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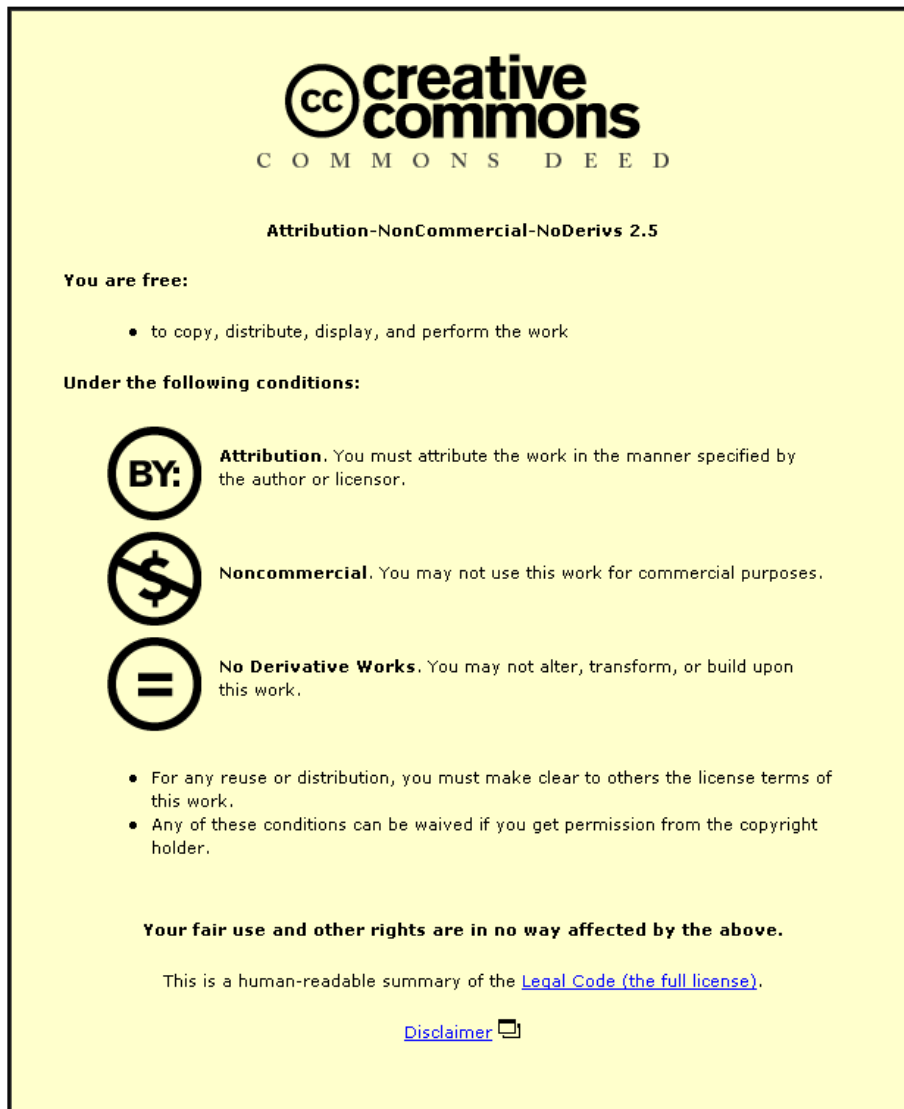
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**Neo-Institutional Theory and Institutional Change: Executive Share
Options in Germany ↗**

by

Amon Chizema

A Doctoral Thesis

**Submitted in partial fulfilment of the requirements for the award of
the degree of Doctor of Philosophy of Loughborough University**

December 2006

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Abstract

This study focuses on one element of corporate governance, Executive Stock Options (ESOs) in Germany. The fact that ESOs are purely an Anglo-American innovation, and are now getting adopted in Germany; a country whose corporate governance system is so much different from that of the UK/USA, makes this study more interesting.

Several studies on executive compensation have used agency theory as a theoretical lens. On the contrary, this study employs neo-institutional theory, a theoretical lens that embraces socio-economic factors within the firm's institutional and market environment.

In general, early institutional theory was associated with path dependence and inertia. In international corporate governance, it has been used as an explanation for the continued divergence of national systems in certain contexts. However, recent developments in neo-institutional theory, under a combination of the New Institutional Sociology strand and the Old Institutional Economics strand identify the circumstances in which change is likely to occur, and this theory is developed to produce hypotheses in relation to governance changes.

The adoption in Germany of the US practice of rewarding executives with stock options is chosen as a governance institution suitable for empirical testing. Results show significant hypothesized associations between firms' ESO adoption and institutional variables such as the presence of US investors, declared shareholder value commitments, dispersed share ownership and large block-holdings. Profits seem to act as an enabling resource for ESO adoption, rather than low profits creating a crisis and a greater willingness to adopt ESO changes.

This study adds theoretical development in the study of corporate governance, especially to the debate on governance convergence. Indeed, German corporate governance is far from converging on the American system, and as shown in this study, changes in the German system suggest a 'hybrid' of firm corporate governance.

With a lot of institutional changes taking place in transition economies (e.g. China and Eastern Europe), the European Union, and developing countries, this study has great relevance for policy makers and firm-level strategy.

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CHAPTER ONE

Laying the Foundation

1.1 Introduction

This thesis focuses on one element of German corporate governance - executive pay, specifically executive stock options (ESOs) - as an American pay innovation dating from around 1960 (Lewellen, 1968). ESOs have been transplanted into many countries, even in Germany, where a distinctive institutional context exists. However, institutional theory has predicted conformism, isomorphism, path dependency and resistance to this kind of potentially illegitimate transplant (Tuschke and Sanders, 2003). Perhaps this could explain why ESOs took over thirty years to penetrate German firms.

Nevertheless, neo-institutional theory does consider the circumstances in which institutional change can occur, and this thesis represents one of the first attempts (see also D'Aunno, Succi and Alexander, 2000; Buck and Shahrin, 2005) to extend neo-institutional theory as a theoretical framework all the way to empirical testing. In this context, it must be recognized that institutional theory has not yet fulfilled the promise of its early years. While early papers referred to its "adolescence" (Scott, 1987; 1991), this has recently shifted to notions of "adulthood" and "maturity" (Scott, 2006), where this implies a gradual loss of vigour. Nevertheless, we feel that neo-institutional theory can still offer insights into the prediction of institutional change.

The analysis of the topic is important in the context of the alleged "Americanization" (Djelic, 1998) of corporate governance, i.e. the means by which the behaviour of senior executives is constrained. Americanization represents convergence on the American model of "Stock Market Capitalism" based on dispersed shareholders, laws that protect the rights of such minority shareholders, open information disclosure, liquid stock

markets, hostile takeovers, stock-based executive pay, and single-tier boards including independent directors (Dore, 2000). The collapse of alternative economic systems in centrally-planned economies and the problems faced by relational governance in, for example, Japan, Korea and Germany has led to an element of triumphalism in some quarters in relation to convergence. For example, Hansmann and Kraakman (2001) foresee the end of comparative corporate law as the world converges on the Anglo-American model.

This triumphalism may prove to have been premature in what has been called an international “clash of capitalisms” (Ahmadjian and Robbins, 2005). China is developing its own very successful variety of relational or Welfare State Capitalism (Dore, 2000) and countries like Germany and Japan still manage to produce corporations that are world-leaders.

This thesis, therefore, addresses one crucial element of corporate governance, executive pay, in Germany, a country well-known for its own variant of Welfare State Capitalism and its resistance to governance change (Vitols, 2004). This chapter introduces and lays the foundations for the thesis. Section 1.2 provides the research background, outlining the broad field of study and leading to the research questions (Section 1.3). Section 1.4 briefly describes the research methodology and Section 1.5 outlines the structure of the thesis, chapter by chapter.

1.2 Research Background

The typical components of Anglo-American Stock Market Capitalism are different from the German version of Welfare State Capitalism which characterises a world where executives are mainly influenced not by share price movements, but by the *voice* of various stakeholders (Noteboom, 1999). In Germany, this voice is exercised by family owners, banks and other block-holders and by employees, usually supported by incumbent managers, on the upper tier of a two-board system (Vitols, 2004).

The level of ownership concentration in Germany is very high. Gorton and Schmid (1996) reported that 80% of listed companies had a non-financial owner holding at least 25% of shares. In addition, banks have been known to have a significant control of major corporations through proxy voting, a system which allows banks to cast votes on behalf of other shareholders, mainly individuals who deposit their shares with banks (Edwards and Fischer, 1994). In this way, banks have been able to obtain a significant degree of control, even over widely-held companies especially those with significant cross-holdings between firms (Franks and Mayer, 2001).

The presence of cross-holdings shields companies against hostile takeovers (Wenger and Kaserer, 1998). As a result, hostile takeovers have been rare, and there has only been a voluntary takeover code (Baumann, 1998; Bernhardt, 2000).

Employee representation on boards also acts as a barrier to takeover, particularly when jobs are threatened. The management board in German corporations is not selected directly by shareholders but by the supervisory board (Hopt, 1998). In corporations with at least 2,000 employees, 50% of the seats on the supervisory board is reserved for employees, while in smaller firms this share is a third (Mülbert, 1998). The power of employees, commonly known as *co-determination*, is further extended by the role of works councils and trade unions.

Thus, the stock market plays a minor role in the governance of German companies through takeover. In addition, there is low market capitalisation, but this situation has been changing (Van der Elst, 2000). The weakness of the stock market is further compounded by poor disclosure requirements and auditing standards (Fox, 1998; Nobes and Parker, 2000; Schmidt, 1998).

However, in the 1980s, much research aimed to explain the comparative advantages of the Japanese and German firms, which appeared to be different but in some cases out-competed Anglo-American firms. Anglo-American corporate governance was criticised for its short-term orientation, whereas firms in Japan and Germany were able to develop

and implement long term-strategy. In Germany, for example, long-term strategy conferred the comparative advantages of incremental innovations in industrial production that enabled industry to focus on high quality and high value-added market niches that rationalized high wages and investment in skill formation.

However, these benefits came at an increasingly steep price during the 1990s, as export markets became increasingly unstable, international competition became fiercer, bank profits declined as domestic market for corporate finance became increasingly saturated and German reunification required more rapid and thorough restructuring of the national economy. Germany entered long periods of crisis, suffering increased unemployment and slowed growth under these conditions.

Meanwhile, the virtues of the Anglo-American model were rediscovered in the light of excellent macroeconomic performance, attracting foreign direct investment and lowering unemployment.

Thus, despite the past success, Germany has recently faced strong pressures to change her corporate governance system. First, internationalisation has created pressures to move toward a more market-based, Anglo-American or shareholder-oriented model of corporate governance. International finance and investors have become increasingly important, and hence an increase in foreign ownership and major international mergers and acquisitions. Germany's finance minister, Hans Eichel was quoted in the press as saying "...*German as a closed system...that is over...*" and "*German firms have to be competitive or lose out...*" (Roth, 2000).

Second, German firms are relying less on bank finance as they rely more on internal finance and funds from investors through stock markets. Banks, themselves, have undergone strategic reorientation toward new business models (Beyer, 2002), shifting away from industrial loans, deposits and shareholding (Deeg, 1999). For example Deutsche Bank has turned its eyes to investment banking instead of monitoring German

firms, and this shows that the role of private banks in corporate governance is diminishing (Hackethal, Schmidt, and Tyrell, 2005).

Banks and insurance companies (e.g. Deutsche Bank and Allianz) have also been relaxing the system of cross-holdings and interlocking directorates. Jackson and Höpner (2001), report that the share of bank representative as chairmen of supervisory board fell from 44 to 23 percent in Germany's 40 largest companies between 1992 and 1999.

As bank ownership has declined, foreign ownership has increased. In 1998, the proportion of dispersed ownership averaged only 26 percent among the 100 largest German companies, 18 percent was held by families, 14 percent by the state, 17 percent by foreign investors, and 14 percent by other companies and banks (Jackson and Höpner, 2002). Given the volume of these foreign holdings, the decisions of foreign investors on whether to buy or sale shares have a huge impact on share prices. Foreign investors also influence management through voice, particularly informal dialogue. Recent studies by Ahmadjian (2005) in Japan have shown a strong relationship between the percentage of shares owned by foreigners and corporate behaviour.

These changes in the composition of shareholding and the attitudes of investors may increase the prospect of a market for corporate control. Foreign investors are much more likely to support hostile bids that bring share price premia, as seen in the case of Mannesmann in Germany (Höpner and Jackson, 2001).

Additionally, German corporations' policies towards employees have been observed to be changing. The fact that employees have a strong voice in German corporate governance has not, in itself, prevented US-style corporate governance reform.

The adoption of ESOs has been seen as a sort of "litmus test" in relation to the overall issue of Americanisation and corporate governance (Cheffins, 2003). ESOs were virtually non-existent in Germany until 1996, when Daimler Benz AG and Deutsche

Bank AG introduced the first major ESO schemes. Since then, all other DAX 30 firms have followed in isomorphic fashion.

While performance-linked executive pay in the form of stock options is relatively new in Germany, they are very popular in the USA and UK where investors typically urge companies to link managerial remuneration with share price performance (Heard, 1995; Marino, 1999; Flynn and Naik, 2000). Managers have to be attentive to shareholders' interests and pay levels fluctuate in accordance with the returns being delivered to those owning equity (Cheffins, 1999; Allen and Gale, 2000) and thus stock options arguably align their interests with owners. Shareholders in the USA and UK have accepted dramatic increases in executive pay, as long as good results for investors are being delivered (Heard, 1995). By choosing not to implement US-style performance linked pay, German companies stand to lose out in the competition for international capital or find their own domestic cost of capital increasing. Similarly, German companies not implementing such remuneration schemes would fail to retain nor attract managerial talent due to a global executive labour market. In 2000, the US subsidiary of SAP AG (a German firm) had to approve a plan to start offering stock options to senior executives, just like other American firms, as a way to stop the brain drain that had started to affect it (Stedman, 2000).

In 1996, large German corporations such as DaimlerChrysler, Deutsche Telekom and SGL Carbon started to introduce US-style executive pay, by granting compensation in the form of bonds, which could be converted into shares (convertible bonds), or had warrants attached which granted the rights to acquire shares upon its exercise (warrant bonds) and stock appreciation rights (SARs). In 1998, the German government decided to end the prohibition of US-style stock option schemes and amended the German Stock Corporation Act (AktG) to allow German corporations to freely issue straightforward stock option schemes, by either issuing new shares or repurchasing outstanding equity to meet obligations. Following the passing of the AktG, most large German corporations started to adopt some form of US-style executive pay and introduce ESOs. By 2005 all DAX 30 firms had ESOs, with the single exception of BMW.

The combination of these developments indicates that large German corporations are faced with a changing corporate governance system. What is not certain, however, is whether these changes represent convergence on the Anglo-American model, or represent a hybrid of two “varieties of capitalism” (Hall and Gingerich, 2001).

Thus, despite alleged convergence (Hansmann and Kraakman, 2001), in 2005 fifty-six out of a hundred and twenty large German listed firms still did not prepare accounts to IAS or US GAAP standards, still relying on the local HGB standard (authors’ own database). Of DAX 30 firms in 2005, nine had still only disclosed executive pay data for the board as a whole; not individual directors, and another three identified only the individual pay of the CEO. Thus, criticisms of German corporate governance reform are related to standards of disclosure in general and on executive pay in particular, and in this respect Germany certainly has not achieved the Stock Market Capitalism that convergence theorists predict.

Besides slow progress with US-style executive pay and poor standards of disclosure, German law offers only weak US-style protection for minority shareholders (La Porta et al., 1999), and managers (in collusion with employees) are able to resist hostile takeovers through poison pills and other devices, even where raiders have secured over 60% of the issued capital of a target firm (Franks and Meyer, 2001).

Nevertheless, German, voice-based, relational governance does continue to “work” in a German context in the sense that global leaders have emerged, and Kaplan (1994) reports similar relations between share price movements and discipline over executives, measured by CEO dismissal, in Germany, Japan and the USA.

One implication of these multi-faceted elements of German governance institutions, bound together by regulative, normative and cognitive forces (Scott, 1987), is that they have helped to produce an economic system that does not resemble Stock Market Capitalism, and that has changed very little in governance terms over many decades

(Buck and Shahrin, 2005). From the perspective of the “varieties-of-capitalism” literature (Hall and Gingerich, 2001), German corporate governance institutions represent a web of mutually-supporting institutions. For example, takeovers could not be resisted without weak minority shareholder protection, strong employee representation and low stock liquidity, but these elements at the same time do facilitate stakeholder voice as a locally effective alternative to Stock Market Capitalism. Vitols (2004) concludes that the distinctive pattern of German governance persists because any Americanization must be “negotiated” with stakeholders.

The ESO is a key component of American governance systems because it makes managers’ rewards (and penalties, in the context of accrued ESO values) depend automatically upon share price. A foreign innovation such as the ESO therefore faces institutional resistance, dependent as it is upon liquid stock markets and main board support, unlikely with the high degree of employee control in German firms. ESOs as an innovation may be expected to be rejected or at least “translated” by German firms, to preserve their legitimacy, i.e. suit the interests of salient stakeholders (Buck and Shahrin, 2005).

At the same time however, German firms have certainly adopted ESOs in large numbers, and a theoretical framework is needed to analyze this recent phenomenon. Traditional institutional theory, with its emphasis on path dependency, is clearly unsuitable for the purpose, and agency theory, such a frequently used paradigm in the study of executive pay (Gomez-Mejia, Wiseman and Johnson, 2005) is “under-socialized” in this context (Lubatkin, Lane, Collin and Very, 2001; Aguilera and Jackson, 2002; 2003). Nevertheless, it is proposed that neo-institutional theory may be exploited to examine closely recently adopted ESOs.

1.3 Research Questions

Organizations often arrange their core activities according to accepted models, or templates. These templates are patterns for arranging organizational behaviour that

specify organizational structure and goals and reflect a distinct set of beliefs and values. Accounting and law firms, for example, have traditionally used templates that emphasized individual autonomy and equality among peers, that Greenwood and Hinings (1988, 1996) termed a professional partnership model. Some templates are so repetitive and enduring across the national economy that actors take it for granted that this pattern is the right way to organize (Oliver, 1992).

Nevertheless, there is a possibility that organizations may abandon such templates, diverging from accepted models. *What causes them to abandon an institutionalised template for arranging their core activities and replace this template for arranging their core activities with a substantially different one?* Put in other words: *In what circumstances may change be predicted, in contrast with the path dependency of traditional institutional theory?* This question is posed in the context of adopting a potentially illegitimate executive pay innovation (the ESO) by German's largest corporations, a practice transplanted from Anglo-American capitalism. Additionally, this thesis seeks to answer two other questions: *Which firms may be predicted to adopt institutional change? What factors determine early or later adoption of ESOs in German's largest corporations?*

Understanding the causes of such divergent organizational change (in this case adoption of ESOs) is important both for understanding the change itself and for advancing neo-institutional theory into the field of corporate governance.

1.4 Research Methodology

One of the greatest impediments to explaining trend in executive compensation in Germany has been the lack of reliable and comprehensive data (Buck and Shahrin, 2005; Tuschke and Sanders, 2003; Bradley and Sundaram, 2004; Wójcik, 2004). Detailed information on executive stock-based incentive plans is difficult to obtain for many German firms because disclosure requirements are appreciably weaker than those in the United States or UK (Tuschke and Sanders, 2003).

Information disclosure relating to options in Germany has however improved recently. The trend for German companies to list on American stock exchanges (NYSE, AMEX, and NASDAQ) has resulted in a source of previously undisclosed information in the form of proxy statements filed with the Securities Exchange Commission (SEC). There has also been an adoption of US GAAP or IAS (accounting standards which, by comparison, are more transparent than the local HGB) by a number of German firms. This trend has meant that these firms' annual reports contain more information on executive pay compared to those found to be still using only German HGB accounts. However, many international studies involving German executive pay including ESOs still incur the problem of obtaining the actual amounts paid to individual directors.

However, this thesis is merely concerned with the timing, adoption or non-adoption of ESOs as a governance innovation, and such information is easier to get from the companies' websites. Thus, sourcing data on adoption and non adoption of ESOs (taken in this thesis as a dichotomous dependent variable) and a number of independent variables, event history analysis of logistic regression was used to estimate models on early and later adoption of ESOs.

1.5 The Structure of the Thesis

Following the introduction above, the chapters in this thesis are organised and presented in the following way. Every chapter, with the exception of this chapter and the concluding chapter, begins with an introduction that outlines the main areas of consideration, and ends with a chapter summary that highlights concluding remarks and sets out links with the following chapter.

Chapter 2 starts by providing a clear understanding of the issues underlying this thesis by focusing on the meaning of corporate governance, providing a literature review of comparative corporate governance systems, but mainly focused on the dichotomous varieties of capitalism, involving the German and US/UK models. The second part of

this chapter unveils the typical structure of executive compensation, paying special attention to ESOs from a corporate governance perspective i.e. the fact that management compensation may be aligned to shareholders' interests. The remainder of the chapter assesses the relative importance of ESOs within executive compensation packages awarded in the USA, UK, and Germany.

Chapter 3 develops the conceptual framework by arguing that recent research has shown the possibility of breaking away from organisational embeddedness by employing neo-institutional theory. This chapter calls for the importance of both exogenous factors from both the institutional and market contexts and endogenous (within-firm) factors drawn from intra-organisational dynamics. Thus, *Chapter 3* considers the recent developments in neo-institutional theory which seeks to understand change by progressing beyond the ideas of inertia and concentrating on induced changes, and embraces the speed of template adjustment.

The purpose of *Chapter 4* is to develop a set of hypotheses from neo-institutional theory (discussed in *Chapter 3*) in the context of the adoption of German ESOs. The chapter first summarises the findings of the literature review conducted in *Chapters 2, and 3* and restates the research questions which were first introduced in *Chapter 1*.

The aim of *Chapter 5* is to discuss the process of data collection, identifying sources, proposing and discussing the research design and statistical tests which best addresses the hypotheses generated in *Chapter 4*. The chapter proposes the use of the discrete event history analysis feature of logistic regression as a means to analyse the adoption of ESOs in Germany.

Chapter 6 presents the results of the tests carried out in Chapter 5. The chapter uses descriptive statistics, correlation matrix and Variation Inflation Factors to test for multicollinearity. The results of logistic regressions are presented for (a) the adoption and non-adoption of ESOs (b) the early adoption of ESOs and (c) the later adoption of ESOs.

Finally, *Chapter 7* concludes the thesis by synthesising the major findings of the research, discussing their significance to academic debate and any implications it might have for policy in developing and transition economies, and for remuneration practices in firms. Finally, the chapter considers the limitations for the research and highlights suggestions for future work.

CHAPTER TWO

Institutional Background: Corporate Governance in the USA, UK and Germany

2.1 Introduction

Chapter 1 laid the foundation of this thesis, in the form of a long introduction, explaining that its main aim is to find out the circumstances under which radical change in the context of a corporate governance template change is possible, and more specifically under which the adoption of a potentially illegitimate governance innovation (i.e. Executive Stock Options) may take place in Germany. The purpose of this chapter is to provide a background for the understanding of corporate governance in general and executive stock options in particular, as a basis for the work that follows in the rest of the chapters.

The chapter is organised as follows. *Section 2.2* outlines the categorization of corporate governance within the varieties-of-capitalism perspective, i.e. under “Stock Market Capitalism” and “Welfare Capitalism.” *Section 2.3* provides some background on corporate governance systems, contrasting the traditional German model with the US and UK versions. In order to be able to assess institutional change, this section will focus on German corporate governance before the mid-1990s. *Section 2.4* represents a continuation of the discussion of German corporate governance from the mid-1990s (a period that represents change in German corporate governance) to the present day. *Section 2.5* turns from governance in general to executive pay in particular, and explains the typical structure of executive pay in both models. *Section 2.6* analyses executive stock options from a corporate governance perspective, with special emphasis on the alignment of executives’ interests with those of shareholders. This section also deals with conventional *optimal contracting theory*, a model that arguably reduces agency problems. *Section 2.7* tackles *managerial power theory*, a model that casts doubts on the

2. Institutional Background: Corporate Governance in the USA, UK and Germany.

relevance of the optimal contracting approach by claiming that executives have excessive power to decide on the design and structure of their pay packages. *Section 2.8* reviews trends and the history of executive pay structures, in particular executive stock option schemes in the USA, UK and Germany. *Section 2.9* summarises and concludes.

2.2 Stock Market Capitalism and Welfare Capitalism

Corporate governance operates differently in two broadly distinct worlds, namely those of “Stock Market Capitalism” (e.g. the USA and UK) and “Welfare Capitalism” (Dore, 2000; Buck and Shahrim, 2005) which embraces countries such as Germany and Japan.

The governance definition in an Anglo-American context is narrower, and is usually restricted to shareholders, i.e. the means by which a firm’s outside investors try to ensure that they are not exploited by senior managers within the firm (Shleifer and Vishny, 1997). In this context, corporate governance is a means of ensuring that corporate actions, assets, and agents are directed at achieving the corporate objectives established by the corporations (Sternberg, 1998). The key goal of corporate governance here is to ensure a maximum return to investors, with the firm viewed as a capital market institution with a primary duty to its shareholders (Monks and Minow, 1995). Shareholders, being residual claimants, thus exert substantial influence on managerial decisions while other parties, such as employees, suppliers, customers, banks and the government, are usually dealt with on a bilateral market basis. Managers are disciplined by *market-based* rewards and punishments through capital markets. Market control via equity encourages hostile takeover where performance is poor and, thus, partly resolves the conflict between management and shareholders (Jensen, 1993). This “variety of capitalism” (Hall and Gingerich, 2001) depends upon high levels of information disclosure to outsiders to inform investment decisions, and laws that protect minority shareholders (La Porta, Lopez-de Silanes, Shleifer and Vishny, 2000; Weimer and Pape, 1995).

The other group of corporate governance models, most commonly analysed outside the discipline of economics with its emphasis on agency, embraces a wider definition which

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refers to the means by which stakeholders (creditors, employees, etc) may have control over the firm's decisions. Here, corporate governance is taken as the means by which important decisions are controlled by the firm's stakeholders (Buck and Tull, 2000). The focus is on the entire network of formal and informal relations which determine how control is exercised within corporations and how the risks and returns are distributed between various stakeholders (Lane, 2000). Here, executives are influenced only weakly by stock prices and shareholders but strongly by the voice of other stakeholders (Noteboom, 1999) who are highly committed to the firm and are prepared to contribute formally to its governance (Hall and Gingerich, 2001). The principle embodied in this form of corporate governance is that companies should be required to serve a number of groups, rather than treat the interests of shareholders as overriding all others (Schneider-Lènne, 1992). In Germany, where the stakeholder approach is followed, this commitment is rooted in Article 14(2) of her constitution, which requires that property be used to serve the "public weal" (Charkman, 1995). The interests of labour here are very important, and both their right to an equitable share of surplus and their entitlement to industrial participation are emphasised (Streeck, 2001).

The shareholder approach is identified with outsider and arms' length control, associated with dispersed share ownership and the prevalence of institutional investors. The stakeholder approach, dwelling on the whole network of control, occurs when share ownership is more concentrated and owners of significant portions of shares are able to exercise control. Concentrated holdings may be held by family owners, banks or other non-financial firms.

Whereas the stakeholder or insider system is associated with management goals of stability and growth and longer-term returns to significant owners, the shareholder or outsider system implies the goals of liquidity of capital markets and of opportunities for short-term maximisation of returns on capital invested.

The foregoing discussion underlines that different countries uphold different definitions of the objective of the firm and therefore have different definitions and interpretations

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of corporate governance. Hence, a nation's system of corporate governance can be seen as an institutional matrix (North, 1990) that structures the relations among owners, boards, and top managers, and determines the goals pursued by the corporation. In this thesis, corporate governance in the USA and UK is defined as the "...means by which important decisions made by senior managers are controlled by the firm's shareholders" (Shleifer and Vishny, 1997: 45). Conversely, when referring to corporate governance in Germany, the term corporate governance shall be taken as the "...means by which important decisions are controlled by the firm's stakeholders" (Buck and Tull, 2000: 98), where stakeholders comprise employees, banks, suppliers, the government and the communities in which firms are located.

2.3 Corporate Governance Systems

As indicated above, the USA/UK have a distinctly different corporate governance system from that of Germany. Corporate governance systems, therefore, comprise country-specific characteristics enshrined in what might be referred to as a national corporate governance framework; a collection of legal, institutional and cultural factors that shape the influence that stakeholders (shareholders included) exert on managerial decision-making (Weimer and Pape, 1999). Blair (1995: 3) argues that corporate governance involves "...the whole set of legal, cultural, and institutional arrangements that determine what publicly traded corporations can do, who controls them, how that control is exercised, and how the risks and returns from the activities they undertake are allocated."

These subsystems of the overall framework can be referred to as elements of a corporate governance system. The number of these elements is large, but the main ones, for the purpose of this thesis, include: the prevailing concept and objective of the firm, the board system, the power and influence of stakeholders over the firm's decisions, the importance of the capital markets in the national economy, the presence and importance of an external market for corporate control, the ownership structure and the extent to which executive compensation is dependent on corporate performance (De Jong, 1989; Moerland, 1995).

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Therefore, classifying countries with respect to their corporate governance characteristics (as discussed above) places the USA and UK in one group and Japan and Germany in the other. For example, the USA and UK share the same prevailing concept of the firm, the board system, the ability of salient (i.e. influential) shareholders to exert influence on managerial decision-making, the importance of stock markets in the national economy, an external market for corporate control, the ownership structure and the extent to which executive compensation is dependent on corporate performance. On the other hand, the German corporate governance system is characterised by a system of co-determination, the ties that corporations have with banks, dual shareholdings and interlocking directorates.

Further distinction of these two main groups has been made in the extant literature (e.g. Buck and Shahrim, 2005; Vitols, 2004; Lane, 2003). The USA/UK system of corporate governance is often referred to as a “market-oriented” system and “network-oriented” refers to the Japanese/German style of governance. A “market-oriented” system is characterised by an active market for corporate control which acts as a mechanism for independent shareholders to influence managerial decision-making. A “network-oriented” system is characterised by a relationship-oriented structure where shareholders are able to influence managers directly, based on the strength of their inter-corporate relationships (Adams, 1999).

The next sections extend this distinction by discussing the Anglo-American and German corporate governance systems in detail, with the emphasis on the distinctive characteristics of the two models. To a certain degree, this implies abstracting from real-world realities. Not all US or UK enterprises are organised according to the Anglo-American model, e.g. the John Lewis Partnership in the UK is employee-owned and controlled. Similarly, in Germany some companies may be closer to the German model than others. However, analysing the two archetypal models makes it easier to link theories on stakeholder relationships to institutions and to assess their impact on enterprise performance.

2.3.1 The Anglo-American Corporate Governance System

In the Anglo-American system of corporate governance, the firm is viewed as an instrument for the creation of shareholder wealth. The present view of the purpose of the corporation was laid down in 1919 in the case of **Dodge v. Ford Motor Co.**, the Michigan Supreme Court: *“There should be no confusion of the duties which Mr. Ford conceives that he and the stockholders owe to the general public and the duties that he and his co-directors owe to protecting minority shareholders [i.e., the Dodge brothers]. A business corporation is organized and carried on primarily for the profit of the stockholders. The powers of the directors are to be employed for that end. The discretion of directors is to be exercised in the choice of means to attain that end, and does not extend to a change in the end itself, to the reduction of profits, or to the non-distribution of profits among stockholders in order to devote them to other purposes.”* (Walsh, 2000: 45).

This concept of the firm was further institutionalised by pieces of legislation in the USA [the Securities Exchange Act (1934), the Securities Investor Protection Act (1970), the Insider Trading Sanctions Act (1984), the Private Securities Litigation Act (1995)] and in the UK (the Company Securities Act, 1985 revised in 1989), the City Code on Takeovers and Mergers and the Financial Services Act (1986).

Further to the shareholder value maximization view of the firm, the Anglo-American model is characterised by a single-tier board, elected by shareholders. The main functions of the board of directors are to select, evaluate and dismiss the CEO and senior managers, to review financial objectives and strategies of the company and to counsel top management (Monks and Minow, 1995; Hermalin and Weisbach, 1988, 2003; Warther, 1998; Adams and Ferreria, 2003; Harris and Raviv, 2005). The board generally consists of a number of executive directors, who are employed by the company, and a number of independent or non-executive directors, who help with strategy and represent the interests of shareholders (Bleicher and Paul, 1996). However, the effectiveness of independent directors in monitoring management on behalf of shareholders may be limited because strong linkages exist between board and

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management, either because the CEO is also chairman of the board or because a considerable number of board members are company managers (Main and Johnson, 1993; Milgrom and Roberts, 1992; Jensen, 1993; Hart, 1995). Moreover, non-executive directors are very “busy” people (they may themselves be CEOs elsewhere and sit on numerous boards) and probably have little time to think about the company, over and above the inputs provided by management (Hart, 1995; Ferris, Jagannathan and Pritchard, 2005; Fich and Shivdasani, 2006) and owe their positions to management who proposed them as directors in the first place, although many boards have nomination committees comprising non-executives. Recent empirical work in the USA focuses on the evolution of board structure over time, and changes in board structure post-Sarbanes-Oxley (SOX). For example, Chhaochharia and Grinstein (2005a, 2005b) focus on recent changes in board structure, finding that board size and independence have increased since SOX.

Besides the control of managers by non-executive directors, the governance of managers by shareholders is another central characteristic of the Anglo-American model, which has been referred to as the model of “shareholder democracy” or “corporate democracy” (Blair, 1995: 68). However, possibilities for direct influence are limited. Opportunities for individual shareholders to influence management by “voice” through active participation at the general meeting are small and relatively costly in large publicly traded corporations with a highly dispersed distribution of shares (Blair, 1995).

Consequently, changes in share prices and takeover threats are the main instruments to discipline management (Burkart, 1999; Grossman and Hart, 1980). Thus, in the USA/UK the most essential mechanism for enforcing attention to share price is the takeover market or “market for corporate control” through the stock market. A poorly-run corporation may suffer a low stock market valuation, which creates an opportunity for outsiders with better management skills to buy the firm at a premium from shareholders, oust the top management team, and rehabilitate the firm themselves, thus increasing its value (Manne, 1965). This provides an economic safety-net for shareholders, who use their “exit” options and an opportunity for outsiders who detect

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undervalued firms. Moreover, it provides a mechanism to discipline top managers that fail to serve shareholder interests, as they may be required to leave the firm following a takeover. Under the market-oriented model, the market for corporate control, therefore, tends to weed out badly-run firms and may protect shareholders from bad management if internal control mechanisms fail. Boards may be compromised by “cronyism,” and thus the hostile takeover – as an objective, market-based mechanism – is an essential weapon in the shareholder system (Jensen, 1993). U.S. public policy in the 1980s made it considerably easier for outsiders to mount hostile takeover bids, and the result was a massive wave of takeovers in which nearly one-third of the largest publicly-traded manufacturers faced takeover bids (Davis and Stout, 1992).

However, the market for corporate control has its own share of problems. There is no evidence, for example, that the takeover of smaller firms by larger ones always results in marked improvements on the return to shareholders (O’Sullivan, 1999).

Thus, the core of market-centred capitalism (as opposed to relationship-based) is clearly represented by the USA and UK. Additionally, in contrast to corporations throughout the rest of the world, for example, large American corporations have relatively dispersed ownership. Roughly seventy-five percent of the 100 largest U.S. corporations lack even a single ownership block of 10 percent or more. Of the 25 largest companies in 1999, the largest single shareholder averaged only 4 percent of the holdings, while comparable percentages are 11 in Japan, 18 in Germany, and 19 in France (Brancato, 1999). In the UK, where there is also dispersed ownership, 16% of the listed companies had a single shareholder owning more than 25% of shares and in only 6% was there a single majority shareholder.

The dispersion of ownership in the U.S. effectively rules out the direct control available in firms where a single family or bank owns most of the shares, because of free-rider abuse (LaPorta *et al.*, 1999; 2000). Dispersed shareholders therefore delegate control to a board of directors that they elect to act as their agents in choosing and supervising the top management team. Apart from the financial institutions, control by minority

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shareholders generally extends only as far as buying and selling shares, and voting for directors and other matters on the annual proxy. Minority shareholders rarely have a real say in the selection of top managers, or even in who ends up on the board.

Given weak direct control by dispersed shareholders, management stock ownership, believed to align the interests of management with those of shareholders, is a significant element of the Anglo-American model of corporate governance. In particular, the USA has been characterised by increasing use of stock option compensation (Blair, 1995), and management ownership of shares in the firms they manage exceeds that in other countries (Prowse, 1995). In the UK management ownership of shares is also considerable (OECD, 1998).

Besides shareholders, another stakeholder worth discussion is labour, especially as its treatment is different in the two corporate governance models. In the archetypal Anglo-American model, workers are promised a return on their investment in human capital through wages and bonuses. However, the use of profit-sharing, and employee share-ownership arrangements have been introduced in the USA.

In the Anglo-American model, workers bear the risk of the loss of human capital in the long run. If the performance of the firm weakens and share prices fall, managers have an incentive to cut costs and lay off employees. Employees have little formal means to counter the tendency for dismissal and to monitor the way management handles their relationship.

Finally, international accounting standards (IAS) and/or US GAAP are typical of the Anglo-American model. These accounting standards are investor-oriented and are guided more exclusively by the notion of providing capital market participants with the necessary information to estimate true company value. Anglo-American accounting rules, compliant with the rest of governance elements in the system, therefore, stress market valuations and precise definition of profits.

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Therefore, this section has reviewed the Anglo-American model, treating the nexus of institutions that characterises a shareholder-oriented system of corporate governance. In the next subsection, a similar approach will be followed in reviewing Germany's relational model of corporate governance.

2.3.2 The German Corporate Governance System

The German model in relation to large firms is characterised by cooperation and long-term relationships between stakeholders in the firm. According to Schneider-Lènne (1992) interest in the firm as a community is a key concept of the German corporate culture. Charkman (1995) alludes to the values of cooperation and consensus as the cornerstones of the German model of corporate governance.

The German model is based on a two-tier principle by distinguishing a management board (*Vorstand*) and a supervisory board (*Aufsichtsrat*) with no overlapping membership between them. While the management board (a more collegial version of the CEO and senior management of the Anglo-American firm) consists of executives of the company and is responsible for managing it. The supervisory board (analogous to the American board of directors), is responsible for appointing and supervising the management board (Streeck, 1995). It also formulates (or at least approves) major corporate policies and strategies.

Important rights of control have been vested in the supervisory board, which is independent from the management board, and seats on it are held in varying proportions by representatives of owners and employees. Following the Co-determination Act of 1976, a law that incorporates employees into the firm's governance processes, the number of seats held by representatives of labour on supervisory boards differs according to firm size but amounts to parity with representatives of capital in the largest firms (Lane, 1989).

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Specifically, in companies with more than 500 employees (whatever their legal status), one third of the supervisory board members are employee representatives. In companies with more than 2,000 employees, the Co-Determination Act of 1976 stipulates that labour should take half the seats on the board. However, the representatives of capital retain the right to nominate the chairman of the supervisory board who has the casting vote when the two sides are deadlocked (Wiedemann, 1980; Charkman, 1995). Thus, the structure of the supervisory board preserves shareholder formal (or managerial) dominance, but possibly alters the bargaining dynamics on the board by allowing managers to ally with employee representatives to resist shareholder pressures for higher returns.

Two-thirds of the employee representatives must be members of the company's staff, while one third are external trade union representatives (Schneider-Lènne, 1992). Representatives elected by shareholders are typically representatives of firms with close functional relations with the company, including suppliers, customers and bankers (Sternberg, 1998). Where the German law requires the supervisory board to include a stipulated number of employee representatives, corporations are prevented from pursuing decisions that lack employee support (Sternberg, 1998). For employees, the survival of the company, the protection of jobs as well as their wage and non-wage benefits is naturally of primary interest (Hansmann, 1996). These interests are further protected by works council codetermination which provides a second form of employee representation in firm governance.

