

Change in the German model of corporate governance: Evidence from blockholdings 1997 – 2001

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Abstract. In order to research the dynamics of the German model of corporate governance, data pertaining to major holdings of voting rights in listed companies between 1997 and 2001 were examined. The change that took place in this short period of time is striking, with falling level of ownership concentration, dissolving cross-holdings, and financial sector institutions losing their position as blockholders. The concentration of voting rights is lowest in companies included in the DAX30 stock market index. Factors affecting the types of holders of voting rights in a company include company's size, age, economic sector, and location. The analysis shows that Germany made a quick step towards some aspects of the Anglo-American system of corporate governance. However, there are also areas of strong persistence. In addition, I show that the German model is far from uniform, with different types of companies and different regions demonstrating a variety of corporate governance arrangements, as well as distinctive development trajectories.

1 Introduction

At the Annual Shareholder Meeting of Volkswagen AG (VW), the investment funds of Union Investment and DWS, major owners of VW, expressed their anxiety about the way VW was managed. A representative of one of the funds summarised their concerns saying: 'There is no point in VW just building perfect cars. It also needs to construct a perfect share price' (FT, Mar 24, 1999). According to the funds, another factor which adversely affected the price was the control exercised over VW by the Land government. Another was the low quality of information on corporate affairs available to the general public. To address these problems the shareholders called for the reduction of the ownership stake held by the Land government, and the application of the International Accounting Standards. The case of VW exemplifies a major change in the way Deutschland AG is governed. As the ownership of companies changes, the relationships between owners and management change, what in consequence affects the way companies are managed.

Corporate governance plays a major part in the economy. Dispersed ownership, for example, enhances the liquidity of the capital market and thus is believed to facilitate the growth of new ventures and the so-called 'New Economy' (see for example Berglöf, 1996; Bolton and von Thadden, 1998). On the other hand, dispersed ownership makes hostile take-overs possible, which results in restructuring, often accompanied by the lay-off of workers. Due to its significance for welfare and its distribution, corporate governance is central to governmental policy. In Germany we saw the government blocking the introduction of the European take-over code, in an effort to avoid the looming unrest in the labour market. There have been many reforms, however, aimed at the creation of a friendlier environment for investors (Jürgens and Rupp, 2001). One of the leitmotifs of German economic policy during the late 1990s has been *Standortwettbewerb*, which assumes that relatively immobile factors of economic development -mainly labour- need to compete for mobile factors -mainly capital (Prigge, 1998; Streeck, 1997).

The existing literature offers an ambiguous picture of change in the German system of corporate governance. Most of the economic press heralds a revolution marked with spectacular events such as the hostile take-over of the high-tech part of Mannesmann by the Vodafone AirTouch, a UK-based firm (Garret, 2001). Some researchers also emphasised the change, with Jürgens and Repp, for example, describing the boom of the Neuer Markt, the stock market for high growth companies (2001), and Van der Elst reporting the growing incidence of widely held companies (2000). At the same time, another prominent body of research claims the changes are shallow and that corporate governance arrangements, including corporate ownership, are stable. Studies presenting the slow pace of change are usually supported by the theory of path dependence, according to which systemic change is

costly and can take place only if the benefits from it are large enough (Bebchuk and Roe, 1999; Bebchuk, 1999). The proponents of fast change, on the other hand, usually point to the theory of convergence, which forecasts that continental European systems of corporate governance will become similar to the Anglo-American ones, due to the higher efficiency of the latter (Rajan and Zingales, 2000; Coffee, 1999).

The objective of this paper is to describe and account for the changes that have taken place in the German model of corporate governance by focusing on the ownership of German listed companies between the end of 1997 and May 2001. Four research questions are addressed:

1. How has the level of ownership concentration changed?
2. How has the ownership structure of listed companies changed, and what factors have affected this structure?
3. Have the top institutional owners maintained their power in corporate governance?
4. What factors have affected the level of ownership concentration?

The empirical findings of this paper show that in 2001 Germany still had a very high level of ownership concentration among listed companies, and that a few top institutions dominated as the owners of listed companies. In addition, this study proves that within a very short period of time the German model had undergone very significant changes. These changes involve many aspects of corporate governance, from ownership concentration, through the structure of the holders of voting rights in companies, to the role of top banks and insurance companies.

The paper is structured as follows. First the building blocks of the German model of corporate governance are identified and compared to systems in other countries. Section 3 reviews the literature on corporate ownership, the central dimension of corporate governance. Section 4 presents data sources and methodology, and section 5 introduces the structure of the listed companies that were analysed. The following 4 sections show the empirical results, grouped according to the 4 research questions. They start with the level of ownership concentration and its change in section 6 and then proceed to the structure of holders by type, including its change and determinants, in section 7. Section 8 is devoted to the role of the top institutional holders, such as banks and insurance companies, as well as their cross-holdings. In section 9 I assess the determinants of ownership concentration. Finally, section 10 presents a summary of results as well as the implications for the future of the German model and the theory of corporate governance.

2 The German model of corporate governance

In a narrow sense “corporate governance deals with the ways in which suppliers of finance to corporations assure themselves return on their investment” (Shleifer and Vishny, 1997, 738).

In a broader sense, it is “concerned with the institutions that influence how business corporations allocate resources and returns. Specifically, a system of corporate governance shapes who makes investment decisions in corporations, what types of investments they make, and how returns from investments are distributed” (O’Sullivan, 2001, 1). In this section I identify the characteristic features of the German system, which justify the use of the term ‘the German model of corporate governance’. These features, presented graphically in figure 1, have recently found themselves subject to a growing pressure for change.

The level of ownership concentration in Germany is very high. Gorton and Schmid, 1996 for example, reported that 80% of listed companies had a non-financial owner holding at least 25% of shares. Financial intermediaries deserve special attention as owners of companies. There is a system of proxy voting, under which banks can cast votes on behalf of other shareholders, mainly individuals who deposit their shares with banks (Edwards and Fischer, 1994). In this way banks can obtain a significant degree of control, even over widely held companies (Franks and Mayer, 2001). What is more, the largest banks and insurance firms play a central role as spiders in the web of cross-holdings, involving both financial and non-financial firms (Wenger and Kaserer, 1998; Schneider-Lenné, 1994). The scope of cross-holdings and the significance of banks imply that the role of portfolio investors, such as investment funds and pension funds, has been marginal (Davis and Steil, 2000; Blommenstein and Funke, 1998).

The management board in German corporations is not selected directly by shareholders but by the supervisory board, which is also supposed to control and dismiss management (Hopt, 1998). In corporations with at least 2000 employees, half of the seats on the supervisory board is reserved for employees, while in smaller firms this share is one third (Mülbart, 1998). The power of employees, referred to as co-determination, is further extended by the role of work councils and trade unions. Co-determination fits the aforementioned phenomenon of cross-holdings. If two companies own a considerable amount of shares in one another, they shield themselves against hostile take-overs, and distribute a smaller part of their profits to external shareholders, thus increasing the retention of profit (Wenger and Kaserer, 1998).

The stock market plays a minor role in the governance of German companies. The number of listed companies and their market capitalization are small in relation to the size of the economy (Van der Elst, 2000). Few companies have shares with high turnover. In 1999 the top 10 companies accounted for over 50% of the total market turnover (FIBV, 2001). If large amounts of shares change hands, they do so as a result of trade in blocks of shares among large holders outside the stock exchange, and this trade permits price discrimination against minority holders (Franks and Mayer, 2001; Jenkinson and Ljungqvist, 2001; Köke, 2001).

Hostile takeovers have been rare, and there has been none but a voluntary takeover code (Baumann, 1998; Bernhardt, 2000; Walter and Smith, 1997). The weakness of the stock market is further compounded by lax disclosure requirements and auditing standards which serve the needs of tax authorities better than those of shareholders (Fox, 1998; Nobes and Parker, 2000; Schmidt, 1998).

