = 1$ explanatory variable is statistical independent, it does not exist an estimated impact for the response variable

**STD_OI**: $(0.344 - 1)*100 = -65.6\%$

**Institutions**: $(1.057 - 1)*100 = +5.7\%$

Transformation of estimated odds ratio $\hat{y}$ in predicted probability $\hat{p}$:

**STD_OI**: $65.6\% / (1+65.6\%) = -65.6\%$

**Institutions**: $5.7\% / (1+5.7\%) = +5.39\%$

### Correlation Table

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### SPSS Output Tables (2001-2003)

#### 2001

**Variables not in the Equation**

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**Overall Statistics**

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### Variables in the Equation

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**Step 2**

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### Omnibus Tests of Model Coefficients

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### Model Summary

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<sup>a</sup> Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

<sup>b</sup> Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

### 2002

#### Variables not in the Equation

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#### Variables in the Equation

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Predicted Probability of the Response Variable (2001)
Logistic Regression Output

Logistic P-P Plot of Predicted probability

Observed Cum Prob

Expected Cum Prob

Transforms: natural log

Detrended Logistic P-P Plot of Predicted probability

Deviation from Logistic

Observed Cum Prob

Transforms: natural log