The market for corporate control, which is important in the Anglo-American system, does not provide a significant disciplining influence in Germany, although there has been a shift from that belief of late (Jenkinson and Ljungqvist, 2001). To start with, the stock market plays a relatively unimportant role in the German model. The number of listed firms in Germany is smaller than the one in the USA or UK, and stock market capitalization has been low compared to the USA and UK (Mayer, 2000; Bernhardt, 2000; Vitols, 2004, 2005). Banks, other financial enterprises and non-financial companies own large blocks of shares of companies listed on the stock exchange. Shareholdings are concentrated and block shareholders monitor firms through their

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representation on supervisory boards. Cross holdings of shares, bank control of voting rights at general meetings and regulations with respect to the number of votes required to replace management at general meetings, make the market for corporate control virtually non-existent in Germany. Instead, representatives of the relatively small group of shareholders who own large equity stakes influence management through their voice to a considerable extent, through informal procedures and meetings. Thus, while the market for corporate control helps discipline managers in the USA and UK, in Germany, insiders like employees, banks and inter-locking shareholders are well informed, and it is their influence through a two-tier board system that disciplines the behaviour of managers (Conyon and Schwalbach, 2000b; Vitols, Soskice, and Woolcock, 1997).

This form of relational, or network, governance has implications for strategic decisions. For example, the participation of employees and banks on an upper-tier supervisory board may limit managers' attempted retrenchment actions (Morck, Shleifer and Vishny, 1998). Takeovers will be easier to resist, and banks will be well informed about decisions concerning the finance of investments, etc.

The ownership structure in Germany partly explains the absence of an active market for corporate control. Ownership structure is central to the field of corporate governance and possible agency problems (Fama and Jensen, 1983; Murphy, 1999; Shleifer and Vishny, 1997) As German corporate governance is characterised mainly by concentrated ownership, large corporations are in the hands of large block-holders, who have a majority interest and minority shareholders play a limited role (Höpner and Jackson, 2001). Large share blocks are primarily held by families and other firms, often in the form of inter-corporate holdings of large blocks of shares, notably in the form of pyramids of shareholdings and cross-holdings. Gorton and Schmid (1996) reported that 80% of German listed companies had a non-financial owner holding at least 25% of shares and in more than 50% of these companies, there was a single majority shareholder.

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Two other traditional features of the German corporate governance system differ significantly from the Anglo-American model. The first is the ties that German companies have with financial institutions, which are predominantly German banks. The second is the dual shareholdings and the nature of the interlocking directorate that is produced. Large German financial institutions are salient influential stakeholders. Apart from their role as suppliers of finance/debts, they exercise influence through equity ownership (Prowse, 1995; Peck and Ruigrok, 2000). In contrast to the USA, where the Glass-Steagall Act (1933) and the Bank Holding Company Act (1956) forbade commercial banks from participating in the shareholders' capital or non-financial corporations on their own account, there are almost no restrictions on the German financial institutions' ability to hold large blocks of shares of non-financial firms (Weimer and Pape, 1999). The banks directly held 13% of all German shares in 2000, much the same as in 1991 (Deutsches Aktieninstitut, 2001). Deutsche Bank and Dresdner Bank together controlled the greatest market value. Additionally, most directors sitting on supervisory boards come from other firms or particularly banks that have a major stake in the firm. The supervisory board is not only used to exercise supervision over companies but also as a tool for business cooperation in the fields of production and finance (Jackson, 2001). A survey by Ziegler (1997) of large German firms in 1927 provides an insight into the extent of entanglement of the German republic in earlier days: within the iron and steel industry: 28% of supervisory board members belonged to banks, and an additional 36% represented industrial interests.

While the ownership stakes of banks are substantial, their dominating role is based less on direct share ownership than on proxy voting. Through a legal device called *Depotstimmrecht*, banks have the right to assemble the voting rights conferred in them by keeping custody of bearer shares of individual/company shareholders who have surrendered their proxies. In 1992, banks cast on average more than 84% of all votes present at the meeting of the 24 largest stock corporations with widely dispersed ownership (Baum, 1994). This influence rests on equity holdings, the votes cast by their subsidiary investment funds and above all their role as proxies for their clients who have deposited their shares with them (Höpner and Jackson, 2001). The status of banks

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as dominant shareholders (mainly by proxy) explains why bank representatives can be found on most companies' supervisory boards.

Thus, bank representation on the supervisory board cements the combination of voting power with long-term relational lender and shareholding relationships (Vitols, 2004). In theory, the banks' status as shareholders, it may be argued, aligns their interests with those of other shareholders; and the banks' power within firm governance presumably protects these other investors. In fact, banks do not play the active monitoring role (with the interests of other shareholders) assumed by conventional wisdom and the contradictory status of banks as lenders first and shareholders second may generate conflict of interests (Cheffins, 2001; Vitols, 2004).

Finally, disclosure requirements are less strict in Germany, and legal requirements make accounting information more relevant to tax policy than to the purpose of obtaining a proper insight in the equity value of a company (Lane, 2000) and legislation prohibiting insider trading has only recently been established.

More specifically, German accounting and disclosure rules are generally considered to lack transparency. Substantial discretion exists in the creation of hidden reserves and the valuation of assets. Traditionally, German accounting has stressed very conservative prudence rules (*Vorsichtsprinzip*) and creditor protection. These rules favour a long-term business conservatism allowing firms to build up substantial reserves for rainy days. For example, up to 50 percent of profits can be dedicated to reserves with the approval of the Supervisory Board and the shareholders' meeting, a situation that does not benefit shareholders, at least in the short term.

Furthermore, the valuation of assets at book rather than market prices leads to hidden valuation reserves. While large reserves might make German companies attractive targets, the general impact of accounting standards would seem to deter takeover activity since the uncertain risks to bidders is large: liabilities remain undisclosed, and true levels of profit may be hard to gauge (Schmidt, 1997). In addition, strict capital

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protection rules in German accounting prohibit the use of certain financial techniques during takeovers. Most importantly, this inhibits takeovers financed through the assets of target firms such as the large levered buyouts (LBOs) in the United States.

Another strategic issue concerns the disclosure of ownership stakes. Until recently, disclosure was required only for stakes exceeding 25 percent compared with the disclosure thresholds of 5 percent in the United States and 3 percent in Britain. Disclosure regulations were changed in 1998 to require reporting of stakes at the thresholds of 5, 10, 25, 50 or 75 percent.

Likewise, most firms issue bearer shares which make the identity of shareholders hard for the company to determine. Such lack of disclosure has contradictory effects on takeover strategies and defences. On the one hand, bidders have the advantage of being able to accumulate quite large stakes without being detected. This was the case in the Krupp-Hoesch deal, since Krupp was able to secretly accumulate a 24.9 percent stake through Credit Suisse prior to attempting a takeover (Jenkinson and Ljungqvist, 2001). However, on the other hand, lack of transparency might discourage potential bidders, since they cannot estimate the power of minority block-holders acting as white knights in defending the target company either. Minority block-holders can easily hide their true influence by dividing stakes among family members or formally separate organizations. Similar to accounting rules, lack of disclosure makes takeover battles even more uncertain and risky than would otherwise be the case.

Besides disclosure and other general governance elements, of course, executive pay is a particular governance device at the heart of this thesis, but this will be extensively discussed in Sections 2.5, 2.6, 2.7 and 2.8. Suffice, at this stage, to say that the treatment of executive compensation in Germany is different from the way this issue is handled in the USA/UK.

While the story painted on German corporate governance so far represents the state of affairs before the mid-1990s and what has come to be considered, “stereotypically”, as

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the German style, it must be remembered that changes have taken, and are still taking, place. These changes induced by both internal and external factors to the firm are the subject of the next section.

2.4 Changes in German Corporate Governance

The German system of corporate governance began to change during the second half of the 1990s. There have been a number of forces behind these changes, some of which are: the transformation of the capital markets (Heinze, 2001), intensified competition in product markets and the poor performance of the German economy in the face of reunification. The transformation and importance of capital markets had far reaching effects on German corporate governance. The following paragraphs in this section will discuss fully this factor, including the resultant changes in legislation to promote “good” corporate governance.

The mid-1990s saw the liberalisation of international capital markets, spreading the Anglo-American model. These changes enabled firms that had traditionally used bank finance to consider alternative and cheaper ways to raise funds for growth, thus calling for their participation in international capital markets. This in turn, introduced new actors to these firms by way of investments through the acquisition of shares. These actors (investors) arrived with demands, putting pressures on listed firms to restructure their operations in line with their expectations - hence the changes in German corporate governance.

Specifically, there has been a shift of the objective of the firm towards shareholder value maximization, at least in principle, as more and more companies started using this term, and introduced investor relations departments (Bradley and Sundaram, 2004, Vitols, 2004). Since the mid-1990s, some German firms have adopted international accounting standards (IAS) or US GAAP which are by comparison better than the local German GAAP, popularly known as HGB. The proportion of shares owned by foreign

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institutional investors increased from four percent in 1990 to thirteen percent in 1998 (Deeg, 2001).

Most of these specific firm changes in corporate governance were triggered by the reform of securities law and regulation. For example, the landmark Second Financial Market Promotion Act of 1994 replaced the decentralized system of state-level exchange regulators, and largely self-regulating stock exchanges, with a centralised federal regulator, German Federal Securities Supervisory Office (*Bundesaufsichtsamt für den Wertpapierhandel*, or BAWe).

Over the remainder of the 1990s further legislation and regulations increased the stringency of disclosure rules and other regulatory standards. From late 1997 through 1998, another series of Financial Market Promotion Laws and other legislative changes markedly reformed corporate governance in Germany. For example, BAWe came to oversee the filing of prospectuses, the financial disclosure by public companies, insider trading, and the reporting of voting rights and ownership stakes (Cioffi, 2002).

The Control and Transparency Act of 1998 (*KonTraG*) complemented the earlier massive overhaul of securities law by addressing issues of bank power, the function of the supervisory board, auditing, share voting rights, stock options, and litigation rules (Cioffi, 2002). The law sought to reduce the power of Germany's universal banks in voting shares and supervisory board representation while strengthening their disclosure and their fiduciary obligations to shareholders. However, in the end, the law's restrictions were measures acceptable to large banks and did fit with their emerging business strategies that diverged from the relational banking model of the past.

An equally important regulatory reform introduced by the *KonTraG* was the mandating of shareholder democracy through a "one share, one vote" that prohibits unequal voting rights. However, in contrast to the general principle of one share-one vote, the *KonTraG* prohibits the voting of cross-shareholding stakes above 25 percent (a blocking minority under German company law) in supervisory board elections. This provision was

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designed to prevent managers from wresting control from shareholders by engaging in reciprocal voting with the managers of other firms involved in cross-shareholding relationships. By weakening their defensive ownership structures, this new structure of voting rights exposes some German firms to unprecedented threats of hostile takeover.

The *KonTraG* also allowed stock repurchases and the use of stock options as executive compensation for the first time, though with more restrictions than in the USA (Buck and Shahrin, 2005), probably to prevent excessive executive compensation and “abuse”. Executive compensation in general and the use of stock options as a compensation instrument in particular, is central to this thesis and thus will be dealt with in detail in the next sections. Suffice to say at this juncture that the *KonTraG* appears to have partially embraced Anglo-American financial practices and litigious enforcement mechanisms.

2.5 Executive Compensation Structures and Determinants

Executive compensation, which is one of many different elements of governance, has long attracted a great deal of attention from financial economists. Many academic papers on this topic were written during the 1990s prompting Murphy (1999) to declare that the increase of these academic papers exceeds even the remarkable increase in CEO pay itself.

However, a handful of studies of executive compensation were published prior to 1980, including pioneering works by Roberts (1956), Baumol (1959), and Lewellen and Huntsman (1970). Most early studies focused on whether pay was more closely tied to company size or company profits (e.g. Ciscel and Carroll, 1980).

Research in the nineties and later focused on how executive compensation schemes, particularly share option plans, can help alleviate the agency problem in publicly traded companies (Bebchuk and Fried, 2003; 2004; Murphy, 1999). Early studies in this area focused on documenting the relationship between CEO pay and company performance

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(Coughlan and Schmidt, 1985; Murphy, 1985; 1986; Jensen and Murphy, 1990; Abowd, 1990; Leonard, 1990). Others examined whether CEOs' contracts were terminated following poor performance (Weisbach, 1988; Warner, Watts, and Wruck, 1988) and whether CEOs' rewards for performance are measured relative to the market or industry (Antle and Smith, 1986; Gibbons and Murphy, 1990).

Executive compensation generally consists of four basic components: a base salary, an annual bonus tied to accounting performance, perquisites, and long-term incentive plans such as stock options, with the value of stock options dominating other sources of wealth for executives certainly in the USA and UK.

Base salaries are universal and are determined through competitive comparisons based on industry surveys and tend to reflect company size (Baker, Jensen and Murphy, 1988; Rosen, 1992). However, apart from company size, base salaries should also be influenced by the age, experience, education and performance of executives, especially as most components of compensation are measured relative to base salary (Murphy, 1999). For example, target bonuses are expressed as a percentage of base salary, and likewise pension benefits and severance arrangements.

Annual bonus plans relate to payments which are made to executives upon achieving their performance targets. A study by Murphy (1999) using data from Towers Perrin Annual Plan Design Survey shows that almost all companies base their bonuses on some measure of accounting profits such as revenue, net-income, pre-tax income, operating profit, or economic value added. Where such financial performance measures are not used, individual performance relating to pre-established objectives as well as subjective assessments is utilised. Thus, although annual bonus plans do provide incentives for executives to increase company profits to a certain extent, they can also induce executives to make decisions which might conflict with shareholders' objectives, as they pursue their own targets rather than shareholder returns directly.

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Unlike base salaries and most bonus plans, long-term incentive plans in the form of stock options are more complicated. In general terms, stock options are contracts which give the executive the right to buy stocks at a specified exercise price after a specified term. They typically take effect over time, are non-tradable, and are forfeited if the executives leave the firm before vesting. The value of the stock option varies according to the share price performance of the firm. For example, where the market price increases above the exercise price during the period in which the option is eligible for exercise, the value of the stock option will increase. Conversely, should the share price remain below the exercise price (under water) throughout the eligible exercise period, they will become worthless. The realised value received by executives from exercising options thus is the difference between current market price and exercise price, less transaction costs.

Unlike base salaries and annual bonus plans which offer no strong incentives for executives to act in the interest of owners, and take risks, stock option grants increase managerial risk-taking by rewarding share appreciation in full and imposing only limited penalties for falling share price. For example, sustained growth in the market price of a share over a number of years will provide considerable returns to the executives holding the options. On the contrary, should the share price remain below the exercise price throughout the eligible exercise period, the executive enjoys no gain. The executive however experiences *a sense of loss*, if the options offered a notional gain that was lost when prices fell. Problems with options arise because share price movements may be caused by factors not relating to the company's, let alone the executive's, performance. From the relatively undiversified executive's viewpoint, therefore, options carry risks that reduce their value.

From a corporate governance perspective, it is the direct link between stock options and share appreciation that cause stock options to be regarded as a vital component of executive pay. This theme is the subject of the next section, where it is considered in more depth. Thus, the next two sections (Sections 2.6 and 2.7) discuss the theory and literature on this form of executive compensation, thus setting a platform on which the

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executive compensation structures in Germany are discussed in comparison with the ones in the US and UK.

2.6 Executive Compensation and Corporate Governance

Accepting the importance of executive compensation contracts as a corporate governance mechanism is acknowledging the relevance and importance of agency theory. Agency theory is concerned with the relationship between the principals (shareholders) and agents (executives) and the determination of the optimal contract which would align the interests of shareholders with those of executives. Agency problems arise with the recognition that executives can potentially pursue their own interests at the expense of shareholders (Grossman and Hart, 1982; Kaplan, 1982). This problem is caused by the separation of ownership and control (Berle and Means, 1932; Jensen and Meckling, 1976) and by information asymmetry that results from delegating authority (i.e. of executives by shareholders).

In their seminal work on the separation of ownership and control, Berle and Means (1932) argue that when control is distinct from ownership and dispersion of shareholders is too great to enforce the maximisation of shareholder wealth, those in control (i.e. management) may deploy assets in ways that benefit themselves rather than owners (shareholders). Thus, management's unobserved actions, particularly where personally costly decisions by management (e.g. laying off employees) and privately beneficial activities (the taking of perquisites) are involved (Jensen and Meckling, 1976) can prejudice shareholder wealth and give rise to agency costs.

Jensen and Meckling (1976) formalise agency costs by demonstrating that when the owner-manager sells equity in the firm to outsiders and both parties are utility maximisers, the owner's interest will diverge from that of the new principal's. As a solution, agency theory suggests that the performance-based pay contract, which links pay to shareholder wealth via performance indicators, such as share prices or accounting-based targets, is a powerful way of attracting, retaining, and motivating

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managers to pursue the shareholders' agenda (Jensen and Murphy, 1990; 2004; Conyon and Leech, 1994; Hall and Liebman, 1997).

Another school of thought (e.g. Coughlan and Schmidt, 1985), attributes agency problems to information asymmetry associated with delegated authority. If executives' actions and decisions were easily and fully discernible, then a risk-neutral shareholder could fully insure a risk-averse executive by only paying a fixed salary. From this argument, it appears that the classical agency problem arises because shareholders cannot monitor cheaply numerous executives' decisions, some of which could be quite "adventurous" (Murphy, 1999).

The moral hazard problems resulting from information asymmetry, some scholars have argued (e.g. Mirrlees, 1974, ; Holmstrom, 1978; Grossman and Hart, 1982), can be overcome by employing the *optimal-contracting model*. The model basically suggests that executive compensation practices in large, publicly traded companies are viewed as designed to minimize the agency costs that exist between senior executives (the agents) and shareholders (the principals). The board is viewed as seeking to maximize shareholder value, with the compensation scheme being designed to serve this objective. The optimal contract thus depends on reducing the risk aversion of the executives, increasing the certainty of firm value, and the function describing the cost of effort to the executive (Murphy, 1999).

Relating this concept to a specific compensation instrument such as stock options, they may be considered as optimal contracts because they involve trading-off both executives' risks and incentives, by virtue of there being a direct and mechanical link between executive rewards and share price appreciation. Conversely, the link between pay and performance via executive cash compensation and shareholder returns demonstrates only an implicit link between one-component pay and shareholder returns. However, tying executive pay to shareholder wealth directly is not without risks. For

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instance, increasing the sensitivity of executive pay to firm's performance will result in more risk being imposed on the executives where performance measures might also be affected by factors beyond the control of the executives, share price movements being noisy (Murphy, 1999).

The pay scheme designer attempting to optimize an executive compensation program would be concerned with attracting and retaining high quality executives, providing executives with incentives to exert sufficient effort and to make decisions that serve shareholders' interests, and minimizing overall costs. To induce an executive to take and retain a position and to subsequently expend effort on behalf of principals, then, a firm must offer an overall package of benefits that meets or exceeds the executive's opportunity cost i.e. the executive pay-off must be at least as great as those presented by outside opportunities.

Giving the agent a package of benefits that exceeds his/her opportunity cost may not be enough as the success of optimal contracting theory is also dependent on other factors. For example, the board must be in a position to bargain with the executives at arms' length, the directors or executives are constrained by market forces from deviating from optimal compensation contracts, or shareholders could use the courts or another mechanism to force managers to adopt compensation contracts that maximize shareholder value.

However, the key problem is the pervasive influence of management, particularly the CEO, on all facets of the pay-setting process. First, managers influence the appointment of independent directors (Main and Johnson, 1993; Yermack, 1996), which in many cases enables them to block the appointment of directors who are likely to try to bargain with the managers at arms' length. Secondly, once appointed, independent directors are influenced by board dynamics that make it difficult for them to deal with managers in a truly arm's length way (Main and Johnson, 1993), especially if other directors have no interest in confronting the managers over their pay. Finally, even if directors were

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otherwise inclined to challenge managers on the issue of executive compensation, they would likely have neither the financial incentive nor sufficient information to do so.

Additionally, empirical studies have so far only provided weak support for the pay-performance link (Morck, Shleifer, and Vishny, 1998; Tosi, Werner, Katz, and Gomez-Mejia, 2000; Core and Larcker, 2002). For example, a negative relationship has been established between the share option wealth of CEOs and the measures of firm risk (Wiseman, McNamara and Devers, 2001). Moreover, empirical evidence has also yet to prove whether stock option contracts actually motivate executives. Such studies are difficult to conduct where stock returns have shareholder expectations embedded in them (Abowd and Kaplan, 1999; Westphal and Zajac, 1998), allowing the announcement effect to occur prior to the executive responding or ahead of the announcement of the plan. Also, while an innovation in the structure of incentives which is followed by improved performance might suggest a causal link, they might also reflect the exploitation of a scheme by executives in anticipation of improved performance (Bruce and Buck, 1997; Tehranian and Waagelein, 1985).

Given these weaknesses, there remains the possibility and danger that the optimal contracting approach may not be relevant to the solution of agency problems through executive pay, especially as shareholders are ineffective in monitoring executive decisions. This possibility introduces a role for theories based on the executive's power to extract more than optimal pay or rents, from shareholders, subject to an outrage constraint (Bebchuk and Fried and Walker, 2002; Bebchuk and Fried, 2004). As a possibility, Bebchuk *et al.* (2002) argue that *managerial power theory* and the desire to camouflage rents perhaps explain significant characteristics of the stock option plans that have been problematic from the optimal contracting perspective. The next section addresses managerial power theory in relation to executive pay in general and stock options in general.

2.7 Executive Compensation and Managerial Power Theory

According to Bebchuk *et al.* (2002) executive compensation can be explained by managerial opportunism and power over the board of directors. Like the optimal contracting approach, the managerial power theory recognises the principal-agent framework. Unlike the optimal contracting approach however, the managerial power approach argues that executive rewards are not optimal contracts but instead contain characteristics which allow executives to extract excess pay or rent (Bebchuk *et al.*, 2002). Thus both optimal contracting theory and managerial power theory, when applied to the study of executive compensation, start with the recognition that there is an agency problem, but they take that recognition in different directions.

The underlying hypotheses of managerial power theory are that executives prefer more rather than less compensation and that they possess excessive power over the level and structure of their pay. While the optimal contracting approach assumes that most pay decisions are made by independent directors in legitimate arm's length transactions, the managerial power approach argues that independent directors are not independent in making these decisions. Executives, especially the CEO, exercise power over independent directors because they control the nomination process, maintain social relations with board members (the result of board dynamics), and expect total support. Moreover, although executive compensation is set against the background of market-forces measures which offer corporate governance control, these forces are hardly strong enough to compel optimal contracting outcomes (Bebchuk *et al.*, 2002).

However, the managerial power model does not claim that there exist no constraints which will prevent executives from extracting rent. Indeed, the model explicitly recognises that an important factor affecting executives' ability to increase their compensation is affected by how the compensation arrangements are perceived by outsiders or, in the language of Bebchuk *et al.* (2002), by the amount of "outrage" expressed in response to the proposed compensation. The tightness of the constraints

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that managers and directors confront depends, in part, on how much “outrage” a proposed compensation arrangement is expected to generate among relevant outsiders. “Outrage costs” impose constraints via their effect on the board in the form of increasing social and reputation costs to directors, or by affecting market measures through the reaction of shareholders who may, for example, view excessive pay rises as insensitive to their interests.

In fact, there is evidence that the design of compensation arrangements is indeed influenced by how outsiders perceive them. Johnson, Porter, and Shackell (1997) find that CEOs of firms receiving negative media coverage of their compensation arrangements during 1992-1994 subsequently received relatively small pay increases and had the pay-performance sensitivity of their compensation arrangements increased. Thomas and Martin (1999) find that, during the 1990s, CEOs of firms that were the target of shareholder resolutions criticising executive pay had their annual compensation reduced over the following two years by an average of \$2.7 million.

However, outrage costs are a function of perception (i.e. they depend on the visibility of the rent extraction), implying that it is not necessarily excessive compensation that triggers outrage costs. Subsequently, opportunistic executives will prefer compensation packages which are camouflaged as optimal contracting, and use their power to influence design. Thus, using compensation consultants is one sure way of giving legitimacy to excessive pay and thus reducing outrage costs. Under managerial power approach, therefore, executive compensation is viewed not only as a potential instrument for addressing the agency problem but also *a part* of the agency problem itself.

Thus, unrestrained opportunism or self-interested opportunism (Bruce, Buck and Main, 2005) by executives in the design of their own reward packages may be dangerous and costly for shareholders, a situation that might have caused concern in Germany and to some extent in the UK, where the use of stock options has been advocated as a means to align the interests of executives with those of shareholders. In Germany, resistance to

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generous option schemes has come from supervisory boards, government regulators, academics and the media (see Appendix 2.1) and, in the UK, self-regulatory bodies such as the London Stock Exchange, accountancy profession and the association of institutional investors have voiced concerns.

It is this intriguing theoretical clash, between agency theory and managerial power-based theories, that brings flavour to research into US-style pay innovations like executive stock options in Germany. In fact, as can be discerned from the foregoing discussion, the mere adoption of an option scheme by German firms does not necessarily mean an alignment of the interests of executives and shareholders. Nor does it imply the Americanisation of German corporate governance.

To appreciate the differences in national executive compensation arrangements, the next section is devoted to a discussion of the prevailing situation in the USA, UK and Germany.

2.8 Executive Compensation Structures in the USA, UK and Germany

The executive share option as an element of executive remuneration has gained popularity over the last two decades, quite rightly so as stock options are seen as an instrument of compensation which seek to address the conflict of interest between owners and decision makers. In the USA and UK, the early use of stock options can be linked to their tax efficiency relative to other forms of executive reward.

As a result, stock options have been growing in importance since the 1980s. Lambert, Lanen and Larcker (1989) found that by 1986, 193 of the Fortune 200 companies had introduced executive stock option programmes. Studies of CEOs' compensation in US Standard and Poor 500 Industrials (S&P 500) companies by Murphy (2002) have shown that, over the 1990s, the percentage of stock options of total CEOs pay, swelled from 27 percent to 51 percent. Although option valuation involves problems, an earlier study of CEO pay components of S&P 500 by Murphy (1999) also revealed that in the early

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1990s, stock options had replaced base salaries as the single largest component of compensation in all US industry sectors with the exception of the utilities sector. Conyon and Murphy (2000), examining CEO pay for almost 1,700 US publicly quoted companies, found a strong bias in favour of stock options. More recently, a study of S&P 500 firms by Bebchuk and Grinstein (2005) shows that the average CEO compensation increased from \$3.7 million in 1993 to \$9.1 million in 2003 (an increase of 146%), and average compensation to top-five executives rose from \$9.5 million in 1993 to \$21.4 million in 2003 (an increase of 125%). From these compensation figures, equity-based compensation was 37% of total pay for top-five executives in 1993, this fraction rising to 55% by 2003. The overall picture is that stock options continue to rise in importance in the USA, despite declining capital markets in the period 1998-2004.

In the UK, executive stock option schemes were relatively new in 1987 (Conyon and Murphy, 2000). During the 1990s, however, stock options became hugely popular with average remuneration in the form of share options increasing over 145 percent, representing nearly 41 percent of the overall pay package in 1995 compared to just less than 26 percent in 1993 (McKnight and Tomkins, 1999). In a later survey, Towers and Perrin (2002) show this figure as having increased to 57 percent in the year 2000.

As in the USA, the strong growth of the executive stock option schemes in the UK was facilitated by similar tax incentives thanks to the Finance Act of 1984 and a more fundamental desire to realign potential conflicts of interest within the corporation. Another argument was the fear by larger UK companies to be disadvantaged in international executive labour markets, where American firms had been the pioneers in developing such schemes (Murphy, 1999) and there was a sharp disparity between the earnings potential of UK and US senior executives (Main, O'Reilly and Crystal, 1990). As stock option schemes became established with larger firms in the UK, it appears that the rest of the firms followed in isomorphic fashion.

However, despite the self-regulatory mechanisms in place and the recommendations of the Cadbury Report (1992), ESOs were not judged to have induced better company

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performance in the late 1980s and early 1990s, prompting a public scrutiny of executive pay through the media and the influential Association of British Insurers (ABI). These developments led to the establishment of the Greenbury (1995) and Hampel (1998) Committees, bodies designed to explore the wider issue of corporate governance and recognising the role of executive compensation in this context.

While these developments occurred in the USA or UK, CEOs in Germany received no compensation in the form of stock options prior to 1998. The granting of executive stock option schemes by corporations was impossible until the German Stock Company Law (*Aktiengesetz*) was changed. Nonetheless, there existed performance-related pay since 1986, which ultimately achieved similar ends to the option schemes in the USA and UK. These took the uniquely German form of option bonds, warrant bonds, stock appreciation rights (SARs, or phantom stocks) and convertible bonds (Bernhardt, 1999). Despite the existence of these instruments, German executive compensation packages prior to 1996 only contained a small variable portion (Bernhardt, 1999) and were typically based on operating results and absolute magnitudes such as annual profit, dividends, turnover and cash flow, or in direct relation to the company's performance on factors like return on equity, return on investment, and return on assets (Becker, 1990).

To be sure, studies conducted on German executive pay structure confirm that, prior to 1996 performance-related pay was not a foreign idea (Cheffins, 2001). A comparison of Germany and UK executive pay from 1960 to 1995 conducted by Conyon and Schwalbach (2000b) showed that the only difference between the two countries, in relation to executive compensation, was that German executives were not awarded stock options.

There are a number of reasons why equity-related pay was missing in the executive compensation package. For example, prior to 1998, German companies that intended to issue stock options to their executives would have to submit a resolution to the shareholders and obtain a three-quarters majority vote. Moreover, gains from options

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were not tax deductible (unlike in the USA), a fact that left companies with no incentive to award stock options. Conyon and Schwalbach (2000a; 2000b) attribute the lack of stock options in Germany to the national corporate governance, where employees can resist any incentive plans which result in executives becoming more disposed towards shareholders. Most importantly, executive compensation innovations such as ESOs, designed to minimise the conflict of interest between shareholders and executives, are not vital instruments to large German firms, traditionally associated with long-term, relational investors and a *Gemeinschaft* of stakeholders with voice-based corporate governance (Buck and Shahrin, 2005).

However, the situation in Germany has changed. In 1996, larger German corporations such as Deutsche Bank, DaimlerChrysler and Deutsche Telekom started introducing compensation in the form of US-style executive pay, by granting compensation in the form of convertible bonds, warrant bonds and SARs. Further changes came in 1998, when the German government decided to formally end prohibition of US-style stock option schemes and amended the German Stock Corporation Act (AktG) to freely allow German corporations to issue outright stock options. Equally, German tax laws were changed to remove the disincentives for share sales by long-term relational investors like banks, making shares of large firms more liquid, and a necessary condition for stock options as effective incentives.

Indeed, since 1998, most large German corporations have started introducing US-style stock option schemes. By 2005 all DAX 30 firms had adopted executive stock options, with the single exception of BMW. Although no stock option culture can yet be said to exist in Germany, the country is nevertheless adapting to the international trend raising the question as to what has finally happened to the embedded social construction of German corporate governance known for its persistence and inertia. Of course this apparent adoption of an American pay institution may be a surface phenomenon only, and there is a possibility that the adopted innovation could *be translated* (Buck and Shahrin, 2005) to suit the German social environment.

2.9 Summary

The objective of this chapter was to provide a background to corporate governance and executive rewards for the analysis of executive rewards as a specific governance element in future chapters. Consequently, this chapter started with discussing the “varieties of capitalism”, linking them to the dichotomous definitions of corporate governance which are system specific. In the Anglo-American model, corporate governance refers to the means by which important decisions made by managers are controlled by the firm’s shareholders. In Germany, corporate governance is taken as the means by which important decisions are controlled by the firm’s non-managerial stakeholders.

Consequently, the chapter then contrasted German and Anglo-American models of corporate governance, outlining the respective corporate governance mechanisms used in both models in the process. The most important corporate governance characteristics in Germany were identified: the establishment of the two-tier board system, enshrined in the Co-determination Act of 1976, the ties that German companies have with financial institutions, the ineffective market for corporate control and the illiquid capital markets, the dual shareholdings, and the nature of the interlocking directorates that are produced. In a similar fashion the Anglo-American characteristics were identified as: the dispersed ownership and the direct monitoring exercised by shareholders through annual general meeting, the transparency of financial accounts and, most importantly, the active market for corporate control.

The chapter proceeded by discussing the typical structure of executive compensation, explaining that executive compensation consists of a base salary, annual bonus, perquisites and long-term incentive plans including stock options. Emphasis was made that the link between stock options and share price appreciation provided the basis of regarding stock options as a vital component of the executive pay structure. That is by linking pay to performance, conflict of interest between shareholders and executives are

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addressed and are supposed to be minimised. However, empirical studies have shown weak support of this hypothesis.

The lack of empirical evidence on the link between pay and performance provides a rich basis to claim that optimal contracting theory fails to address the principal-agent problems. It would appear therefore that managerial power theory, which argues that executive compensation contains characteristics which allow executives to extract excess pay (rent) from their compensation, has more explanatory power of what actually happens in the corporate world. Capitalising on the legitimacy of optimal contracting theory, but clandestinely and effectively adopting an approach consistent with managerial power theory, opportunistic executives (Bruce *et al.*, 2005; Gomez-Mejia, Wiseman and Dykes, 2005) thrive, using compensation consultants in the process.

The chapter also assessed the relative importance of stock option plans within executive compensation packages awarded in the USA, UK and Germany. Stock options use started in the USA in the 1980s, followed in the UK about a decade later and arrived officially in Germany in 1998 after the amendment of the German Stock Corporation Act (*AktG*). Several German corporations have since adopted stock options thus prompting academics to wonder whether institutional change is actually taking place from a country that is well known for its deeply embedded relational governance that is expected to display inertia and additionally whether convergence on Anglo-American corporate governance is taking place.

The next chapter reviews the literature on institutions, institutional theories and the possibility of institutional change in order to understand the changes in German corporate governance, particularly on executive pay.

CHAPTER THREE

Institutional Theory and Innovation Diffusion Theory

3.1 Introduction

The introduction to this thesis argued that the stage should be set for a research approach that explicitly recognizes the institutional influences on changing corporate governance practice *e.g. the adoption of ESOs in Germany*. As such, this thesis draws on institutional theories as explanatory devices for corporate governance changes and particularly the adoption of an American executive pay practice in Germany.

Definitions of “institution” refer to *humanly-devised* frameworks of behaviour: institutions that reduce uncertainty and guide the behaviour of actors in a society. On the other hand, culture usually refers to “invisible” customs and beliefs that are not consciously devised by humans. For instance, collective actions in control of individual action are regarded as institutions, and so are the highly standardised social customs and prescribed patterns of correlated behaviour, although such customs may elsewhere be recognised as “culture” (Peng, 2002). A useful distinction can here be made between the “institutional environment” on the one hand and “institutional arrangements” on the other. The firm and other “governance structures” are institutional arrangements; norms, routines, legal rules etc. are part of the institutional environment.

Institutions have also been defined in the broad sense covering the institutional environment and arrangements as: *The norms, rules and structures that guide, constrain and facilitate the behaviour of human actors* (North, 1990; 1991).

Institutionalisation is, therefore, seen as a process of social construction by which individuals come to accept a shared definition of social reality or institutions which

include the way things are, what is important and the way things are done (Scott, 1987; Jennings and Zandbergen, 1995).

In this sea of definitions, Scapens (1994) has defined institutions as a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people.

However, choosing a definition remains rather arbitrary, as different meanings reflect many different approaches to institutional theory (Mäki, 1993; DiMaggio and Powell, 1991). New Institutional Economics (NIE) differentiates itself most from other approaches as it retains a notion of bounded rationality and it assumes (limited) economic optimization “through economizing on transaction costs” (Scapens, 1994: 308). Moreover, some applications of NIE assume a degree of opportunism that affects the behaviour of the actor.

Whereas NIE uses the concept of institutions in relation to transaction costs, Old Institutional Economics (OIE) emphasises the enabling and constraining qualities of institutions. Thus, OIE is a theory that maintains that human action is constrained by institutions, but it also recognizes that institutions enable people to come to meaningful action (Hodgson, 2000). It assumes considerable uncertainty in the range of alternatives available to agents and in the possibility that agents can evaluate these alternatives in time. In this sense, OIE challenges the assumption of rationality found in neo-classical economics. New Institutional Sociology (NIS) also deals with institutions, but it treats them largely as a given. Moreover, the processes of institutionalization over time are not well developed by NIS. Instead, its focus is primarily on how and why firms conform to institutionalized beliefs in society. While institutions are an integral part of organizational life in the view proposed by OIE, the view held by NIS treats institutions as largely exogenous to the firm.

This range of views on institutionalism is bound to give rise to questions regarding the differences between them. What are the properties of the different views? How do they

differ? How can they best be applied? How do they relate to each other and most importantly to this thesis: how do these strands of institutional theory help us to understand processes of change and the adoption of a practice completely alien to a corporate governance system? In order to assess the usefulness of the different strands of institutional theory for a study on organizational change (e.g. the adoption of ESOs in Germany), it is therefore necessary to confront their properties and assumptions. This chapter will describe some of the properties of the three strands of institutional theory addressed here: New Institutional Economics, New Institutional Sociology and Old Institutional Economics. The purpose to this thesis is to clarify the properties and assumptions of the various institutional theories so that the most appropriate theory or combined theories can be selected to address the research questions that were posed in chapter 1. It will be argued that NIE is not suitable for this thesis and that a synthesis of OIE and NIS is appropriate here.

Contrary to conventional wisdom, therefore, NIE will be discussed first and not OIE as discussion of the later should be linked to the discussion of NIS. Besides, NIE was not a development from OIE, but was aimed at dismissing some notions of neo-classical economics (as will be shown later). NIS will also be discussed before OIE, as the former is about the wider environment and the latter about the actors within the organization, a situation that befits the approach taken in this study where the external environment is considered first, subsequently narrowing down to intra-organizational dynamics.

Moreover, by treating the use of ESOs in Germany as an innovation, the later part of this chapter will explore the literature on innovation diffusion, linking it to three variants of institutional theory. These variants are identified and synthesized in the rest of this chapter.

The chapter is organized as follows: Section 3.2 covers New Institutional Economics, Section 3.3 discusses New Institutional Sociology and Section 3.4 deals with Old Institutional Economics. Section 3.5 considers the fusion of OIE and NIS as the basis to

study organizational change, followed by Section 3.6, that looks at a specific fusion of OIE and NIS by Greenwood and Hinings (1996) through the Neo-Institutional lens. Section 3.7 develops further the ideas raised in 3.6 by considering the intra-organizational dynamics of change. Section 3.8 discusses Innovation Diffusion theory as a theory that informs firm behaviour on the early and later adoption of an innovation, linking it to Neo-Institutional theory (i.e. OIE and NIS brought together) setting the stage for the development of hypotheses in Chapter 4. Section 3.9 summarizes and concludes the chapter.

3.2 New Institutional Economics

NIE is known from many different strands of theory. For example agency theory, game theory, property rights theory and transaction cost theory all contribute to NIE theory. This section discusses Transaction Cost Economics (TCE) as the main basis for NIE.

The early pioneers of the transaction cost reasoning (originating in the work of Coase, 1937) were especially interested in the boundaries of the firm, an issue that was later reformulated into the make-or-buy decision (Williamson and Ouchi, 1981). In turn, TCE exists in many variants, but the variant promoted by Oliver Williamson has received the most widespread application (Ghoshal and Moran, 1996). It is regarded as a response to the stringent assumptions made by neo-classical economics (Van der Meer-Kooistra and Vosselman, 2000). TCE makes use of transactions and their associated costs as the primary unit of analysis (Williamson, 1998). TCE is essentially a theory of the coordination of transactions between and within business organizations. It assumes that organizations incur costs of transactions, such as costs of contracts, supervision costs, costs associated with opportunistic behaviour, and costs associated with specific assets (in particular those that are not easily used for different transactions). TCE argues that firms will select the governance structure that minimizes the costs of effecting a transaction.