Corporate governance in Germany is not unique. Many countries have a two-tier board system (e.g. Austria, Switzerland, Netherlands); many have representatives of employees on supervisory boards (e.g. in Scandinavia); and in many countries (e.g. Japan and Italy) banks are highly involved in the control of the corporate sector (Wymeersch, 1998). Germany, however, has attracted special attention as Europe's largest economy, its post-war economic success and its position in international trade. In addition, the German model differs diametrically from corporate governance in the US and the UK. In Anglo-American systems there are no supervisory boards, the power of employees is limited, institutional portfolio investors are powerful, capital markets are strong and take-over activities are common. This is why the German model was called an insider, networked, bank-based or closed system, in contrast to the open, market-based Anglo-American system (Prigge, 1998).

Irrespective of the contribution of the German model of corporate governance to the country's post-war economic success, there can be little doubt that this system is presently under pressure (Dore, 2000). The logic of this pressure can be explained with the framework of the modern industrial revolution set forth by Jensen (1993). Technological progress, which accelerated in the wake of the oil crises in the 1970s and 1980s, along with the globalization of economic activities (plus European integration in the case of Germany), has increased productivity and led to overcapacity in many global markets. The latter calls for corporate restructuring and/or exit, which are facilitated among other factors by a large and liquid capital market and an open market for corporate control. Neither of them exists as yet in Germany, and certain aspects of the German system of corporate governance seem to have hindered their development.

The pressure on the German model of corporate governance implies also the pressure exerted on the German government. The latter has reacted to it by introducing reforms that affect the features of the inherited system. The reform of supervisory boards, introduced in 1998, enhanced the role of audit, and gave shareholders the power to sue members of supervisory boards (Hopt, 1998). Furthermore, corporations with less than 500 employees that are family owned or incorporated later than August 10, 1994 are exempt from the participation of employees on supervisory boards (Roe, 1998). The abolition of capital gains tax on the sale of shares between corporations is expected to make banks, insurance companies, and non-financial corporations downsize and diversify their holdings, thus

leading to the erosion of the web of cross-holdings. Last but not least, the introduction of privately managed, funded pensions should create a new and potentially powerful class of institutional investors, focused solely on the return from their portfolios of shares, thus pushing German corporate governance decisively further towards shareholder capitalism (Clark, Mansfield, Tickell, 2000; König and van der Lende, 2000).

3 Corporate ownership

To account for the state and the change of the German system of corporate governance, this paper focuses on the ownership of companies, and particularly on the concentration of ownership. The latter is the central issue in the theory of corporate governance (see Shleifer and Vishny, 1997) and its central character can be justified particularly in the German context (Edwards and Nibler, 2000). It is not a coincidence that the major features of the German model include co-determination, rudimentary stock and corporate control market, as well as high ownership concentration. Dispersed ownership would not fit co-determination, because without large shareholdings, and given the power of employees, owners could not assure themselves return on investment (Roe, 1998). Dispersed ownership is also a prerequisite for a liquid stock market and for an open market for corporate control (Bolton and von Thadden, 1998; Becht, 1999). Hence, four questions addressed in this paper concentrate on corporate ownership. Below I present the literature, debates relevant to each of them, and the resulting hypotheses.

How has the level of ownership concentration changed?

As Becht and Mayer (2000) reported, until the early 1990s it had been assumed in research that diluted corporate ownership was common. This assumption was inspired to a large extent by the work of Berle and Means, who claimed that as companies expand they look for external sources of capital and thus develop a dispersed ownership structure. It was not until the early 1990s that empirical data were presented that revealed a very high level of ownership concentration in Germany and other European countries (Franks and Mayer, 1990, 1992, Edwards and Fischer, 1994). Soon afterwards, concentrated ownership was shown to dominate in continental Europe (Barca and Becht, 2000), and indeed worldwide, with the exception of large companies in the US and the UK (La Porta et al., 1999). Unfortunately, there is very little research on patterns of ownership concentration. It almost seems as if the old paradigm of dispersed ownership was replaced with the assumption that concentrated ownership is stable (La Porta et al., 1999). The available empirical evidence relating to this assumption has yielded mixed results. A study for Norway proved a stable level of concentration (Bøhren and Ødegaard, 2000), while one for Spain showed ownership concentration growing at a significant pace (Cladera, 1997). In a study focused on Europe,

Van der Elst indicated a growing number of widely held firms in Germany (2000). Capitalizing on the last finding, and considering the changes permeating all the building blocks of the German model, I expect that between 1997 and 2001 there was a reduction in the very high level of inherited ownership concentration.

How has the structure of the owners of listed companies changed, and what factors affect this structure?

In research on the types of owners of German companies, the emphasis has traditionally fallen upon the financial sector and particularly upon the banks. It has been claimed that Germany is one of the exceptional countries where financial institutions play a huge role as owners (La Porta et al., 1999). At the same time some research showed that the description of the German system as bank-centered is insupportable (Edwards and Fischer; 1994, Breuer, 1998). There are two major studies on the evolution of the structure of share ownership which I used as a benchmark. Research by Prigge (1998), covering the period of 1984 to 1996, showed non-financial and financial corporations as the main groups of owners. The share of the former group in corporate ownership was growing while that of the latter was stable. Within financial owners, investment funds were growing most dynamically, while the stakes of banks and insurance companies grew slowly. A study by Jürgens and Rupp (2001) confirmed that these tendencies continued in the late 1990s, with the exception that the share of non-financial owners began to fall steeply. In order to focus on the ownership structure as a reflection of the change in the German corporate governance system, this paper extends earlier studies analysing major holdings of voting rights (Becht and Mayer, 2000; Becht and Böhmer, 1997). Given the lack of dynamic studies based on these kinds of data, I expect similar tendencies in the change of the structure of holdings to those indicated in the benchmark research.

Another interesting issue is the relationship between company characteristics and the structure of ownership by type of owner. The research available seems to be focused on the determinants of foreign shareholdings (Dahlqvist and Robertsson, 2001) and neglect the diversity of domestic owners. The rare exceptions are works that explored the determinants of ownership concentration for various types of owners. The major finding of these studies was that individuals tend to own larger percentage stakes in smaller companies (Demsetz and Lehn, 1985; Prowse, 1992). In Norway, for example, it was documented that freshly listed companies were owned mostly by individuals, and that the owners of financial companies tend to be financial companies themselves (Bøhren and Ødegaard, 2000). In addition to company size, age, and economic sector I also expect geography to affect the structure of holders of voting rights in companies. This expectation is based on my previous research (Wójcik, 2002b) in which I showed the German capital market to be strongly regionalized

with holders usually seated close to the headquarters of companies in which they hold voting rights.

Have the top institutional owners maintained their power in corporate governance?

The role of the top institutional owners, such as Allianz, as spiders in the web of cross-holdings has been well recognized (Story and Walter, 1997). Like other aspects of ownership concentration however, the understanding of the dynamics of top holders and cross-holdings is at best fragmentary. Many authors report on big banks and insurers selling their stakes and leaving boardrooms (O'Sullivan, 2000; Mülbart, 1998). Some of these stakes are not really sold but rather spun off to separately managed holdings or investment funds, still controlled by the big players (Jürgens and Rupp, 2001). This is one of the reasons why Doremus et al. predicted that universal banks would maintain their position in the German market for corporate control (1998). Connected with the position of the top institutional owners, is whether the role of cross-holdings, widely reported to be significant in the past (Prowse, 1994; Wenger and Kaserer, 1998), has changed. In the light of the inconclusive research evidence, I expect that the power of the top institutional owners was maintained.

What factors affect the level of ownership concentration?

Two main explanations of the differences in the level of ownership concentration between countries are based on legal and political factors. La Porta et al. claimed that dispersed ownership prevails in countries where minority shareholders are strongly protected by law (1998). According to Roe, in countries where socio-democratic pressures are strong, shareholders tend to be concentrated in order to protect themselves against the exploitation by the state (2000). There were also attempts to explain the differences in the level of ownership concentration between companies within a country. The existing results seem most conclusive with regard to the role of company size and regulation. First, they indicate an inverse relationship between the size of a firm and ownership concentration (Demsetz and Lehn, 1985; Morck, 2000). Second, they suggest that ownership concentration is lower in regulated industries, such as financial services and utilities (Bergström and Rydqvist, 1990; Böhren and Ødegaard, 2000). Factors about which there is no conclusive evidence include the age of firms and economic sectors in which they operate (Becht and Mayer, 2000; Bebchuk and Roe, 1999). Jürgens and Rupp reported that the shareholder value culture was noticeable in Germany in the DAX30 companies (2001). This leads us to expect a lower level of ownership concentration in this group. A factor that I add to the list of potential determinants of ownership concentration is the geographic location of a company.