Markets, firms, common law and regulations all provide alternative forms of governance (Palay, 1985: 156). Williamson (1973) proposed that depending on a

number of general dimensions of transactions, different modes of contracting exist through the market or through the hierarchy or through an intermediate form.

Transaction costs are costs that are usually ignored in standard economic theory, but play an important role in TCE. However, similar to neo-classical theories, NIE appeals to the idea of optimization. As Hira and Hira (2000: 269) state: "...rather than seeking to replace neoclassical economics, the new institutionalists wish only to modify the rational choice, utility-based neoclassical model by relaxing some of its assumptions. The new institutionalism focuses on the central assumption of zero transactions costs in neoclassical economic models as the main gap to be filled." Williamson (1998: 35) notes that "many would-be theories of economic organization are primarily retrospective, in that they offer an *ex post* explanation of what has transpired", but that "sooner or later, candidate theories of economic organization must go beyond *ex post* rationalization and offer predictions". His ultimate goal is to predict beforehand which structure decision makers will choose, given the dimensions of the transactions.

One of the most attractive features of NIE is its ability to generalize human qualities. It "...is attractive in the sense that rational choice perspectives seem to allow for a "universalization" of individuals' political actions, just as a market-based model allows for the aggregation of individuals' economic behaviour" (Hira and Hira, 2000: 268).

Below is a description of five features embedded in TCE reasoning that are critical to the functioning of the theory. They are thus partly responsible for the focus of the theoretical ideas. Moreover, the section below will identify a potential problem with TCE that reduces the usefulness of TCE reasoning for this thesis.

3.2.1 Important Features of TCE

This section discusses the important features of TCE. It starts by briefly discussing the dimensions of transacting conditions, distinguished by TCE, under the two behavioural assumptions of opportunism and bounded rationality, which together generate a need for elaborate contracting. Finally, the section addresses a problem with TCE: its

“invisible hand” approach (Langlois, 1989), meaning that it perceives the drive for efficiency as an inherent feature of institutions, without providing an explanation for the emergence of these institutions. This lack of attention for the emergence of institutions will constitute the argument why TCE is not the most appropriate theory for this thesis.

3.2.1.1 Features of Transacting Conditions

Williamson (1998) identifies three critical features that describe transactions, and thus influence the choice for a particular governance structure: the frequency with which transactions recur, the uncertainty (disturbances) to which the transactions are subject, and the condition of asset specificity. The frequency of transacting is the number of times that a transaction takes place within a given amount of time. Uncertainty results from the inability to predict events in the environment. Finally, asset specificity relates to the specificity of organizational assets involved in specific transactions; e.g. specific investments or particular technologies. Asset specificity addresses the fact that assets are part of specific contractual relationships, from which they cannot be released or they can only be released at a cost. Asset specificity is especially important, as it formulates a condition of mutual dependency. It takes a variety of forms, among which are site specificity—e.g. stations located closely together to facilitate transacting; physical asset specificity—e.g. specialized production equipment; human asset specificity that arises from learning; and dedicated assets that are purchased for specific customers. Williamson (1985; 1997; 1998) argues that the combination of these three dimensions (frequency, uncertainty and asset specificity) determine a very large part the optimal governance structure i.e. transactions can be effected through the market, or through internal organization, or through an intermediate form. TCE uses two behavioural assumptions that allow theorists to make inferences on the selection of a governance structure: opportunism and bounded rationality. These will be discussed below.

Opportunism

Opportunism refers to a more sophisticated form of self-interest seeking, namely self-interest seeking with guile, “...making false or empty, that is, self-disbelieved threats or

promises, cutting corners for undisclosed personal advantage, covering up tracks, and the like” (Williamson and Ouchi, 1981: 351). The assumption of opportunism dictates more sophisticated calculating behaviour of the actor than assumed in neo-classical theories. TCE argues that the presence of opportunism in itself is not a problem *per se*, it is the combination of opportunistic behaviour and bounded rationality (see next subsection) that creates the need for elaborate contracts. The basic idea of transaction cost theories boils down to the following: A situation where individuals have the propensity to behave opportunistically on the one hand and the individual property of bounded rationality on the other. In this situation, the task is to organize transactions that will economize on bounded rationality “while simultaneously safeguarding those transactions against the hazards of opportunism” (Williamson and Ouchi, 1981: 351). As Williamson assumes that agents are looking for personal gain (opportunism), contracts need to be drawn up to attempt to minimize this opportunism. The costs associated with these contracts are an example of transaction costs. In Williamson’s (1985) view, contracts enforce legal rights *ex post*. However, organizations can also employ other means, such as specific investments to demonstrate “credible commitments”. These “credible commitments” signal to the other party that the organization intends to honour the agreements as it has a clearly visible interest in its outcomes. For example, an investment in a specific asset places the organization in a position in which it has an interest in honouring the contracts. As such, it provides information on the probability that it would engage in acts of opportunism. Williamson (1985) discusses this notion of “credible commitments” particularly in relation to intermediate structures, which are located between discrete market contracting on the one extreme and hierarchical organization on the other. It is important to note that given the overall aim of economizing on transaction costs, the assumptions of opportunism and bounded rationality are essential to the functioning of the model. Therefore, the next section will explore the notion of bounded rationality somewhat further.

Bounded rationality

Bounded rationality is an assumption that attributes qualities such as the propensity to optimize on a (limited) number of different alternatives. It assumes more moderate qualities than the neo-classical agent, who is assumed to maximize based on a “superhuman” ability to assess all available alternatives. Bounded rationality allows for an imperfect ability to assess all alternatives. Therefore, individuals do not maximize, but only optimize with the information at their disposal. Indeed, Williamson (1997: 22; 1998: 30) states that bounded rationality “is behavior that is intendedly rational but only limitedly so”. This means that all complex contracts are unavoidably incomplete.

The notion of boundedly rational behaviour is not particularly problematic when the original objectives of TCE are considered. TCE was developed as a positive theory to explain the boundaries of the firm. Specifically, this positive theory set out to explore why firms exist and continue to exist in competitive markets. However, more recently, it has been extended to explain behaviour within firms (Ghoshal and Moran, 1996). This constitutes a problem as the prediction and explanation of organizational behaviour is relatively different from that of individual behaviour. When studying firm behaviour as a whole, only basic assumptions of individual rationality may suffice, as one does not seek explanations of individual behaviour. “Economics does not seek to explain individual behaviour *per se*, an undertaking that would no doubt require a picture of the agent that is quite complex and hence “realistic” in any number of senses. Rather, economic theory most often uses assumptions about individual behaviour as an intermediate element in the explanation of various economic phenomena (changes in price and quantity, for example)” (Langlois and Csontos, 1993: 115). Therefore, a highly abstract agent may be very well suited for the description of the behaviour of the firm, as any quality of this agent that does not purport directly to perceived firm behaviour is ignored (Curwen, 1976). However, the notion of bounded rationality can prevent TCE to predict behaviour within organizations, as that would require a more elaborate depiction of individuals. As Argyris (1973) observed, it is not likely that a

single, isolated individual can ever reach any high degree of rationality, simply because the environment is too complex.

Bounded rationality causes imperfect *ex-ante* contracting, thereby introducing the need to adjust contracting as more information becomes available. However, the choice of the optimal governance structure is assumed to be a choice that is made under conditions of perfect rationality. Whereas transaction cost theorists have successfully incorporated bounded rationality into their analyses of the comparative efficiency of alternative designs, there has been much less attention paid to the implications of bounded rationality at the design-selection level (Roberts and Greenwood, 1997). As such, TCE is not entirely consistent in its views on human behaviour: it accepts imperfect *ex-ante* contracting, because of the notion of bounded rationality, but it also assumes that the agent is able to select the most appropriate governance institutions for a given configuration of uncertainty, asset specificity and frequency of transacting.

A number of arguments used by TCE have attracted some criticism over the years. One category of criticism relates to the source of the drive for efficiency. Rutherford (1989) and Langlois (1989) both question the “invisible hand” approach that NIE assumes. They both argue that the assumption of an invisible process of selection, leaving institutions that are most efficient, can lead to a limited applicability of the ideas of NIE. Langlois (1989: 294) puts it like this: “The maximization metaphor is an extremely appealing and powerful “positive heuristic” for a theoretical structure. It is easy to use, and it provides an explanation in terms of a widely applicable set of fundamental ideas. But only in a very restricted set of situations is it in fact a substitute for looking at the actual process by which institutions come into use and are maintained over time”. Similar comments were made by Rutherford (1989). Consequently, the next sub-section will discuss two separate processes that can account for the drive for efficiency assumed by TCE. It also indicates why this drive for efficiency limits the application of TCE for this thesis.

“Homo transaction cost economicus” vs evolution: the source of the “invisible hand”

NIE rests on either of the two following principles: the assumption of man as “homo transaction cost economicus” or the evolution principle. The first principle implies that man is naturally concerned with efficiency. He would then be “homo transaction cost economicus” (Buckley and Chapman, 1997: 132). This view implies that individuals can and will perceive all transaction cost minimizing arrangements beforehand. The evolution principle argues that the market will favour the most efficient organizational form and that it will eventually drive out those that are less efficient.

The assumption of “homo transaction cost economicus” is unlikely to hold as the mere ability of man to assess all alternatives beforehand has been doubted, even by TCE itself. As Dow (1987: 27) observes: “Intentionality arguments collide with the transaction cost school’s emphasis on bounded rationality. If agents cannot cope with contracts featuring complex contingencies... it is doubtful that they can select in advance an efficient decision making procedure to use in adapting to future contingencies.” Moreover, individuals prefer the energy saving properties of acting rationally, and engage in this type of behaviour routinely. This has also been remarked by Ritzer (1993: 35), who notes: “people rarely search for the best means to an end on their own. Rather, the previously discovered best possible means to innumerable ends have been institutionalized in a variety of social settings.” Lastly, Schumpeter (1934) asserts that, individuals act based on routines and habits that are consistent with wider beliefs of what is to be considered “rational”. When knowledge and habit “become as firmly rooted as a railway embankment in the earth, individuals do not undertake much calculating action” (Raines and Jung, 1992: 113). Ultimately Schumpeter suggests that if individuals act rationally (consistent with their established ideals) it is because they have learned from experience how things are done and prefer the energy-saving feature of fixed habits of thinking. It is for these reasons that “homo transaction cost economicus” may not be a viable assumption upon which to base the workings of TCE. The evolution principle causing the drive for efficiency does not necessarily relate to the

most efficient form that can be identified, but it can be limited to structural arrangements that have actually been applied (Vosselman, 2002). As Vromen (1995: 60) observes: "Following Simon (1983) ... only a weak form of selectionism is tenable. A strong form of selectionism would hold that the most efficient form possible will of necessity be established. Weak-form selectionism entails "survival of the fitter", not "survival of the fittest". Evolutionary selectionism rests critically on the motive of survival. Buckley and Chapman (1997: 129) note that "the only analytically robust definitions of "successful adaptation" and "betterment" are coterminous with survival itself". TCE is thus about the adaptation of governance structures in response to pressures for survival of the organization. It is logical that competitive pressures play an important role in the functioning of TCE. As we assume that TCE works through a weak-form evolutionary process (Vromen, 1995) and as this implies a satisficing decision maker, it is competition that drives the need for an optimal governance structure. The level of competitive pressure determines the level of efficiency that would be perceived as minimal for the organization.

Sub-optimal intra-organizational arrangements may persist over long periods, as competitive pressures operate on whole organizations with varying intensity (Roberts and Greenwood, 1997). Agents at different positions in the organization can perceive competitive pressures differently, and thus different views would be taken of the need for efficiency enhancing measures, *i.e.* different satisficing levels of efficiency can exist among different people depending on their position within the organization and their outlook on the environment. The line of argument proposed by Roberts and Greenwood (1997) is that the institutional environment enables and constrains decision makers in their efforts to be as rational as possible. This is in line with the evolution principle. If one wants to explain decisions using TCE, one needs to go beyond frequency of transacting, asset specificity and uncertainty, to clarify how the institutional environment influences the pressures faced by decision makers. Williamson (1997; 1998) acknowledges the importance of the institutional environment in which the organization operates. However, his view of the institutional environment is limited. He explicitly argues that the institutional environment consists of "the formal rules of the

game”, especially property (polity, judiciary and bureaucracy) (Williamson, 1998: 26). Langlois (1989) argues that this limited view on institutions reduces the applicability of TCE outside those institutions that are typified by a drive for efficiency maximization. He notes: “we have good reason to think that many processes leading to institution do not select for efficiency (that is they maximize something other than wealth or the negative of the sum of production and transaction costs)... It seems much more reasonable to look beyond the maximization metaphor to a consideration of the actual processes involved. The fact that an institution economizes on transaction costs, is an important part of the story; but it is not the whole story” (Langlois, 1989: 294).

Moreover, another variant of NIE developed by Douglass North (1984; 1990; 1991) carries arguments that support institutional change and does appear to embrace both economic and political issues of societal change through considerations of property rights. His economic history of the rise of the West, for example, showed that institutional change “...comes from a change in the relative bargaining power of rulers versus constituents (or rulers versus rulers), and, broadly speaking, changes arise because of major, persistent changes in relative prices” (North, 1984: 260). The dynamics of institutional change in North’s theory stem from a continuous interaction between institutions and organizations within the context of competition over scarce resources. From his arguments, institutional innovations will come from states rather than constituents because states generally do not have a free rider problem, whereas individuals and organizational actors are limited in their capacity to implement large-scale changes (Libecap, 1994).

In its entirety, North’s approach may not help much in a study where organizational actors are considered as agents of change, but the relevance of the institutional environment (created by political legitimacy) for the organizational actors cannot be underestimated. Therefore, his work has indirect implications for institutional change through the political and economic conditions set at state level.

In conclusion, one can argue that in the absence of a “homo transaction cost economicus”, TCE assumes an institutional environment that emphasizes the achieving of efficiency as primary motive for action. This is especially the case in market relations; but TCE provides little evidence that relations within organizations and between people are governed by the same principles. For many applications of TCE this poses no problem, as it does not seek to describe or explain relations at such a low level. However, to this thesis, it does pose a problem, because here there is a need to take into account the wider institutional environment so as to provide a richer image of management change at the level of organizational actors.

Therefore, the discussion will shift the focus to a set of theoretical principles that allows assessment of the effects of a wider range of externally induced preferences in the organizational setting.

TCE emphasizes the legally sanctioned role of institutions, but institutions have a broader effect on organizations *and* its participants. An institution may not only constrain the action choices of agents but it can also “enable” the bounded-rational agents to economize on the information processing needed for decision making (Aoki, 2000). Institutions do not only constrain options, they establish the very criteria by which people discover their preferences (DiMaggio and Powell, 1991). NIE describes processes of structural co-ordination with the purpose to affect transactions as efficiently as possible (minimizing costs of transaction). As such, the following features make the TCE variant of NIE theory unsuitable for the purpose of this thesis: the provision of an explanation for the adoption of ESOs in Germany. TCE assumes that a drive for efficiency comes either from a natural propensity of people to act as efficiently as possible or from economic pressures. These assumptions cannot be used for this work, as there is need to explore which institutional influences and actors determine the possibility for change.

Moreover, the unit of analysis of TCE is the transaction, and individual behaviours are simplified to accommodate the analysis of transactions. The current study is interested

in the interactions between actors before and during a process of management change. For this purpose, the simplified individual will not do.

TCE is not a process theory. By this, is meant that TCE does not describe the processes by which organizations change. Rather, it identifies an optimal governance structure for a given configuration of asset specificity, frequency of transactions and uncertainty. It does not address *how* the organization arrives at the desired governance structure.

Furthermore, the economic rationality assumed by TCE may not hold when interactions within specific social groups are studied, since rationality is an institutional phenomenon, not a universal property of human action. As DiMaggio and Powell (1991: 10) note: “the very notion of rational choice reflects modern secular rituals and myths that constitute and constrain legitimate action.” These rituals constitute rules of acceptable means to desirable ends: “modern societies are filled with institutional rules which function as myths depicting various formal structures as rational means to the attainment of desirable ends” (Meyer and Rowan, 1977: 46). These last quotes belong to the domain of NIS, a theory that uses a different concept of institutions and their role in society. The next section discusses New Institutional Sociology.

3.3 New Institutional Sociology

Most social analysis has been built upon two distinct models of organisational actors: the rational actor model and the institutional model (Tolbert and Zucker, 1996; Pfeffer, 1981). The rational actor model assumes the individual to be a rational decision maker, constantly engaged in the calculation of costs and beliefs from alternatives. As such, the rational actor tries to make optimal decisions. The institutional model assumes an “over-socialised” individual whose decisions are mainly influenced by prevailing social norms, and not by any reflection or resistance based on personal interest. This model resembles the decision model discussed by Pettigrew, Ferlie and McKee (1992: 15) who argue that actions can be seen as “politically and socially approved tokens of concern”. Tolbert and Zucker (1996: 176) propose that these two general models of the individual

(overly rational vs “over-socialised”) should not be seen as two opposing views, but rather as two ends of a continuum of decision-making processes and behaviours. They note that what is needed “are theories of *when* rationality is likely to be more or less bounded”.

NIS addresses the behaviour of organisations as motivated by forces in wider society. It argues that organisations will seek legitimacy by adhering to rules and norms that are valued by society and, more specifically, by certain institutions in society. The mechanism through which organisations adopt similar procedures is termed *institutional isomorphism*, which is “a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions” (DiMaggio and Powell, 1983: 149). Early NIS theorists sought to explain how different organisations in many respects, conformed to similar standards of behaviour and how they employed similar structures. Moreover, they sought to explain the stability in these standards of behaviour and organisational structures.

3.3.1 Institutional Isomorphism

Early views of isomorphism (e.g. Hawley, 1968) argue that distinguishable differences in environmental features tend to lead to different optimal organisational structures and practices (Hannan and Freeman, 1977). As a result, one can find similar organisational configurations in similar environments. The earlier ideas on isomorphism regarded the environment as static and homogeneous. However, Hannan and Freeman (1977) suggested significant extensions to these views, which provided more clarity on the processes of competition that drive organisations to adopt “optimal” organisational configurations. Furthermore, they propose refinements that suggest that organisations face competing demands from various and changing environments. Nevertheless, Hannan and Freeman (1977) continued to assume a system of rationality, which encompasses measures of economic fitness and market competition (DiMaggio and Powell, 1983). They were primarily interested in competitive isomorphism, which is mostly concerned with organisational adaptation as a result of competitive pressures. On the other hand, DiMaggio and Powell (1983) were primarily interested in

institutional isomorphism. Institutional isomorphism, which is the domain of NIS, emphasises that organisations do not only compete for resources, but also for political influence and institutional legitimacy. It points to the influence of political power and ceremonies that are aimed at increasing legitimacy of the organisation (Meyer and Rowan, 1977).

Meyer and Rowan (1977) argue that, as large rationalised organisations expand their dominance over other domains of social life, organisational structures have come to reflect these rationalised and institutionalised rules of society. Berger and Luckmann (1977) have asserted that society imposes an objectified reality upon individuals, based on these institutionalised rules. “All institutions appear in the same way, as given, unalterable and self-evident” (Berger and Luckmann, 1979:77). They appear to be undeniable facts, although institutions are human made. Individuals are confronted with an objective structure of facts presented to them on a day-to-day basis (Weber, 1976). The rules of society are presented to the individual as unchangeable objective facts and the application of these rules is a routine matter, according to the established norms of rationality. “The rational thought process spreads and becomes ingrained in the decision making process. If this accurately describes economic action, then rational behaviour is a learned response rather than innate organic behaviour” (Raines and Jung, 1992).

Meyer and Rowan (1977) argue that rationalised institutions create myths of formal structure, which shape organisations and Scott (1987: 506) uses the example of schools to argue that “much of the orderliness of and coherence present in American schools is based upon institutionally defined beliefs rather than on organisational structures.”

DiMaggio and Powell (1983) distinguish three mechanisms of institutional isomorphic change: coercive isomorphism, mimetic isomorphism, and normative isomorphism. These three mechanisms cause organisations to become increasingly alike. It can be argued, therefore, that NIS is more of a theory that explains similarity amongst organisational structures than differences between, and change within, organisations

(Greenwood and Hinings, 1996). A discussion of these mechanisms of institutional isomorphism is made in the following subsections.

3.3.1.1 Coercive Isomorphism

Coercive isomorphism relates to the formal and informal pressures that result from coercive authority. This coercive authority comes from the organisation's dependency on other organisations and the societal expectations from the environment in which the organisation operates (DiMaggio and Powell, 1983). Organisations may alter some of their structural features or practices quite directly as a result of changing legislation, but they can also change more organically in response to changing societal preferences. DiMaggio and Powell (1983) and Meyer and Rowan (1977) argue that these organisational re-configurations can be in large part ceremonial, but that does not mean that they are inconsequential. Rather, they convey the message to the various stakeholders in the organisation that the organisation is responsive to the preferences of the society in which it operates. This adherence to societal preferences helps the organisation to secure economic resources, influence and power.

3.3.1.2 Mimetic Isomorphism

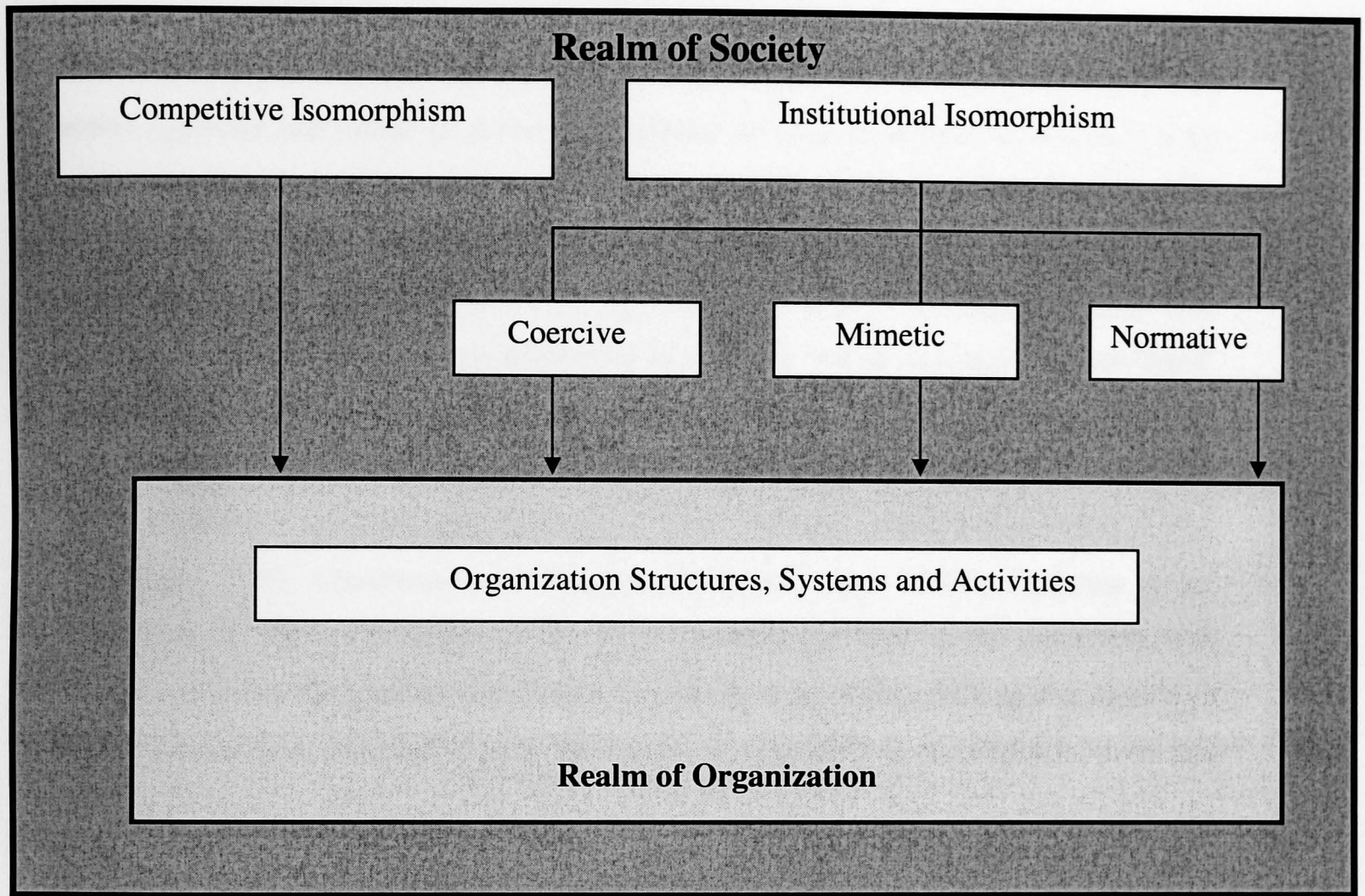
A second process leading to institutional isomorphism is mimetic isomorphism. DiMaggio and Powell (1983) argue that uncertainty is a powerful incentive for imitation. In particular, ambiguous goals, poorly understood technologies or symbolic uncertainty may cause organisations to model themselves on other organisations. The introduction of Japanese management techniques in US firms in the 1990s constitutes an example of changes caused by mimetic isomorphism. American firms observed the successes of Japanese manufacturing industries and introduced their understanding of the techniques used by the Japanese firms. In addition, DiMaggio and Powell (1983) argue that one of the reasons that organisational structures tend to be homogeneous is that there are not many different models to imitate.

3.3.1.3 Normative Isomorphism

The third source of isomorphic organisational change is normative isomorphism. It stems from pressures from professionalization. DiMaggio and Powell (1983) argue that two aspects of normative isomorphism are of particular interest: the grounding of formal education and of legitimation on a cognitive base produced by university specialists, and the growth and influence of professional networks that allow new practices to be diffused rapidly across organisations. Universities function as knowledge centres that influence the development of professional norms and values for organisations. As such, they promote normative standards that make professionals comparable; i.e. their behaviours can be measured against these normatively determined standards. Examples are professional associations for accountants, medics and lawyers. These professionals have strong ties with their professional bodies, which determine the criteria for “proper” and professional behaviour (Greenwood and Hinings, 2002). These criteria are strongly influenced by universities and professional training centres. “To the extent managers and key staff are drawn from the same universities and filtered on a common set of attributes, they will 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” (DiMaggio and Powell, 1991: 72). Normative isomorphism related to professional managers focuses our attention on the norms and values embedded in the act of management. Managers operate in a set of roles, a web of relationships with internal and external groups and individuals. They are constrained by their own structure of reality, which is influenced by normative pressures and accepted ideas on “proper” behaviour (Berger and Luckmann, 1979; Pettigrew *et al.*, 1992; Javidan and Dastmalchian, 1993).

Figure 3.1 below, shows the mechanisms and the drivers of homogeneity in organizational forms and practices from NIS view:

Figure 3.1: Drivers of homogeneity in organizational forms



3.3.2 Criticisms of NIS

Nevertheless, despite its current vogue in organizational analysis, NIS is not without problems. Perrow (1991) depicts it as a theory full of contradictions and Scott (1987) conceded that it was still in its “adolescence” with recent work showing that it has reached “maturity” (Scott, 2006) negatively implying that it has lost its vigour. Amongst other things, there are three inter-related concerns:

3.3.2.1 Neglect of Power Issues and Actors' Interest-Based Behaviour

NIS is frequently criticised for its deterministic nature and its neglect of the role of active agencies and issues of power and interest at intra-organizational (micro-) level (Carmona, Ezzamel and Gutiérrez, 1998). The concern expressed by Powell (1991: 194) is that NIS “portrays organizations too passively and depicts environments as overly constraining”, (see also Collier, 2001: 466; Oliver, 1992). According to Zucker, NIS researchers risk treating institutionalisation as a “black box at the organizational level” without solid cognitive micro-level foundations (Zucker, 1991: 105) (see also DiMaggio and Powell, 1991a; Covaleski and Dirsmith, 1988; Dirsmith, Heian and Covaleski, 1997; Covaleski, Dirsmith and Michelman, 1993; Perrow, 1986; Oliver, 1991, 1992; Carruthers, 1995; Greenwood and Hinings, 1996; DiMaggio, 1988; Carmona *et al.*, 1998; Powell, 1991). Carruthers (1995: 325) also adds that NIS “is too concerned with culture and taken-for-granted meanings to be able to discern the conflicts that abound in organizational life, and that to focus on myth and ceremony is to overlook power and control.”

3.3.2.2 Failure to Explain Processes of Organizational Change

Critics of NIS argue that it precludes inquiry into what causes organizations to challenge, discard or abandon institutionalised procedures (Oliver, 1992). The focus of NIS is on the study of persistence rather than understanding organizational change. Hence, NIS is pointless for the study of the processes of organizational change (Genschel, 1997), and offers not “much guidance regarding change” (Ledford, Mohrman and Lawler, 1989). Similarly, Greenwood and Hinings (1996) argue that the theory is weak in analysing the internal dynamics of organizational change. The same authors add “institutional theory is not usually regarded as a theory of organizational change, but usually as an explanation of the similarity (“isomorphism”) and stability of organizational arrangements in a given population or field of organizations” (1996, 1996: 1023). Likewise, Buchko (1994: 90) comments that institutional pressures are “a

powerful force” against transformational change, (see also Carmona *et al.*, 1998; Greenwood and Hinings, 1996; Oliver, 1992; DiMaggio and Powell, 1991a; Genschel, 1997). Collier (2001) also criticises NIS due to its inability, at an organizational level of analysis, to provide a theory as to how these competing interests can be accommodated or reconciled by management.

3.3.2.3 Failure to Explain Internal Generation of Institutionalized Forms

The theory does not consider the path of change in organizational realm (micro level); rather it focuses on change at an extra-organizational (or macro) level (Abernethy and Chua, 1996: 572). Scott (1991: 165) argues that the focus of the theory is on “examining the effects of institutional environments on organizational structures rather than with examining the internal generation of institutionalized forms within organizations”. He, for example, criticises Selznick’s (1949) work as “largely definitional rather than explanatory: he defined and described the process but did not explicitly account for it. His treatment of institutionalisation informs us that values are instilled; not *how* this occurs” (Scott, 1987: 495). Abernethy and Chua (1996: 572) echo that view, stating that the theory provides only limited insight into “institutionalization in the making” (as opposed to institutionalisation as an achieved state) and deinstitutionalization processes (DiMaggio, 1988). “That is, it does not provide an adequate answer to the question, how do new values and beliefs take root and supplant earlier norms?” These criticisms indicate that the NIS suffers from “inadequate consideration of the relationship between environment/institutional determinism and cultural and political factors within organizations (see Child, 1972; Abernethy and Chua, 1996). Therefore, for institutional theory to fulfil its promise for organizational studies, researchers must develop dynamic models of institutions (see Whittington, 1992) and devise methodologies for investigating how organizational actions/innovations and environmental institutions are recursively related (Barley and Tolbert, 1997). In so doing, Scott (1987) has pointed out that NIS needs to be complemented by other perspectives.

3.3.3 Recent Developments in NIS: Towards a Theory of Institutional Change

Section 3.3.2 discussed the shortcomings of NIS, particularly that: NIS was originally a theory more concerned with explaining stability than change; consequently failing to explain how institutionally-constrained actors can challenge and change those institutions. More recently, however, NIS theorists have made several attempts to extend NIS theory to cope with these problems.

Oliver (1991) introduced a degree of wilfulness on the part of the institutionally-constrained actors. She discusses the various strategies that an organisation can deploy in response to institutional pressures. She therefore questions the notion of institutional determinism, as she argues that people can make attempts to resist institutional pressures. She proposes that institutions do not cause a course of action to be selected, but rather there are variables in a selection process of alternative strategies that constitute varying degrees of active resistance to institutional pressures. Oliver (1991) argues that organizations do not only acquiesce to external pressures, but may also compromise, avoid, defy or manipulate depending on the type and nature of external pressures. In her argument, Oliver (1991) turned to resource dependency theory because of its focus on the role of the individual firm, and the different types of short-term pressures that causes a firm to react to external interests (e.g. shareholders, government agencies, interests groups, etc). The task, as Oliver saw it, was to merge institutional theory with resource dependency's insights that some firms will respond according to individual self-interest, even if against dominant civil society values, while others will acquiesce.

Baum and Oliver (1996) combined ecological and institutional explanations for organisational action to combine institutional arguments with resource dependency arguments. The advantage of this view is that it allows the combination of institutional pressures and also purposeful economic action, while earlier NIS theories largely ignored this type of action. Oliver (1992) sketched the outlines of a theory that addresses the way in which institutionally constrained people are able to bring about

institutional change. She focused on the determinants of institutional erosion, dissipation and rejection. Instead of NIS's emphasis on cultural persistence, she studied the factors that affect deinstitutionalisation, and thus she created the basis for a theory based on NIS, which can explain change, as opposed to NIS's earlier focus on stability.

Roberts and Greenwood (1997) used a process-based view, but they proposed a synthesis of NIS and NIE. They used the foundations of NIE, consisting of the notion of comparative-efficiency in design selection as a starting point. This type of design selection means that an organizational design will be adopted; based on the expected improvements it will bring to the efficiency of the organization. Roberts and Greenwood (1997) adapted this view to include institutional pressures and constraints that influence this selection process.

The early NIS pioneers had discussed institutions primarily in terms of stable organizational structures that reflect institutionalized beliefs about legitimate and rational processes and structures. As Oliver (1992: 564) notes: "...the emphasis in the institutional literature on legitimation processes, organizational conformity and enduring organizational change has tended to preclude inquiry into the factors that cause organizations to challenge, discard or abandon legitimated or institutionalized organizational practices". Since then, different authors have tried to expand NIS to include explanations of change. The authors discussed here have in common that they attempted to introduce a process-based view of institutional change. Oliver (1992) and Greenwood and Hinings (1996) studied the processes of institutional change using a theoretical framework that is grounded in NIS reasoning, but that also includes insights from OIE. Roberts and Greenwood (1997) combine insights from NIS and NIE to provide a process-based view of organizational design selection.

However, these efforts have still not addressed the position of individuals in these processes or the effects of institutions on the actions of individuals. The frameworks discussed here remain quite impersonal, as they do not address the link between individual action and the wider institutional environment, nor do they clarify the role of

the individual in institutional change. The later NIS-inspired articles have, however, provided some valuable insights in the process of institutional change, and the work of Greenwood and Hinings (1996) and Hinings, Greenwood, Reay and Suddaby, (2004) is particularly interesting as it studied the dynamics of institutional change by combining viewpoints from NIS and OIE. Whereas NIS emphasised persistence, OIE uses changes in social entities as a starting point. Therefore, the next section will discuss the principles of OIE in more detail.

3.4 Old Institutional Economics

This section addresses Old Institutional Economics (OIE). This “theory” emerged early in the twentieth century, and is the oldest theory of the three discussed in this chapter. OIE grew out of dissatisfaction with existing economic theory. Its proponents, such as Veblen, Ayrens and Commons, were critical about the assumptions of mainstream economics, and coalesced around the radical *Journal of Economic Issues*. In particular, assumptions relating to the presumed rationality of economic actors and the concept of equilibrium conditions are challenged by OIE, arguing that individuals’ behaviour and the mechanism of the market are both significantly influenced by the institutional context. OIE theorizing revolves around common beliefs, norms and values that bind together action patterns. As such it provides additional explanations for human action, apart from those proposed by “traditional” economics.

OIE is not a clearly delineated theory. Rather, it is a collection of ideas that Hodgson (2000: 318) describes as follows:

- (1) Although institutional economists are keen to give their theories practical relevance, institutionalism itself is not defined in terms of any policy proposals.
- (2) Institutionalism makes extensive use of ideas and data from other disciplines, such as psychology, sociology and anthropology in order to develop a richer analysis of institutions and human behaviour.

(3) Institutions are the key elements of any economy, and thus a major task for economists is to study institutions and the processes of institutional conservation, innovation and change.

(4) The economy is an open and evolving system, situated in a natural environment, affected by technological changes, and embedded in a broader set of social, cultural, political and power relationships.

(5) The notion of individual agents as utility-maximizing is regarded as inadequate or erroneous. Institutionalism does not take the individual as given. Individuals are affected by their institutional and cultural situations.

These general principles of economic action are clearly different from those belonging to “traditional” economic theory. With regards to human behaviour, OIE is situated between transaction economics, that provides an under-socialized account of human behaviour, and institutional sociology that arguably provides an over-socialized account of behaviour (Granovetter, 1985; Roberts and Greenwood, 1997). OIE maintains that human action is constrained by institutions, but it also recognizes that institutions enable people to come to meaningful action. For example, Sjöstrand (1993) regards institutions as infrastructures for human action. In OIE, institutions can be either formal or informal. Formal institutions are grounded in existing procedures, manuals and formal rules. Informal institutions do not have a formalized basis, but they have rule-like status due to the perceptions that these institutionalized practices, “have always been done that way.” OIE emphasizes that institutions appear unalterable and permanent. This is partly, because they tend to be self-reinforcing. As noted above, institutions constrain actions to those that fit the tacit assumptions that are part of the institution. Sjöstrand (1995) argues that institutions are constituted by and reinforced through social (inter)actions. Moreover, OIE argues that institutions are not independent of the individuals that inhabit the various social settings; rather, institutions exist through behaviours of these individuals. As such, there must be some distinguishable relation between institutions and individual action. In this, OIE differs from the other approaches discussed in this chapter. Both NIE and NIS assume that institutions exist independently from individual behaviour. OIE sees individual behaviour as an integral part of the institutions that

govern much of social life: “institutions simplify action choices; they are not separate from, but are part of, the individual (inter)actions” (Sjöstrand, 1995: 21).

However, although OIE recognizes the relation between institutions and individual behaviour, it does not pursue a detailed explanation of this relation or the processes leading to changes in institutionally induced behaviours.

Moreover, with its emphasis on the self-reinforcing qualities of institutions, OIE is not particularly sensitive to questions related to the source of change. If people perceive each other's actions and behaviours in terms of the institutions common to their social group, how can change ever occur? In fact, two problems related to OIE that are relevant for this thesis are discussed next.