To summarise, my research questions aim to analyse corporate ownership concentration in Germany from complementary perspectives, starting with the concentration on the side of companies, through the concentration of all owners and top owners, to the causes of

concentration. By this comprehensive approach, I hope to improve our understanding of corporate governance and document the ways in which it has changed. What follows is the presentation of data and methods used to answer these questions.

4 Methodology and data sources

I have used a database on the German system of corporate governance, which is made up of the following parts: all domestic companies listed on amtlicher Handel (official market); holders of major voting rights in these companies; and the links between companies and holders. The core data on all the three elements have been provided by Bundesaufsichtsamt für den Wertpapierhandel (BaWe, the Federal Securities Authority) for two points in time: Dec 31st 1997, and May 2nd 2001. Amtlicher Handel is one of the four segments of the German stock market, along with Geregelter Markt (regulated market), Freiverkehr (over-the-counter market) and Neuer Markt (new market, opened in 1997 and meant for young growth firms). In relation to geregelter Markt and Freiverkehr, companies listed on amtlicher Handel have to comply with stricter disclosure requirements. In the late 1990s amtlicher Handel accounted for approximately 90% of the capitalisation of the whole German stock market. The shares are traded not only on the Frankfurt Stock Exchange, but also on the 7 regional exchanges, in Berlin, Bremen, Düsseldorf, Hamburg, Hannover, München, and Stuttgart. Frankfurt, however, accounted for over 80% of the trading volume in 1999.

BaWe compile the data on the basis of notifications on voting rights that listed companies are required to publish in order to comply with the Securities Trading Act (Wertpapierhandelsgesetz). Both individuals and institutions are obliged to notify BaWe if their voting rights reach, exceed, or fall below one of the thresholds of 5, 10, 25, 50 or 75%. It should be noted that this obligation refers to both direct and indirect holdings of voting rights. Indirect holdings involve any situation when an entity controls voting rights from shares that it does not own. This may happen, for example, when an entity controls a direct shareholder or has been entrusted with the responsibility for their shares. Throughout the paper I use the term holding, blockholding and voting block interchangeably to describe the percentage of voting rights in a company held by an entity both directly and indirectly. Companies that render investment services may apply to have their trading portfolio exempted from the aforementioned notification requirements. This possibility, along with the minimum threshold of 5%, implies that the database used is highly unlikely to include portfolio holdings. It is not a major obstacle to this research, since the level of portfolio holdings in German companies can be expected to be low (Wójcik, 2002a).

The database was extended by accounting for various economic sectors of the listed companies, as well as various types of holders. The industrial structure was based on the

classification devised by the Morgan Stanley Capital International, which included 10 sectors and 23 industry groups (details in MSCI, 2002). The typology of holders was based partly on the one used by the European Corporate Governance Network (see Barca and Becht, 2000). In cases when more than one family member held voting rights in a company, the whole family was treated as a single holder. In order to add a spatial dimension to the above data, companies and holders were assigned to their headquarters or, in case of individuals and family pools, to their seats. To account for the size of the considered listed companies, use was made of the data on their market capitalisation, as at Dec 31 1997, and May 2 2001, obtained from Morgan Stanley Dean Witter, London. The value of a holding has consequently been defined as the product of the percentage of voting rights controlled and the market capitalisation of a company.

In order to investigate corporate ownership the data were processed in several ways. In sections 5, 6 and 7 I analysed the whole population of firms and their holders using descriptive statistics and the measures of concentration. To complement the statistical approach, in section 8 I analysed specific top holders identified by name. In sections 7 and 9 I used regression analysis in order to evaluate factors affecting the structure of a company's holders by type as well as the determinants of ownership concentration.

The quantitative empirical approach applied in this paper has its limitations. The analysis does not cover the Neuer Markt, the market for growth companies. However, in this paper I am interested more in the core of the German corporate sector, and the coverage of the data comprising all types of holders in all officially listed companies in the whole country is robust. Another advantage of this methodology is that I look at the holdings of ultimate control, not merely shareholdings in companies. Last but not least, the information is up-to-date and covers a very important period for German capital markets in particular, and European ones in general. Indeed, many reports on the recent developments indicate that changes to the German and European systems of corporate governance has gained momentum during the late 1990s (Van der Elst, 2000; Jürgens and Rupp, 2001). In the forthcoming sections I show the extent to which my results reflect this momentum. Before I start answering the research questions, I present the structure of the listed companies under consideration.

5 Listed companies

Number, size and sector structure

The number of companies under consideration was 415 for the end of 1997 and 463 in May 2001. The growth of 48 was the net result of 116 new officially listed companies and 68 companies that for various reasons, including liquidations, delistings, as well as mergers and

acquisitions, disappeared from the official market. The description ‘new’ can also have different meanings, and among the 116 are firms that were created following mergers (with E.ON, the result of merger between VIAG and VEBA as an example), restructuring of previously listed companies, or firms formerly listed on other segments of the stock market.

The total market capitalisation of the considered companies rose from €535bn at the end of 1997 to €982bn in May 2001, and represented approximately two-thirds of the market capitalisation of all German listed companies. This increase in value was predominantly due to price appreciation and secondary public offerings, and to a lesser extent to new listings. In both years the biggest companies in terms of market value were: Deutsche Telekom, Daimler Chrysler, Allianz, and SAP (each worth over €50bn in May 2001). The value of the smallest companies was close to one million. As for the distribution of market capitalisation in the whole of the considered population, if measured with the Herfindahl index, it has slightly increased from 0.034 to 0.035.

The financial sector leads both numerically and in terms of value (table 1). Remarkably, the value of the insurance companies was almost twice as high as that of banks in 2001, which presumably reflects major developments in the financial system: the retreat of banking, and the anticipation of pension reform which appear to have benefited the insurance industry more than any other. The other sectors that follow in terms of value are consumer discretionary (including automobiles) and materials (including basic, industrial and agricultural chemicals), all of which are traditionally strong parts of the German economy.

‘New Economy’ industries, such as health care or information technology play only a minor part in the structure. Interestingly, ‘New Economy’ industries do not feature strongly in the list of 116 newcomers either. At the top of this list are diversified financials, real estate, consumer durable, apparel, and capital goods firms.

Location

The distribution of listed companies by Länder is very uneven (table 2). Among the new Länder, and excluding Berlin, only Saxony and Thuringia had any companies in the first segment of the stock exchanges. The hierarchy of Länder is almost the same whether one looks at number of firms or their value. The ‘core’ is made up of North Rhine-Westphalia, Bavaria, Baden-Württemberg, and Hesse, which together account for 87% of market capitalisation. The second group consists of Hamburg, Berlin, Lower Saxony, and Rhineland-Palatinate, and accounts for 12% of corporate value. The other half of the 16 Länder is hardly represented on the stock market.

If we relate the shares of Länder in market capitalisation to their shares in relation to GDP, we notice that the top four, and particularly Bavaria, hold shares higher than their economic output would imply. The opposite is the case with the aforementioned second group of

Länder, for which the location quotients are between 0.5 and 1. The concentration of market capitalisation in these 8 Länder did not decrease, and out of 48 additions as many as 44 were firms located in one of the 8.

Some interesting movements can be observed at the top of the hierarchy. The southern Länder of Bavaria and Baden-Württemberg rose faster than Hesse and particularly than North Rhine Westphalia. Thus, the capital market indicates some shift of economic fortune to the German 'sunbelt'. In effect, Bavaria almost caught up with North Rhine Westphalia in first position. In the middle of the hierarchy, Hamburg and Berlin were also growing very fast (see also Krätke, 1999). The changes in the geographical distribution of market capitalisation reflect the industrial structure of Länder. Almost all officially listed IT firms were headquartered in Bavaria or Baden-Württemberg (compare Sternberg and Tomasy, 1999). North Rhine Westphalia, in contrast, relied much more on heavy industry, mostly capital goods (compare Berndt, 1998).