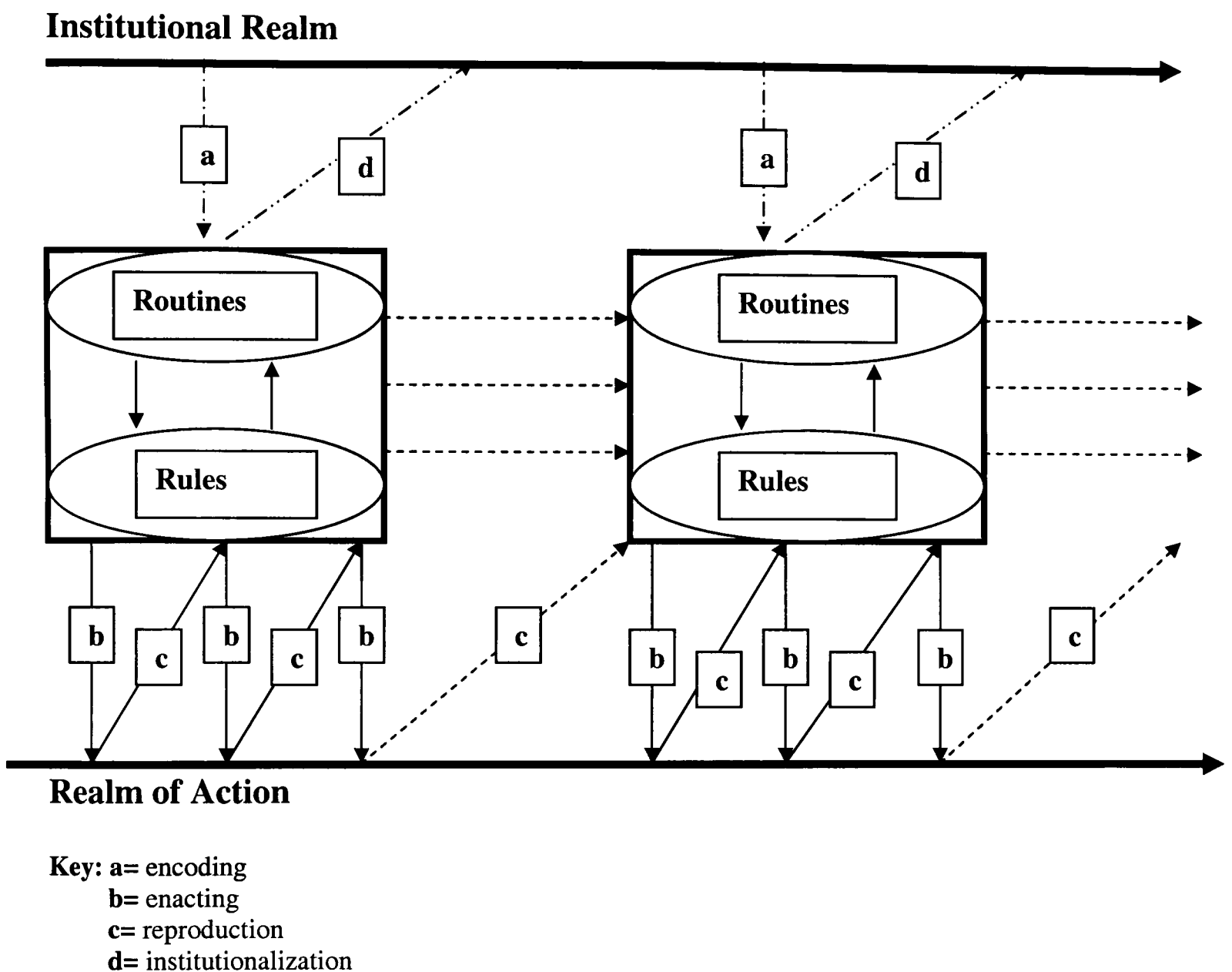
The first problem related to OIE, is that it does not provide insights into the drivers for institutional change. OIE assumes institutions to be present, but it does not clarify when people come to that conscious recognition that institutional arrangements are no longer adequate. In other words, it does not clarify when individuals come to the collective recognition that something needs to change (Seo and Creed, 2002). Here, the concern regarding limitation of OIE stems from its insufficient attention to environmental pressures, as its focus is primarily on micro-level institutions.

The second problem related to the usefulness of OIE to this thesis is that OIE as a set of theories does not provide an explanation or detailed description of the relation between individual action and the presence of institutions. It provides an alternative to the assumption of the economically rational actor, and it outlines some of the influences on human (inter)action, other than an all-consuming desire to gain welfare or a mindless adherence to external institutional pressures. But it does not clarify how processes of institutional change proceed on a micro level.

However, in the last decade, a number of authors have used the principles of OIE to come to an explanation of institutional change (e.g. Barley and Tolbert, 1997; Burns

and Scapens, 2000). Barley and Tolbert (1997) argue that institutions are encoded in behavioural regularities or “scripts” (“Observable, recurrent activities and patterns of interaction characteristic of a particular setting” p98) that are enacted in “the realm of action.” Actions can replicate or revise these behavioural regularities. Finally, these regularities can be externalized in the institutional realm, meaning that these behaviours are rendered independent from the particular circumstances of their conception. They have become “just the way things are.” Basically, Barley and Tolbert argue that institutional change can occur through alterations in behavioural regularities over time. These regularities thus constitute and are constituted by institutions. Basically, changes in scripts can cause changes in institutions. Barley and Tolbert (1997) conceptualized behavioural regularities by the notion of scripts, while Burns and Scapens (2000) have focused on rules (formal rules and procedures) and routines (actual behavioural patterns). Burns and Scapens (2000) have explicitly modeled how the interdependence between action and structure (*i.e.* at intra-organizational level) may lead to institutional change. This is depicted graphically in Figure 3.2 below.

Figure 3.2: A Framework of Institutionalization



(Adapted from Burns and Scapens, 2000: 9)

To explain the framework of institutionalization of new systems and practices, it is important to realize that from an OIE perspective, there are institutional and action realms. “Whereas institutions constrain and shape action *synchronously* (i.e. at a specific point in time), actions produce and reproduce institutions *diachronically* (i.e. through their cumulative influence over time)” (Burns and Scapens, 2000: 10). From Figure 3.2 synchronic and diachronic elements are combined. However, change processes in the institutional realm occur over longer periods of time than change in the

realm of action. The top of the figure represents the institutional realm, whereas the bottom represents the realm of action. Both realms are ongoing in a cumulative process of change through time, as represented by the solid lines at the top and bottom of the Figure 3.2.

The central part of Figure 3.2 illustrates the way in which rules and routines act as the modalities which link the institutional realm and the realm of action. Rules and routines are also in a cumulative process of change, as will be described below. However, from time-to-time new rules and routines may be introduced or emerge in a more discrete way. The four arrows (*a-d*) represent the synchronic (*a and b*) and diachronic processes (*c and d*). Arrow *a* shows the *encoding* of the existing institution, taken-for-granted assumptions, and meanings into new rules, routines and procedures, that embody organizational values. This means that new rules or procedures are usually interpreted in terms of the current norms and values of the group which uses the system.

Arrow *b* is related to individuals' behaviour when enacting these new rules, routines and procedures which embody deep values. These rules are enacted when organizational members use them in their daily ongoing activities. The way these rules are enacted depends on existing institutions. Burns and Scapens (2000) argue that the successful enactment of the new rules depends on whether the norms and values underpinning them are in line or compatible with the norms and values of those who will enact or implement them. However, the process of enactment, especially if the rules and routines challenge existing meanings and values, and actors or individuals have sufficient resources of power to intervene in this process, can be subject to resistance (Burns and Scapens, 2000). In other words, there could be resistance if the new rules require a different way of thinking and doing things in the organization. The new system might not be considered as legitimate and organizational conflict could arise due to the implementation of new practices.

The third step (arrow *c*) takes place as repeated behaviour leads to a *reproduction* of routines. This constitutes part of the continuous process of social validation that for

some specific values embedded in rules and routines will lead to a further transformation in shared taken-for-granted assumptions. Such transformation (arrow d) involves the institutionalization of the values (embodied and embedded in rules and routines) which have been reproduced through the behaviour of the individual actors. Such institutionalized rules and routines become “taken-for-granted ways of behaving... They become the unquestioned way of doing things,” (Burns and Scapens, 2000).

However, this framework is not perfect. For example, it does not specify how human agency takes its form. How do people organize themselves to come to coordinated action that has the potential to alter the institutional arrangements in their social setting? How does the interaction between rules and routines manifest itself to an employee in an organization? How does the institutionalization of rules and routines work? These are questions that relate to the role of human agency in institutional theory. Burns and Scapens (2000) offer a framework to assess the process of institutional change. But “the framework is offered as a starting point for researchers interested in studying management change, and through such studies, the framework will be extended and refined” (Burns and Scapens, 2000: 3).

So far, the thesis has argued that OIE allows for a more comprehensive conceptualization of the individual actor than NIE, which focuses on impersonal transactions. OIE allows us to abandon the “traditional” view of the individual. NIS emphasizes legitimacy as the motivation for much human action, but this resulted in the criticism that NIS theory depends on an over-socialized individual who disregards efficiency considerations (Granovetter, 1985). Moreover, NIS theory is primarily concerned with organizations and societies as the unit of analysis; institutions are regarded as external to organizational participants. OIE may provide a solution to these problems. However, there are two difficulties associated with OIE theories that are not resolved by the OIE-inspired literature: (1) OIE does not provide any insights into what causes people to recognize the inadequacy of institutions; or put differently: where institutional change comes from; and (2) OIE does not provide explanations of agency in the process of institutional change; the role of individual behaviours therein.

It therefore appears that NIS and OIE theories provide complementary insights. Both share the premise that action is largely organized by institutions, widely held definitions of the behaviour and relationships appropriate for a set of actors.

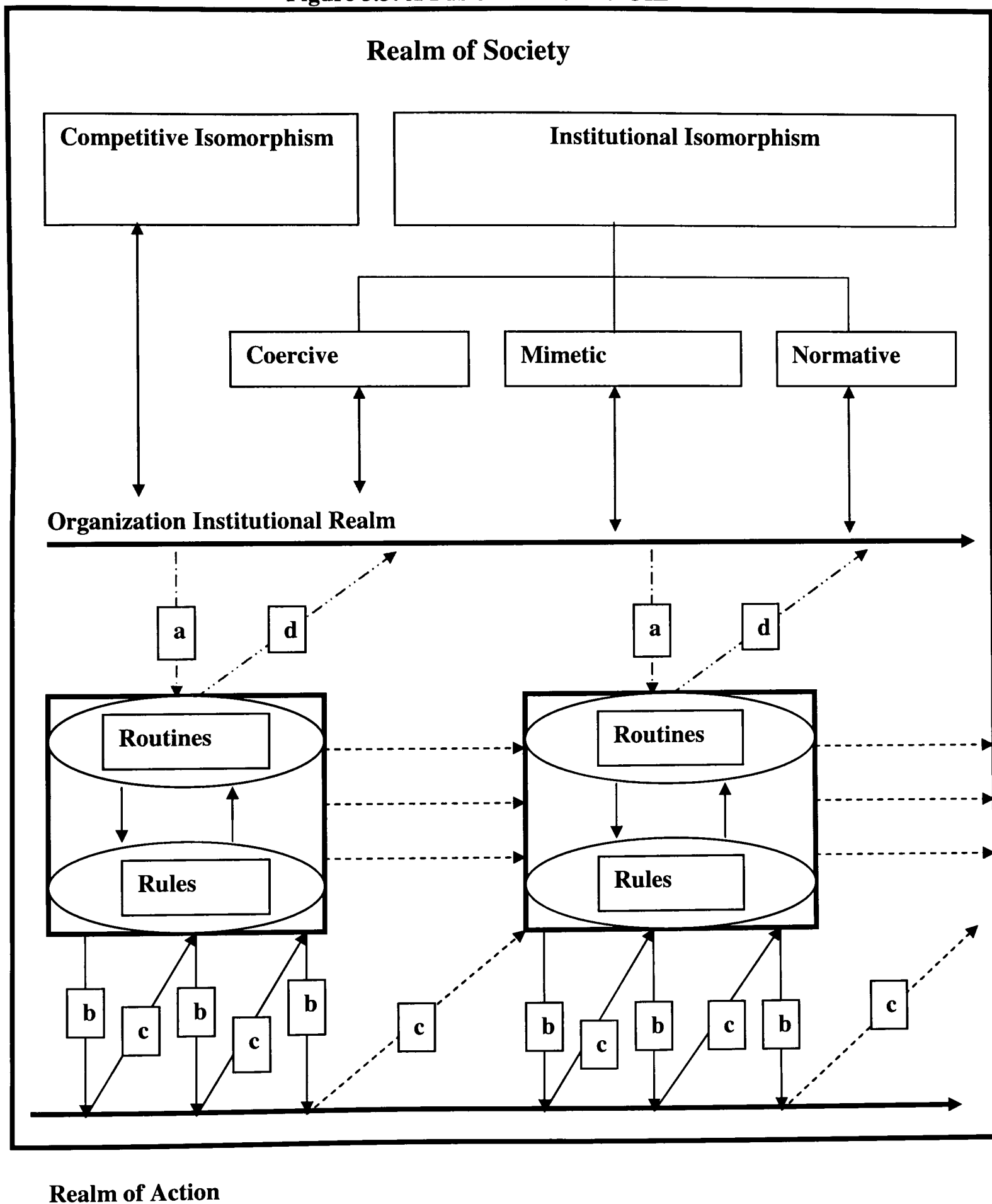
Therefore, to extend the scope and enhance understanding of organizational behaviour and action, there appears to be a need for a combined framework drawn from the two theories. The next section, therefore, discusses the fusion of NIS and OIE.

3.5 Bringing OIE and NIS Together

Greenwood and Hinings (1996) extended the significant synthesising work of Oliver (1992). They proposed a framework of radical change in which they bridge NIS and OIE. They model organisational change as a series of processes that are influenced by the institutional context. As such, they introduced a view that perceives organisational change as a complex process that is not only affected by institutional pressures, but also by the rationality of the market context in which firms operate. Similar to Baum and Oliver (1996), Greenwood and Hinings (1996) proposed that institutional pressures do not prevent actors from acting reflectively, but rather that change consists of a web of different processes that affect the outcomes of change. Siti-Nabiha and Scapens (2005) presented a theoretical framework that retains an OIE perspective, but also addresses issues that used to belong to the NIS domain such as decoupling. They did so by addressing the processes of change, focusing on both internal and external institutional influences.

Figure 3.1 has shown how the external environment dictates organizational behaviour using a NIS lens, and Figure 3.2 showed how institutions are formed within the organization through repetitive actions by actors. A fusion of NIS and OIE using the aforementioned frameworks is now represented by Figure 3.3 below.

Figure 3.3: A Fusion of NIS and OIE



The framework above conveys the message of a two-way interaction between the environment and organizations. This is in line with the stress made by some contributors that a firm's internal structure, systems and practices might shape external rules, rather than merely represent such firm-level structures and processes as passive reactors to external stimuli (Burns, 2000b). The combined institutional framework reveals mechanisms through which society level rules and myths through time impinge the intra-organization activities and come to underpin a firm's specific know-how or memory. It also helps explain how an organization's systems and practices, whose origins lie outside the organization, may come to be embedded within the company and create reality (Scott, 1987) in which the extra-organization's expectations of appropriate organizational forms, systems and behaviour come to take on rule-like status in thought and action (Covaleski and Dirsmith, 1988).

Furthermore, and most importantly, the framework highlights the role of intra-organizations factors in the adoption, implementation or possible resistance and rejection of the new systems. Being able to accommodate both extra- and intra-organizational factors in analysing organizational behaviours and actions, the framework is suitable to conceptualise how organizational and environmental factors interact.

Thus, to summarise this section, early NIS pioneers discussed institutions primarily in terms of stable organisational structures that reflect institutionalised beliefs about legitimate and rational processes and structures. As Oliver (1992: 564) notes: "...the emphasis in the institutional literature on legitimation processes, organisational conformity and enduring organisational change has tended to preclude inquiry into the factors that cause organisations to challenge, discard or abandon legitimated or institutionalised organisational practice". Since then, different authors have tried to expand NIS to include explanations of change as a process. For example Oliver (1992) and Greenwood and Hinings (1996) studied the processes of institutional change using a theoretical framework that is grounded in NIS reasoning, but also includes insights from OIE.

Greenwood and Hinings (1996) do not only combine insights from NIS and OIE but explicitly show the enabling and precipitating factors of change within the firm as a result of external pressures from both the competitive and institutional environment. It is therefore the theorized framework by Greenwood and Hinings (1996), which they refer to as *neo-institutional theory* that is of great interest in this thesis and thus receives detailed attention in the next section. Consequently, hypotheses (Chapter 4) will be developed from this framework.

3.6 Neo-Institutional Theory and Organizational Change

Thus, from the discussion above, organizational responses during periods of extreme institutional change are not well understood (Newman 2000). From their political science perspective, Hall and Gingerich (2001) emphasize the interdependence of governance institutions and the way that different institutions mutually reinforce each other, resisting change. However, in the face of empirically observable, wide-ranging change in core institutional arrangements, analysts have begun to question whether institutional complementarity really is as strong as believed by the earlier approaches or whether discrete institutions may change independently from the rest (Thelen 2000; Lane, 2000; Vitols, 2001; Morgan and Kubo, 2002). Some scholars (e.g. Dougherty, 1994; Greenwood and Hinings, 1996) have declared that the theory has an excellent basis for an account of change. Thus, neo-institutional theory has developed a new focus that considers the possibility of change beyond ideas of inertia and persistence (Greenwood and Hinings, 1996).

Indeed, in discussing radical change, Greenwood and Hinings (1996: 1023) observe that neo-institutional theory is “silent on why some organizations adopt radical change whereas others do not, despite experiencing the same institutional pressures”. How do organizations react when there is a wholesale change in their external institutional environment? Neo-institutional theory attempts to answer this question by suggesting that the response of organizations will be determined by the nature and *degree of their*

embeddedness within societal and organizational contexts (Ahmadjian and Robbins, 2005).

In a similar fashion, Greenwood and Hinings (1996) argue that despite criticisms to the contrary, neo-institutional theory contains insights and suggestions that, when elaborated, provide a model of change that links the external organizational context and intra-organizational dynamics. They accept that a major source of organizational resistance to change derives from the embeddedness of an organization within its institutional context - the underpinning notion of NIS. Greenwood and Hinings (1996) further argue that the incidence of radical change, and the pace by which such change occurs, varies across institutional sectors, as these institutional sectors have different structures and because organizations vary in their internal organizational dynamics. Thus, the manner in which organizations respond to institutional pressures, in so far as the choice of radical change and pace of change is a function of these internal organizational dynamics.

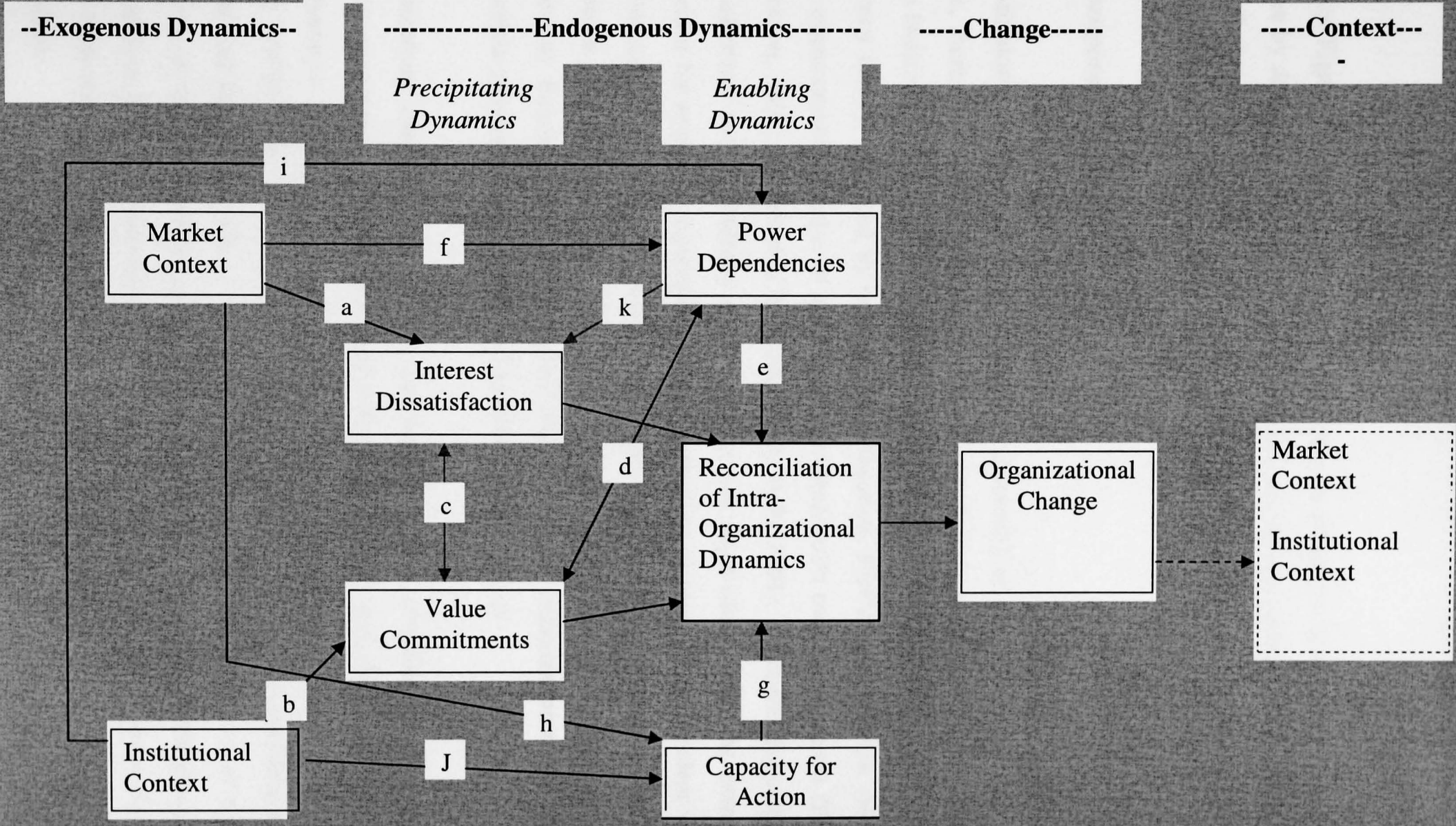
The following sections discuss these intra-organizational dynamics which (when taken as complementary or an improvement to the insights of institutional theory in general) explain how organizations react differently, through their internal actors, to changes in their external institutional and competitive environments.

3.7 Intra-Organizational Dynamics

Intra-organizational dynamics as discussed earlier help to explain how organizations respond to institutional pressures. Four aspects of an organization's internal dynamics are: interests, values, power dependencies and capacity for action (Greenwood and Hinings, 1996). The role of intra-organizational dynamics in accepting or rejecting institutionalised practices has long been recognised (DiMaggio and Powell, 1991). DiMaggio and Powell (1991a: 27) suspected that "something has been lost in the shift from the old to the new institutionalism" and "the goal must be a sounder multidimensional theory, rather than a one-sidedly cognitive one." They acknowledge that "power and interests have been slighted topics in institutional analysis" (1991a: 30).

For this thesis, in attempting to understand organizational change, the model below at Figure 3.4, developed from Greenwood and Hinings (1996), is used.

Figure 3.4 – Model of Organizational Change:



Adapted from: Greenwood and Hinings (1996)

Shown on Figure 3.4 are exogenous and endogenous dynamics. Exogenous dynamics which are by definition external to the organization are *market context* and *institutional context*. Endogenous dynamics operating within the organization are interests, values, power dependencies and capacity for action.

3.7.1 Exogenous Dynamics

The institutional context has been extensively discussed above. The other external dynamic, market context, interacts with the intra-organisational dynamics in a manner that can fruitfully be analysed through the resource dependency theory lens. Resource dependency theory, proposed by organizational theorists, Pfeffer and Salancik (1978) explain organizations in terms of their interdependence with their environment (Pugh and Hickson, 1997; Pfeffer and Salancik, 1978; Daft, 2001). Resource dependency theory addresses the dependency relationship of one organization with the external environment for resources, conceptualizing organizations as being interdependent with their environment and other organizations in order to survive. As organizations are not self-directed and self-dependent (Pugh and Hickson, 1997), they need resources for their survival. Resource dependency, which varies from one organization to the next, has materials, personnel, information and technology as resources.

If organizations crucially lack any of these resources, their providers become more salient in governance, and the firm must effectively interact with those who control these resources (Pugh and Hickson, 1997; Ulrich and Barney, 1984). Pfeffer and Salancik (1978) think that interdependence with others lies in the availability of resources and demand for them. This interdependence may take the form of direct dependence of the seller organization or its customers or the mutual dependence of seller organs on potential customers for whom they compete (Pugh and Hickson, 1997). Without these resources, modern organizations face difficulty surviving in a competitive market place.

3.7.2 Endogenous Dynamics

As shown in Figure 3.4 endogenous (or within-firm) dynamics are further divided into *precipitating dynamics* and *enabling dynamics*. Interests and value commitments are precipitating dynamics and enabling dynamics are power dependencies and capacity for action.

By emphasising endogenous dynamics the importance of the internal complexity of organizations is clearly underlined. We add to Greenwood and Hinings (1996), by suggesting that the institutional perspective is not only relevant to exogenous dynamics, as institutions are also existent within the organization. Our argument is based on the definition of institutions, taken to be “the humanly devised constraints that structure human interaction” (North, 1990: 3). Under the following section of endogenous dynamics, the discussion will first address precipitating dynamics followed by enabling dynamics.

3.7.2.1 Interest Dissatisfaction and Value Commitments

Within an organization there are different groups that have diverse interests, and hence different perceptions of value. Specifically, this organizational differentiation enables the different groups to translate their interests into favourable allocations of scarce and valued organizational resources (Greenwood and Hinings, 1996). As Palmer, Jennings and Zhou (1993: 103) put it: “Organizations are ...arenas in which coalitions with different interests and capacities for influence vie for dominance.” Given, therefore, that interests translate into some form of acceptable value, a potential pressure for change or inertia is the extent to which groups are dissatisfied with how their interests are accommodated within an organization. A high measure of dissatisfaction may become a precipitating pressure for change (Covaleski and Dirsmith, 1988; Walsh, Hinings, Greenwood and Ranson, 1981). For example, a weak stock market performance may precipitate a shareholder revolt thus leading to a number of changes.

However, Greenwood and Hinings (1996) argue that dissatisfaction does not provide direction for change. “ Intense pressure for change arising from dissatisfaction with the accommodation of interests will not lead to radical change, unless dissatisfied groups recognize the connection between the prevailing template and their position of disadvantage” (Greenwood and Hinings, 1996: 1035). To understand one’s position of disadvantage, there must be awareness of an alternative template that could possibly make things right. What is therefore, important in explaining the possibility of radical change is the pattern of value commitments within an organization. Greenwood and Hinings (1996) identified four generic patterns, which are:

1. Status quo commitment, a situation where all groups are committed and satisfied with the prevailing institutionalized template in use. This will not facilitate radical change.
2. Indifferent commitment, a situation where groups are neither committed nor opposed to the template in use.
3. Competitive commitment, a situation where some groups support the template in use, whereas others prefer an articulated alternative. The articulated alternative would have its origins in the institutional context.
4. Reformative commitment, a situation where all groups are opposed to the template in use and prefer an articulated alternative. Change under these circumstances takes place with minimum resistance if any.

Greenwood and Hinings (1996) add that organizations will vary in their pattern of value commitments partly because of their different locations within the institutional sector. (*line b* in Figure 3.4). Leblebici, Salancik, Copay and King (1991) showed that more peripheral, and therefore less embedded, organizations (e.g. in terms of technology or size of firm) are less committed to prevailing practices and readier to develop new ones. They lack the intensity of commitment to the status quo found in firms that are more centrally located and embedded within the institutional field.

Interests and values are not independent precipitators in pressuring for change, but are in fact linked as shown in *line c* of Figure 3.4. Values can be taken for granted, thus

serving to silence expressions of dissatisfaction; as dissatisfied groups may fail to realise that they are worse off because of the template in use. “The role of value commitments is thus critical, because there is no direct link from interests to radical change, only from interests to convergent change” (Greenwood and Hinings, 1996: 1036). Radical change will occur only if interests become associated with a competitive or reformative pattern of value commitment (*line x* in Figure 3.4).

3.7.2.2 Capacity for Action and Power Dependencies

It has been shown above, that internal pressures for change come from interest dissatisfaction and the pattern of value commitments. The severity of those pressures is dependant on the interaction of precipitating dynamics with market and institutional contexts. However, Greenwood and Hinings (1996) assert that radical change will occur only in conjunction with an appropriate *capacity for action* and supportive *power dependencies*. Thus, capacity for action and power dependencies are the enablers of radical change. According to Clegg (1975), a political model of organizational change that starts from groups with different beliefs and interests, must incorporate power. Thus, as shown in the Figure 3.4 (*line k*) groups use power dependencies to promote their interests. “Change ...can only occur when either a new set of actors gains power or it is in the interest of those in power to alter the organization’s goals” (Fligstein, 1991: 313).

Some argue (e.g. Pettigrew, 1985; Ranson, Hinings, and Greenwood, 1980; Greenwood and Hinings 1996) that organizational groups vary in their ability to influence organizational change because different groups have different power to effect or resist change. Positions of power can be used to sustain or buttress the prevailing archetype (Covaleski and Dirsmith, 1988). The implication is that in a situation of a competitive pattern of value commitment, one cannot predict whether radical change would take place. The outcome would depend on whether those in position of privilege and power were in favour of the proposed change or not. Thus, power dependencies either enable or suppress radical organizational change (*line e*).

However, power dependencies are also influenced by their behaviour. For instance, one view from the resource dependency model (Pfeffer and Salancik, 1978) is that changes in market pressures can unsettle power dependencies within the organization, which then enable change. An important point is that shifts in power dependencies, whether brought about by market or institutional pressures, will produce radical change only if the dominant coalition recognizes the weaknesses of existing template arrangements and is aware of potential alternatives.

Most importantly, change cannot occur if the organization is unaware of the intended destination of that change. This transition process also involves organizational abilities, the skills and competencies needed to achieve and function within the new template. This process refers to capacity for action whose importance has been alluded to by a number of authors (Carnall, 1990; Clarke, 1994; Fombrun, 1992; Nadler and Tushman, 1989; Tichy, 1983). Capacity for action embraces different kinds of resources, financial, human and technological etc. It is for this reason that capacity for action is linked to the market context (*line h*).

Capacity for action is about how to manage the whole process of change from the beginning to the end; from the unwanted situation to the desired one. There is an implied recognition that there is a gap between the existing and the desired institutional arrangements and governance systems. This gap is about the degree to which institutions (e.g. structures, practices, legitimating actors) are not well defined and established as well as the inconsistencies between these institutions. This is the reason why capacity for action is an enabling dynamic. If the gap is wide, organizational members may lack the understanding of what the desired structures and values should be, as well as the expertise or capacity for action to change the organization.

In order to have a destination, there must have been a departure point. This departure point, referred to in this thesis as the *initial condition*, is determined by the strength, ingrained nature and pervasiveness of the institutional arrangements that existed prior to the radical change. Zucker (1991: 105) observes that “every institutionalized system

tends to carry “baggage” of related structures and activities that become institutionalized over time”. An unfavourable initial condition implies that the establishment of a new institutional arrangement will be very difficult. North (1990: 6) states, “although formal rules may change overnight as the result of political and judicial decisions, informal constraints embodied in customs, culture, traditions and codes of conduct are much more impervious to deliberate policies”.

The more ingrained and pervasive behaviours, routines and cognitive scripts are, the more difficult it will be to destroy them and replace them with a radically different set of scripts and behaviours. As observed by Oliver (1992: 580), “institutionalized values and activities will exhibit inevitable resistance to erosion or change”. She asserts that even if organization members recognize the need for change, or transition to a new set of values and activities, they may be immobilized by the previously institutionalized arrangements. However, actors creatively recombine and extend the institutional principles at their disposal (i.e. initial condition) to devise institutional solutions to their problems. In this sense, already existing institutions are enabling because they provide the technical and symbolic means with which actors build new institutions.

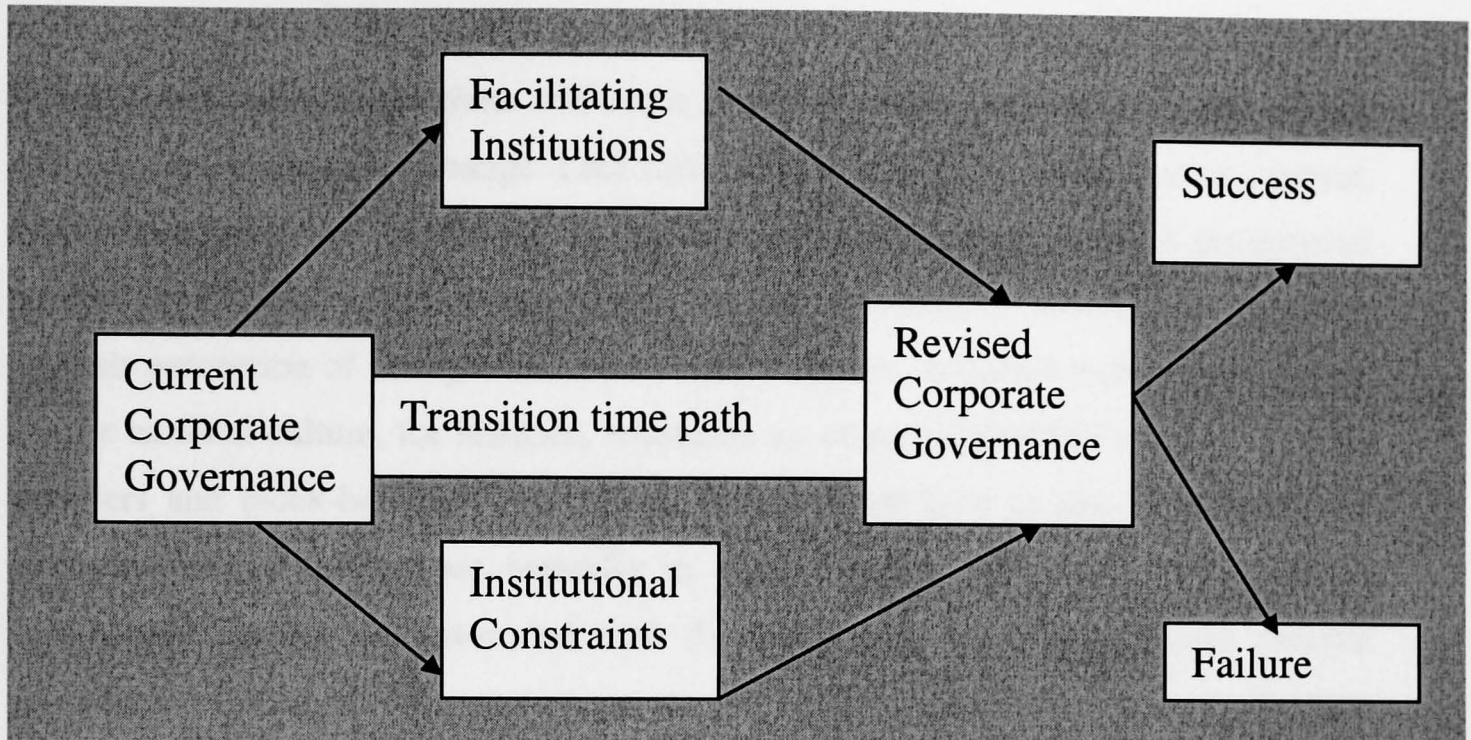
One way to make the initial condition favourable is to rid the firm of institutional hurdles, i.e. dismantle the old, deeply ingrained and widely shared and accepted templates. The problem is that institutional theory has not concentrated on the destruction of old structures but has given attention to the adoption of new ones. As Zucker (1991: 105) notes, “there has been little work on the processes by which institutions disappear”. Oliver (1992) introduced the notion of dissipation, a gradual deterioration in the acceptance and use of a particular institutionalized practice. Her framework involves both environmental and organizational features that can produce deinstitutionalization. The organizational features include conflicting internal interests and increasing social fragmentation. Oliver (1992) also, however, emphasizes how institutionalized practices break down and are replaced by new ones. She identifies a variety of social, functional, and political pressures that are likely to promote deinstitutionalization and reverse the trend toward homogeneity and convergence

(isomorphism) in institutionalized fields. Examples include shifting external dependence relationships (political), declining rewards for institutional conformity (functional), and increasing internal diversity (social).

Capacity for action could also entail tactics like introducing external mechanisms that have the power to destroy the status quo. Thus, inviting equity ownership by foreigners, participating in foreign product and capital markets, adopting International Accounting Standards or GAAP could all be considered as part of the process to deinstitutionalize a corporate governance system. Such activities may facilitate the process of change. Oliver (1992: 577) asserts that, “firms that diversify their operations into other sectors or markets, particularly in different countries are likely to be exposed to alternative organizational customs...”.

We extend the analysis above by narrowing down the discussion to a corporate governance model of change and by linking institutional with innovation theories in a manner that takes into account the circumstances of an individual firm. This perspective recognizes the fact that although there may be an overall trend within an industry, sector or economy towards change, organizations respond differently to institutional pressures (Fennel and Alexander, 1993). The reason is that organizations do not experience such pressures uniformly. We add that intra-organizational dynamics as discussed above are at the disposal of institutions or actors to use. Using these dynamics as weapons, institutions may choose to be supportive or resistant to the organizational change. We refer to supportive institutions as facilitating institutions and to unsupportive ones as institutional hurdles. Figure 3.5, below shows a situation of transformation from one state of corporate governance to another.

Fig 3.5: Conceptual Model of Governance Change.



The current corporate governance institutions are the starting point of this model. At this point (initial condition) the firm has deeply ingrained culture and doctrines. The firm is often loaded with old templates that may be unwanted and disadvantageous. It is this state of affairs that agents of change seek to dismantle or transform. In the attempt to effect change, the firm has certain aspects or institutions that will make the task easier. In the model, these are shown as *facilitating institutions*. Thus, the firm uses facilitating institutions to effect corporate governance changes. Facilitating institutions have either a competitive or reformative kind of value commitment. They are dissatisfied with the template in use and prefer an alternative template from elsewhere. Within the organization, the balance of power is tilted in their favour. Facilitating institutions could be internal or external, implying that the external environment like the firm's internal environment plays an important role in the transformation process. Internal facilitating institutions include, for example, elements such as an effective management culture, supportive institutions, like shareholders' representatives, and effective accounting behaviour. External facilitating institutions could include, for example stock exchange requirements, influence from an Institute of Directors, IAS or GAAP accounting standards, professional associations of accountants and company

secretaries, and cultural spillovers through foreign ownership of equity or issuance of ADRs.

Whereas facilitating institutions will come to the aid of the firm, institutional hurdles will provide resistance to change. Like facilitators, hurdles can be internal or external, again underlining the importance of the business environment. Internal institutional hurdles cover aspects like: organizational conservative culture, employees, depending on their perception of change and some board members. External institutional hurdles are the national culture, for instance, resistance by other stakeholders such as banks or suppliers and block-holders if they think change might lead to loss of control. The characteristics of hurdles are naturally in direct contrast with those of facilitators. Institutional hurdles are associated with the status quo value commitment. Interest groups are satisfied with the template in use and because they do not have any intention to destabilise the organisation, they do not have the strategy or *capacity for action* to change. The level of their satisfaction does not require any form of support from those in positions of power, or they may be linked to power dependencies that resist change (Greenwood and Hinings, 1996).

All firms tread the transition time path towards a new form of corporate governance. Taking full advantage of facilitators and minimizing the effects of hurdles is an obvious recipe for success. We argue that all firms will eventually change, but the speed and degree of success is dependant on how quickly an organization neutralizes the hurdles and promotes facilitators. Thus, this model recognises that institutions are simultaneously constraining and enabling.

The *initial condition* for any firm is also crucial as it affects the pace at which the changes will take place. A favourable initial condition would mean a relatively smaller amount of change towards the desired end. Thus, the two complementary models (Figures 3.4 and 3.5) help to explain why given the same institutional pressures some firms may emerge as early adopters of changes and some lag behind. For example, the organization's policies and its strategic positioning (Fennel and Alexander, 1993; Judge

and Zeithmal, 1992) may magnify or dilute the pressures for isomorphism. Similarly, an organization's own traditions and history may also affect the extent to which it conforms to isomorphic pressures (Eisenhardt, 1989). Helped by starting from a favourable initial condition, with effective facilitators and weaker hurdles, "leaders" may adopt early, and their motives could be efficiency-oriented. On the other hand, late adopters seeing minimum gains from change may eventually adopt change driven by institutional pressures and the need to acquire legitimacy and have access to resources (DiMaggio and Powell, 1983).

3.8 Linking Neo-Institutional Theory to Innovation Theory

Changes in a firm's internal institutions may be viewed as organisational innovations (Douglas and Judge, 2001; Westphal, Gulati and Shortell, 1997). During the early stages of the diffusion of organizational innovations, change has been found to be typically driven by an efficiency rationale, while organizational change tends to follow symbolic and isomorphic patterns among later adopters, i.e. social legitimacy (DiMaggio and Powell, 1983). Westphal and Zajac (1994) reported that early adopters of long-term executive incentive plans were more likely to use such plans extensively, while late adopters were more likely to use these incentive plans in symbolic style. Tolbert and Zucker (1983) proposed that early adoptions of civil service reforms were motivated by technical or economic needs, while later adopters responded to the growing social legitimacy of these programs as taken-for-granted improvements in organizational structure. Similar findings have been obtained in studies investigating the adoption of personnel programs (Baron, Dobbin and Jennings, 1986).

What can be discerned from this is that there is a clear link between institutional and innovation theories. Some scholars (e.g. Witt, 1989; Bush, 1987) have previously used diffusion processes to provide a framework for understanding institutional change. The tradition of innovation diffusion theory covers not only the spread of new objects resulting from inventions but also new ideas and organisational changes that can also be treated as innovation. Specifically, innovation is not only limited to the invention of technological objects but also encompasses the trying out of new ideas. Trying out new

ideas brings the idea of change. Bell (1968) regarded diffusion as the key engine of change in society. At the time he was referring to the spread of both, new goods and privileges, particularly access to higher education and the institutional changes which radiated through society as a result.

One element that may hinder a synthesis of diffusion theory and institutional theory in relation to organizational change is that diffusion theory assumes that individual behaviour is embedded in the rational choice model. Thus, while diffusion theory is not explicitly about cognitive assumptions, bounded rationality is the underlying hypothesis (Redmond, 2003). The assumption is that potential adopters of any innovation will weigh the costs and benefits of the innovation in a more or less traditional economic sense and from an individualistic perspective. In other words, decisions by organizations are not seen to be influenced by institutional pressures. We argue here that the analysis of the adoption of innovations such as ESOs requires more than rationality. The idea is not to deny the importance of diffusion theory with its bounded rationality, but to embrace it, recognizing the institutional pressures that may constrain a rational approach in adopting an innovation. An institutional perspective draws attention to the binding force of habit and tradition as well as the impact of adoption on social relations. From this approach, the possibility of an informed resistance to innovation or change, based on values, norms and traditions and not economic sense, does in fact happen and is compatible with the institutional perspective. Specifically, those subscribing to social constructionist views hold that actors suffer from extremely limited information and high levels of uncertainty and thus are driven more by concerns for doing what is institutionally acceptable and culturally appropriate than by some kind of cost-benefit analysis (DiMaggio and Powell, 1991).

However, what may seem like incompatibilities between the two theories may in fact be complementarities. For instance, in diffusion theory an important dimension is time, i.e. the length of time from the introduction of an innovation to its adoption. From an institutional perspective, however, an important dimension involves the ability and willingness to overturn established ways. To be among the first to break with tradition

and “taken for granted” habits is to be a “first mover” or innovative adopter; and having “follower adopters” is a case of innovation diffusion.

Earlier adopters are marked by venturesomeness, intelligence, ability to cope with uncertainty, and willingness to accept risk (Rogers, 1995). These early adopters or innovative adopters as they are referred to (Rogers, 1995) are the initial adopters in their social networks. No one else in their circle of acquaintances has direct experience of the innovation (Redmond, 2003). In other words, innovative adopters have no social model to follow. There is however, a problem with this perspective. With modern business and the importance of globalization, it is very difficult to discern whether any adopter had a model to follow or not. Resolution of this issue could lie in the manner in which one defines a circle of acquaintances or one’s social network.

What can be safely said is that innovative adoption requires imagination and research on the earliest adopters and that they have a greater ability to deal with abstractions than later adopters (Rogers, 1962). There is also an element of risk-taking. Because of novelty, innovation carries an element of uncertainty as to the efficacy of attaining the desired ends and often presents an unsanctioned and unwelcome departure from habitual and highly embedded patterns of behaviour. There is therefore the presence of both economic and social risk; factors that may discourage most risk-averse actors. In diffusion theory, fewness is a hallmark of the innovative (early) adopter who finds that prospective rewards outweigh perceived risks. There is likely to be great anticipation by early adopters that their actions will be imitated. This anticipation, as Bourdieu (1990) notes, is based not on what actors see but what they foresee to be the response of specific and relevant individuals. The social position of an innovative adopter is enhanced only in the degree that others follow suit (Witt, 1989). That way, social risk is minimized.

For some actors, the arrival of an innovation is a social irritant which must be carefully evaluated. Once the leaders have positioned the innovation and it has been socially accepted as desirable, potential followers must assess the consequences both of

adoption and non-adoption. The follower relies, in this case, on the judgments, decisions, and opinions of others in order to clarify the social meaning of the innovation.

Naturally, followers are slower to adopt than first movers. The reason for this is uncertainty regarding economic benefits or social reactions or both. Social reaction is important because the adopters of novel ideas or objects are highly prominent. While many consumers seek to be noticed in a favourable light, few consumers wish to draw unwanted attention to themselves (Hamilton, 1988). Emulation is thus a drive to keep up with others, not a desire to be ostentatious (Trigg, 2001).

Followers do not only boast of having a model to follow, but also do have less uncertainty in decision making. The observation by followers of applications of an innovation reduces uncertainty of the economic component while observation of previous adopters reduces uncertainty of the social component (Redmond, 2003).

Followers weigh the suitability of adoption in the light of their social position and in doing so; seek to know the shared social meaning attached to the innovation by others in a similar position. Interest is focussed not on whether others have adopted but rather on who has adopted. From an institutional perspective this behaviour is likened to mimetic (DiMaggio and Powell, 1983) or trait-based (Lu, 2002) isomorphism. That way, individuals considering adoption can enjoy the luxury of paying little attention to information about the innovation until diffusion reaches their level (Burt, 1987). Once this point is reached, adoption by members of that position is quite rapid in order to avoid an embarrassing loss of prestige. For late followers, adoption is about avoiding loss of status, rather than gaining status. It will no longer be a case of adopting for economic reasons but of gaining legitimacy. Rogers (1995), notes that later adopters are motivated less by the potential benefits of the innovation than by peer pressure to adopt.

In the final analysis, all adopters undergo an individual process of change in terms of deliberate and guided action followed by habituation (Jensen, 1988). The cycle of

change opens when some individuals create new institutions and closes as the new institutions mould and constrain large numbers of individuals (Hodgson, 2000). Institutional change is complete when the once novel becomes a matter of routine, waiting for new initiatives to start the evolution process again.

Innovation diffusion theory (e.g. Rogers, 1995) has traditionally been the dominant innovation theory, typically addressing those factors that influence an innovation's speed of diffusion, (as discussed above) but also concerned to a minor extent with the "re-invention" of innovations, i.e. the degree to which an innovation is changed or modified by a user in the process of adoption and implementation (Rogers 1995: 17).

This perspective implies that the adoption of an innovation is not congruent to the template from which it is derived. There is, therefore, an alternative to diffusion theory, whereby some elements of the original template are dropped or modified *i.e. translated*.

It is therefore useful to consider theories of innovation translation proposed by the actor-network approach (Law, 1992; Czarniawska and Joerges, 1996). Translation theorists (e.g. Schon, 1971: 49) identified "co-option" as the process by which social systems absorb changes, i.e. they "defuse, dilute and turn to their own ends the energies originally directed towards change." Thus, as the firm treads the "transition time path" (see Fig 3.5) a number of actors are at work. These actors either in their resistance or acceptance of a proposed template are actually transforming the originally intended template: the actors are translating the template. Buck and Shahrin (2005) note that, the adoption of an innovation depends upon the *power* and *believability* of an actor. The power is not exerted linearly, but through a network where powerful participants set up "obligatory passing points" (Callon, 1987). In the final analysis, it is difficult to identify the author of an innovation as all the actors and artefacts in a network shape the innovation (Buck and Shahrin, 2005). Therefore adoption of an innovation may be effected through translation and transformation by different interests groups (Latour, 1996).

Latour (1996) observes that translation applies to any innovation, whether an artefact, idea or organizational procedure, and the translation of a diverse set of strategic innovations has been observed, e.g. diversification (Mayer and Whittington, 1999), human resource procedures (Newman and Nollen, 1997; Gooderham, Nordhaug and Ringdahl, 1999), foreign entry modes (Barkema and Vermeulen, 1997), and TQM procedures (Zeitz, Mittal and McAulay, 1999).

Thus, going back to the model in Figure 3.5, facilitators, which can also include institutions (e.g. institutional shareholders), could possibly facilitate and quicken the adoption of an innovation (share options). On the other hand, hurdles (e.g. trade union representatives) could possibly slow down the rate of innovation adoption.

3.9 Summary

This chapter has provided an overview of institutional theory. More specifically, it discussed three streams of institutional theory: New Institutional Economics (NIE), New Institutional Sociology (NIS) and Old Institutional Economics (OIE). The purpose was to clarify the focal points of the various institutional theories. NIE was identified to be closely associated to “traditional” economics, in that it adopts the image of a boundedly rational individual. Moreover, NIE, in its application of Transaction Cost Economics is especially concerned with the evolution of the governance structures of organizations. As such, the cost of transacting is the unit of analysis. However, Transaction Cost Economics does not describe or explain processes of organizational adaptation. Rather, it identifies optimal future states of the organization’s governance structure under specific conditions. These considerations make NIE an unlikely candidate to theorize about the process of institutional change.

NIS does not employ a process view either. It regards individual behaviour as primarily governed by external institutions and driven by a desire to increase the legitimacy of oneself and the organization in which one works. Although NIS may explain the emergence of practices such as for example Activity Based Costing and the Balanced Scorecard, by referring to the acceptance of these practices by the wider business

community as legitimate and desirable, it does not describe how the process of implementation of new practices proceeds. NIS therefore focuses more on organizational responses to wider institutional pressures, and as such its view of the individual may be regarded as deterministic (in that human actions are primarily dictated by the presence of institutions). On its own, NIS fails to provide a basis for studying organizational change.

The third theory discussed that OIE is not a theory in itself, but a set of principles that allow for eclecticism. As a result, theories inspired by OIE can be sophisticated with regards to the qualities of the individual. OIE has inspired a number of theorists to apply the notion of institutions to processes of organizational change. Barley and Tolbert (1997), Burns and Scapens (2000), Seo and Creed (2002) and Phillips, Lawrence and Hardy (2004) have attempted to model how the process of institutional change proceeds.

This thesis is about the processes of change that are instigated by a formal change program. The knowledge it needs to yield must include the ways in which actors within the organization deal with programs of organizational change inspired by either the internal or external environment or both. While NIS is concerned with institutional pressures from the external environment, OIE considers actors and conditions within the organization. The theoretical basis of the thesis will therefore contain the fusion of NIS and OIE to explain the process of change through intra-organizational dynamics that are influenced by both the market and institutional contexts. Generally it will use the ideas drawn from Burns and Scapens (2000) and DiMaggio and Powell (1983) and more specifically, it will use the framework devised by Greenwood and Hinings (1996).

Such work by Greenwood and Hinings (1996), Hinings *et al.* (2004) goes beyond the general fusion of NIS and OIE by looking at the finer details of intra-organizational dynamics. The work covers the characteristics of actors and conditions that enable and precipitate organizational change; thus also allowing for an examination of earlier and later adopters of an innovation.

Thus, studies of the dynamics of change provide a bridge between institutional theory and innovation diffusion theory, as changes in an organization's institutions may be viewed as organizational innovations. This approach now provides the opportunity to study the adoption of ESOs in Germany by firms as earlier/late adopters. Hypotheses following this line of argument (i.e. using neo-institutional theory and innovation diffusion theory) are therefore developed in the next chapter.

CHAPTER FOUR

Development of Hypotheses

4.1 Introduction

Chapter 2 reviewed the literature on corporate governance in the UK, USA and Germany citing the differences between the stylised Anglo-American and German models for large firms. The chapter highlighted that changes to the German model of corporate governance seem to be taking place, with the adoption of ESOs cited as a good example of the semblance of convergence on the Anglo-American model. Given the renowned embeddedness of the German model in the stakeholder system this new development is intriguing as it represents the abandonment of one template in preference for another. Such a decision is arrived at through a great contest, as organizational actors push for their diverse and contrasting interests. Chapter 3 discussed the process of changing an organizational template, arguing that a clear understanding of this process goes beyond the economic models of rationality, and demands a scrutiny using the relevant strands of institutional theory and insights from innovation diffusion theory.

Therefore, this chapter will pull together work covered in Chapters 2 and 3 by generating hypotheses using neo-institutional theory in the context of German ESOs. It is structured as four main sections. Section 4.2 briefly recapitulates the research background by providing, in the process, the rationale of developing hypotheses from neo-institutional theory. Section 4.3 restates the research questions. Section 4.4 generates the research hypotheses from the inter- and intra-organizational dynamics of neo-institutional and innovation diffusion theories. Section 4.5 concludes.

4.2 The Rationale of Developing Hypotheses from Neo-Institutional Theory

In the context of corporate governance, Germany provides a strong contrast to the USA, based on significant historical differences in social, political, and legal environments (La Porta *et al.* 1997; 1999). In fact, Germany has frequently been cited as the classic case of non-shareholder orientation, confirmed by the original German corporate law of 1937, which stated that the company was to be managed “for the good of the enterprise and its employees (*Gefolgschaft*), the common wealth of the citizens (*Volk*) and the state (*Reich*)” (cited in Bradley, Schipani, Sundaram, and Walsh, 1999: 55). This observation sees the corporation as a social institution (rather than an economic entity) with public responsibilities and influenced by societal beliefs and norms, i.e. echoing institutional theory.

Moreover, these important institutional features of the traditional German corporate governance system have persisted (Lane, 2000). For example, the German stock market, in comparative perspective, remains undercapitalised. Substantial family ownership of large companies persists, and shareholding by individuals, although increasing, remains low by international standards, and thus hinders the development of a shareholder culture. The system of co-determination is still intact with employee stakeholders retaining some degree of influence, if not control within the firm. The two-tier board, designed for insider control, also remains in place.

Applying institutional theory to changes in large-firm German corporate governance also makes perfect sense, as the behaviour of German corporations can be said to be isomorphic in nature, certainly in comparison with Anglo-American firms. Attempts to reform corporate governance can be seen as a way for adopting German firms to gain legitimacy under a changing global economic rationale. Consequently, there have been demands for transparency in corporate practices and calls for more attention to be paid to the interests of shareholders from such groups as German shareholders’ rights groups (e.g. DSW), the stock market regulators, and the government.

Additionally, where corporate governance in Germany has been defined as the means by which important decisions are controlled by the firm's stakeholders, both governance systems in general and individual elements in particular (e.g. executive pay) can be seen as institutions, subject to regulative, normative and cognitive influences on firms (Scott, 2006).

Specifically, since institutional theory focuses on the normative and coercive pressures (DiMaggio and Powell, 1983) that develop within an industry or social system, its application to executive remuneration in Germany must be tailored to the historical, cultural and economic characteristics of German society. Indeed, executive compensation in Germany has traditionally been designed in a strong institutional environment that had more respect for other stakeholders (e.g. employees) besides shareholders. In this institutional environment, organizations adopted structures and practices, i.e. *institutions*, that conformed to society's image of them as "welfare capitalist" (Dore, 2000). Executives were paid to serve primarily according to the stakeholder community, securing resources and political legitimacy for the organization (Cheffins, 2003).

Globalizing product and financial markets have triggered renewed interest in corporate governance among academics in Germany and the global business community. Here, we see that German firms in need of capital to finance global strategies have looked at international capital markets instead of the traditionally important banks. This is one case where market pressures have influence on the organization's power dependencies. Specifically, banks, for example, lose the power and prestige they have always enjoyed, as stock markets gradually take over as providers of finance. Thus, the precipitator of change (for the resource dependence model) is the market context, which, when the salience of some issues is raised relative to others, (e.g. the need for foreign capital), alters the relative power of groups within organisations (e.g. banks *vis-à-vis* foreign shareholders). Banks are not the only group affected by such a trend. Issues of global finance and others, including managerial talent, shift the power dependencies among directors, employee representatives and shareholders' representatives. The resource

dependence approach in this case complements the institutional perspective as firms seek resources (Oliver, 1992), resulting in the reconfiguration of power relationships. The focus and interests of groups are changed, (e.g. banks may turn to other areas of operations other than firm lending) leading to erosion of value commitment.

Greater exposure to international product markets also exerts market pressures on firms. Competition in these product markets may bring German firms in direct contact with firms adhering to alternative corporate governance systems, thereby providing opportunities to learn and observe. The institutional context also acts to reconfigure the power and status of groups within the organization. As firms face new challenges from increased cross-border competition, pressures to adapt to an internationally integrated environment mount. Thus it seems that global financial pressures may be changing the nature of institutional pressures and weakening the German organizational template from that of a welfare organization towards a shareholder-centred one. A shareholder-centred organization comes with institutional pressures for executive compensation to be aligned with shareholders' interests, with the expectation that such payments should reflect performance.

Thus, the external context through market pressures (need for human and financial capital) and institutional pressures (e.g. legislation), could possibly influence organizational actors to consider a shift by German firms toward a more shareholder-centred corporate governance system.

German corporate governance is a crucial adopter of the Executive Stock-Option (ESO) innovation. However, one may argue that the German ESOs are not strictly an innovation, since this system of executive compensation has long been used in the United States and the UK. This argument makes adoption of ESOs in the United States a radical change (template bending), but any subsequent "Germanification" of ESOs (i.e. by followers) may be seen as convergent change (i.e. fine-tuning of an existing template).

Nevertheless, an argument, for the purpose of this thesis, is raised in defence of German ESOs as a German innovation, thus calling for radical change analysis. An innovation is defined by Zaltman, Duncan and Holbek (1973: 158) as “any idea, practice or material artefact perceived to be new by the relevant unit of adoption.” The fact that the adoption of ESOs in Germany was unknown before 1996 makes their use an innovation. Besides, the adoption of ESOs in Germany is not being achieved in the same manner as in the United States (Buck and Shahrin, 2005; Chizema and Buck, 2006). Here, we see evidence of transformation, dilution and readjustment to suit the German business culture (e.g. German ESOs may not only be offered to directors but may cover hundreds of employees in management). Thus, the departure from an Anglo-American style of ESOs justifies the treatment of German ESOs as an innovation. Accepting this argument opens the possibility of analysing the adoption of ESOs from “an early adopter/late adopter” perspective rather than treating all German firms as late adopters.

Accepting the early/late adopter argument implies that these changes will not be uniformly adopted but that they will be met with mixed responses. Some institutions influenced by both exogenous and endogenous dynamics, hence different pressures, will be in favour of the changes (facilitators) and some will present isomorphic inertia (constraints). As observed by Machiavelli (1972: 71): “... there is nothing more difficult to plan or more uncertain of success or more dangerous to carry out than an attempt to introduce new institutions...”

Thus, although the overall expectation is of a change in executive remuneration to reflect the Anglo-American model, organizations respond differently to institutional pressures (Fennel and Alexander, 1987). For example, firms with ADRs are expected to disclose their operations and performance according to the requirements of the Securities Exchange Commission and the Stock Exchange on which their ADRs are traded (*i.e.* coercive isomorphism). Firms with foreign subsidiaries are also likely to import practices that they pick up from abroad, a process that neo-institutional theorists refer to as mimetic isomorphism (DiMaggio and Powell, 1983). This is a form of imitation which institutional theorists argue is a result of prior decisions or actions by

other organizations which were successful (Tolbert and Zucker, 1983; DiMaggio and Powell, 1983; Haunschild and Miner, 1997).

Initial conditions for firms or current templates in use are also different. Deeply embedded firms may be prevented by the institutional context from developing an action capability. Such organizations, Greenwood and Hinings (1996) argue, are centrally located within an institutional context and are less likely to develop the specialties and competencies of an alternative archetype. Peripheral organizations in contrast, may develop these competencies because they are less fully socialized by the context (Leblebici *et al.*, 1991). For example, German DAX 30 firms may be considered as the organizations that are centrally located within an institutional context as most of the institutional pressures (regulatory, political and cultural) bear on them. The rest of the firms far removed from the DAX 30 may be assumed to be peripheral organizations.

Some firms start with different institutional governance configurations, e.g. a higher proportion of block-holders, some with a greater presence of institutional shareholders or foreign shareholders. Some firms may be making good profits or achieving excellent share values, implying little incentive to change from the viewpoint of weak performance and dissatisfied interest groups.

Given the foregoing justification of using neo-institutional theory, here in the context of German ESOs, it is appropriate to discuss testable hypotheses. However, before doing that, a quick reminder of the research questions is provided.

4.3 The Research Questions Restated

It has been shown so far that changes in German corporate governance are taking place. Important legal reforms have proceeded, a significant hostile takeover has occurred (*i.e.* Mannesmann takeover by Vodafone) and German corporations started to adopt ESO schemes from 1996. Some scholars have pointed to these changes as a clear case of convergence on the Anglo-American governance model, while others discern convergence on some hybrid, *i.e.* the merging of two corporate governance systems

(Mishaupt, 1998). On the other hand counter-convergence theorists emphasize that important features of the traditional German corporate governance system have persisted; noting that German corporate governance is constrained by institutions and culture, leading to zero convergence or even divergence (Mishaupt, 1998).

There are, therefore, fundamental contradictions between relational governance and US-style ESOs. The implicit aim of US-style ESOs of maximizing shareholder value is incompatible with the concept of the German firm as a social institution and its sense of *Gemeinschaft* created to enhance community welfare. This research is therefore about the process by which a corporate governance practice (ESOs) from one corporate governance model (Anglo-American) diffuses among corporations in a different (German) corporate governance regime. More specifically, the thesis aims at answering the following questions: *What causes German firms to adopt a **contested** US-style corporate governance element: ESOs? Which firms are likely to adopt ESOs and at what rate (i.e. earlier or later adopters)?*

The thesis attempts to answer the first question through a neo-institutional lens and the second by using both neo-institutional and innovation diffusion theories. Hypotheses are therefore generated accordingly in the next section.

4.4 Hypothesis Development

The proposed synthesis of neo-institutional and innovation theories will be developed to generate testable hypotheses for German executive pay.

It has been discussed above that the salience of institutional forces, or the strength of their influence on what constitutes social legitimacy and hence firm survival, may also be explained by resource dependence theory. In Germany, institutional pressure for the adoption of a standard American element of executive pay packages may be expected to be felt according to the dependence of firms on American capital (Cheffins, 2003; Fuerbringer, 2004). American investors are familiar with the ESO and may be

suspicious of the motivation of executives who receive rewards mainly in the form of guaranteed salary and bonus, at quite low levels by American standards (Towers Perrin, 2003).

Additionally, new institutional sociologists argue that a driving force behind organizational activities is an organization's desire to fit with its external institutional environment by conforming to institutional pressures from other organizations (Martinez and Dacin, 1999). This isomorphic tendency often leads to mimetic behaviour (as discussed already), uniformity in decisions and homogeneity in organizational form (DiMaggio and Powell, 1983). German firms with ADRs will experience these pressures and may succumb to inter-organizational mimetic behaviour. This reasoning centres on the idea that the likelihood a firm will imitate a decision or organizational form increases with the frequency that other organizations in the environment implement a decision or use an organizational form (DiMaggio and Powell, 1983). For example, German firms with ADRs are exposed to an American capital market environment in which most American firms have adopted ESOs. The likelihood that the German firms with ADRs will want to be like other international firms listed on American Stock Exchanges is high. Indeed, it would be expected that such firms that had ADRs when this reform started (i.e. ESO adoption), become *earlier* adopters.

We predict therefore that these firms will not only adopt ESOs but will seize the first opportunity to adopt them. Hence for the first pair of hypotheses it is proposed:

H1a: *ESO adoption will be positively associated with the extent of a German firm's dependence on American investors.*

H1b: *Firms with a heavier dependence on American investors will be earlier adopters of ESOs.*

Of course, ESOs are characteristic of most English-speaking countries and foreign ownership as a whole may indicate a firm's willingness to accept new influences.

Foreign shareholders have access to information derived from various sources. The view taken of the foreign institutional investors in this thesis is that they are well informed, and have exposure to other business practices that promote value maximizing. Their concern would be to maximize their returns and they are convinced that this can be done by aligning managerial interests with their own. Foreign investors may also be aware that the executive labour market is now internationally competitive and the only way to attract and keep good managers is by paying them well.

Additionally, Anglo-American institutional investors have promoted the use of stock-based incentives among firms in the United States (Useem, 1996). We also expect them to favour such management incentives when investing in Germany. Foreign shareholders will not therefore resist the adoption of ESOs; in fact they could be leading advocates of this innovation. Recent studies in Japan, a country very close to Germany in governance terms, have documented a strong relationship between the percentage of shares owned by foreigners and corporate behaviour (Ahmadjian and Robbins, 2005). Following Ahmadjian and Robbins (2005), therefore, the second set of hypotheses are proposed as follows:

H2a: *ESO adoption will be positively associated with a firm's level of foreign ownership.*

H2b: *Firms with higher proportions of foreign ownership will be earlier adopters of ESOs.*

4.4.1 Interest Dissatisfaction and Value Commitment

Where a firm is doing well as measured by its level of profits, organizational groups (shareholders, employees, etc) are expected to be satisfied. Dissatisfaction may arise when profits are low, however. Thus, we expect a *status quo* form of value commitment, power dependencies tilted towards resistance to change and capacity for action mobilised towards resistance to change, if a firm has a healthy profit and loss

account. There is no need to reject the template in use in favour of something that has not been tried and tested.

What is true of profitability can also be said of the firm's stock market performance. Good stock market performance provides satisfaction among organizational groups and poor performance, dissatisfaction. Thus, a firm's performance may cause an erosion of commitment. In particular, performance problems (e.g. in terms of stock market prices) and crises may act to trigger political "dissensus" over existing arrangements and permit groups less committed to prevailing practices to more legitimately raise and promote alternative perspectives (Child and Smith, 1987; Oliver, 1992; Pettigrew, 1985; Tushman and Romanelli, 1985). Thus, weak financial performance is seen as a key outcome of the market context capable of generating interest group dissatisfaction and pressure for change (*line a* in Figure 3.4). For example, weak firm financial performance may be associated with low levels of job creation that may create dissatisfaction among employees and their union representatives. Similarly, weak share price performance may stimulate shareholders to quickly press for reforms to executive pay packages that place a new emphasis on rewards that respond to share price performance, e.g. ESOs.

To represent this possibility, it is proposed:

H3a: *ESO adoption will be associated with low profitability in firms.*

H3b: *Low profitability firms will be earlier adopters of ESOs.*

It has been discussed in Chapter 3 that organizations will vary in their patterns of value commitments partly because of their different locations within the institutional sector. Leblebici *et al.* (1991) showed that more peripheral, less embedded organizations may be less committed to prevailing practices and readier to develop new ones. Indeed, Hinings and Greenwood (1988a), found from their studies of municipalities that change occurs more quickly where organizations are small and where there is low structural and task complexity. Organizations that are peripherally located within their institutional

field may lack the intensity of commitment to the *status quo*. As an empirical device, membership of the DAX 30 group of the biggest firms in Germany could be used to define core firms, with other firms in the DAX 100 but outside the DAX 30 being peripheral. Firms outside the DAX 30 may be hypothesized to have a lower value commitment to the traditional German governance template and may be early adopters of ESOs. Alternatively, market capitalization may be used as a measure of peripherality. It is acknowledged, however, that peripherality may conflict with access-to-resources variables, and, as with H3a and H3b, applications of H4a, H4b may conflict with those of H7a, H7b see below.

We may therefore hypothesize that:

H4a: *ESO adoption will be positively associated with the peripherality of firms.*

H4b: *Peripheral firms will be earlier adopters of ESOs.*

The third precipitating influence addresses the value commitment of firms directly, or rather declarations of value commitment. In the context of German Welfare Capitalism, declared commitments to shareholder value orientation rather than to the *Gemeinschaft* (community) of the firm represent a contingency that favours the adoption of a pay innovation, itself associated with the values of Stock Market Capitalism. Studies on the shifting of commitment from relational governance in Germany to a market-oriented system of corporate governance have cited changes in the accounting system as a suitable indicator of commitment (e.g. Fiss and Zajac, 2004).

Therefore, we propose:

H5a: *ESO adoption will depend on the declared value commitments of firms.*

H5b: *Firms with clearer and stronger declared value commitments will be earlier adopters of ESOs.*

However, it should be emphasized that H3a, H3b; H4a, H4b and H5a, H5b only constitute precipitating mechanisms and change may fail to occur without enabling dynamics.

4.4.2 Capacity for Action and Power Dependencies

Greenwood and Hinings (1996) propose that radical change will occur only in conjunction with enabling dynamics: an appropriate *capacity for action* (e.g. line g in Figure 3.4) and supportive *power dependencies* (line e, Figure 3.4). Ranson *et al.* (1980) argue that organizational groups vary in their ability to influence organizational change because different groups have different power to effect or resist it. Positions of power can be used to enable or suppress the prevailing template (Covaleski and Dirsmith, 1988).

Employees, undiversified compared with shareholders, may be expected to favour job security and resist labour retrenchment (Fernandez and Rodrik, 1991), and ESOs that link executive pay directly with share price may be perceived as increasing job-related uncertainty.

However, large German firms exhibit little variation in employee board representation since precisely 50% of the supervisory board must be employee representatives for firms with more than 2,000 employees. Supervisory board representation for employees may therefore not be used as an independent variable. As the importance of labour costs as a proportion of sales may be a proxy for employee power and voice within the firm, we suggest:

H6a1: *ESO adoption will be negatively associated with labour power.*

H6a2: *Firms with less labour power will be late adopters of ESOs..*

Of course, the power of employees was granted by the German government under Co-Determination Laws, and governance institutions hang together in a nexus of parallel interests (Hall and Gingerich, 2001). Employee representation on supervisory boards may be reinforced by State ownership (at a Federal and Land level) of a firm's shares, which may also be associated with board representation. It follows that:

H6b1: *ESO adoption will be negatively associated with the proportion of State ownership of a firm's shares.*

H6b2: *Firms with a higher proportion of state ownership will be later adopters of ESOs.*

The organizational templates of enterprise founders have been found to have a persistent influence on the institutions and strategies of firms (Baron, Hannan, and Burton, 1999). The ownership of shares in large German firms by founding families still represents an important obstacle to high stock liquidity, and may also be expected to act as a conservative influence in relation to ESO adoption, another feature of Stock Market Capitalism, like stock liquidity. Therefore:

H6c1: *ESO adoption will be negatively associated with the proportion of founding family ownership.*

H6c2: *Firms with a higher proportion of family ownership will be later adopters of ESOs.*

Besides the question of power dependencies and who owns a firm's stock, (e.g. the State or founding family), the concentration of stock ownership may be an important element in relation to power dependencies.

Dispersed share ownership is associated with Stock Market Capitalism, where the exit of shareholders from a particular stock can put pressure on executives to adopt

organizational changes. Such dispersed ownership is not characteristic of the German system, but where it exists:

H6d1: *ESO adoption will be positively associated with the dispersed ownership of shares.*

H6d2: *Firms with dispersed ownership will be earlier adopters of ESOs.*

In apparent contradiction of H5d, the coalescence of stock into significant blocks has been an important influence on corporate strategies in US firms (Maug, 1998). Blockholders may provide more powerful pressures for institutional change, and in Germany, block-holdings not in the hands of families or the State (e.g. institutional investors) may press for a reform with the capacity to boost shareholder value through an incentive effect for executives. Thus:

H6e1: *ESO adoption will be positively associated with the presence of significant block-holdings of shares.*

H6e2: *Firms with block-holdings of shares will be earlier adopters of ESOs.*

Banks are an important category of corporate stakeholder in Germany, and represent one of the main pillars of the German corporate governance system (Jurgens *et al.*, 2000). German banks have played a central role in the historical development of German corporations. They were among the primary financiers of German industrialization and of the great wave of company foundings of the 1870s (Jurgens, Naumann and Rupp, 2000), thereby laying the foundation for the prominent role of the banks in company financing and supervision. Apart from controlling significant shareholdings in most of the largest German firms (Baums and Fraune, 1995), banks also represent individual shareholders through proxy voting. Since banks often hold significant shares over long periods of time, they also have both the incentive and the ability to engage in extensive and ongoing monitoring of the firm.

One channel by which the internal institutional environment can influence the adoption of ESO schemes is intra-organizational imprinting. Imprinting is a process of institutionalization that creates reality for a firm in its own internal environment (Berger and Luckmann, 1967; Zucker, 1977). With imprinting, once a practice or decision has been implemented, it reduces the likelihood of alternatives being used in future decisions. As the frequency of adoption of a practice grows, it becomes a “taken for granted” approach (Zucker, 1977; March, 1981) that becomes difficult to change (Mezias, 1990). For banks, the adoption of ESOs marks a radical change in the *status quo*. Their fear stems from the wave of changes in corporate governance which one day may directly affect them. German banks may have traditionally been more interested in keeping corporations as profitable debtors (Cheffins, 2003) rather than taking the risk of losing these clients due to increased profits, arguably following a profit-enhancing stock based pay scheme. We therefore predict that banks will lead resistance to the adoption of ESOs.

H6f1: *ESO adoption will be negatively associated with the proportion of bank ownership.*

H6f2: *Firms with a higher proportion of bank ownership will be later adopters of ESOs.*

Besides these hypotheses (H6a1/H6a2-H6f1/H6f2) relying on power dependencies, it must be recognized that *capacity for action* must also buttress motivation if reform is to occur. Actual reform requires the skills, competencies and resources (line g in Figure 3.4) needed to achieve, and function with, a new template (Clarke, 1994; Nadler and Tushman, 1989). Thus, capacity for action embraces different kinds of resources: financial, human and technological etc. Sherer and Lee (2002) consider that resource endowments are linked with the prestige of an organization, important to the initiation of change in many organizational fields. Large organizations with prestige may have the legitimacy and *access to resources* to act as initial and early adopters (Rogers, 1995). Therefore, we propose:

H7a: *ESO adoption will be positively associated with the size and prominence of firms on capital markets.*

H7b: *Larger firms will be earlier adopters of ESOs*

Networks are a resource that does not appear in conventional financial statements, yet repeated exposure to reformed templates in contacts with trading partners can be an important source of information on reforms. Thus, inviting equity ownership by foreigners, participating in foreign product and capital markets, adopting International Accounting Standards (IAS) or American Generally Accepted Accounting Principles (GAAP) could all be considered as part of the process of de-institutionalizing a corporate governance system. Such activities may facilitate the process of change. Oliver (1992: 577) claims that: "...firms that diversify their operations into other sectors or markets, particularly in different countries are likely to be exposed to alternative organizational customs..."

It has also been suggested that greater exposure to international product markets may encourage a firm to move towards a shareholder value orientation (Hansmann and Kraakman, 2001; Vitols, 2001). Competition in international product markets may bring German firms in direct contact with American firms, for example, and executives may make direct comparisons with their own pay packages, stimulating mimetic isomorphism (DiMaggio and Powell, 1983). This implies:

H8a: *Greater foreign links will be positively associated with the adoption of ESOs.*

H8b: *Firms with greater foreign links will be earlier adopters of ESOs.*

Besides these thirteen pairs of hypotheses (26 in all) developed from neo-institutional and innovation diffusion theories, other variables are proposed as controls in empirical tests, without formal hypothesizing. As with peripherality,

embeddedness may be related to the age of the firm, which is included here as a control, plus debt-to-equity ratio (leverage) as a possible influence on executive pay packages through risk mechanisms (Gray and Cannella, 1997). In addition, time may have an influence on ESO adoption through the legislative process.

With these hypotheses and controls in hand, the next section concludes this chapter, to be followed by Chapter 5 that covers sources of data used to test these hypotheses.

4.5 Summary

This chapter is important to the thesis in formulating a set of research hypotheses relating to the convergence of German executive pay in general and to the adoption of ESOs in particular. This process was achieved by firstly, discussing the rationale for generating hypotheses from neo-institutional theory, noting in particular the persistence of German institutions known especially to be embedded in their social context. It was also noted that the implicit aim of US-style ESOs, of maximizing shareholder value, remains incompatible with the concept of the German firm as a social institution and its sense of *Gemeinschaft* created to enhance community welfare.

Attempting to show the organizational dynamics involved in a decision such as the adoption of ESOs at firm level, this chapter developed a set of testable hypotheses that recognise the reality of institutional change that will help to answer the research questions which were again restated in this chapter. Thus, it has been hypothesized that the extent of a German firm's dependence on American investors is associated with ESO adoption. The same has been hypothesized for the proportion of foreign ownership, size and prominence of firms on the capital markets, dispersed ownership, block-holdings, value commitment, the peripherality of firms and the extent of foreign links. On the other hand, a negative relationship is expected for labour power, state ownership, family ownership and bank ownership.

The hypotheses are presented in pairs, reflecting the two levels of the research questions: the general adoption of ESOs and the early/late characteristics of German firms' ESO adoption.

The next chapter discusses the process of data collection and suggests the most appropriate methods to test the hypotheses generated in this chapter.

CHAPTER FIVE

Data and Methodology

5.1 Introduction

The previous chapter developed the hypotheses to be tested in this study. Chapter Five discusses data collection and the statistical method to be used to test the hypotheses. Data for this study were collected from various sources using a number of methods. To perform tests on the data, logistic regression analysis is used following the unavoidable nature of the dependent variable: adoption or non-adoption of ESOs.

The chapter is structured as follows: Section 5.2 explains the philosophical approach behind the research i.e. the epistemological and ontological issues of the study. Section 5.3 explains choice of sample, an overview of the data collection strategy and specifically how data on dependent, independent and control variables were collected. Section 5.4 is a discussion of event history analysis in logistic regression. Statistical models to be tested are also shown under this section. Section 5.5 gives a brief explanation of how the SPSS software handles logistic regression, especially the main issues of model fit and regression coefficients. The final section, 5.6, summarizes and concludes the chapter.

5.2 The Philosophical Approach of the Study

Lawson (1997) asserts that every philosophy presupposes a reality. This implies that the interpretation of behaviour must take into account the vantage point from which it is observed, and indeed “where you stand can influence what you see” (Fischer, 1998: 128). As a result, the epistemological stance of any research work influences its design and the methods used for data collection. Epistemological issues concern the question of what is or should be regarded as acceptable knowledge in a discipline. A central issue in this context is the question of whether the social world can and should be studied

according to the same principles, procedures and ethos as the natural sciences. An epistemological position that advocates the application of the methods of the natural sciences to the study of social reality, such as the current one, is known as positivism (Blaikie, 1993). It is therefore the dominant philosophy of this study.

The positivist approach, arguably, often designed as a quantitative research, essentially proposes that the subject under analysis should be measured through so-called objective methods rather than being inferred subjectively through sensation, emotions, reflection or intuition (Hussey and Hussey, 1997; Denscombe, 2002a; Easterby-Smith, Thorpe and Lowe, 2002). From an ontological perspective, positivist research is conducted in an observable and tangible social reality, which is viewed as a complex set of causal relations between events which are depicted as an emerging patchwork of relations between variables (Blaikie, 1993; Denscombe, 2002b; Easterby-Smith *et al.*, 2002). This approach stresses the need for the formulation of hypotheses for empirical testing, and searches for causal explanations and fundamental laws, reducing the whole to the simplest possible elements in order to facilitate analysis (Easterby-Smith *et al.*, 2002; Remenyi, Williams, Money, and Swartz, 1998). Such an approach assumes there are independent causes that lead to observed effects and that evidence and prudence are important to ensure that findings are generalisable to the wider population, hence the employment of a reductionist approach (Remenyi *et al.*, 1998).

It is clear that this is a simplification of the real world environment, an approach that is necessary in order to understand how social constructs work. However, positivism and reductionism bring problems, as the real world environment is much more complex than simple models may portray; a fact that may suggest the possibility of missing some of the most interesting dimensions of social phenomena. Indeed, Giddens (1974) has spoken pejoratively about the unsuitability of positivism, while Jung (1995) claims that methods borrowed from natural science are far too general and fail to adequately manage the subjective variety of individual life.

To address these shortcomings, the interpretive or phenomenological approach, which tries to understand and explain phenomenon rather than search for external causes for fundamental laws (Easterby-Smith *et al.*, 2002; Remenyi, *et al.*, 1998) may be employed.

Notwithstanding this long-standing debate on the appropriateness of the epistemological and ontological approach, in reality the positivist and the interpretive approach are not entirely different in terms of their impact on research and the generalizability of their findings. Indeed, Easterby-Smith *et al.* (2002) argue that, while it is true that the positivist approach is epistemologically different from the interpretive approach, this incompatibility is blurred when it comes to actual research.