6 Change in the level of ownership concentration

Proposition 1: The concentration of holdings of voting rights in listed companies fell between 1997 and 2001.

In order to test the proposition, the number of the major direct holdings and voting blocks in the listed companies was analysed. I also looked at the size of these direct and indirect holdings and tested the change in the level of ownership concentration according to different company characteristics.

There were some 600 direct holdings and 1,000 voting blocks in all considered companies in May 2001. A direct holding means that an entity holds shares in a company. A voting block means that it holds voting rights either directly or indirectly, as explained in the methodology section. Both figures increased since the end of 1997, by 10% and 25% respectively. The mean and median size of a direct holding fell by approximately 10% (from 31.8% to 28.9% for mean, and from 19.6% to 16.8% for median). The mean and median size of a voting block fell by approximately 10% as well (from 39.7% to 36.2%, and from 26.2% to 24%, respectively). The change of the aforementioned figures indicates a consistent and significant level of ownership deconcentration.

Since the data cover only major holdings, in order to assess ownership concentration it is helpful to consider the percentage of voting rights that were not disclosed in the database due to their small size. The percentage of direct holdings in all analysed companies fell from 45% to 40%, while that of voting blocks remained unchanged at approximately 76%. This observation has important implications for both the results and the method of the analysis.

First, it implies that concentration did not fall to the extent indicated by direct holdings. In other words, while major holders own a decreasing percentage of shares directly, they control voting rights indirectly from a growing percentage of shares. These figures suggest that the owners of corporate Germany spin off parts of their ownership stakes to separate but dependent entities, such as holding companies and investment funds (compare to Jürgens and Rupp, 2001). They also imply that direct holdings may misrepresent control of voting rights, and they do so to a growing extent. In the rest of the paper, only the total holdings of voting rights (also referred to as voting blocks or blockholdings) are analysed.

Deconcentration of ownership, observed for the whole population of voting blocks, was confirmed after distinguishing between the largest, second largest, third largest and the rest of the voting blocks in each company. Figure 2 shows the median figure for each of these categories. The percentage of voting rights typically controlled by the largest holder was strikingly high (65% in 1997 and 60% in 2001). The top owner usually overwhelmed the share of the second largest holder, which confirmed the findings of previous research (e.g. Barca and Becht). More importantly, and consistent with earlier results, the median size of a holding for each category fell by 8% to 20%.

The histogram of all holdings showed high frequencies of in relation to size around the marks of 25%, 50%, 75% and 95-100%. This confirmed the thesis of Becht and Mayer who explained that share blocks are concentrated at levels at which there are significant control benefits. The roots of these benefits can be found in the commercial code (2000). The peaks of frequency around these marks were equally significant in both 1997 and 2001, which suggests that the importance of control benefits remained similar.

Finally, I analysed the size of voting blocks in companies according to their size, industry classification and the location of their corporate headquarters. The decrease in the level of ownership concentration was observed in all size groups, defined on the basis of market capitalization (figure 3). In addition, concentration fell across all 8 industries (figure 4). As for the location of headquarters, deconcentration took place in 9 out of 12 Länder in both 1997 and 2001 (figure 5). The three Länder with growing concentration comprised Saarland and Saxony, both of which hosted only a couple of listed firms. The only major exception from this trend of falling concentration was Baden-Württemberg. Interestingly, in previous research the author found the market for corporate control in this Land to be more closed than in any other main German Land. In other words, firms headquartered in Baden-Württemberg had very few German owners from outside the Land (Wójcik, 2002b). The role of geography in the ownership structures is investigated throughout the following sections. The variation in the level of ownership concentration across industries and size groups is analysed further in

section 9. At this stage I should conclude that the decrease in the level of ownership concentration between 1997 and 2001 was significant and its scope was nearly universal.

7 Change and determinants of the structure of owners by type

Proposition 2: Two major groups of holders of voting rights in listed companies were financial and non-financial corporations. The share of financial holders grew and that of non-financial holders fell between 1997 and 2001. With regard to owners from the financial sector, banks and insurance companies maintained their share and role in corporate ownership.

Testing the proposition I focused on the domestic holders of voting rights. The share of foreign holders was relatively low, actually fell in the considered period from 17% to 14% of the total value of voting rights. The structure of holdings in the listed companies, after the exclusion of foreign owners, is presented in table 3. Financial sector had by far the highest and stable share in the total value of holdings. Individuals and families held as much as 39% of all major voting blocks, but their value was on average, three times smaller than the value of a block held by a financial holder. The shares of the non-financial corporate, public, and other holders were approximately equal.

Given that cross-holdings among financial institutions in Germany are common, the analysis was narrowed down to the holdings of domestic entities in *non-financial* listed companies. The results in table 4 contradict the proposition. The main types of owners, both in terms of value and number of holdings, were individuals and families, and their share was growing. Second came the non-financial corporations, also with an increasing share. The position of financial sector was incomparably weaker and deteriorating sharply. Within this sector, insurance companies accounted for almost 60% of the total value of major holding rights, and their share was growing fast. This growth, however, was much more than offset by the fall of the position of banks, and particularly banks from outside the Big 3 group of Deutsche, Dresdner and Commerzbank¹.

¹ The category ‘other domestic banks’ in tables 2, 3, and 4 includes first of all Landesbanken. They are usually owned by Land governments and the associations of savings banks, and they are traditionally engaged in regional development projects. Chairman of one of them said that they are ‘a key element of Germany’s social market economy’ (FT, Mar 3, 2000). In the late 1990s some Landesbanken were accused, by private German and foreign banks, of receiving subsidies from Land governments and thus violating fair competition. The ‘attack’ was supported by the European Commission. These events set in motion reforms aimed at the restructuring of Landesbanken, including their privatization. The

Table 5 indicate the number of companies in which the owner of a given type is the largest holder of voting rights. The data confirm and add strength to the patterns observed previously. Individuals, families and non-financial firms accounted for some 70% of the largest holders. The financial sector and particularly the banks were on a downward slope.

Summarising, the results of the analysis of major holdings of voting rights strongly contradict the proposition. Recall that the proposition was based on earlier studies concerned with total share ownership. One conclusion is that the structure of major holdings of voting rights is simply very different from the structure of share ownership. In addition, the two types of structures differ in the way they have evolved. A comparison of the results of this paper with research on share ownership (e.g. Jürgens and Rupp, 2001) provides some interesting observations. The financial sector as a whole has shifted from control to portfolio holdings. The share ownership of non-financial firms, not interested in portfolio holdings, fell despite their growing strength in corporate control. From a statistical perspective, the findings of this section support the skepticism about the strong position of financial institutions, and particularly banks, in German corporate governance (Edwards and Fischer, 1994; Breuer, 1998).

Proposition 3: The structure of holders of voting rights in a company depends on its age, size, and the economic sector in which it operates. In addition it depends on the geographic location of the company.

I focused on four groups of owners: individuals and families, non-financial firms, financial companies and foreign entities. Linear regression was used to test the relationship between the percentage of voting rights in a company held by entities from each of these groups, and the following company characteristics: age, size, geography and economic sector. The description of the variables is presented in the appendix. The geographical variable should be emphasized as a factor not considered in previous research. Using this variable I assume that the structure of holders in companies headquartered in a given Land is affected by the mix of entities ‘available’. There are two reasons for this assumption. First, the mix of holders of voting blocks differs significantly from Land to Land (e.g. in Baden-Württemberg they are mainly individuals, in Bavaria – insurance companies, in Hesse - banks, and in North Rhine Westphalia – industrial companies). Second, it has been well documented that proximity encourages ownership and control relationships (see Wójcik, 2002b; Coval and Moskowitz, 1999). The mix of holders in a Land is a result of a variety of socio-economic, political and

figures reported in the tables suggest a dramatic decrease in the role of Landesbanken in corporate governance, and thus reflect the change of this key element of the German model. For an account of the debate on the changing role of Landesbanken see Dore, 2000, pp. 179-181.

other forces operating throughout history and in space. For the sake of simplicity I have named this variable geography.

The results of the regression analysis are presented in table 6. The size of a company, significant for all types of holders, seems to be the strongest determinant of the structure of holders. Individuals, families and non-financial companies tend to hold major voting blocks in smaller firms rather than bigger ones, while the holdings of financial institutions and foreign entities are correlated positively with the size of a company. One possible explanation is that non-financial owners, and particularly individuals and families, have on average less capital available for investment in other firms than financial institutions or foreign owners (which are typically financial or large international non-financial corporations). Therefore, non-financial owners are less likely to become major holders of large companies (see also Demsetz and Lehn, 1985). This explanation would be enhanced by an additional hypothesis that holders desire bigger stakes and not any stakes, because this gives them more control benefits (Bebchuk, 1999; Bebchuk and Roe, 1999).

Geography occurred as the second most important determinant. All types of holdings seem to be influenced by geography, but it is particularly significant for individuals and families. This is logical because distance, as an obstacle to exercising control, would play a much more important role for them than for corporate holders (compare Grinblatt and Keloharju, 2001). Corporate holders simply have more resources to overcome the barrier of distance. Furthermore, they are mostly multi-locational, which means that even if their headquarters are far from the controlled entity, one of their branches can be close to it. With regard to the holdings of financial companies, the regression confirms the hypothesis that they invest mostly in other financial firms (Bøhren and Ødegaard, 2000).

Age and economic sector play a less important part for the structure of holdings by the type of owner. Individuals, families, foreigners and financial firms seem to have holdings mostly in older companies, but none of the coefficients was significant. Non-financial companies, in turn, concentrated their holdings on firms listed after the end of 1997. At the same time, their holdings were mostly in service or ‘new economy’ firms, while all other types of holders, and particularly financial companies, held more voting blocks in manufacturing or ‘old economy’ sectors. These observations, notwithstanding their low statistical significance, are consistent with my analysis of the preceding proposition. It should be recalled that non-financial firms experienced the most dynamic growth of any kind of blockholder. As such, they were likely to acquire voting blocks in newly listed and ‘new economy’ firms, while the holdings of the traditionally strong types of owners i.e. individuals and financial firms, appeared biased towards long-listed and ‘old economy’ enterprises. The following section will explore these issues in more detail.

8 The power of the top institutional owners

Proposition 4: The top institutional owners maintained their position as holders of voting rights in the listed companies.

The literature on German corporate governance generally paints a picture of cross-holdings among companies, with Allianz in the middle of them as ‘the spider of the web’ (see e.g. Story and Walter, 1997). In order to test this proposition, I researched the dynamics of this ‘web’. In the first instance, I identified the top owners, which led to some interesting observations. Between 1997 and 2001, the number of entities holding 5 or more voting blocks fell from 21 to 17. What is more, the number of blocks controlled by them fell from 194 to 170. These figures suggested a diminishing level of power among top holders.

For a detailed analysis of the top holders identified by name I selected all domestic entities that in either 1997 or in May 2001 held 10 or more voting blocks in the listed companies. There were 8 entities satisfying this condition. As some of them were involved in merger activities, I extended the group by another 3. The names of the resulting group of 11 companies (7 of them operating in 2001, from now on referred to as ‘top 7’), the numbers of voting blocks controlled by them, and their value are presented in table 7. The companies in the table: 3 banks, 2 insurance companies, and 2 utility companies are all giants of the German corporate economy, and together account for over 30% of the market capitalization of the first segment of the stock exchanges (over €300bn in May, 2001). The absolute number of voting blocks controlled by the ‘top 7’ fell from 118 to 103, but their relative value remained unchanged, at approximately 30% of the total market capitalization.

Table 8 presents the change in the number of voting blocks, accounting for such phenomena as mergers and acquisitions, delistings, and liquidations. It shows that the impact of mergers and acquisitions was strong. As many as 13 holdings ceased to exist because controlled companies merged with each other. In addition, 12 blocks disappeared because companies were delisted or liquidated. The decrease in the number of controlled voting blocks, which took place for these reasons, clearly does not represent a decrease in the significance of the ‘top 7’ in corporate control. There are figures however, that do evidence to support this tendency. First, considering companies listed in both 1997 and 2001, the ‘top 7’ lost 22 voting blocks and acquired only 10. Second, looking at companies listed after 1997, the top holders had only 16 blocks in 13 firms. This means they had major voting rights in a very small part of the 116 newly listed companies, while in 1997 as a group they held a voting block in more than a fifth of all listed company. This observation is consistent with the result of the preceding section, where I found that the holdings of financial owners were biased against newly listed companies.

I also distinguished between mutual and external holdings. The state of mutual holdings of voting rights, as at the end of 2001, is presented in figure 6². If drawn for the end of 1997, the picture would look almost identical. The value of mutual holdings was approximately €50bn and €105bn in 1997 and 2001 respectively, and in both years this represented about 30% of their combined market capitalization. The combined market capitalization of the 'top 7' rose above the German average, and therefore the share of mutual holdings in total holdings grew from approximately 58% to 64%. This strong performance of the 'top 7' in terms of market value is very important, as it explains why the relative value of their voting blocks remained unchanged despite an absolute fall in the number of controlled blocks. The explanation is that the rising value of mutual holdings made up for the relative loss in the value of external holdings.

With regard to the contracting of external holdings, I also researched their interconnectedness, asking: in how many companies in which one of the 'top 7' firms held a voting block, was there another 'top 7' firm with a major block of voting rights? In 1997 there were 27 such companies out of 86 (the total number of companies in which the 'top 7' had voting rights). In 2001 this ratio decreased to 18 companies out of 78.

Clearly, not all cross-holdings in Germany have to involve one of the seven selected companies. Thus, in order to test the scope of cross-holdings, I analysed the number and value of major voting rights in listed companies held by any other listed company. The findings are similar to those for top holders. The number of voting blocks held by listed companies fell from 185 to 168. Thus their share in the total number of voting blocks fell sharply from 23% to 17%. At the same time, the share of cross-holdings in the total value of all holdings remained at a high level of 40% (compare Prowse, 1994; Wenger and Kaserer, 1998). The share of the 'top 7' in the value of cross-holdings fell roughly from 90% to 80%.

To summarize, the results strongly contradict the proposition. The top institutional owners lost some of their power as holders of voting blocks in the listed companies between 1997 and 2001. This loss referred to their external holdings, while the cross-holdings in the core, among the top owners themselves, remained largely unchanged. The evidence presented here confirms the reported cases of big German banks and insurance companies selling their stakes in the industry (Hopt, 1998). In addition, this evidence showed that the pace of this selling

² Interestingly, the core of the German cross-holdings presented in figure 6 reflects the basic economic geography of Germany. Among 'top 7' holders there are 3 companies from Bavaria, 2 from Hesse, and 2 from North-Rhine Westphalia. The web of cross-holdings binds together the insurance center of Munich, the banking center of Frankfurt, and the traditional industrial centers of Duesseldorf and Essen in the Ruhr area.

activity was not offset by new acquisitions. One issue not tackled here is the role of investment funds controlled mainly by top banks and insurance companies. It is very likely that banks and insurance companies transferred some of their holdings to investment funds, and started to manage them as parts of diversified asset portfolios (Jürgens and Rupp, 2001). This phenomenon, however, does not make the conclusion on the falling power of top institutions *as blockholders* less important. The falling power in terms of blockholdings, whether accompanied by control over investment funds or not, represents an important change in the role of top German institutions in corporate governance.

9 The determinants of ownership concentration

Proposition 5: The concentration of holdings of voting rights in the listed companies is inversely related to company size, and the inclusion in the DAX30 index. Controlling for other factors, it is lower in regulated industries. In addition, it depends on the age, economic sector and the geographic location of the company.

Linear regression was used to test the relationship between the concentration of holdings of voting rights and 6 variables. The analysis was conducted with the concentration defined either as Herfindahl index³ or as the percentage share of voting rights held by the largest holder. The results of the analysis, very similar for both definitions of the dependent variable, are shown in table 9. A detailed description of the variables is presented in the appendix.