These arguments favour the use of a positivist approach in this study. Furthermore, the difficulties of obtaining data through interviews or any such method that requires direct contact with managers, of German firms, eliminates the use of the interpretive approach as an option. Any limitations resulting from the use of a single approach, in this case positivism, are, therefore, acknowledged, in light of the justification given above.

Data collection methods, variables and the statistical methods used in a spirit of positivism in this study are discussed in the next subsections.

5.3 Data

The sample size, choice and the strategy used to collect data are issues addressed, in this subsection, in detail.

5.3.1 Choice of Sample

Data was collected from a sample comprising German firms listed in the DAX 100 at any time between 1992 and 2003. This yielded a sample $n=120$. Information disclosure by German firms is notoriously thin (Buck and Shahrin, 2005) and so a focus on large, DAX firms is inevitable, with the smaller firms of the *Mittelstand* comprising unincorporated partnerships and sole proprietorships that account for around half

German GDP, but with even weaker disclosure standards (Edwards and Fischer, 1994). In this sense, the sample employed was the population of large German firms, with certain adjustments.

For example, firms with less than eight years of complete data were excluded from the sample. Thus, firms established after 1995 were omitted, and firms that stopped operating as a result of bankruptcy, amalgamation or acquisition with fewer than eight years in the DAX 100 were also excluded. For example, Mannesmann was acquired by Vodafone in 2000, but was included in the sample for the period 1992-2000. Firms that were DAX 100 members but were wholly owned subsidiaries of other firms in the sample were excluded, to avoid double-counting. For example, while RWE-DEA was listed, 1992-1998, another firm, RWE AG, held more than 99% of its shares, making RWE-DEA a subsidiary of RWE AG.

Generally a company needs to be listed for at least three years prior to the inclusion of its stock in the DAX and the free-floating capital must at least reach 15%. Other conditions include the company's turnover and market capitalization. These stringent conditions of DAX 100 membership underline the significant importance of large German firms in the economy. For example, in 2000, five per cent largest companies (42 in number) accounted for 73.5% of total market capitalization (Deutsches Aktienstitut, 2001).

The choice of time period (1992-2003) was determined by changes in corporate governance in Germany, that began to occur in the early nineties and are still ongoing. Specifically, the German government enacted the first of three Financial Market Promotion Laws in 1990, aimed at liberalizing financial regulation and promoting the growth of the German stock market, and declarations of shareholder value orientation first emerged among German firms around 1992 (Bradley and Sundaram, 2004; Fiss and Zajac, 2004).

5.3.2 Sample Representativeness

In relation to the quantitative methodological approach, this study selects a sample from a much larger group i.e. the entire population of large (DAX100) companies in Germany over the period 1992-2003. The rationale behind this selection is, first, the sample consists of large companies that feature the wide range of governance institutions and elements included in the database. Secondly, it comprises large corporations that are distributed across Germany and that operate in various industries and market sectors. Thus, the sample consists of firms with a wide variety of different property forms: state-owned firms, family-dominated or owned, widely dispersed ownership firms, and firms with significant block-holders. Similarly, a wide range of industries is represented, e.g. construction, manufacturing, services, chemical and pharmaceutical, food, engineering, transport, clothing, technology and telecommunications.

Finally, the size of the sample is large, which is likely to increase the probability of the sample being representative of the population (Hussey and Hussey, 1997; Remenyi *et al.*, 1998). It is also noted that companies that are listed on the DAX have an obligation to publish annual reports making access to the required data more feasible. However, data availability continues to represent a fundamental constraint on progress (Bushman and Smith, 2001).

5.3.3 An Overview of the Data Collection Strategy

The main approach taken to collect data is that of documentation, consisting of multiple published sources, for example in the form of individual company annual reports, proxy statements filed with American Securities Exchange Commission (SEC), archives, financial reports from the press and financial analysts, books, journals and website pages as to promote the achievement of “triangulation” (Denzin, 1970). As will be explained later in this chapter, detailed data regarding awarded executive stock option schemes are simply not available in other forms. Annual reports and proxy statements

however provide a route of gaining access to information relating to German executive share option schemes and some scholars have used this approach (e.g. Fiss and Zajac, 2004; Tuschke and Sanders, 2003; Bradley and Sundaram, 2004).

Additionally, where annual reports and proxy statements represent meaningful constituents of executive stock option schemes adopted by companies, they can be considered to be more consequential than verbal utterances particularly where executives hesitate to disclose information about their pay. Indeed, Hakim (2000) writes that administrative records provide more reliable information than interviews (most certainly in Germany where the institutional environment does not support voluntary disclosure) on topics such as annual earnings.

Talking about the credibility of documentary evidence, Mason (1996) asserts that many qualitative researchers see the analysis of documents as a meaningful and appropriate method in the context of research strategy. That observations and interviews become data when they are transformed into text emphasizes the inherent credibility of documentary data. Indeed, previous studies on executive pay and especially on cross-country comparisons have also mostly used data sourced from published sources. For example, studies using aggregate figures relied on databanks or surveys compiled by international consultancies such as Tower Perrin, European Independent Remuneration Network (EILN) and several other consultancies. Surveys published by Forbes, Business Week and Wall Street Journal although less comprehensive have also been utilised (Murphy, 2002). Similarly, where data are required on a more micro level, published reports in the form of company annual reports and proxy statements filed with SEC have been used whether obtained directly or through secondary sources such as Datastream, PriceWaterhouseCooper's Corporate Register and Compustat ExecuComp database.

The next subsections, discussing the dependent and independent variables will further explain the relevant sources of data for each variable.

5.3.4 Dependent Variable

Information was collected for each year 1992-2003 on whether a firm had adopted an ESO, including executive-only schemes, schemes for executives-plus-other managers but not all-employee SO schemes. The unit of analysis being the firm-year, each observation was coded 1 if the firm adopted an ESO (excluding phantom ESOs, that are effectively annual cash bonuses related to share price) in a particular year and 0 otherwise.

Data was collected on the composite DAX 100 sample (as defined above, n=120) for the years 1992 through 2003. Information on ESOs was compiled from the executive compensation reports within companies' annual reports. Unlike large listed firms in the USA and UK, German firms rarely provide detailed information on options awarded to individual directors, exercise prices etc., so option values cannot be estimated. This is mainly because German law requires the disclosure of the aggregate amount paid to the group of top executives. Another common objection to the disclosure of executive stock options is that such disclosure breaches individual privacy.

Moreover, executive stock option schemes were only made legal in 1998 (as discussed in Chapter 2), and there is no national body collecting aggregate statistics and neither are there publicly available databases listing information on executive stock options. German companies adopting executive stock option schemes only have to announce their intention in the Federal Bulletin (*Bundesanzeiger*) without disclosing details of their schemes.

Information on executive pay only became public recently when German corporations started to issue Level II and III ADRs on the American Stock Exchanges. Issuers of ADRs are required by the Securities Exchange Commission (SEC) to file proxy statements disclosing details about their stock option plans, although this is limited to the aggregate remuneration for the whole board of directors, in their financial accounts under notes to the balance sheet and profit and loss statement.

However, it is still possible to test hypotheses in relation to the dates of option adoption (as this information is available from the companies' annual reports), so this information was collected. In any case this study is not on how much is paid but is aimed at changes in the philosophy of executive pay and of executive stock options adoption in particular.

Where the date of adoption was not stated or appeared vaguely in annual reports, the investor relations departments of firms were contacted directly. Journal publications on German corporate governance in general and on executive compensation in particular (e.g. Bradley and Sundaram, 2004) were used as supplementary sources of information on ESOs.

5.3.5 Independent Variables

Information was collected for each year 1992-2003 for each firm. Dependence on American capital markets (H1a and H1b) is represented by whether firms have American Depositary Receipts (ADRs, at levels 2 or 3) on US exchanges (AMEX, NASDAQ, and NYSE), coded 1, and 0 otherwise. This data was obtained from the website: www.adr.com as well as directly from these three exchanges. This information was cross-checked for reliability with companies' annual reports and Form 20-Fs supplied to the U.S. Stock Exchange Commission.

In relation to (H2a and H2b), the foreign ownership of German firms was established from a number of sources. A database derived from *Hoppenstedt Aktienführer* (Share Gazette) was the principal source of ownership data for the majority of firms¹. This database was checked with and complemented by data taken from Deutsches Aktieninstitut (DAI) and directly from companies' annual reports. Where data was incomplete, investor relations departments of firms were again contacted directly.

¹ Thanks to Prof Stefan Winter of Bochum University for his enormous help with this data.

Firm performance (H3a and H3b) was measured for each year by an accounting-based variable, namely Return on Assets (ROA) from Datastream International, Thomson Financial and Deutsche Börse. ROA is taken as the ratio of net income to total average assets, expressed as a percentage. ROA has been used in many studies to proxy for firm performance (e.g. Bhagat and Black, 2002; Botosan and Plumlee, 2001) and is arguably a better measure than Return on Equity (Barber and Lyon, 1996).

In relation to peripherality (H4a and H4b), firms were coded 1 if not in the DAX 30 (the thirty largest German firms) during each observation year and 0 otherwise. German DAX 30 firms may be considered as the organizations that are centrally located within an institutional context as most of the institutional pressures (regulatory, political and cultural) bear on them (Leblebici *et al.* (1991). As a practical short-cut, membership of the DAX 30 group of the biggest firms in Germany is used to define core firms, with other firms in the DAX 100 but outside the DAX 30 being peripheral.

For (H5a and H5b), the dependence of the accounting system used by firms on American standards (i.e. IAS, US GAAP or HGB, where the latter represents the German standard) was again obtained from annual reports and the Deutsche Börse website at www.deutscheboerse.de. To complete missing data, companies' annual reports were again searched and the investor relations departments contacted. Firms were coded 1 for using either International Accounting Standards (IAS), now known as International Financial Reporting Standards (IFRS), or US GAAP, and 0 for German GAAP commonly known as HGB.

Consistent, with Fiss and Zajac (2004), the adoption of IAS or US GAAP accounting standards is used in this study as a measure of value commitment. An alternative approach could have been that used by Bradley and Sundaram (2004) where value commitment is measured by the number of times the phrase "shareholder value" is used in the directors' annual report. The use of IAS or US GAAP is a much more practical way of demonstrating commitment to shareholder value maximization, rather than relying on mere statements that may be used ceremonially.

Data on firms' ownership proportions and ownership concentration (various subsets of H6) were taken from a number of sources, as described for H2a and H2b, above.

To measure the interests and power dependence of employees (H6a1 and H6a2), the percentage of personnel costs on total sales was obtained from Datastream International, supplemented by Thomson Financial and Deutsche Börse. One great possibility for this variable could have been employee supervisory board representation. However, German co-determination law eliminates employee representation as a possible measure of power dependency, as it decrees uniformity, without variation in employee representation in large firms. This is because, where a firm has at least 2000 employees, 50% of the supervisory board members should be employees' representatives. Using the number of employees is unsuitable either as this has been used in past studies as a proxy for firm size.

A dichotomous variable was used to measure State ownership (H6b1 and H6b2), coded 1 if State (Federal or Land) ownership exceeded 10% and was the largest block-holder, and 0 otherwise. The same criterion and dummy variables were used for family ownership (H6c1 and H6c2). Information on dispersed shareholdings and blockholdings was taken from the *Hoppenstedt Aktienführer* (see above). With the intention of investigating whether the institutional ownership of the state or not makes a difference in a firm adopting an ESOs, the study used a dummy variable. To measure the influence of these ownership variables on power dependencies, an alternative measure could have involved the representation of their respective ownership groups on the supervisory board (e.g. number of board members representing state, family, etc ownership). However, the categorical divisions of the supervisory board tends to be restricted to banks' and employees' representatives, usually in rigid proportions offering little variation in independent variables (Vitols, 2004; Buck and Shahrin, 2005; Conyon and Schwalbach, 2000b).

The logarithm of total assets (H7a and H7b) comprised a variable representing the prestige and abundance of resources available to a firm, with total assets for each year obtained from Datastream International, Thomson Financial and Deutsche Börse. A firm's assets is a representation of its value, hence an abundance of resources and capabilities. However, this measure has also been used in the literature to proxy for firm size.

Regarding the extent of foreign links, (H8a and H8b) the ratio for foreign to total sales was obtained for each firm from the same sources. This ratio, commonly known as export intensity, has often been used as a measure of a firm's internationalisation (e.g. Filatotchev, Dyomina, Wright, and Buck, 2001). In the absence of more suitable measures, like Foreign Direct Investment (FDI) this measure suffices to proxy for how globally networked a firm is. Of course, the imports ratio could have been an alternative and at best a complement, but obtaining data on imports proved very difficult. Equally, a more direct measure of foreign links pertaining particularly to the phenomenon under observation (i.e. adoption of ESOs) could have been firm sales to the USA. However, data on foreign sales to the US is often presented at country and industry levels.

Using an inter-library search, the Thomson Financial European Handbooks were located in a number of University libraries. From De Montfort University the 1997 Thomson Financial European Handbook was used; University of Leicester for the 2000 handbook, Aston University for the 1998 and 1999 handbooks. Earlier editions of these handbooks (1991-1994) were located at the British Library in London.

5.3.6 Control Variables

Two control variables were used, namely firm age and debt-to-equity ratio. The rationale for controlling for age of the firm is that because older firms are more experienced they would be in a position to determine the future benefits of ESO adoption or the implications of non-adoption of a new management practice.

German firms have in the past relied heavily on banks to finance their projects. This situation has given greater control to banks on what goes on within firms. As banks are likely to be opposed to any form of change that may destabilise their power we control for debt-to-equity ratio.

The Deutsche Börse website was useful in identifying the date on which firms were established, and firm ages were obtained for each year by subtracting the observation year by the firm's founding year. These estimates were cross-checked with data taken from Europe's 15,000 Largest Companies Handbook (1999). Debt-to-equity ratios were obtained from Datastream International, supplemented by Thomson Financial and Deutsche Börse. Finally, year dummies were introduced for each year after beginning from 1996. The first ESO adoption, in Germany, was in 1996, and in 1998 ESOs were fully legalized. The purpose of these year dummies is to pick up any effects of regulatory change and any other time-specific institutional changes.

5.4 Methodology

The context of this thesis is, as stated earlier, the adoption and diffusion of executive stock options in an institutional environment where such a form of compensation has been historically regarded as being antithetical to the dominant and taken-for-granted corporate governance logic (Vitols, 2004). As recently as less than ten years ago, almost no German firms offered stock-based pay to top executives; by the end of 2001, almost 50% of the largest one-hundred firms (DAX 100) had done so.

In following the traditional diffusion model, most previous studies have employed a binary dependent variable for adoption (e.g. Westphal and Zajac, 1994; Tuschke and Sanders, 2003), and this thesis follows the same approach. Thus, the key data for the dependent variable is knowledge of the existence or otherwise of a company's stock option plan. We used a dichotomous variable to designate whether a firm had adopted a stock-based incentive plan.

First, (in Models 1A and 1B) we looked at whether a firm adopted ESOs in any given year or not. For adopting firms, the dependent variable is an indicator dummy variable equal to one in the year in which the firm first adopts ESOs. The dependent variable is equal to zero for all firm-years prior to the adoption year, and firm-years subsequent to the adoption year are removed from the sample. For non-adopting firms, the dependent variable is set equal to zero for all years that the firm is in sample. This approach is similar to the one used by Kato, Lemmon, Luo and Schallheim (2003) and follows a popular methodology of event history analysis (see below). The first step yielded the first dependent variable (*ESO-adopt*) which simply considered the adoption or non-adoption situation without specific timing considerations.

Secondly (in Models 2 and 3), on the basis of adoption theory we expect that the factors explaining the adoption of innovations (ESOs) will not be stable over the diffusion process but will change as subsequent companies adopt stock options.

Thus, to compare the effects of the independents on the likelihood of stock options adoption at two different points in time, (early/late adoption) we specified two logistic regression equations, one for each dichotomous dependent variable. The first equation (Model 2) refers to early adoption versus non-adoption, the second (Model 3) refers to later adoption versus non-adoption. ESO adoption is classified before and up to 1998 as early adoption since legislation allowing the “official” use of them was passed in 1998. Prior to 1998 firms had managed to use *de facto* ESOs. Thus, as the economic and corporate governance of Germany has been changing, we divide the time periods of stock options adoption as shown in Table 5.1

Three classifications of the dependent variable are considered.

Table 5.1: Defining the dependent variables

Model	Period	Dependent variable	Variable definition
1 (A and B)	1992-2003	<i>ESO-adopt</i>	1 for adoption 0 otherwise
2	1992-1998	<i>Early-ESO- adopt</i>	1 for adoption 0 otherwise
3	1999 - 2003	<i>Later-ESO- adopt</i>	1 for adoption 0 otherwise

Whereas the first step considers the adoption status of the firm, the second step goes beyond that by recognising the timing of stock options adoption, thus systematically investigating shifts in adoption stimulating factors that enable to better understand the processes and dynamics behind the adoption of executive stock options in Germany. To analyse the determinants of ESOs adoption, certain statistical techniques are used and this is the subject matter of the next sections.

5.4.1 Event History Analysis

An event history is a longitudinal record of when events happened to a sample of individuals or collectivities (Allison, 1984). Demographers, for example, study individual life events such as deaths, births, migrations, marriages, etc. In this study we look at the event of adopting ESOs by firms.

Occurrence of an event assumes a preceding time interval that represents non-occurrence. More specifically, a certain time period of duration must exist in order for an occurrence to be recognised as an event. Moreover, the occurrence should represent a change consisting of a relatively sharp disjunction between what precedes and what follows. In our case, German firms have up until 1995 not been using ESOs to pay their executives. Stock option adoption represents a new form of executive compensation. This makes the adoption of stock options by German firms an “event”.

To apply event history methods one needs event history data—a longitudinal record of when key events occurred for some individual or organization (Allison, 1984). For example from a sample of firms one could record the dates of when they adopted a management innovation like ESOs. These dates could be recorded on a daily, monthly or yearly basis. Where the event history data is recorded at very close intervals e.g. hourly or even daily, continuous-time models can be estimated. On the other hand if the adoption of a practice or event is recorded on an annual basis, discrete-time models can be estimated. In this study it is the discrete-time model that is of relevance.

5.4.2 Discrete-Time Models

Discrete-time models assume that the event of interest occurs only at discrete time points. In this study, we focus on discrete-time, non-repeatable and one-way transition events. One-way transition events imply that firms which had not adopted stock-based compensation schemes do it for the first time and the reverse is not acceptable. Thus, we do not consider a situation where firms had ESOs and then decided to get rid of them at some stage. Non-repeatability refers a situation where firms adopt ESOs only once. Although firms often introduce stock options at irregular intervals after the initial adoption, that scenario is not relevant for this study.

Two major alternatives exist for modelling discrete-time event history data: proportional hazards models and logit models. The most commonly used proportional hazard model is the Cox Regression and the logit model commonly used for event history data is logistic regression.

For this study we use a discrete-time logit model: logistic regression model. Our choice of a logit model over a proportional hazard model like the Cox regression is based on two main reasons. Firstly, the timing of ESOs adoption in our study does not take the date and month into consideration, but simply the year of adoption. The use of discrete-time logit is normal practice when measurement is based on discrete times of fairly large intervals (such as years) and when the event of interest sometimes occurs for a substantial number of organizations at the same time, as is the case in this study

(Yamaguchi, 1991). Thus, the main advantage of the discrete time model over the continuous model is that it does not require exact information on the timing of events and is thus well suited to handling the problem of “ties” on the dependent variable. Events are “tied” when two or more subjects in the sample have the event at the same time. The presence of many ties can lead to a serious bias in parameter estimates when using proportional hazard models like Cox’s method (Yamaguchi, 1991). On the other hand, discrete-time models following logistic regression can handle ties without introducing bias in parameter estimates. Accelerated failure models such as exponential, Gompertz, and Weibull model are not appropriate either since this study uses time-varying covariates.

Secondly, Cox regression uses the *partial-likelihood (PL)* method whereas logistic regression uses *maximum-likelihood (ML)* method, which not only handles ties well, but also permits direct analysis of time-dependent covariates (Yamaguchi, 1991).

Thus, a practical advantage of the discrete-time logit model compared with the discrete-time proportional hazards model is that we can use a logistic regression program for estimating parameters. Additionally, the interpretation of logistic regression output, very much like linear, non-logistic regression, is easy.

The structure of the input data, however, differs between the conventional logistic regression analysis and the use of logistic regression for the analysis of discrete-time event history data. While the former uses one observation for each sample subject, the latter uses multiple observations for each. Accordingly, the input data for the logistic regression must be arranged in a specific way.

For each sample subject, *i.e.* for each firm in the sample and for each discrete time point at which the firm is at risk for having the event, the firm-year record file contains information about the occurrence or non-occurrence of the event in question. The file also contains for each year the values of time-dependent and time-independent variables. This is one area of difference between not only the conventional logistic

regression analysis at data structure level, but also between event history analysis and linear regression. Further differences are discussed below.

5.4.3 Event History Analysis and Censored Data

The occurrence or non-occurrence of an event produces a dichotomous dependent variable. Linear regression is not suitable for dichotomous dependent variables. Apart from this problem, there are further complications with event history data (which further dismisses the use of linear regression) sometimes referred to as survival data: *censoring and time-dependent covariates* (called time-varying explanatory variables).

Censoring exists when incomplete information is available about the duration of the risk of occurrence of an event because of a limited observation period. Censoring comes in many forms and occurs for many different reasons. The most basic distinction is between left censoring and right censoring. Technically, an observation on a variable T is right censored if all you know about T is that it is greater than some value c . In event history analysis, T is typically the time of occurrence for some event, and cases are right censored because observation is terminated before the event occurs. Thus if T is the 12th year of observation in a sample of companies (where adoption of stock options is the event) and we know that $T > 12$, in which case, the company's adoption time is right censored at the 12th year.

Symmetrically, left censoring occurs when all you know about an observation on a variable T is that it is less than some value, in this case $T < 1$, where 1 is the first observation year.

Thus, a major strength of event history analysis is its ability to handle censored data.

5.4.4 Logistic Regression Model

Logistic regression is a mathematical modelling approach that can be used to describe the relationship between several independent variables and a dichotomous dependent

variable (Long, 1997; Menard, 1995). Logistic regression applies maximum likelihood estimation after transforming the dependent into a logit variable as explained below. Thus, logistic regression estimates the probability of an event occurring.

5.4.5 Logistic Regression and Ordinary Least Squares (OLS) Compared.

Logistic regression has many analogies to OLS regression: logit coefficients correspond to *beta* coefficients in OLS, the standardized logit coefficients correspond to *beta* weights, and a pseudo R square is available to summarize the strength of the relationship. Unlike OLS regression, however, logistic regression does not assume the linearity of any relationship between the independent variables and the dependent variable; does not require normally distributed variables, and does not assume homoscedasticity. In other words, it places less stringent requirements on the data. However, logistic regression requires that observations are independent and that the independent variables be linearly related to the logit of the dependent variable.

5.4.6 Logistic function

To explain the usefulness of logistic regression, we explain here the logistic function, which describes the mathematical form on which the logistic model is based.

The logistic function is shown mathematically as:
$$f(z) = \frac{1}{1 + e^{-z}} \quad [5.1]$$

Plotting the values of this function as z varies from $-\infty$ to $+\infty$, the function takes an asymptotic form between 0 and 1.

When $z = -\infty$, the logistic function $f(z)$ equals 0. On the right side, when $z = +\infty$, then $f(z)$ equals 1. This situation can be demonstrated mathematically:

$$f(-\infty) = \frac{1}{1 + e^{-(-\infty)}} = \frac{1}{1 + e^{\infty}} = 0 \quad [5.2]$$

And,

$$f(\infty) = \frac{1}{1 + e^{-\infty}} = \frac{1}{1 + 0} = 1 \quad [5.3]$$

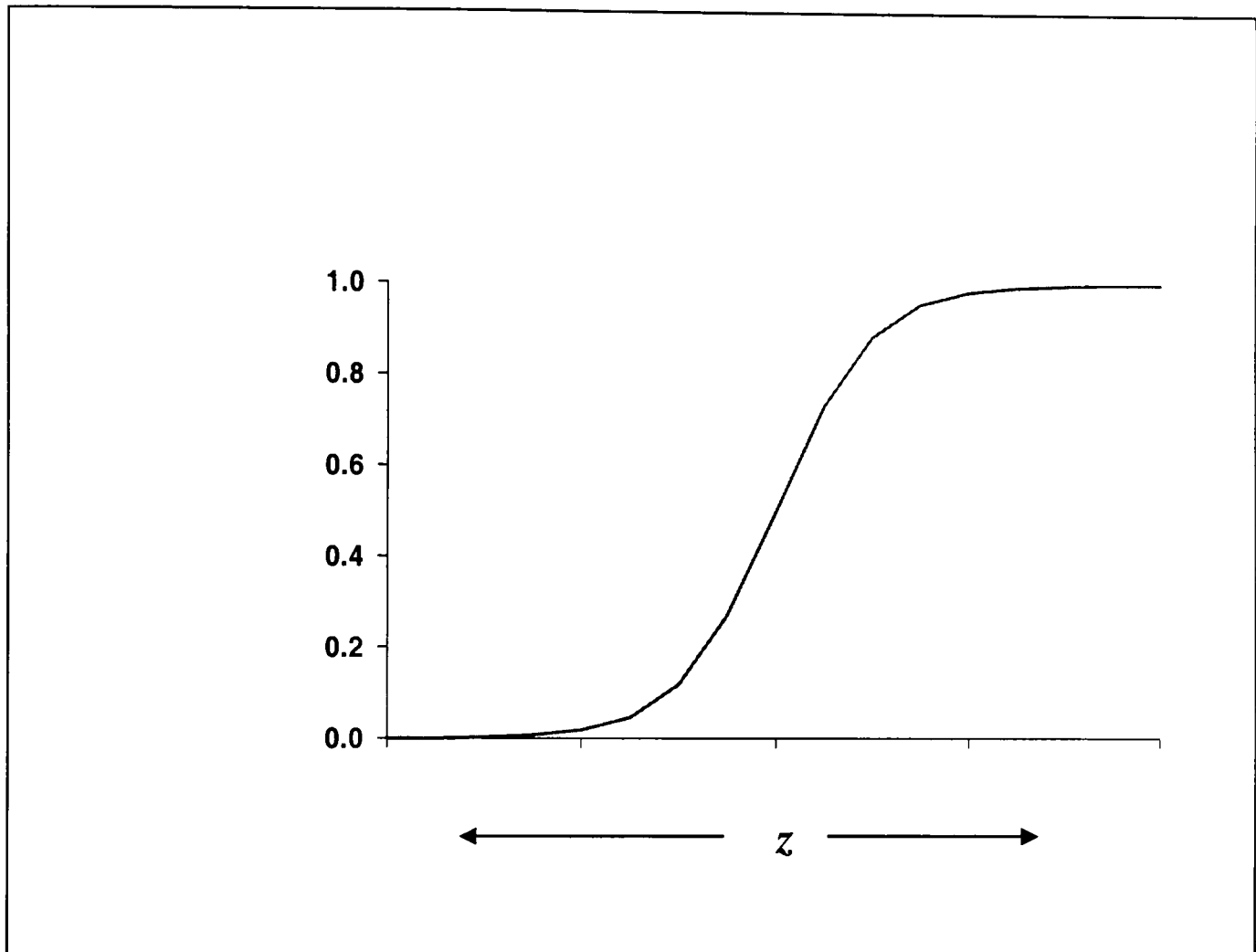
Thus, as the function describes, the **range** of $f(z)$ is between 0 and 1, regardless of the value of z .

The fact that the logistic function $f(z)$ ranges between 0 and 1 is the primary reason why the logistic model is suitable for a dichotomous dependent variable. The model is designed to describe a probability, which is always some number between 0 and 1.

Another reason why the logistic model would be the most appropriate for this thesis derives from the **shape** of the logistic function.

As shown in the Figure 5.1, if we start at: $z = -\infty$, and move to the right, then as z increases, the value of $f(z)$ hovers close to 0 for a while, then starts to increase dramatically toward 1, and finally levels off around 1 as z increases toward $+\infty$. The result is an elongated, S-shaped picture.

Figure 5.1: The logistic function: $f(z) = \frac{1}{1 + e^{-z}}$



This situation represents the view that many studies on adoption of innovations have shown (e.g. the diffusion across organizations of practices such as corporate acquisitions (Haunschild, 1993), poison pills (Davis, 1991), golden parachutes (Davis and Greve, 1997), technological innovations (Ahuja, 2000), total quality management techniques (Westphal, Gulati and Shortell, 1997), and the multidivisional form (Palmer, Jennings and Zhou, 1993)).

Thus, for this study, the starting point is when not a single firm has adopted stock options. Adoption starts in small numbers and, as predicted and discussed in the conceptual model (in Chapter 3), more firms join in greater numbers, only to slow down again towards the end of the adoption era.

The logit form (see Appendix 5.1) is the basis on which we design the models to test hypotheses for this thesis.

5.4.7 Logit Models for German ESOs Adoption

As outlined above, we test three models with the dependent variables: *adopt*, *early - adopt* and *late - adopt*.

Thus, Allison (1984) is followed in using discrete time event history analysis to conduct a logistic regression:

$$\text{Log} \frac{P(ESO_t)}{1 - P(ESO_t)} = \alpha_t + \sum \beta_i X_t + \varepsilon_{it}, \quad [5.4]$$

where, $P(ESO_t)$ is the probability of a firm adopting an ESO at time t . The term α_t implies that the hazard rate for adoption varies across time. To estimate α_t , a set of seven year dummies was entered (see Model 1B below). β stands for the parameter estimates and X_t represents the independent variable at time t . Estimates of parameter β are obtained using maximum likelihood. This method as explained above treats the data as quasi-cross-sectional; if a firm adopts ESOs in the first year of observation, i.e. 1992, it contributes one firm-year, and at year two, two firm years and so on. Non-adopting firms contribute as many firm-years as there are in the sample. Thus each of the censored firms contributes a maximum of n firm-years, where n is the longest time interval.

The first model tests the overall adoption situation by German firms between 1992 and 2003. This model does not consider specific timing of stock options adoption. The model to be tested relates to the entire observation period from 1992 through 2003.

5.4.7.1 Adoption of ESOs: 1992-2003

Specifically, we test the model:

$$\begin{aligned} \text{Logit (early-ESO-adopt)} = & \alpha + \beta_1 USinvestors_{it} + \beta_2 Foreign\ ownership_{it} + \beta_3 \\ & Profitability_{it} + \beta_4 Peripherality_{it} + \beta_5 Value\ commitment_{it} + \beta_6 \\ & Labour\ cost_{it} + \beta_7 State\ ownership_{it} + \beta_8 Family\ ownership_{it} + \beta_9 Dispersed \\ & ownership_{it} + \beta_{10} Block\ ownership_{it} + \beta_{11} Bank\ ownership_{it} + \beta_{12} Firm\ size_{it} + \beta_{13} \\ & Foreign\ sales_{it} + \varepsilon_{it} \end{aligned} \quad [5.5]$$

Where; α is the unknown intercept and β is the unknown coefficient.

To capture the effect of time on the adoption of ESOs, a second equation (Model 1B) with the same dependent variable and independent variables as in the one above, plus year dummies is estimated. We also estimate early and late adoption of ESOs using the same specified model designated as Models 2 and 3 respectively.

To fit these models and carry out subsequent analysis, Version 13 of SPSS was used. The next section discusses the evaluation of logistic regression models, particularly how to assess the model goodness-of-fit and interpretation of regression coefficients.

5.5 Evaluation of the Logistic Regression Model

Once the model has been built and predictions produced, it is necessary to determine how effective that model is at predicting the dependent variable. This is referred to as *goodness-of-fit*.

The F ratio and R^2 tests are commonly used to determine the significance (goodness-of-fit) of the more familiar linear regression models. In some cases, random sampling variation in the data can produce an improvement in prediction by using the regression equation even when the independent variables are unrelated to the dependent variable. The multivariate F ratio test is used to ascertain whether a reduction in error of prediction is caused by these sampling variations, or whether there is truly a relationship between the independent variables and the dependent variable. The coefficient of determination, or R^2 , measures the proportion by which use of the regression equation reduces the error of prediction. In other words, it determines whether the relationship is substantial enough to be significant.

To analyze goodness-of-fit for the logistic regression models used in this study, close parallels to the F and R^2 tests were used. In logistic regression the G_M statistic is analogous to the F test in linear regression (Menard, 1995; Hosmer and Lemeshow, 1989).

To obtain the G_M statistic the following process takes place using SPSS software. Before independent variables are entered into the logistic regression model, the *-2Log Likelihood* or *-2LL* (which approximates a chi-square distribution) for the model with only the intercept constant (α) is given. This intercept-only *-2LL* is designated D_0 (designated as L_0 by Hosmer and Lemeshow, 1989) to indicate that none (zero) of the independent variables were included in the equation. In SPSS, this value is located at the beginning of the output and is labelled "Initial Log Likelihood Function". D_0 is analogous to the total sum of squares (SST) in linear regression analysis (Menard, 1995).

At each additional step in the logistic regression procedure a new *-2LL* value is determined. This *-2LL* statistic is produced using only those independent variables included at that step and the intercept. This statistic is referred to as D_M^n (n denoting

the step number in the logistic regression procedure) or the deviation X^2 for the full model. D_M is analogous to the error sum of squares (SSE) in linear regression analysis and indicates how poorly the model fits with the independent variables in the equation (Menard, 1995).

Taking the difference between D_0 and D_M , that is $(D_0 - D_M)$, gives the model G_M . In SPSS G_M is labelled as “Model Chi-Square”. G_M is not only analogous to the multivariate F test, but also to the regression sum of squares (SSR) that is, $SSR = SST - SSE$ (Menard, 1995). Thus, G_M provides a test of the null hypothesis that $\beta_1 = \beta_2 = \dots = \beta_k = 0$ for the logistic regression model. If G_M is statistically significant, then the null hypothesis can be rejected, and it can be concluded that the independent variables contribute to better predictions.

Analogous to R^2 or $(\frac{SSR}{SST})$ for linear regression is the R^2L statistic for logistic regression. R^2L indicates how much the inclusion of the independent variables in the model reduces the badness-of-fit D_0 chi-square statistic. R^2L varies between 0 (independent variables are useless in prediction of dependent variable) and 1 (independent variables in model predict the dependent variable perfectly), and is calculated by dividing the Model Chi-Square (G_M) by the Initial Log Likelihood

$$\text{Function } -2LL(D_0) \text{ thus: } R^2L = \frac{G_M}{D_0} \quad [5.9]$$

Another goodness of fit test is the Hosmer and Lemeshow. The test divides subjects into deciles based on predicted probabilities, then computes a chi-square from observed and expected frequencies. Then a probability value is computed from the chi-square distribution with 8 degrees of freedom to test the fit of the logistic model. A good model should have a Hosmer and Lemeshow goodness-of-fit test statistic greater than 0.05 i.e. it must be insignificant. This is because the null hypothesis that there is no difference

between the predicted and observed values of the dependent variable must be accepted (Hosmer and Lemeshow, 1989). Such a situation means that the model's estimates fit the data at an acceptable level i.e. well-fitting models show nonsignificance on the Hosmer and Lemeshow goodness-of-fit test.

Finally, the success of the logistic regression can be assessed by looking at the classification table showing correct and incorrect classifications of the dependent variable. SPSS produces these statistics. A large percentage of correct case classification is an indication of good model fit.

5.5.1 Interpreting the Logistic Regression Coefficients

Within the framework of inferential statistics, the null hypothesis states that β equals zero, or there is no linear relationship in the population. Rejecting such a null hypothesis implies that a linear relationship exists between the independent variable and the logit of the dependent variable. In linear regression, the slope β tells us the change in the dependent variable given a one unit change in the independent variable. In logistic regression, the logit transformation must be used and the slope coefficient "represents the change in the logit for a change in one unit in the independent variable" (Hosmer and Lemeshow, 1989: 39). In both linear and logistic regressions, β coefficients can be positive or negative. Thus, like other regression analyses, logistic regression still looks at the relationship between variables of interest as the core focus of analysis. A positive coefficient indicates that an *increase* in the corresponding variable is associated with a greater likelihood of an event taking place, e.g. the adoption of an ESO scheme. Conversely, a negative coefficient indicates that a decrease in the corresponding variable is associated with a greater likelihood of adopting an ESO scheme.

Moreover, logistic regression effectively uses the concept of the odds ratio as its measure of association. Indeed, DeMaris (1986: 6) states that, "...in categorical and dichotomous data analysis, 'the effect' of one variable upon another is best expressed in terms of odds ratios". While odds are the ratio of events (e.g. adoption of ESOs) to non-events, odds ratios can be considered as ratio of two odds (Morgan and Teachman,

1988) Odds ratios are obtained by “exponentiating” the coefficients or log-odds (i.e. taking their antilogs). That is, if β is the coefficient, computing $\exp(\beta)$, that is raising the number e (approximately 2.718) to the β power. The interpretation is then as follows: For each unit increase in an explanatory variable, the likelihood is multiplied by its “exponentiated” coefficient. Further, computing $100[\exp(\beta)-1]$ gives the percentage change in the probability with each one unit change in the explanatory variable.

Put simply, the odds ratio approximates how much more likely (or unlikely) it is for the outcome to be present among firms with certain characteristics than among those without the same characteristics (Hosmer and Lemeshow, 1989). For example, if the odds ratio $\exp(\beta)$ of ESO adoption is 2 for firms with American Depositary Receipts, we could say *that firms with ADRs are twice as likely to adopt ESOs than those without other variables held constant.*

Additionally, the interpretation of $100[\exp(\beta)-1]$, which gives the percentage change in the probability with each one unit change in the explanatory variable is also very useful. For example, if the regression coefficient for the variable foreign ownership is 0.022, then $100[\exp(0.022)-1]$ would equal 2.3. The interpretation of this result would be: a percentage point increase in foreign ownership increases the probability of adopting ESOs by 2.3%.

It is important, however, to note that the odds ratio [*i.e.* $\exp(\beta)$] is not a separate measure of the relationship between the dependent variable and the independent variables. It contains the same information as the logistic regression coefficient. All that is different is the way in which the information is presented. In particular, the odds ratio cannot take the place of a standardized logistic regression coefficient for evaluating the strength of the influences of the independent variables on the dependent variable.

It is also important to note that odds ratio do not place a figure on the probability of an event taking place, rather it is a measure of association between the event and the non-event (e.g. adoption versus non-adoption of ESOs). For this study, it is not the absolute

value of the probability of adoption that is important. The study seeks to show the behaviour of adopting firms vis-à-vis non-adopting ones. For that reason the interpretation of odds ratios (which is a measure of association between the event and non-event) is the most appropriate.

However, absolute probability values, though not important in this study (and not shown in SPSS) can be easily calculated by using odds values through the following

ratio:
$$\frac{ODDS}{1 + ODDS}$$

Finally, the statistical significance of individual regression coefficients (i.e., β s) is tested using the Wald chi-square statistic, in the same way the t-statistic is used in OLS.

5.6 Summary

This chapter has discussed data collection and the methodology pursued in both the collection and analysis. It started by discussing the philosophical approach of this study, which is positivism following the quantitative method of data collection and analysis.

However, data collection in Germany is not an easy task although the situation seems to be improving as more and more German firms are moving towards a culture of financial transparency. Data for this thesis pertains to large German firms, all listed and with at least eight years data for the period 1992-2003. The choice of this sample not only allows easy access to data via databases and annual reports, but is also the most suitable given that ESOs, by definition, would not be an issue for small, unquoted firms of the *Mittelstand*.

Data for the defined sample was collected from a number of sources including Datastream, annual reports, investor-relations departments, companies' websites, Securities Exchange Commission filings, American Stock Exchanges and the Deutsche

Borse websites. The rationale of using this data collection strategy over interviews was given.