The regression coefficient for company size and regulation had the expected signs but were not statistically significant. As we saw in figure 4, in which the median size of voting blocks is presented according to industry classification, the utilities and particularly the financials did not stand out as industries with exceptionally low levels of ownership concentration. With regard to size, and as is indicated in figure 3, we see no clear-cut increase in the median size of voting blocks as we move down from the first to the last quintile of companies in terms of decreasing market capitalization.

In figure 3 we also see that the concentration of voting blocks in the first quintile, comprising 92 companies with the largest market capitalization, was incomparably lower than in other firms. This should draw our attention to the role of stock market indices. The top quintile companies represented approximately the constituents of the DAX100 index, while the largest of them were constituents of the elite DAX30 index. In fact, the DAX30 was the most significant determinant of ownership concentration in the regression analysis.

³ Bounded Herfindahl index was used as the dependent variable. I ran the regression for an unbounded index, following the methodology used in some earlier studies (e.g. Demsetz and Lehn, 1985). The signs of the coefficients were similar, and their significance was lower.

Controlling for other factors, the inclusion in DAX30 implies a relatively low level of concentration. The relationship between index inclusion and concentration is a two-way relationship. The inclusion causes more exposure to trading as numerous portfolio investment institutions, and particularly indexed funds want to have a small portion of the index companies in their diversified portfolios. In order to be included in DAX30, however, a company must already have sufficiently dispersed ownership to ensure that its shares have the required level of liquidity (Jürgens and Rupp, 2001).

The concentration of holdings appeared higher in companies listed before the end of 1997 than for younger companies. This result triggered a hypothesis that perhaps the decrease in ownership concentration reported in section 5 was due mainly to the stock market entry of newly listed companies with more dispersed ownership. After analysing 347 companies listed before the end of 1997, I found that during the considered period there was no change of the largest holder in 70% of them. Nor was there any change in the number, identity, or the order of all major holders in half of them. Indeed, there was not even any change in the percentage distribution of holdings among major holders, in as much as 40% of them. In addition, the mean and the median size of a voting block in these 347 companies did not change between 1997 and 2001. This confirms the hypothesis and sheds new light on proposition 1.

The result showing that ownership concentration was higher in services or ‘new economy’ sectors than in manufacturing or ‘old economy’ sectors is difficult to interpret. Bebchuk and Roe (1999) suggested that corporate structures might depend on economic sector, but they did not however specify how or why. Becht and Mayer (2000) introduced the concepts of ‘influence’ and ‘realisation periods’. Simplifying their argument, economic activities with longer realization periods require that investors could exercise control over these activities for a longer period of time. If I assume that concentrated ownership facilitates control by owners and improves the stability of ownership structure, it also facilitates a longer influence period. Hence, I would expect a higher level of ownership concentration in economic sectors with longer realization periods. Returning to the regression results, they would confirm the above expectation only if the realization periods were longer in services than in manufacturing sector. As I cannot agree with such an assumption, I can only suggest that the relationship between economic sector and ownership concentration should be a focus for further research.

The geographical factor proved significant in the analysis. In figure 5 we saw that the level of concentration varied greatly among Länder, and the extent of these variations was much higher than in the case of industries, as presented in figure 4. The regression results suggests that the concentration of holdings in a company is higher the more closed the company’s ‘home-Land’ is towards extra-Land investors in terms of corporate control. Thus history has a powerful effect upon the openness of a Land’s market for corporate control. Here I would like

to focus on an explanation inspired by the theory of Roe. According to this thinking, in countries where socio-democratic pressures are strong, shareholders tend to be concentrated in order to protect themselves against the exploitation by the state (2000). Is it possible that these socio-democratic pressures differ significantly between German Länder? It might be possible for two reasons. First, the German Länder are powerful compared to sub-national levels of government in other countries (Herrigel, 1996). Second, subsidies to Landesbanken and the impact of Land government on mergers and acquisitions⁴ represent examples of how the openness of a Land to corporate control by outsiders can be affected at the level of Land.

10 Conclusions and implications

The objective of this paper was to further our understanding of the German model of corporate governance and its dynamics. In order to achieve this goal I identified concentrated ownership as the central feature of this model, and analysed the ownership structures and concentration, using the data on major holdings of voting rights in German listed companies as at the end of 1997 and May 2001. With the creation of the Neuer Markt, the first hostile takeovers of German companies, the introduction of Euro and many other developments, this period merits special attention in the study of corporate governance. The subject of ownership structures and concentration was approached from four different but complementary angles, starting from the overall change in the level of concentration, through the structure of major holdings of voting rights by the type of holder and the determinants of this structure, to the role of the top institutional owners and cross-holdings, and finishing with the determinants of ownership concentration.

I found that the concentration of holdings of voting rights in the listed companies fell considerably between 1997 and 2001. This deconcentration took place across all industrial

⁴ Examples on the diverse role of Länder in shaping regional corporate governance are numerous. FT reported (Jul 10, 1999) that the level of purported subsidies to Landesbanken (see footnote 3) varied greatly among Länder. The ‘merger of equals’ between Vereinsbank and Hypobank (both headquartered in Munich) was facilitated by the Bavarian government with a favourable tax treatment. The offer of the Frankfurt-based Deutsche Bank to take over Vereinsbank was rejected. In 1998 the Austrian company Voest Alpine failed to take over Preussag Steel, when the latter was defended by Gerhard Schröder, then the Ministerpräsident of Lower Saxony, who arranged the purchase of the majority of Preussag’s shares by the state and the state-owned banks (Garret, 2001).

sectors, irrespective of company size, and in almost all German Länder. The consistency of this process was, however, misleading. While the ownership of companies entering the stock market was relatively dispersed, long-listed and older companies maintained very concentrated ownership. Regarding the structure of holders of voting rights, I observed a strengthening position of individuals and non-financial companies and a retreat of financial companies, particularly banks. This retreat reflected a decisive shift in the role of the financial sector, from the holder of big voting blocks to the control of portfolio investment funds. I also showed that the position of various types of holders in firms depends on company age, economic sector, but above all on its size and geography.

The top owners of Deutschland AG are losing their power as holders of voting blocks in the listed companies. Mutual holdings within the group of top owners remained almost unscratched, but holdings in listed companies from outside the group shrank. In other words, the core of the web of cross-holdings exhibited strong persistence, but on the edges the web was decidedly disintegrating. Testing the determinants of ownership concentration I found out that controlling for other factors, the inclusion of a company in the DAX30 stock market index coincides with a relatively low level of concentration of voting rights. The inclusion in the index was shown to be much more important in influencing ownership concentration than the size of a given company. Company age, geography and economic sector also affect the level of concentration.

Considering that the fundamental corporate governance arrangements prevailing in Germany, such as co-determination or cross-holdings, have been in place for over a century, the magnitude of the change reported in this paper, which took place within only 3 years and 4 months, is striking. The German model is definitely not set in stone. When compared to earlier research on German corporate governance (Hopt, 1998, Dore, 2000), the research reported in this paper suggests that the degree of change witnessed in the late 1990s had indeed been unprecedented. There are, nevertheless, clear reasons to expect that the change may accelerate still further. This text was written on the eve of the abolition of capital gains tax, effective from the 1st of January 2002. This is likely to bring about further dissolution of blockholdings, resulting in a disintegration of the web of cross-holdings, and contribute to the creation of an open market for corporate control. If the future brings tax incentives for savings in private pension funds, and the introduction of an obligatory take-over code, the rate of change and its effects can be hard to imagine.

Falling ownership concentration, dissolution of cross-holdings, and a shift in the role of financial institutions from blockholders to portfolio investors imply that over the considered period of time corporate governance in Germany became more similar to that in the U.S. or the U.K. Remarkably, the change in the direction of the Anglo-American model took place

without a large or even a growing share of foreign, not least American or British, entities in corporate ownership. At the same time, however, I found evidence of persistence. To a great extent older companies did maintain their concentrated ownership structures, and the cross-holdings among the top financial and industrial institutions hardly changed. These examples and other findings of the paper imply that the pace of change differs greatly from one type of company to another. The diversity in terms of the rate of change as well as the impact of the change on different types of firms and different regions should feature strongly in any future research agenda.