Given that the dependent variable is taken as whether an ESO was adopted or not in a given year, discrete time event history analysis is followed. This approach uses logistic regression. The choice of event history analysis of logistic regression over other methods like proportional hazard models (e.g. Cox regression) is determined by the time-varying covariates used in this study.

Three models are tested, with the first one referring to the determinants of adoption or non-adoption of ESOs and the other two testing timing effects: early/late adoption of ESOs.

Finally, a brief discussion of how calculations in SPSS are evaluated and interpreted in logistic regression models, especially the goodness-of-fit and regression coefficients was provided. Having, thus, considered the data and methodology used in this thesis, the next chapter is devoted to the discussion of results.

CHAPTER SIX

Results

6.1 Introduction

The previous chapter dealt with data and methodology. It explained that logistic regression is the preferred statistical method for this study, given the dichotomous nature of the dependent variable. Using SPSS, logistic regression tests were run and Chapter 6 discusses the findings of these tests.

The aim of this study, as explained earlier, is twofold. The first aim is to determine the characteristics of firms that adopt or do not adopt ESOs, and the second is to determine factors that lead to early or late adoption of ESOs. In reporting the results in relation to these aims, the first part focuses on models that test for adoption or non-adoption of ESOs. These tests extend to general tests of whether the adoption of ESOs is time-dependent, but without actually testing for the characteristics of early or late adopters. This is the concern of the second part of the analysis.

As explained in Chapter 5, the first part is presented in two sections. The first section is truncated i.e. it excludes the year dummies and the second section includes them.

The chapter starts by describing the data set, including descriptive statistics (means, standard deviations, etc), and multicollinearity tests such as variance inflation factors (VIFs), tolerance ratios and correlation coefficients.

For each model fitted, overall model fit is discussed, followed by the interpretation and analysis of coefficients.

After fitting a model, the emphasis shifts from the computation and assessment of the significance of the estimated coefficients to the interpretation of their values. The interpretation of any fitted model requires the drawing of practical inferences from the estimated coefficients. The question addressed is: *What do the estimated coefficients in the model tell us about the research questions that motivated the study i.e. the adoption or non-adoption of ESOs in Germany?* For most models this involves the estimated coefficients on the independent variables in the model. The estimated coefficients for the independent variables represent the slope or rate of change of a function of the dependent variable per unit of change in the independent variable. Thus, interpretation involves two issues: (i) determining the functional relationship between the dependent variable and the independent variable, and (ii) appropriately defining the unit of change for the independent variable. The final part of the chapter provides a summary and conclusions.

6.2 Descriptive Statistics

Table 6.1 shows sample information under two main headings, namely adopting and non-adopting firms. The number of firms that adopted ESOs over this period in this sample is 65 and the figure for non-adopting firms is 55.

All the 16 firms with ADRs adopted an ESO scheme and none of the non-adopting firms had ADRs.

The average of foreign ownership by adopting firms is higher than that of non-adopting firms, (14.6% and 5.15% respectively). This shows that although non-adopting firms are not listed on American Stock Exchanges, they have still managed to attract foreign investors, albeit at a lower level.

The profitability means for adopting and non-adopting firms are 6.1% and 4.4% respectively.

Table 6.1: Sample Statistics

	Adopting Firms	Non-Adopting Firms
1. Number of firms	65	55
2. US Investors	16 firms	0
3. Foreign ownership	14.6%	5.15%
4. Profitability (ROA)	6.1%	4.4%
5. Peripherality	44 firms	56 firms
6. Value Commitment (IAS)	44 firms	24 firms
7. Labour power (cost)	19.6%	23.5%
8. State ownership	9 firms	5 firms
9. Family ownership	17 firms	21 firms
10. Dispersed ownership	49.6%	36.5%
11. Block ownership	62 firms	53 firms
12. Bank ownership	6.4%	7.2%
13. Firm size (log assets)	6.6	6.1
14. Foreign sales	41.9%	41.4%
15. Firm age	90.8 years	81.8 years
16. Leverage	227.5%	245.6%

Notes: Percentages, number of years and logarithm of assets are averages

From the sample, that spans from 1992 to 2003 adopting firms outside the DAX 30 (considered in this study as being “peripheral”) total 44, and non-adopters (firms not in the DAX 30 total 56.

From the sample of 65 that adopted ESOs, 44 reported that they had adopted internationally accepted accounting standards, *i.e.* US GAAP or IAS. This shows that 21 firms adopted ESOs, but continued to use German (HGB) accounting standards. From the non-adopting firms, 24 were using US GAAP or IAS with the remaining 31 using HGB accounting standards.

Labour cost as a percentage of sales is lower among adopting firms (19.6%), and stands at 23.5% among non-adopting firms.

From the sample, 9 State-owned firms adopted ESOs and 5 did not. The number of State-owned firms in the sample is therefore low, however, representing a possible maximum of 168 firm-years. Similarly, 17 family-owned firms adopted ESOs over the 12 years of study while 21 did not. Dispersed ownership averages 49.6% among adopting firms and is much lower among non-adopting firms at 36.5%.

A total of 115 firms are classified as having a block-owner, where block ownership is defined as having an ownership stake of at least 10% by a single owner or group. This situation may suggest why dispersed ownership is very low particularly among non-adopting firms. Of the 115 firms, 62 adopted ESOs and 53 did not.

The mean of bank ownership is 6.4% among adopting firms and 7.2% among non-adopting firms.

Firm size, measured here, as the logarithm of total assets is 6.6 for adopting firms and 6.1 for non-adopting ones.

There is a small difference between the means of foreign sales for both adopting and non-adopting firms, 41.9% and 41.4% respectively.

On average, adopting firms are older than non-adopting firms. The average age for adopting firms is about 90.8 years and it is 81.8 years for non-adopting ones.

Finally, debt-to-equity ratios are 227.5% and 245.6% for adopting and non-adopting firms respectively. These ratios are very high in international terms, and this may

suggest an over-reliance on bank finance by firms, and the indirect control that banks still have over German firms.

Table 6.2 presents the number and cumulative rate of ESOs adoption during the period 1995-2003. The number of ESO adoptions over this period defines an inverted, U-shaped distribution which peaks in 1999. Cumulatively, 65 firms adopted ESOs over this period. The Table shows that there were no ESO schemes in 1995 and only one firm adopted an ESO scheme in 2003. The majority of the firms adopted ESOs in 1999 followed by 2000, when 10 firms adopted this executive pay element. It is worth noting that German ESOs were first legalised in 1998, hence the high adoption rate in 1999.

Table 6. 2 Classification of Firms' Adoption of ESOs by Year

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Adopting firms	0	5	3	7	28	10	8	3	1
Cumulative	0	5	8	15	43	53	61	64	65

6.2.1. Means, Standard Deviations and Correlations

Table 6.3 shows means, standard deviations and zero-order correlation coefficients and Table 6.4 shows tolerance and VIFs.

<i>VARIABLE</i>	<i>Mean</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.US Investors	.04	.20	1														
2. Foreign ownership	9.77	18.88	.18	1													
3. Profitability	4.88	8.68	.03	.04	1												
4. Peripherality	.86	.35	-.34	-.21	.04	1											
5. Value Commitment	.15	.34	.18	.20	.05	-.12	1										
6. Labour power	22.03	11.66	-.09	-.13	-.05	.06	-.07	1									
7. State ownership	.17	.27	.07	-.05	-.11	-.08	-.01	-.15	1								
8. Family ownership	.37	.42	-.10	-.16	.15	.11	-.09	.18	-.26	1							
9. Dispersed ownership	42.47	27.71	.19	.10	-.02	-.34	.06	-.02	-.03	-.23	1						
10. Block ownership	.90	.29	-.14	.01	-.03	.17	-.07	-.11	.10	.16	-.55	1					
11. Bank ownership	5.86	11.63	-.06	-.05	-.15	.01	-.06	-.18	-.09	-.21	.00	.15	1				
12. Firm size	6.34	.90	.25	.26	-.17	-.46	.15	-.34	.34	-.32	.18	-.05	.08	1			
13. Foreign sales	40.12	25.71	-.01	.04	.04	-.12	.11	.07	-.22	.01	.11	-.15	-.09	-.01	1		
14. Firm age	87.82	57.24	-.06	.17	-.10	-.02	.10	.08	-.08	-.11	.06	.01	.04	.17	.17	1	
15. Leverage	243.23	237.39	.06	-.02	-.09	-.00	-.02	-.14	.09	-.10	-.02	-.00	.07	.25	-.04	-.07	1

6.2.2. Multicollinearity Tests

The presence of high correlations among independent variables in a regression model is known as multicollinearity, a condition that suggests that two or more variables may be measuring similar factors. Although this is not a violation of the assumptions underlying a regression analysis (multicollinearity does not affect the overall fit of the model), it often impairs the usefulness of a regression analysis, particularly with respect to the interpretation of regression coefficients. Two frequently used tools in measuring levels of multicollinearity are correlation coefficient tables and the VIFs.

Thus to assess the extent of multicollinearity, we calculate correlations between the independent variables and VIFs. The highest correlation coefficient is $-.55$ and relates to the correlation between block-holdership and dispersed ownership, and the tolerance levels are all above 0.4 , with the highest VIF at 2.008 . According to Menard (1995: 66), a tolerance score of 0.2 or below is a sign of concern. Since all tolerance scores are above 0.4 for all variables in the model, we conclude that multicollinearity is not a concern.

Table 6.4: Collinearity Diagnostic Tests

<i>Independent Variable</i>	<i>Tolerance</i>	<i>VIF</i>
US Investors	.835	1.198
Foreign ownership	.834	1.199
Profitability	.915	1.093
Peripherality	.628	1.592
Value commitment	.918	1.089
Labour power	.786	1.272
State ownership	.767	1.303
Family ownership	.764	1.309
Dispersed ownership	.580	1.725
Block ownership	.630	1.588
Bank ownership	.815	1.227
Firm size	.498	2.008
Foreign sales	.880	1.137
Firm age	.850	1.177
Leverage	.896	1.116

6.3 Interpretation of Results for Model 1A

Results from Model 1A, estimating equation 5.13 with ESO adoption as the dependent variable for the period 1992-2003 are discussed in this section. Section 6.3.1 discusses

the overall model fit statistics and section 6.3.2 discusses the coefficients of the variables with their respective odds ratios.

6.3.1. Overall Model Fit: Model 1A

In assessing model fit, several measures are used here (see Table 6.5). First, a chi-square test for the change in the -2 Loglikelihood (-2LL) value from the base model is compared to the overall F test in multiple regression. In this model, the reduction was statistically significant at the .000 level, yielding a Chi-square of 149.96 with 15 degrees of freedom (df) and predicts ESO adoption accurately in 95% of the cases. As a general rule, smaller values of the -2LL measure indicate better model fit. The goodness-of-fit measure compares the predicted probabilities to the observed probabilities, with higher values indicating better fit. However, there is no upper or lower limit for this value (Hair, Underson, Tatham and Black, 1998).

Additionally, three measures comparable to the R^2 measure in multiple regressions are used. The Cox and Snell R^2 measure operates in the same manner, with higher levels indicating greater model fit. However, this measure is limited in that it cannot reach the maximum value of 1, so Nagelkerke proposed a modification that had the range of 0 to 1. In this study, the Cox and Snell value is .13 and the Nagelkerke value is .37, implying that the model accounts for about 37% in predicting ESO adoption in Germany. The third measure is the “pseudo” R^2 measure based on the improvement in the -2LL value. The “pseudo” R^2 for this study is 32% calculated as:

$$\begin{aligned}
 R^2 \text{ logit} &= \frac{2LL_{null} - (-2LL \text{ model})}{-2LL_{null}} \\
 &= \frac{468.155 - 318.193}{468.155} \\
 &= \frac{149.962}{468.155} \\
 &= .32 \text{ or } 32\%
 \end{aligned}$$

The final inferential goodness-of-fit test is the Hosmer and Lemeshow test, which measures the correspondence of the actual and predicted values of the dependent variable. In this case, better model fit is indicated by a smaller difference in the observed and predicted classification i.e. the difference should not be significant. A good model fit is, therefore, indicated by a non-significant chi-square value in the Hosmer and Lemeshow test. Results show that the Hosmer and Lemeshow measure indicates that there is no statistically significant difference between the observed and predicted classifications, i.e. it is non-significant (6.54 with 8df and $p > 0.1$).

Table 6.5: Model Fit Statistics for Adoption of ESOs (Model 1A)

<i>Goodness of Fit</i>	<i>Value</i>			
-2 log likelihood (-2LL)	318.19			
Chi-Square X^2 (15 df)	149.96***			
Cox and Snell R^2	.13			
Nagelkerke R^2	.37			
“Pseudo” R^2	.32			
		<u>Chi-square</u>	<u>df</u>	<u>Significance</u>
Hosmer and Lemeshow		6.54	8	.57
Correct case classification	95%			
Firm years	1220			

*** Significant level $p < 0.01$; Initial -2LL = 468.155

6.3.2 Interpretation of Coefficients for Adoption of ESOs (Model 1A)

The preceding section has shown that Model 1A is suitable for the data; thus, at least one of the variables significantly helps to explain the adoption or non-adoption of ESOs. These results provided support for the selection of the explanatory variables. This section is, therefore, devoted to the interpretation of coefficients on explanatory variables. Table 6.6 shows the b-parameters, standard errors and significance levels for each of the variables. Significant effects ($*p<0.10$, $**p<0.05$, $***p<0.01$) are shown in bold.

Four equations with explanatory variables entered at different stages and in different combinations were fitted. As there are insignificant differences between results (coefficients and their respective significance levels) for these equations and the full model, we therefore comment on the results of the full model, as shown in Table 6.6.

The test of the intercept (i.e. the constant) merely suggests whether an intercept should be included in the model. For the present data set, the test result ($p<.01$) suggests that the model should include the intercept.

Table 6.6: Logistic Regression Results for Adoption of ESOs (Model 1A)

		β	S.E.	Wald	Sig.	Exp(B)
Variables						
Constant		-8.37***	2.143	15.275	.000	.000
H1a	US Investors	1.186**	.511	5.393	.020	3.274
H2a	Foreign ownership	.022***	.006	11.970	.001	1.023
H3a	Profitability	.023*	.014	2.655	.100	1.023
H4a	Peripherality	-.604	.421	2.055	.152	.547
H5a	Value commitment	2.526***	.331	58.237	.000	12.501
H6a1	Labour power	-.022	.017	1.804	.179	.978
H6b1	State ownership	-.230	.736	.097	.755	.795
H6c1	Family ownership	.110	.496	.049	.824	1.117
H6d1	Dispersed ownership	.018**	.008	5.624	.018	1.018
H6e1	Block ownership	1.952***	.677	8.312	.004	7.041
H6f1	Bank ownership	-.001	.018	.005	.943	.999
H7a	Firm size	.246	.240	1.051	.305	1.279
H8a	Foreign sales	.006	.007	.770	.380	1.006
	Control Variables					
	Firm age	.003	.003	1.098	.295	1.003
	Leverage	.000	.000	.134	.714	1.000

Notes: Significant levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Moving on to the individual regression coefficients (*i.e.* β s), the results support H1a: ESO adoption is significantly and positively associated with the extent of a German firm's dependence on American investors. The odds ratio for US investors indicates that when holding all other variables constant, firms with ADRs are 3.274 times more likely to adopt ESOs than firms that do not have Level II and/or III ADRs.

H2a is supported ($\beta = 0.022$; $p < 0.01$) by a significant, positive coefficient on foreign share ownership. A 1% increase in foreign ownership increases the probability of adopting ESOs by $100[\exp(0.022) - 1]$, which is equal to 2.3%.

Results show that poor profitability is not associated with ESO adoption. Thus, for H3a, a negative relation was hypothesized, and it seems that high profits should be regarded as a resource that enables change, rather than low profits representing a performance crisis that stimulates ESO adoption. However, the significance of this variable ($p < 0.1$)

is very weak. Results on the odds ratio also show that a 1% increase in a firm's profits has the effect of increasing the likelihood or probability of the firm adopting ESOs by 2.3%.

There is no support for the peripherality variable (H4a), in terms of its significance and direction, i.e. the expected sign on the beta value is positive.

Another insignificant result occurs for firm size (H7a), suggesting that ESO adoption is unaffected by firms being small or large.

On the other hand, public declarations of commitment to shareholder value are significant and consistent with H5a. The odds ratio for value commitment indicates that when holding all other variables constant, a firm that has shown a high level of value commitment by using US GAAP or IAS is 12.5 times more likely to adopt ESOs than one using HGB (local accounting standards).

Results for H6a1, predicting that employees will resist firm adoption of ESOs, are insignificant. It is worth noting, however, that the coefficient is negative as expected.

The fact that State ownership represents no support for the adoption of ESOs is not supported by a significant result, although the direction of the negative sign of the coefficient is as hypothesized.

Family ownership does not play a significant role in either the adoption or non-adoption of ESOs and, contrary to the negative association expected, the coefficient sign is positive.

The outcome of tests on dispersed ownership (H6d1) and block-holder presence (H6e1) appear to be contradictory at first sight, with both being positive and significant. Each is associated with ESO adoption. Further consideration suggests that no contradiction need be involved, however. Both dispersed shareholdings (through shareholder exit and share

price) and block-holder presence (through internal voice) may have the same influence on firm decisions and ESO adoption. A 1% increase in free float increases the likelihood or probability of ESO adoption by 1.8% and firms with significant block-holders are 7 times more likely to adopt ESOs than those without.

There is no support for H8a (foreign sales) or for the two control variables, (firm age and debt-to-equity ratios) which are not significantly associated with the adoption or non-adoption of ESOs.

The next section discusses results from Model 1B, estimating equation 5.14 with ESO adoption as the dependent variable for the period 1992-2003. The only difference between this model and the one discussed previously is that the latter includes year dummies to capture the effect of time. Section 6.3.3 discusses the overall model fit statistics and section 6.3.4 discusses the coefficients of the variables with their respective odds ratios.

6.3.3 Overall Model Fit: Model 1B

Model 1B differs from Model 1A in that year dummies have been included to capture possible time-dependence of the adoption of ESOs in Germany. The first discussion of Model 1B centres on goodness-of-fit (see Table 6.7 below), and will be followed by the interpretation of coefficients.

With respect to ESO adoption, Model 1B is significant (*Chi-square* 203.68 with 22 *df* renders a significance level of 0.00), and predicts ESO adoption accurately in 95.5% of cases. Cox and Snell R^2 and Nagelkerke R^2 are .166 and .487 respectively. These statistics represent an improvement of Model 1B over Model 1A in terms of model overall fit. For example the “Pseudo” R^2 shows an improvement of 13 % (from 32% in Model 1A to 45% in Model 1B). As in Model 1A, the Hosmer and Lemeshow figure (7.905 with 8 *df*) is insignificant, a condition that implies the appropriateness of the model in fitting the data. In other words, the null hypothesis of a good model fit to data was tenable. The number of observations, similar to Model 1A, stands at 1220 firm-years.

Finally, the -2Loglikelihood for Model 1B is 264.476.

Table 6.7 Model Fit Statistics for Model 1B (with year dummies)

<i>Goodness of Fit</i>	<i>Value</i>	<i>Change in -2LL</i>		
(-2LL)	264.48		<i>Value</i>	<i>Significance</i>
Chi-Square X^2 (22 df)	203.68***	From base model	53.72	.000
Cox and Snell R^2	.17			
Nagelkerke R^2	.49			
“Pseudo” R^2	.45			
		<i>Chi-square</i>	<i>df</i>	<i>Significance</i>
Hosmer and Lemeshow		7.91	8	.44
Correct case classification	95.5%			
Firm years	1220			

*** Significant level $p < 0.01$; Initial -2LL = 468.16

Model 1B focuses on the same independent and control variables as Model 1A, with the addition of the time dummies. Adding time variables contributes significantly to the amount of explained variation and demonstrates the overall robustness of the findings.

6.3.4. Interpretation of Coefficients: Model 1B (with year dummies)

The same independent variables significant in Model 1A i.e. without year dummies are also significant in the Model 1B that includes year dummies.

Thus, from Model 1B, which includes year dummies, firms with ADRs are still 3 times more likely to adopt ESOs than those without. The sensitivity of foreign ownership is 1.9%, having gone down from 2.3% in Model 1A. An increase in profits of 1% has the effect of increasing the probability of adopting ESOs by 2.5%.

Table 6.8: Logistic Regression Results for Adoption of ESOs (Model 1B)

	B	S.E.	Wald	Sig.	Exp(B)
Variables					
<i>Constant</i>	-9.62***	2.806	11.759	.001	.000
H1a US Investors	1.311**	.605	4.695	.030	3.711
H2a Foreign ownership	.019***	.007	6.982	.008	1.019
H3a Profitability	.025*	.015	2.771	.096	1.025
H4a Peripherality	-.428	.508	.710	.399	.652
H5a Value commitment	1.994***	.385	26.784	.000	7.346
H6a1 Labour power	-.021	.019	1.299	.254	.979
H6b1 State ownership	.065	.775	.007	.934	1.067
H6c1 Family ownership	.151	.517	.086	.770	1.163
H6d1 Dispersed ownership	.025***	.009	8.075	.004	1.025
H6e1 Block ownership	1.840	.780	5.567	.018	6.297
H6f1 Bank ownership	.009	.020	.202	.653	1.009
H7a Firm size	.231	.314	.543	.461	1.260
H8a Foreign sales	.005	.007	.532	.466	1.005
Control Variables					
Firm age	.002	.003	.390	.532	1.002
Leverage	.000	.000	.172	.678	1.000
Year Dummies			32.316	.000	
1996	.620	1.257	.243	.622	1.858
1997	.225	1.258	.032	.858	1.253
1998	.901	1.167	.597	.440	2.463
1999	2.813***	1.096	6.593	.010	16.663
2000	2.201**	1.117	3.878	.049	9.030
2001	2.373**	1.128	4.423	.035	10.724
2002	1.173	1.211	.938	.333	3.231

Notes: Significant levels: *p<0.10, **p<0.05, ***p<0.01

The odds ratio for US investors indicates that when holding all other variables constant, firms with higher value commitment are more than 7 times likely to adopt ESOs than those with low value commitment (i.e. those not using US GAAP or IAS). This represents a big reduction in value from 12.501 (from Model 1A). Thus, when time is considered, the association of value commitment with ESO adoption, although still very strong, is somewhat reduced.

Results for dispersed ownership show that a 1% increase in free float results in an increase in the likelihood or probability of ESO adoption by 2.5%, an increase over Model 1A by 0.7%. On the other hand, firms with high block-holdership are 6.3 times more likely to adopt ESOs than those without, other variables held constant.

In addition, the time dummies for 1999, 2000 and 2001 are positive and significant, drawing attention to the fact that ESO adoption was concentrated into this period. Thus, the years 1999-2001 evoke the impression of a bandwagon, in which numerous German firms are mimicking their trend setters in a process of mimetic voluntarism; paying executives with stock options may be another manifestation of “institutional isomorphism” (DiMaggio and Powell, 1983).

Thus, the comparison between Model 1A and Model 1B shows the hazard rate (*i.e.* the likelihood of ESO adoption) to be time dependent. Comparing the models, with and without the six year dummies, shows an improvement of Model 1B over Model 1A (a significant ($p=0.00$) chi-square difference of the -2 Log-Likelihood at 53.7). Additionally, the differences on odd ratios between the two models reflect the importance of time in this study.

Table 6.9 below is a summary of the results for the first part of the study, estimated in Models 1A and 1B, however, without the year dummies. The test outcome in terms of coefficient sign and significance levels are the same for the two models.

Table 6.9: Summary of Results for Models 1A and 1B

<i>Hypothesis (Variable)</i>	<i>Predicted Sign</i>	<i>Test Outcome Significance Level</i>	<i>Outcome of Test</i>
H1a: US investors	+	+**	√
H2a: Foreign ownership	+	+***	√
H3a: Profitability	-	+*	X
H4a: Peripherality	+	-	
H5a: Value commitment	+	+***	√
H6a1: Labour power	-	-	
H6b1: State ownership	-	+	
H6c1: Family ownership	-	+	
H6d1: Dispersed ownership	+	+***	√
H6e1: Block ownership	+	+**	√
H6f1: Bank ownership	-	-	
H7a: Firm size (assets)	+	+	
H8a: Foreign sales	+	+	

Notes: Significant levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

6.4 Early Adoption of ESOs

Model 1B shown in Table 6.8 demonstrates that the adoption of ESOs is time - dependent with significant results for adoption in the years 1999, 2000 and 2001. As explained in Chapter 5, adoption of ESOs before and including 1998 is classified as early adoption and from 1999 to 2003 as late adoption.

This section discusses the results of models testing for the early or late adoption of ESOs. The first part of the section is devoted to analysing the characteristic of early adoption, while the second part discusses late adoption. Goodness-of-fit statistics are dealt with first, and as before, the interpretation of regression coefficients then follows.

6.4.1. Model Fit Statistics for Model 2: Early Adoption of ESOs

Table 6.7 shows goodness-of-fit statistics for Model 2, which as explained above addresses the early adoption of ESOs. With respect to the early-adoption of ESOs, Model 2 is successful (*Chi-square* 37.34 with 15 *df* renders a significance level of 0.00), and predicts ESO adoption accurately in 98.3% of the cases. Cox and Snell R^2 and Nagelkerke R^2 are .05 and .29 respectively. The “Pseudo” R^2 is 28%, and very close to the Nagelkerke value. This suggests that the model accounts for 28%-29% of the variance in the dependent variable, i.e. in answering the question on the characteristics associated with the early adoption of ESOs by large German firms. However, the Hosmer and Lemeshow figure (16.68 with 8 *df*) is significant, a condition that may suggest the inappropriateness of the model in fitting the data. Nevertheless, given the fact that the rest of the tests of model fit are good (*Chi-square*, case classification, Nagelkerke and “Pseudo” probabilities), there is good reason to assume the validity of this model, and to thus go on to interpret the results of coefficients. The number of observations, which only take into account years 1992 to 1998 is 847 firm-years.

Table 6.10: Model Fit Statistics for Early Adoption

<u>Goodness of Fit</u>	<u>Value</u>			
-2 log likelihood (-2LL)	102.53			
Chi-Square X^2 (15 df)	37.34***			
Cox and Snell R^2	.05			
Nagelkerke R^2	.29			
“Pseudo” R^2	.28			
		<u>Chi-square</u>	<u>df</u>	<u>Significance</u>
Hosmer and Lemeshow		16.68	8	.03
Correct case classification	98.3			
Firm years	847			

*** Significant level $p < 0.01$; Initial -2LL =139.876

6.4.2 Interpretation of Coefficients: Early Adoption

The coefficients presented in Table 6.11 below are used to approximate the size and direction of the association that each independent variable has with the dichotomous dependent variable in the early period of ESOs adoption in Germany. The intercept is significant and thus can be included in the model. Associations with each independent variable are discussed in turn.

In the early part of ESO diffusion process, the presence of US investors through the use of ADRs is not correlated with ESO adoption. The study can only speculate that there were probably few firms with ADRs or that the requirements by American stock markets were not so strong, or possibly that imitation by German firms was still weak.

Table 6.11: Logistic Regression Results for Early Adoption of ESOs

	<i>Variables</i>	β	<i>S.E.</i>	<i>Wald</i>	<i>Sig.</i>	<i>Exp(B)</i>
	Constant	-10.776***	3.081	12.234	.000	.000
H1b	US Investors	.575	1.042	.304	.581	1.776
H2b	Foreign ownership	.028*	.015	3.623	.057	1.028
H3b	Profitability	-.007	.044	.023	.881	.993
H4b	Peripherality	.564	.743	.575	.448	1.757
H5b	Value commitment	2.849***	.708	16.204	.000	17.272
H6a2	Labour power	-.058*	.032	3.199	.074	.944
H6b2	State ownership	.178	1.529	.014	.907	1.195
H6c2	Family ownership	1.174	1.026	1.310	.252	3.236
H6d2	Dispersed ownership	.016	.015	1.166	.280	1.016
H6e2	Block ownership	1.553	1.259	1.521	.218	4.726
H6f2	Bank ownership	.002	.033	.006	.941	1.002
H7b	Firm size	.405	.306	1.755	.185	1.499
H8b	Foreign sales	.020	.015	1.792	.181	1.020
	Control Variables					
	Firm age	.000	.006	.000	.993	1.000
	Leverage	.000	.000	.182	.670	1.000

Notes: Significant levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Foreign ownership, a variable that is not only limited to ADRs but includes all foreign shareholders, US-based and non-US alike, is positively associated with the early adoption of ESOs. A 1% increase in foreign ownership is associated with the firm's probability of adopting an ESO scheme increasing by 2.8%.

In the early stages of ESO adoption, profitability is not associated with the adoption nor the non-adoption of ESOs i.e. the result is insignificant. However, the beta value is negative (-.007).

The hypothesis that peripherality is a condition to early adoption of ESOs is not supported by results.

Value commitment, represented here by the company use of internationally recognised accounting standards (US GAAP or IAS) is positively and significantly associated with ESO adoption in the early years of ESO diffusion. At 2.849, $p < 0.001$ this result demonstrates the association with financial transparency and commitment consistent with shareholder value maximization. Indeed, value-committed firms are not only highly inclined to adopt ESOs as shown in Models 1A and 1B above, but are 17 times more likely to be early adopters, compared with firms with low commitment to shareholder value maximization.

Employee power dependencies expected to exert pressures of resistance are not completely associated with the dependent variable during the early part of ESO adoption, as the variable coefficient is negative, but the significance level is weak. An increase in labour costs by 1% is associated with a reduction in the likelihood of a firm adopting an ESO scheme by 0.056%. This sensitivity ratio is very weak.

The rest of the power dependency variables namely, State ownership, family ownership, dispersed ownership and bank ownership are not significant.

Firm size does not make a difference in terms of the decision to ESOs in the early part of the diffusion process, nor does the fact that firms are globally networked through foreign sales.

6.5 Late Adoption of ESOs

Results for Model 3, estimating equation 5.16 with late-ESO adoption as the dependent variable (for the period 1999-2003) are discussed in this section. Section 6.5.1 discusses the overall model fit statistics and section 6.5.2 discusses the coefficients of the variables with their respective odds ratios.

6.5.1. Model Fit for Late Adoption of ESOs

With respect to late-adoption of ESOs, Model 3 is also successful (*Chi-square* 111.87 with 15 *df* renders a significance level of *0.00*), and predicts ESO adoption accurately in 87% of the cases. Cox and Snell R^2 and Nagelkerke R^2 are .27 and .50 respectively. The “Pseudo” R^2 is 41% suggesting that the model accounts for 41% of the variance in relation to the characteristics of early, large firm adopters of ESOs in Germany. The Hosmer and Lemeshow figure (4.77 with 8 *df*) is insignificant, a condition that suggest the appropriateness of the model in fitting the data. The number of observations, which only take into account years 1999 to 2003, is 373 firm-years.

Table 6.12: Model Fit Statistics for Late Adoption of ESOs.

<u>Goodness of Fit</u>	<u>Value</u>			
-2 log likelihood (-2LL)	161.61			
Chi-Square X^2 (15 df)	111.87 ***			
Cox and Snell R^2	.27			
Nagelkerke R^2	.50			
“Pseudo” R^2	.41			
		<u>Chi-square</u>	<u>df</u>	<u>Significance</u>
Hosmer and Lemeshow		4.77	8	.781
Correct case classification	87 %			
Firm years	373			

*** Significant level $p < 0.01$; Initial -2LL = 273.486

6.5.2 Interpretation of Coefficients for Late Adoption of ESOs

The coefficients presented in Table 6.12 below are used to approximate the strength of the association of each independent variable with the dichotomous dependent variable in the late part of ESOs adoption in Germany. The intercept is significant and thus can be included in the model. Associations with each independent variable are now discussed in turn.

In the late part of the ESO diffusion process, the presence of US investors through the use of ADRs is positively associated with ESO adoption (at $p < 0.1$). Compared with the results with early adoption, having ADRs has a weaker association, with the odds ratio suggesting that firms with ADRs are only 1.107 times more likely to adopt ESOs.

There is no support for the foreign ownership variable.

Results show that the more profitable a firm is, the more likely it is that it will adopt an ESO scheme in the late part of the diffusion period. The result shows a highly

significant coefficient (0.091 at $p < 0.01$) although the size of the coefficient is not large. This is a direct contradiction of the expected result, predicted to be negative, following the argument that poorly performing firms do have the incentive to change their governance templates in anticipation of better performance. The odds ratio shows that a 1% increase in profits is associated with an increase in the probability of ESO adoption by 9.6%.

Table 6.13: Logistic Regression Results for Late Adoption of ESOs (Model 3)

		B	S.E.	Wald	Sig.	Exp(B)
	Constant	-7.299*	4.055	3.240	.072	.001
H1b	US Investors	4.701*	2.657	3.132	.077	1.107
H2b	Foreign ownership	.015	.009	2.457	.117	1.015
H3b	Profitability	.091***	.035	6.771	.009	1.096
H4b	Peripherality	-1.453*	.773	3.534	.060	.234
H5b	Value commitment	1.703***	.478	12.695	.000	5.492
H6a2	Labour power	-.017	.024	.464	.496	.984
H6b2	State ownership	.405	.966	.175	.675	1.499
H6c2	Family ownership	-.104	.619	.028	.866	.901
H6d2	Dispersed ownership	.024**	.011	4.401	.036	1.024
H6e2	Block ownership	1.340	1.114	1.447	.229	3.820
H6f2	Bank ownership	.005	.030	.030	.862	1.005
H7b	Firm size	.365	.460	.628	.428	1.440
H8b	Foreign sales	-.002	.008	.065	.799	.998
	Control Variables					
	Firm age	.005	.004	1.754	.185	1.005
	Leverage	.000	.001	.090	.764	1.000

Significant levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The hypothesis that peripheral firms would adopt ESOs because they are not highly embedded in the current template is dismissed, as results show a significant negative coefficient on peripherality (-1.453 at $p < 0.1$). In fact, by not being in the DAX 30, a firm's chance or probability of adopting an ESO scheme is associated with a reduction of 76.6%.

Early adoption results on value commitment are highly and positively significant (1.703 at $p < 0.01$), consistent with the possibility that value commitment by top management counts a lot when it comes to the decision on ESO adoption. However, it may count relatively less during the late adoption window, as firms using US GAAP or IAS are 5.5 times likely to be late adopters compared with 17 times for early adopters.

Resistance to the adoption of ESOs by employees is insignificant when considered in the late part of the hazard period. Employees do not support a change in the status quo. For employees, a change to them might represent subsequent downsizing. Thus, we see employees resisting adoption of ESOs over the period 1992-1998 i.e. during the early part. This resistance fades with time as the results of the later period show.

Other insignificant results are found in relation to power dependency variables, such as State ownership, block and bank ownership.

Results show that dispersed ownership is positively correlated (0.024 at $p < 0.05$) to ESO adoption in the late part of the study period. A 1% increase in a firm's free float is likely to increase the probability of adopting an ESO scheme by 2.4%.

Finally, firm size and foreign sales and the two control variables (firm age and leverage) are not significantly correlated to ESO adoption.

6.6 Summary

To determine the characteristics of firms that: (1) adopt or do not adopt ESOs, (2) are early adopters, and (3) are late adopters of ESOs, a number of models were tested. The first part of the analysis shows that firms with ADRs, with greater foreign ownership and that have high dispersed ownership are more likely to adopt ESOs. Block ownership is also seen to be positively associated with ESO adoption. Additionally, firms with greater value commitment, measured here through the use of US GAAP or IAS accounting standards, are more likely to adopt ESOs. Results of the associations

with profitability, although positive and significant, show the opposite of the predicted outcome. A summary of these results, together with results for the characteristics of early and late adopters are shown in Table 6.14 below.

Table 6.14: Summary of Results for All Tested Models

Variables	<i>Adopt/Non-Adopt</i>		<i>Early Adoption</i>		<i>Late Adoption</i>	
	Outcome	Predicted Sign	Outcome	Predicted Sign	Outcome	Predicted Sign
US investors	***	√			**	√
Foreign ownership	****	√	**	√		
Profitability	**	X			****	X
Peripherality					****	X
Value commitment	****	√	****	√	****	√
Labour power			*	√		
State ownership						
Family ownership						
Dispersed ownership	****	√			**	√
Block ownership	**	√				
Bank ownership						
Firm size						
Foreign sales						

Only three factors explain the possibility of early-ESO adoption among large German firms. Firms with higher proportions of foreign ownership and that are value-committed, are more likely to be early adopters of ESOs. On the other hand, the power of employees is negatively associated with the adoption of ESOs by firms during the early years.

Late adoption is explained by a plethora of factors. The presence of US investors, through the firm's ownership of ADRs, is associated, though not strongly, with the adoption of ESOs in the late period. Again, contrary to the expected result, profitability has a positive association with the late adoption of ESOs. Firms that are peripheral (i.e. not in the DAX 30) are less likely to adopt ESOs in the later period. This result is interesting, as one would have thought that the bandwagon effect would take place as firms adopt ESOs not for efficiency's sake but to gain legitimacy. Value commitment is still associated with ESO adoption, even in the later part of the adoption period. This underlines the importance of prior commitment to shareholder value maximization, in this case, through the adoption of a more transparent accounting system. Dispersed ownership partly explains the adoption of ESOs in later years.

Finally, state ownership, family ownership, bank ownership, firm size and foreign sales are not important as correlates of ESO adoption in this study. However, apart from these factors being insignificant, the signs on the beta values are as predicted.

CHAPTER SEVEN

Conclusions

7.1 Introduction

Chapter 1 stated that the aim and challenge of this research was to determine the factors that encourage the changing of a governance template; in particular the adoption of an American executive pay practice by German firms. The thesis proceeded to use neo-institutional theory as a framework for the analysis of one particular governance innovation (the ESO) in a single country, Germany, whose governance system seems capable of divergence from, or convergence on, the American model. Chapter 6 presented the results of the study. In the present chapter, the results of the formal empirical tests are summarised and discussed from the perspective of their theoretical and practical implications, possible limitations and future extensions.

This concluding chapter is organised as follows. Section 7.2 reviews key findings. Section 7.3 summarises the key findings in the context of exogenous and endogenous dynamics. Section 7.4 considers the possible contribution that the research may make to the academic debate, any implications it might have for policy, and for the actual remuneration practices in firms. Section 7.5 discusses the limitations of the research and Section 7.6 highlights suggestions for future research.

7.2 Discussion of Key Findings

In general, this research has focussed on the following questions: (1) *Which German firms may be predicted to adopt institutional change?* and (2) *What factors determine the early or later adoption of ESOs in German's largest corporations?*

In the sections that follow, the two issues are discussed in terms of existing knowledge and the contribution of this study's results in furthering understanding in this area of corporate governance change.

7.2.1 Determinants of Institutional Change

Leaving aside until 7.2.2 the timing of ESO adoption, some of the coefficients on the independent variables suggested by neo-institutional theory proved to be insignificant in predicting the probability of a firm having an ESO.

For example, "peripheral" firms, together with employee, State and family power dependencies, were all insignificant together with access to resources and information variables involving asset values and foreign sales.

Many variables were significant, however, and advocates of the notion of the "Americanization" of German corporate governance may gain strength from this study of ESO adoption. In terms of exogenous dynamics (US investors and foreign ownership), value commitment (demonstrable shareholder value orientation) and power dependencies (dispersed shareholdings and strategic block-holdings), the presence of these elements of Anglo-American governance in German firms was associated with the adoption of ESOs. These results support and extend those of Ahmadjian and Robbins (2005), who found that American-style downsizing strategies were limited to those firms not deeply embedded in the Japanese version of relational governance or Welfare State Capitalism. These significant results will be discussed in detail in the following paragraphs.