Presenting how ownership concentration and structure depend on company age, size, sector, location and other characteristics, I showed that within the German model there is a great deal of diversity. Geography is a crucial dimension of this diversity. I observed that Baden-Württemberg was going against the main current of ownership deconcentration. I found that companies tend to be controlled by entities that reside nearby. I also showed that companies in regions that were closed to outside control had more concentrated ownership. In other words, proximity breeds corporate ownership and control links, and corporate governance even at a sub-national level is by no means spatially uniform. The more seriously we consider the role of geography in corporate control, the more unlikely it becomes that corporate governance systems will fully converge, and the less acceptable it becomes to attempt to impose or prescribe a uniform model across space.

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**Fig. 1 The building blocks of the German model
of corporate governance**

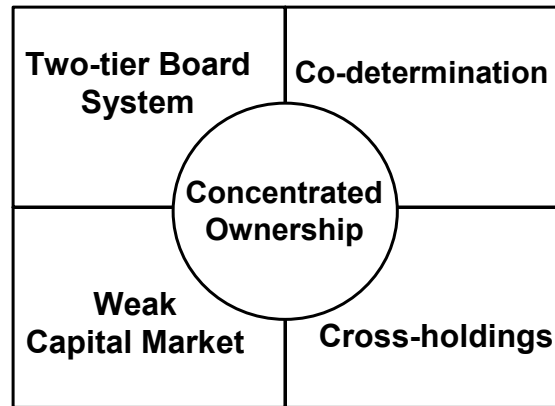


Table 1. Sector structure of the listed companies

Sector	No.of companies		Share in market capitalisation (%)	
	1997	2001	1997	2001
Energy	1	1	0.3	0.2
Materials	52	53	5.7	10.0
Industrials	94	106	12.3	6.5
incl. Capital goods	74	81	11.5	5.0
Consumer discretionary	78	95	18.5	15.9
incl. Automobiles&components	16	20	13.8	12.0
Consumer staples	39	40	2.9	3.0
Health care	13	12	3.6	3.3
Financials	94	111	27.8	32.2
incl. Banks	28	27	10.8	11.0
incl. Insurance	29	37	14.4	18.9
Information technology	12	12	6.1	9.4
Telecommunication services	1	3	9.3	9.6
Utilities	25	25	13.6	9.9
Unspecified	6	5	0.0	0.0
Germany	415	463	100.0	100.0

For all tables, figures, and appendices the source is author's research based on data from BaWe, MSDW London, and MSCI.

Table 2. Distribution of listed companies by land

Land	No.of companies		Share in market capitalisation (%)		Location quotient*
	1997	2001	1997	2001	
Baden-Wuerttemberg	60	70	17.5	18.0	1.24
Bavaria	97	101	26.7	28.0	1.63
Berlin	15	18	1.5	2.2	0.54
Brandenburg	0	0	na	na	na
Bremen	6	6	0.0	0.0	0.02
Hamburg	26	35	2.0	4.0	1.03
Hesse	52	63	11.4	10.7	1.14
Lower Saxony	26	26	5.2	4.1	0.47
Mecklenburg-Western Pomerania	0	0	na	na	na
North Rhine-Westphalia	112	118	33.2	29.4	1.34
Rhineland-Palatinate	13	14	2.3	3.1	0.73
Saarland	3	2	0.1	0.1	0.06
Saxony	2	3	0.0	0.1	0.02
Saxony-Anhalt	0	0	na	na	na
Schleswig-Holstein	3	6	0.0	0.1	0.04
Thuringia	0	1	na	0.1	0.06
Germany	415	463	100.0	100.0	na

* land's share in market capitalisation in May 2001, divided by its share in gross domestic product in 1998

Fig. 2 Median size of voting block held by the first, second, third largest, and the rest of holders

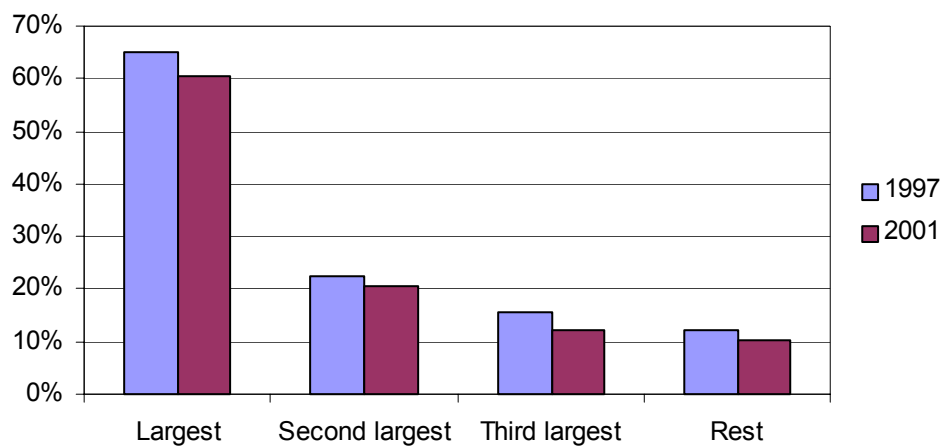


Fig. 3 Median size of voting block in companies according to their size quintile

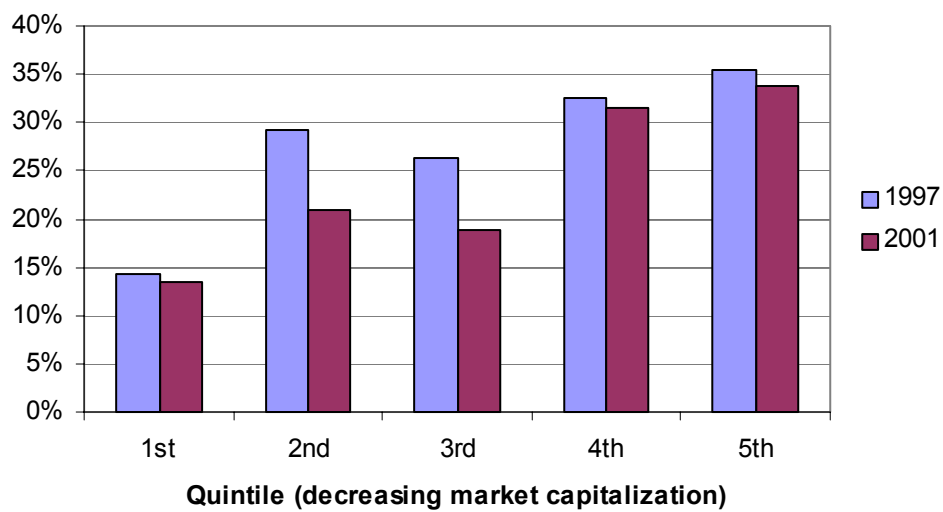


Fig. 4 Median size of voting block in companies according to their industry classification