7.2.1 (a) Firms with ADRs (i.e. US investors) are more likely to adopt ESOs

The fact that firms with ADRs are more likely to adopt ESOs could possibly suggest that the external market plays an important role in the adoption process. These market pressures *coercively* push firms that are exposed to American markets to adopt shareholder value principles, and ESOs are certainly a cornerstone of US-style

corporate governance. It could be argued that this behaviour is better explained by resource dependency theory, but from an institutional perspective, the need to comply in order to appear legitimate, facilitating access to resources is well documented (DiMaggio and Powell, 1983). In addition to such voluntary imitation and legitimacy seeking, American Stock Exchanges have certain regulations that firms have to adhere to if they wish to stay listed. These regulative measures could very well be interpreted as being coercive.

Another possible interpretation pertains to mimetic isomorphism; the notion that German firms with ADRs are certainly in a shareholder-value environment, mixing with American firms with a culture of ESOs. This scenario leads to the diffusion of practices through mimicking best practices.

These arguments lend support to the continued suitability of neo-institutional theory as a lens through which to study corporate governance changes.

7.2.1 (b) Firms with higher proportions of foreign ownership are more likely to adopt ESOs

An extension of the argument given above, explaining the role of ADRs in the adoption of ESOs, is relevant here, where firms with higher proportions of foreign ownership are more likely to adopt ESOs. This result gives hope to proponents of corporate governance convergence, with the potentially active role taken by foreign institutional investors such as CALPERS. Indeed, large institutional investors have some capacity to make their voices heard by maintaining active relationships with firms (Seki, 2005). Firms with higher foreign ownership are more likely to implement a variety of corporate governance reforms through the pressure exerted on corporate behaviour (Ahmadjian, 2005). In particular, foreign ownership may have a positive impact on employment adjustment, specifically on the likelihood of reducing employment levels or reducing seniority-related pay (Ahmadjian and Robinson, 2001; Jackson, 2005). The existence of a positive, general association between foreign ownership and the degree of corporate

restructuring and strategy is further supported by specific findings in relation to the adoption of ESOs in this study.

7.2.1 (c) *More profitable firms are more likely to adopt ESOs*

The hypothesized view derived from neo-institutional theory was that poor performance could promote change, e.g. the adoption of ESOs. On the contrary, however, more profitable firms are found to be more likely to adopt ESOs. This may be because profitable firms have the resources to experiment with new innovations. However, in a study of the diffusion of human resources practices of law firms, Sherer and Lee (2002) investigate the relative contributions of institutional (legitimacy) and of technical (resource scarcity) pressures to institutional diffusion. They argue that legitimacy *enables* institutional change, while resource scarcity *drives* it. They find that prestigious firms innovate first because they can get away with deviance due to greater legitimacy, and that less prestigious firms adopt the innovative practices only after these practices have been legitimated. The findings in this study could be taken to confirm that prestigious firms adopt ESOs, assuming that profitable firms are more likely to be prestigious.

On the other hand, the findings of this study refute the idea that resource scarcity (Sherer and Lee, 2002) could alone determine change. Indeed, Schumpeter (1970) and Galbraith (1956) have argued that larger firms have the resources necessary to engage in research and development, and thus for the adoption of innovations. Various adoption studies confirm a positive relationship between absolute firm size and resources and the speed of adoption of innovations (Dewan *et al.*, 1998; Frambach *et al.*, 1998; Kennedy, 1983; Kimberly and Evanisko, 1981; Thong, 1999). Adopters in particular, run a higher risk by adopting an innovation, since the new “product” has not yet proved its value on the market. Webster (1969) claims that adopters of an innovation are generally those firms that can best bear the risk involved in adoption, where the ability to bear risk is a function of the size and the financial strength of a company. However, as the risk of adopting stock options diminishes over the life cycle of the firm, the effect of size can

be expected to diminish (Levin *et al.*, 1987). Thus, differences in size or ownership of superior resources play an important role in the adoption of ESOs.

7.2.1 (d) Firms with higher levels of value commitment (i.e. use of US GAAP or IAS) are more likely to adopt ESOs.

The literature on German corporate governance has shown two ways in which shareholder value commitment by top management is measured. One way, used by Bradley and Sundaram (2004), considers how many times the words “shareholder value” appears in the CEO’s annual speech at AGMs. The other approach, used by Fiss and Zajac (2004) and followed in this study, considers the prior adoption of shareholder value-oriented behaviour, such as the use of IAS or US GAAP, as a signal of commitment by top management to adopt other US-style innovations such as the ESO. In this study, value commitment by management, through the earlier adoption of US GAAP or IAS accounting standards, is associated with the adoption of ESOs. This finding adds support to earlier studies by Tuschke and Sanders (2003) who found that earlier adoption of Anglo-American innovations do make it easier to adopt further related elements.

7.2.1 (e) Firms with higher levels of dispersed ownership are more likely to adopt ESOs

Dispersed ownership is one of the tenets of shareholder value. Many studies have demonstrated the importance of dispersed ownership in achieving shareholder democracy leading to shareholder value maximization (LaPorta *et al.*, 2000). On the other hand, some studies have associated dispersed ownership with free rider problems and the unwillingness of small, dispersed shareholders to invest in “voicing” their concerns . Rather, they may simply dispose of their shares. ESO adoption may be promoted by Boards that perceive that ESO announcements will discourage share exit among frustrated, small investors.

7.2.1 (f) *Firms with higher levels of block ownership are more likely to adopt ESOs*

The fact that block ownership appears to support the adoption of ESOs apparently contradicts 7.2.1(e). Block ownership, it may be argued, facilitates direct control of management, thus reducing the need for ESOs which are normally used to align the interests of management with those of shareholders. However, this finding can be explained by the dynamics of German corporate ownership over the years. Bank ownership has been declining, reducing the active role of banks in corporate governance (see Appendix 7.1 on Deutsche Bank ownership). Bank exit has to some extent been compensated for by the appearance of new investors in the insurance and fund industry, representing a shift in corporate power dependencies, interests and value commitment. However, this situation has not reduced block-holdership but the *type* of block-holder.

An analysis of the DAX 30 companies, around the beginning of 2005, shows that only two of the companies (Deutsche Bank and BASF) have no major block-holder (see Appendix 7.2). Insurance companies and funds have stepped into the gap left by the banks and have taken major stakes in DAX companies. Insurance companies are the largest block-holders in a total of eight DAX companies, and funds are the largest in two DAX companies. By comparison (insurance versus German banks), insurance companies with the intention of maximizing their investment would support the adoption of ESOs as the findings show in Models 1A and 1B. Indeed, these new block-holders have not exercised as much influence over management as banks previously did, but on the other hand they generally have been more active in corporate governance (Vitols, 2005). Moreover, many of these are foreign investors (see Appendix 7.2), such as AXA (France), Assicurazioni Generali (Italy), Atticus Capital L.L.C and Capital Group (USA).

An important point here is that despite the withdrawal of banks from being the largest block-holders, German corporate governance is still far short of convergence to the Anglo-American system of dispersed shareholder capitalism. This, certainly, points to

the difficulties of transferring Anglo-American institutions to countries which have very different cultures, traditions and practices.

These significant relationships support the use of neo-institutional theory in the specific context of ESOs and it may be extended usefully to other areas of international governance and strategy determination.

However, one important caution must be entered: we have no way of telling, given the current state of German information disclosure, whether German ESOs are equivalent to their American template or not. It seems likely that they may have been “translated” in transit, to suit the German institutional context (Buck and Shahrim, 2005). For example, an ESO scheme focused on five senior executives in the US bank, JP Morgan Chase is a very different institution to one applying to 2,498 senior managers in Deutsche Bank.

Finally, it seems clear from the significant coefficients of the year dummies in Model 1B that some changes in political and legal institutions have not been captured by the independent variables used in hypotheses so far. Evidence of legislation as an external contingency, influencing endogenous forces, can be inferred from the passing of the German Stock Company Law (*Aktiengesetz*) in 1998. This legalized the use of ESOs as a compensation instrument. The effect of this legislation started to be felt in 1999, arguably reflected in the significance of the 1999 year dummy. In fact, out of the 65 ESO adoptions reported in this study, 29 of them took place in 1999 alone, representing 45% of the total.

The precise effect of these changes in legal institutions in regressions remains as an outstanding challenge. Meanwhile, other institutional elements measuring the embeddedness of German firms in their German environment, and conversely their willingness to change, have been demonstrated as being important in the analysis of the adoption of an American pay innovation in Germany.

7.2.2 Early or Late Determinants of ESO Adoption

The discussion above has centred on findings of ESO adoption without taking timing (i.e. early/late adoption) characteristics into consideration. This section discusses the significant findings of early or late adoption of ESOs.

7.2.2 (a) *Firms with ADRs are more likely to be late adopters of ESOs*

In this study, the early adoption of ESOs is not influenced by a firm having ADRs. On the contrary, late adoption is more likely to be associated with having ADRs. One possible explanation of this situation is that there were very few firms with ADRs during the early-adoption period. The majority of the firms with ADRs adopted ESOs after 1998. The other reason possibly derives from the decline (in the later period) in the role played by banks in financing firms, hence the need for large German firms turning to US stock markets for their financial needs. Indeed, German firms have in the past relied heavily on local banks to finance their operations. However, as the globalisation of financial markets intensified, these firms realised that they could raise finance in a cheaper manner. Moreover, German banks changed their strategy with time, getting more and more involved in investment banking as opposed to their traditional role of lending.

7.2.2 (b) *Firms with higher proportions of foreign ownership are more likely to be early adopters of ESOs.*

Whereas the majority of firms with ADRs got them late in the observation period as discussed above, foreign ownership, not necessarily through listing on American stock markets, although not very significant, was present in Germany. Firms that have higher proportions of foreign ownership may bring a different philosophy to the AGM. It is not surprising, therefore, that such firms are more likely to quickly embrace a shareholder value orientation, hence the early adoption of ESOs.

7.2.2 (c) Employee power is likely to be negatively associated with the early adoption of ESOs

Employees are unlikely to support any changes in the *status quo* that may be associated with downsizing. Thus, we see employees possibly resisting the adoption of ESOs over the period 1992-1998, arguably because they focus executives on share price rather than employment stability. However, it must be pointed out that any such resistance must be quite weak, as the results in Chapter 6 have shown. This weak resistance fades with time, as the results of the later period are not significant. This might suggest that employees have not been averse to the new arrangements, perceiving that a buoyant share price secures their jobs. In Germany's top firms, Höpner (2001) reports that share ownership has been made widely available to employees at all levels of the firm and that German works council members favour greater information disclosure and involvement of the supervisory board. This might at least partly explain the low degree of opposition from labour against the changes in corporate governance in general. In Japanese firms that are exposed to capital market pressure, strong employee participation via labour-management councils had no positive or negative influence on the adoption of stronger information disclosure and shareholder rights, and even had a positive effect on board reforms (Arikawa and Miyajima, 2005).

7.2.2 (c) Value commitment is associated with both early and late adoption of ESOs

The adoption of an innovation demands the commitment of top management. Indeed, as the results of this study have shown, value commitment is likely to influence the adoption of ESOs both in the early and late stages of the adoption process. This underlines the fact that it is easier to adopt an innovation, such as the ESO, where other shareholder value-friendly preconditions are already in place. Indeed, the use of International Accounting Standards (IAS) or US GAAP has been linked to shareholder value orientation (Tuschke and Sanders, 2003).

7.2.2 (d) Higher proportions of dispersed ownership are associated with the late adoption of ESOs

During the early part of the ESO adoption process in Germany, dispersed ownership was not common. Even during the later part of this study, dispersed ownership was still very low, at least by Anglo-American standards. Thus, dispersed ownership is still not a general characteristic of German corporate governance, but where it exists, it has the power to influence the adoption of ESOs in the later part of the adoption window. With time, German stock markets became more developed, as banks sold their shareholdings and as state firms were privatised.

In summary, three aspects that are likely to be considered by actors when making a decision to adopt an innovation early or late are the level of perceived risk (Rogers, 1995), the quality of available information and related experience (Redmond, 2003).

Early adopters are characterised by “venturesomeness”, an ability to cope with uncertainty and a willingness to accept risk (Rogers, 1995). The fact that foreign shareholders are more likely to support early adoption of ESOs in Germany simply adds support to this argument. For instance, foreign shareholders may be less risk averse, judging by their earlier decisions to invest in German firms. They are more likely to have access to knowledge on the merits and demerits of ESOs from their global experiences. Besides, these foreign owners could be institutional investors (see Appendix 7.2) implying that they have the financial resources to conduct research on the suitability of ESOs in Germany.

Indeed, the lack of association between early adoption and employee power echoes similar arguments, albeit from an opposite direction. For German employees, ESO adoption raises uncertainty regarding economic benefits. Accepting one form of shareholder value commitment could lead to further changes, some of which might mean loss of employment. Thus, the risk may be too high and employees may not have the experience or knowledge to evaluate reforms of this nature.

Finally, a lack of reliable information can possibly explain the association of dispersed shareholders with the late, but not early, adoption of ESOs. As large German corporations were, and are still, to an extent dominated by block-holders, dispersed shareholders are outsiders with little access to strategic information. At the early stages of the innovation diffusion process, they do not have enough information to evaluate the benefits of the innovation.

7.3 Exogenous and Endogenous Dynamics in ESO Adoption

As discussed in Chapter 3, intra-organisational dynamics can be divided into exogenous and endogenous elements. A summary of the discussion on findings is thus provided under these two headings. As discussed in Chapter 3, exogenous dynamics enable the analysis of the firm's interactions with the market and with its wider institutional environment, whereas endogenous dynamics help in understanding how organisations respond to internal institutional factors.

7.3.1 Exogenous Dynamics

The element of exogenous dynamics in neo-institutional theory comes close to resource dependency theory (Pfeffer and Salancik, 1978; Pugh and Hickson, 1997). Firms lacking crucial resources have to respond to the demands of salient suppliers, because without these resources it would be difficult to survive. Indeed, German firms are listed on American stock markets for that very purpose, to seek financial resources. The demands exerted on these firms are twofold. First, there are laws and regulations they have to comply with, a situation that best describes coercive isomorphism. Secondly, as discussed earlier, indirect pressure is evident on this external institutional and market environment through imitation, as German firms emulate successful American firms. In this study, these exogenous dynamics have been seen to be associated with the overall adoption and in late adoption of ESO adoption.

Moreover, the behaviour of German firms after the legislation of ESOs in 1998 is a good indication of the effect of external pressures. Indeed, Tolbert and Zucker's (1983) work demonstrated how legal mandates work to rapidly facilitate institutional change.

7.3.2 Endogenous Dynamics

As discussed in Chapter 3, endogenous dynamics are classified under (a) interests and value commitment and (b) power dependencies and capacity for action.

7.3.2 (a) Interest and value commitment

There is evidence in this study that individual actors' interests play a part in the timing of decision to adopt ESOs. For instance, in firms that are prestigious and not on the periphery, actors' interests lead to the adoption of ESOs, possibly because of the financial strength that these firms enjoy.

Value commitment by top management is purely an internal factor and the findings confirm the importance of prior management decisions that are meant to promote a strong shareholder value philosophy. In this case, it is the earlier adoption of internationally recognised accounting standards (IAS or US GAAP) that serve as a symbol of value commitment and are indeed prior shareholder value-oriented innovations.

7.3.2 (b) Power dependencies and capacity for action

The findings show the importance of the varying power geometries of organisational actors. Indeed, some actors are more influential than others, as shown in this study by the possible resistance shown by employees in adopting ESOs and by the possible support given by dispersed shareholders and block-holders to the adoption of ESOs. The power dependencies also manifest in the timing of the decision to adopt ESOs, e.g. the possible resistance by employees to early adoption of ESOs.

7.4 Contribution

This subsection describes the contribution of this study to knowledge and to policy makers. An analysis is therefore made of the relevance of the study to theoretical development, the debate on corporate governance convergence and its implications for national government policies and for the harmonisation policies of the European Union in relation to executive pay.

7.4.1 Theoretical Development

It is claimed that the contributions of this study are several. First, the main purpose of this study has been theoretical development, in the form of the extension of a theoretical approach to the context of governance change in general and to the adoption of the ESO as a specific governance innovation in particular. To date, neo-institutional theory has rarely been used in the study of corporate governance change, and in areas where it has been extensively used, empirical tests have not been performed. This study applies this analytical lens all the way to empirical testing in relation to corporate governance change in a country that lies along a clear fault-line between stock market and welfare state capitalism.

The use of neo-institutional theory in this study has shown that a plethora of factors, including non-economic ones, can be used to understand the adoption of US-style ESOs. Indeed, the research has emphasised that the adoption of a governance element ultimately depends on the institutional influences affecting the actors making the decisions in organisations. This observation goes a long way towards understanding governance institutions and change, where theories like agency theory have made only a limited contribution, arguably because they are “undersocialized” (Aguilera and Jackson, 2003; Granovetter, 1985; Lubatkin *et al.*, 2001; Bruce *et al.*, 2005). The empirical results of this study suggest that further applications of neo-institutional theory may be fruitful in wider studies of governance institutions.

Furthermore, this observation may have important implications for all governance performance studies that fail to go beyond surface appearances. In particular, evident cases of innovation adoption in relation to business strategies such as ESO schemes, takeovers, human resource management strategies, etc should first be analysed in depth before their equivalence across countries and/or national cultures is assumed.

Finally, this study contributes to the contemporary debate on corporate governance and convergence, characterised by wide disagreement. There is no study so far which has been able to provide evidence that there is an unambiguous direct link between corporate governance and economic performance, and markedly different governance structures in various countries have been associated with world-class firm performance. In other words, divergence may persist. The balance of opinion and evidence from literature appears to be tilted towards counter-convergence arguments where there are fundamental institutional reasons, as well as legal and political explanations, why convergence in corporate governance systems, especially on the Anglo-American pattern, is not likely. Indeed, the literature has documented that important features of the traditional German corporate system have persisted (Lane, 2003; Vitols, 2005), thus the German corporate governance system remains quite distinct from that of the UK and USA.

Nonetheless, literature has shown that legal reforms and hostile takeovers are taking place in Germany. In this study, ESOs have been observed to have been widely introduced, thereby raising important convergence issues. However, this thesis has not proved whether convergence is happening or not. However, it has demonstrated the possible influences on the adoption of an innovation that is considered to be one of the signals of possible convergence.

Emphasizing the role of institutions, the research reintroduces neo-institutional theory into the research framework for the study of institutional change. Thus, it is premature to say that convergence is taking place, though external forces such as market pressures or network positions have contributed to the understanding of the adoption of US-style

ESO schemes in Germany. The research has shown that changing a governance template, or elements thereof, calls for more than agency theory, since the institutional, cultural and political influences affecting the actors in an organisation must be carefully considered.

From the perspective of national corporate governance systems, current developments (e.g. the adoption of ESOs while maintaining old structures such as codetermination, etc) can be interpreted as a form of “hybridisation” (Jackson, 2003), translation (Buck and Shahrin, 2005) or “negotiated shareholder value” (Vitols, 2004). Indeed, structural elements of stakeholder-oriented models are being recombined with newer elements of shareholder-oriented models (e.g. transparency and disclosures, executive pay) so as to arguably produce a distinct “hybrid” combination of structures and perhaps unique set of governance practices. Convergence on a hybrid governance pattern may be occurring (Mishaupt, 1998).

An important consequence of this “new order” is the growing heterogeneity of corporate governance across firms, even within the same country (Aoki, Jackson and Miyajima, 2005). Corporations now choose their corporate governance practices within the boundaries of prevailing national and international constraints (Chizema and Buck, 2006). While national models were never entirely homogeneous, the capacity to generate relatively isomorphic practices across companies and sectors within a particular country is declining. Inherent institutional tensions, such as those between public disclosure and relational behaviour, facilitate deviant patterns of corporate behaviour (Whitley, 1992) and greater firm-specific experimentation in combining elements of different models. Countries may retain distinctive patterns of corporate governance, but the range of internal variation may be growing (Chizema and Buck, 2006), particularly between large internationalized corporations and more protected domestically-oriented or small to medium-sized firms.

7.4.2 Government Policy

Apart from having implications on theory, the research findings may also be significant in that they show the role of policy-makers in attempting to harmonise or reform governance systems or elements.

Before 1998, German firms could essentially not blatantly use ESOs, but the significance of the reported year dummies, 1999-2002 in relation to ESO adoption arguably reflects the changes in German government policy at that time. From 1998 onwards, after the Control and Transparency Act (KonTraG), Germany saw a series of reform measures affecting internal corporate governance. The acceleration of reform activities since the late 1990s shows that the trend to bring Germany more into line with Anglo-American norms and practices was deliberate and proceeded from the broader themes of modernizing the financial market and promoting the capital-market orientation of German firms. This work shows that the mere legal sanction of a practice can be sufficient to significantly increase adoption rates among practices that face considerable opposition elsewhere within the institutional environment. This finding may have wide ranging application to other practices contested in society beyond ESOs adoption.

Thus, the observation made above has wider implications for governance reform programmes e.g. the adoption of national corporate governance codes which could either be mandatory or voluntary i.e. based on a spirit of “comply or explain”. The results of this study are consistent with the power of national government, such as Germany, to promote or at least validate changes that amount to governance convergence.

Beyond national borders, the study also has implications at a wider, regional level, e.g. for the proposed harmonisation of corporate governance practices in the European Union (EU). The High Level Group of Company Law Experts was set up by the

European Commission in September 2001 to make recommendations on a modern regulatory framework in the EU for company law. This group drew up a report in Brussels on the 4th of November 2002 to improve the EU framework for corporate governance, specifically through:

- enhanced corporate governance disclosure requirements;
- strengthening the role of independent non-executive and supervisory directors, particularly in three areas where executive directors have conflicts of interests, i.e. nomination and remuneration of directors and audit of the company's accounts;
- an appropriate regime for directors' remuneration, requiring disclosure of the company's remuneration policy and individual director's remuneration, as well as prior shareholder approval of share and share option schemes in which directors participate, and accounting for the costs of those schemes to the company.

Understanding the internal dynamics of corporate governance change at firm level within a given external environment shaped by country-level market and institutional factors, may help policymakers to improve the situation in relation to executive pay in the EU. For example, the resistance of employees to shareholder-orientated reforms should not be under-estimated in a society like Germany, with institutions founded on a national culture of high collectivism and uncertainty avoidance.

7.4.3 Firms' Remuneration Strategies

By rewarding executives with stock options, the expectation is that top management become motivated to maximise shareholder value. This strategy, according to agency theorists, should reduce self-serving behaviour by top management. However, as shown in this study, instead of attempting to provide real incentives for individual managers, ESOs may exist merely to appease international investors, since the announcements of executive stock option schemes has in general a positive influence on share price (Westphal and Zajac, 1998). The important implication of this is that the symbolic adoption of ESOs may mislead investors, because their introduction may be motivated by social legitimacy, not efficiency, considerations.

On the other hand, ESO adoption may have been supported by self-interested senior managers, anxious to add to the value of their total rewards without improving their efforts or performance. In other words, top management could possibly support ESO schemes without total commitment to their intended purpose. Such commitment may be secured only after other shareholder value-oriented innovations, such as financial transparency and full disclosure.

Finally, whether a firm needs ESOs or not, and whether they prefer to design them in one form or another, has been found to be dependent on their needs and circumstances. In other words a one-size-fit all approach for firms in relation to executive pay is not practical, at both country and firm levels.

7.5 Limitations

The sample framework used in this study is the DAX 100. Although, this sample is observed for twelve years, it is only representative of large German firms. In order to gain a more complete picture of remuneration practices and policies and how well they reflect a philosophy of change across Germany, it would seem desirable to extend the data to small and medium firms. This approach could have been relevant, especially as variables like peripherality and profitability were used in the study. Indeed, small firms could automatically be considered peripheral, and are generally less profitable. However, it is acknowledged that ascertaining the relevant information from small firms is difficult, due to the problems associated with obtaining the relevant company data. In addition, the use of share price, and thus ESOs as a basis for executive compensation, is not common among small firms.

Secondly, while the methodology used in data collection was effective, more could have been done to achieve triangulation. For example, interviews and questionnaires could have been used to complement data collected from annual reports and databases.

Thirdly, the use of one country in this study does not afford the luxury of making generalisations about the association between institutional forces and the adoption of a governance practice like the ESO.

Another limitation of the study concerns the cause-and-effect relationship between ESO adoption and neo-institutional variables. In this empirically-based study, the models used necessarily provide a lens for viewing the world that must simplify reality. In the complex real world of business, there are potentially other factors that could influence ESO adoption. For example, different political parties may influence ESO adoption. Of course, a quasi cross-sectional study also cannot identify causal relationships.

Additionally, while it is argued that the study advances neo-institutional theory and its application to reality, it has a number of weaknesses. Many of them are related to standards of disclosure on executive pay in Germany, and in this respect Germany certainly has not achieved the Stock Market Capitalism that convergence theorists have predicted. Executive pay disclosure in Germany, particularly in relation to ESOs, is still quite weak. Germany's public companies were given three years (dating from the recommendation of the Cromme Commission in 2002) to comply with the voluntary Corporate Governance Code recommending the full disclosure of individual directors' pay. By mid-2005, only 70% of the DAX 30 firms had announced that were intending to comply, forcing the German Federal Council in July 2005 to approve a law on the Disclosure of Management Board Remuneration (*VorStog*, see DSW, 2005). The expectation was that all annual reports for the financial year 2006 would for the first time disclose individual directors' remuneration. However, with the so called opt-out rule in the *VorStog*, shareholders may pass a resolution, with a three-quarters majority of the shares represented at the meeting, allowing the company to refrain from publishing individual board members' remuneration. For example, at the AGM of Sixt AG, 98% of the shares represented at the meeting voted against the disclosure of individual pay, a decision made easier by the fact that its founder Erich Sixt holds 57% of the company's shares. Thus, while ESOs may be adopted in German firms, how many are given to which directors often remains a mystery to outside shareholders. It is

for this reason that this study relies on dummy variables for ESO adoption, rather than sophisticated valuations of ESO awards, as in the USA and UK (Tosi, Werner, Katz, and Gomez-Mejia, 2000).

7.6 Future Research

The conclusions, as well as the limitations of this study, suggest some interesting possible avenues for future research.

More work could be done with a larger sample that includes smaller firms, so long as they are listed. As an overall objective is to find whether German corporate governance is getting closer to the Anglo-American system, a dependent variable common to all German firms, small or large, could be used. Thus, future work could possibly investigate corporate downsizing in Germany. Firms could be downsizing because they need to reduce production costs, raising shareholder value, the main philosophy behind Anglo-American corporate governance. At the same time, institutional resistance could be expected from employees through work councils and supervisory boards. This would allow further use of the model developed in this study and most importantly this study would embrace small, medium and large firms, giving greater variation in independent variables like peripherality, firm performance and value commitment.

It has been pointed out in the limitations section that the study is not in a good position to render generalisations in relation to how institutional factors affect corporate governance change due to the focus on a single country. Future work could take a multi-country approach, drawing sample elements from the EU as a whole for example. In this approach, the same theoretical lens used in the current study could be employed. This approach could lead to better understanding of institutional change especially as more country-specific variables such as culture, political and economic environment could be also added to the model.

Finally, further studies, employing the same theoretical lens as this study, could be applied to those transition economies which were formerly planned economies and are

now moving toward a market-oriented system. Indeed, transition is a shift from one institutional template to another (Johnson, Smith and Codling, 2000; Spicer, McDermott and Kogut, 2002) and corporate governance reform is on the agenda of many transition economies (e.g. China).

APPENDICES

**Appendix 2.1
Opposition to Stock-Based Incentives 1996-1998:
Quotes from Representative German Constituents**

<i>1996</i>	
Person, Position	Statement
<i>Bernhard Wurl, Trade union official IG Metall</i>	“Share options may run counter to a trade union’s interests because they change the company’s corporate objectives – and could mean job cuts”. (Munchau, 1996: 23)
<i>Klaus Zwickel, Trade union president</i>	“Share options make the management focus too much on share price.” (Munchau, 1996: 23)
<i>Anonymous, Trade union official</i>	[On the stock option plan of Daimler]: “[this is a] bonus for laying off employees.” (Spegel and Bierach, 1996: 92)
<i>Jürgen Schrempp, CEO of Daimler Benz</i>	[Noted that the discussion on shareholder wealth generally had lapsed into] “A phantom discussion stamped by class struggle”. (Frankfurter Allgemeine Zeitung 1996: 21)
<i>Martin Peltzer, Prominent attorney</i>	“There is no clear parallelism between high profits from stock-based pay and top management’s efforts. Famous examples like Jack Welch and Robert Goizeta, who enriched themselves as well as their shareholders, are opposed by examples of less impressive top managers who just benefited from windfall profits.”(Blick durch die Wirtschaft: 108: 9)
<i>Klaus Menichetti, Professor of Management</i>	“The stock-based incentives schemes that are currently introduced in German companies are designed in a way that is not appropriate for increasing shareholder wealth.... it will be utmost difficult to design stock-based pay in a way that helps to reduce agency costs.”(Menichetti, 1996: 1692)
<i>Hubert Spegel and Barbara Bierach,</i>	“Many people fear that top managers find ways and means to enrich themselves in times of rising stock prices and find excuses for negative [share price] developments....All experiences with the stock market point to the fact that some managers will try to blandish the company in order to

<i>Journalists</i>	increase the stock price before they convert their option into cash.” (Spegel and Bierach, 1996: 92)
1997	
<i>Robert Koehler, CEO of SGL Carbon</i>	This [introduction of stock option pay] was revolutionary in a country where wage differentials between top management and assembly line workers are among the lowest in the world and there is a great deal of public skepticism about performance-related pay.” (Financial Times, 1997)
<i>Stefan Winter, Institut for Management, Humboldt University</i>	“Often, stock based incentives are designed badly, are open for manipulation, and don’t contribute to the firm’s profit.” (Winter, 1997: K3)
<i>Jochen Klusman, Analyst, Bank Julius Baer</i>	[on tying compensation to firm stock price] “It isn’t a very logical way to encourage employees.” (Rose and Marshall, 1998: 6)
<i>Norbert Sturm, Journalist</i>	[On the stock option program of Volkswagen]: “The stock option program was initially designed to include only the top management team. But then the work’s council started causing problems. It demanded that the program be offered to all employees, otherwise it would deny its approval. The top management team conceded, but only half-heartedly. The workforce can get a maximum of 10 stock options while managers can get 100. The top management team treats itself to 1000 options.” (Sturm, 1997:25)
<i>Hans Schneider, Professor of Personnel Management</i>	“Along with the discussion on “shareholder value” that focuses on increasing shareholders’ wealth, the interests of workers are more and more pushed to the background.” (Sueddeutsche Zeitung 1997)

<p>1998</p> <p><i>A senior manager of an automobile manufacturing company.</i></p>	<p><i>“We don’t mind [the competitor’s] efforts to attract excellent managers with the help of a stock option program – [We’re] just not interested in the type of managers that are attracted by stock-based pay.” (Anonymous)</i></p>
<p><i>Joerg Pluta, Director for the German Shareholder Protection Association</i></p>	<p><i>“It’s the European mentality. The enrichment of an individual [through stock options] on the backs of the workers is considered exploitation.” (Steinmetz and White, 1998: B1)</i></p>
<p><i>Klaus Eilrich, Spokesman for Germany’s biggest trade union</i></p>	<p><i>“If employers tell workers they should relinquish wage increases, we are not ready for stock options.” (Rose and Marshall, 1998:6)</i></p>
<p><i>Wolfgang Bernhardt, Management consultant</i></p>	<p><i>“Most often – and I think rightfully – it is pointed out that stock prices are not an appropriate indicator for management’s performance....Normally, the design of stock-based pay provides rewards for a managerial performance that is below average.”(Bernhardt, 1998:5)</i></p>
<p><i>Ekkehard Wenger, Professor of Management</i></p>	<p><i>[On stock-based pay of DaimlerChrysler’s CEOs]: “The only ones who deserve such sums are entrepreneurs. No executive deserves that much money.”(Steinmetz and White, 1998: B1)</i></p>
<p><i>Editorial, Süddeutsche Zeitung</i></p>	<p><i>“If stock price development becomes the criterion for management’s actions, no-one should be surprised that managers prefer layoffs over hiring. Stock markets reward cost cutting. Therefore, stock-based incentives can give wrong signals.”(Sueddeutsche Zeitung 1998: 4)</i></p>

Appendix 5.1

5. The Logistic Model

The logistic model, derived from the logistic function (as shown in Figure 5.1), is the main focus of this section.

To obtain the logistic model from the logistic function, we write z as the linear sum α plus β_1 times χ_1 plus β_2 times χ_2 , and so on to β_k times χ_k :

$$z = \alpha + \beta_1 \chi_1 + \beta_2 \chi_2 + \dots + \beta_k \chi_k \quad \text{[App 5.1]}$$

Where:

$\chi_1, \chi_2, \dots, \chi_k$, are known independent variables.

α , is an unknown constant

$\beta_1, \beta_2, \dots, \beta_k$, are constant terms representing unknown parameters.

Substituting the linear sum expression for z in the right-hand side of the formula for $f(z)$ we get:

$$f(z) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}} \quad \text{[App 5.2]}$$

Where: $i = 1, 2, 3, \dots, k$.

To view the expression above as a mathematical model, we place it in a stock option adoption context. In this case, the logistic model considers the independent variables such as block-holder ownership, size of firm etc, which we shall continue to refer to as: $\chi_1, \chi_2, \dots, \chi_K$, on a group of companies, for which we have also determined stock options adoption status, as either 1 for having adopted or 0 for having not.

We use this information to describe the probability that stock options will be adopted during a defined study period, say t_0 to t_1 .

The probability modelled can be denoted by the conditional probability statement:

$$P(\text{adopt}=1 \mid \chi_1, \chi_2 \dots \chi_k)$$

The model is defined as logistic if the expression for the probability of adopting stock options, given χ_i (i.e. independent variables) is:

$$P(\text{adopt}=1 \mid \chi_1, \chi_2 \dots \chi_k) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}} \quad \text{[App 5.3]}$$

The terms α and β_i in this model represent unknown parameters that we need to estimate based on data obtained from χ_i and on the dependent variable (*adopt*) for a group of companies.

For notational convenience, we will denote the probability statement:

$P(\text{adopt}=1 \mid \chi_1, \chi_2 \dots \chi_k)$ as simply $P(X)$ where X is a shortcut notation for the collection of variables $\chi_1, \chi_2 \dots \chi_k$.

Thus the logistic model may be written as:

$$P(X) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}} \quad \text{[App 5.4]}$$

5. 1 Logit Form of the Logistic Model

Odds ratio is the primary parameter estimated when fitting a logistic regression model. In this section we explain how an odds ratio is derived and computed from the logistic model.

To begin the description of the odds ratio in logistic regression, we present an alternative way to write the logistic model, called the **logit form** of the model. To get the logit from the logistic model, we make a transformation of the model. The logit transformation, denoted as $\text{logit } P(X)$, is denoted by the natural log (i.e. to the base e) of the quantity $P(X)$ divided by one minus $P(X)$, where $P(X)$ denotes the logistic model as previously defined.

This transformation allows us to compute a number called **logit** $P(X)$, for any company with independent variables given by X . This we do by;

1. Computing $P(X)$ and
2. Computing $1 - P(X)$ separately, then
3. Dividing one by the other, and finally
4. Taking the natural log of the ratio.

For example, if $P(X)$ is 0.110, then

$1 - P(X)$ is 0.890

The ratio of the two quantities is 0.123 and the log of the ratio is -2.096

That is, the **logit** of 0.110 is -2.096

This practical example can be demonstrated algebraically as shown in the next section.

5.3 Logit Function Formula

Let us consider the formula for the logit function. We start with:

$$P(X) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}}$$

Algebraically, we can write $1 - P(X)$ as:

$$1 - \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}}$$

[App 5.5]

If we divide $P(X)$ by $1 - P(X)$, we obtain:

$$\frac{P(X)}{1 - P(X)} = \frac{\frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}}}{1 - \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}}} = \frac{1}{e^{-(\alpha + \sum \beta_i \chi_i)}} = e^{(\alpha + \sum \beta_i \chi_i)}$$

[App 5.6]

We then compute the natural log of the formula just derived to obtain:

$$\ln_e \left[\frac{P(X)}{1 - P(X)} \right] = \ln_e \left[e^{(\alpha + \sum \beta_i \chi_i)} \right] = \alpha + \sum \beta_i \chi_i \quad \text{[App 5.7]}$$

For the sake of convenience, the logistic model is described or stated on its logit form rather than in its original form as $P(X)$ thus;

$$\text{Logit } P(X) = \alpha + \sum \beta_i \chi_i \quad \text{[App 5.8]}$$

Where; $P(X) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i \chi_i)}}$ as already defined above.

Appendix 7.1: Change in Deutsche Bank blockholdings 1995-2005:

Company	1995	2005
Aachner und Munchner Beteiligungs AG	5.0	>5
Allianz	10.0	>5
Continental	10.1	>5
DaimlerChrysler	24.4	10.4
Fuchs Petrolub	10.0	>5
Hapag-Lloyd	10.0	Acquired by TUI
Heidelberger Zement	10.1	>5
Philipp Holzmann	25.8	19.5
Hutschenreuther	25.1	Acquired by BHS Tablecloth AG
Karstadt	10.0	>5
Klockner-Humboldt-Deutz	45.0	Acquired by MFC Industrial
Leifheit	11.0	>5
Leonische Drahtwerke	12.5	>5
Linde	10.1	10.0
Metallgesellschaft	16.6	>5
Munchner Ruckversicherung	10.0	>5
Nurnberger-Beteiligungs AG	25.9	2.5
Phoenix	10.0	>5
Salamander	10.7	Acquired by ENBW
Schmalbach-Lubeca	10.0	Acquired by Ball Corp
Sudzucker	12.8	>5
Vereinigte Elektrizitatswerke	6.3	Acquired by RWE
Verseidag	10.4	Acquired by Deutsche Gamma
Vogele	10.0	Acquired by Wirtgen GmbH
Vossloh	7.6	>5
WMF Wurrtembergische	9.1	11.7

Source: Deutsche Bank 1995 Annual Report, 'Wer gehört zu wem?', CD-ROM, 2005

Appendix 7.2: Largest blockholders in the DAX 30 companies in 2005

Company	Largest block-holder	Size (%)	Shareholder type
Addidas-Salomon	Barclays Global Investors UK	5.4	Fund
Allianz AG	Münchener Rück	9.9	Insurance
Altana AG	Klatten, Susanne	50.1	Founder/family
BASF AG	None	n/a	n/a
Bay.Hypo-Vereinsbank	Münchener Rück	18.4	Insurance
BMW AG	Quandt Family	36.6	Insurance
Bayer AG	Capital Group (USA)	5.0	Fund
Commerzbank AG	Assicurazioni Generali (Italy)	9.1	Insurance
Continental AG	AXA (France)	11.8	Insurance
DaimlerChrysler	Deutsche Bank	10.4	Bank
Deutsche Bank AG	None	n/a	n/a
Deutsche Boerse	Atticus Capital L.L.C.	5.1	Fund
Deutsche Post	Bundesrepublik	44.7	State
Dt.Telekom	Bundesrepublik	42.8	State
E.ON	Freistaat Bayern	5.0	State
Fresen. Med Care	Fresenius AG	50.8	Company
Henkel KGAA	Henkel Family	57.8	Founder/family
Infineon AG	Wachovia Trust Co	18.2	Fund
Linde AG	Allianz AG	12.6	Insurance
Luftansa AG	Allianz AG	8.7	Insurance
Man AG	AXA (France)	7.3	Insurance
Metro AG	Haniel + Besheim Families	55.7	Founder/family
Münchener Rück	Bay. Hypo-Vereisbank	10.0	Bank
RWE AG	RW Energie Beteiligung	10.0	State
SAP AG	Founders	34.7	Founder/Family
Schering AG	Allianz AG	11.8	Insurance
Siemens AG	Siemens Family	6.1	Founder/Family
Thyssenkrupp AG	Krupp Family	20.0	Founder/Family
TUI AG	Grupo de Empresas Matutes	7.3	Company
Volkswagen AG	Land Nierdersachsen	18.2	State

Source: "Wer gehört zu wem?", CD-ROM, 2005 version

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