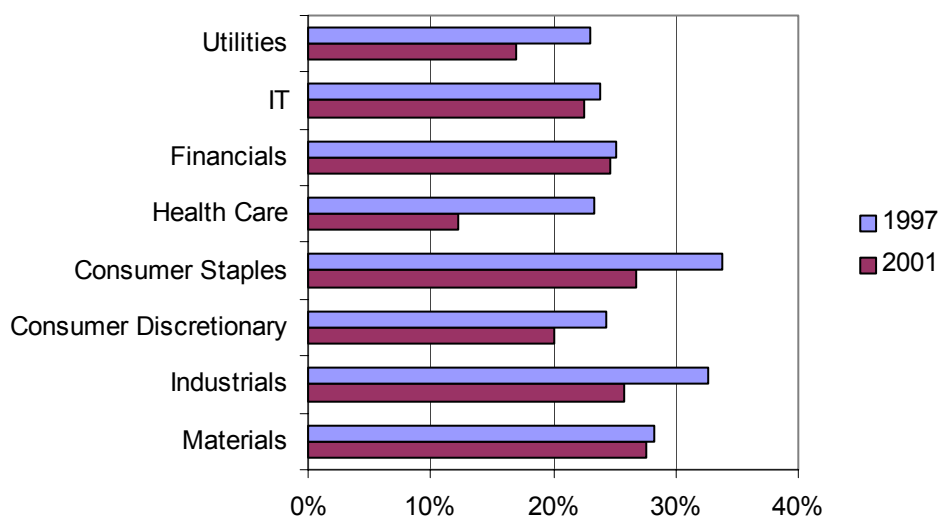
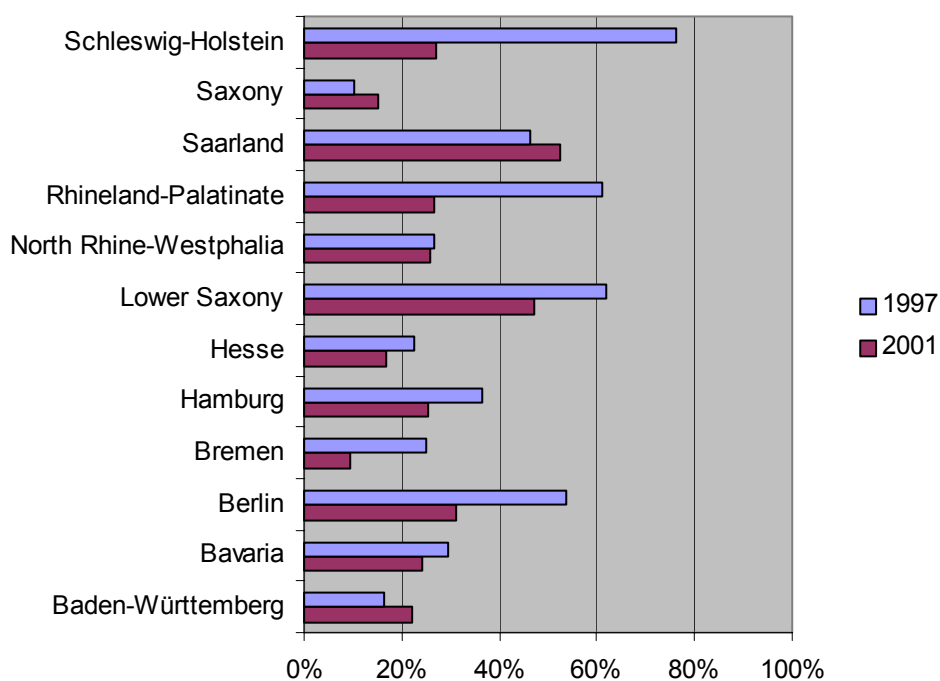


Fig. 5 Median size of voting block in companies according to the location of their headquarters



Tab. 3 Holdings of German entities in German listed companies

Type of holders	No. of Voting Blocks				Value of voting blocks (million €)			
	1997		2001		1997		2001	
Individuals and families	225	35%	303	39%	51,902	22%	110,763	22%
Financial sector	162	25%	150	19%	77,584	33%	158,496	32%
Industry and trade	158	24%	184	24%	31,214	13%	81,853	16%
Public	27	4%	36	5%	52,894	22%	72,291	14%
Others	80	12%	108	14%	23,406	10%	76,225	15%
Total Germany	652	100%	781	100%	237,000	100%	499,628	100%
Financial sector:								
Big 3 and foreign banks	41	25%	42	28%	24,509	32%	44,955	28%
Other domestic banks	50	31%	44	29%	12,920	17%	23,775	15%
Insurance companies	58	36%	44	29%	38,801	50%	88,628	56%
Other financial firms	13	8%	20	13%	1,353	2%	1,138	1%
Total financial sector	162	100%	150	100%	77,584	100%	158,496	100%

Tab. 4 Holdings of German entities in German non-financial listed companies

Type of holders	No. of Voting Blocks				Value of voting blocks (million €)			
	1997		2001		1997		2001	
Individuals and families	195	39%	247	42%	50,080	29%	97,376	30%
Financial sector	86	17%	78	13%	25,358	15%	42,865	13%
Industry and trade	138	27%	155	26%	27,813	16%	75,694	23%
Public	23	5%	29	5%	51,032	30%	70,022	21%
Others	61	12%	76	13%	17,158	10%	43,059	13%
Total Germany	503	100%	585	100%	171,441	100%	329,016	100%
Financial sector:								
Big 3 and foreign banks	28	33%	26	33%	11,767	46%	13,263	31%
Other domestic banks	25	29%	19	24%	3,928	15%	3,667	9%
Insurance companies	22	26%	21	27%	9,497	37%	25,387	59%
Other financial firms	11	13%	12	15%	166	1%	548	1%
Total financial sector	86	100%	78	100%	25,358	100%	42,865	100%

Tab. 5 The largest holders of the listed companies by the type of holder

Type of holders	1997	2001
Individuals and families	131	152
Financial sector	80	82
Industry and trade	144	158
Public	14	18
Others	46	53
Total Germany	415	463
Financial sector:		
Big 3 and foreign banks	16	18
Other domestic banks	17	13
Insurance companies	36	36
Other financial firms	11	15
Total financial sector	80	82

Tab. 6 Regression of the structure of holders of voting rights on company characteristics

	Individuals and families	Non-financial companies	Financial companies	Foreign entities
Constant	30.58***	36.29***	-9.75*	3.87
Age	3.43	-8.43*	0.51	3.09
Size	-7.11***	-4.95**	3.01**	3.86 *
Geography	0.16***	0.13	0.10***	-
Economic Sector	3.42	-3.36	6.47**	3.91
Intra-Financial	-	-	19.46***	-
Adjusted R square	0.075	0.006	0.113	0.002

N = 454 i.e. the number of companies listed on May, 2, 2001 on which all the analysed characteristics were available. The dependent variable for each type of holders is defined as the percentage of voting rights in a company held by entities of this type. For the definition of the independent variables see the appendix.

The asterixes show the significance at 10% (*), 5% (**), and 1% (***).

Tab. 7 The holdings of the top 7 institutional holders of voting rights in the German listed companies

Name	No. of voting blocks		Value of voting blocks (million €)	
	1997	2001	1997	2001
Deutsche Bank AG	22	22	16,182	22,744
Allianz AG	23	19	23,284	54,249
E.ON AG	0	18	0	20,436
Dresdner Bank AG	13	14	8,086	19,411
Bayerische Hypo- und Vereinsbank AG	0	11	0	15,540
RWE AG	10	10	4,605	10,063
VIAG AG	16	0	5,300	0
Münchener Rückversicherungs-Gesellschaft AG	14	9	12,081	30,782
VEBA AG	7	0	2,048	0
Bayerische Hypotheken- und Wechselbank AG	4	0	1,682	0
Bayerische Vereinsbank AG	9	0	6,598	0
Sum	118	103	79,866	173,224
% of Germany's total*	15.0	10.6	27.6	29.7

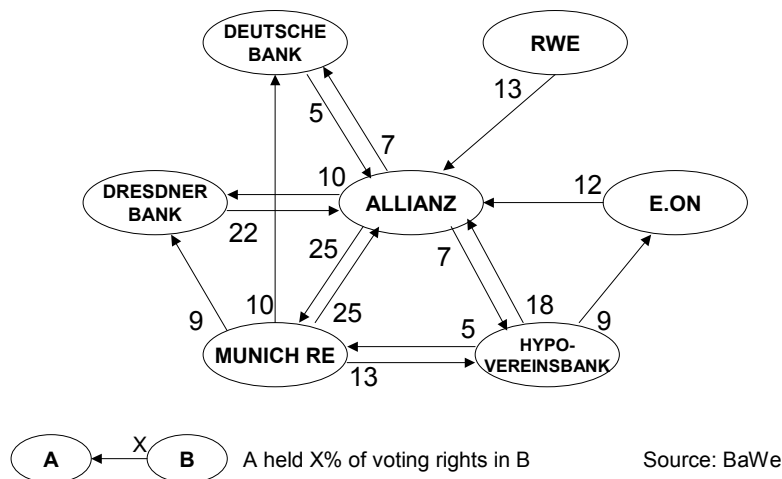
Between the end of 1997 and May 2001 VIAG and VEBA merged into E.ON, while the two Bavarian banks merged into Bayerische Hypo- und Vereinsbank

* for Mcap - the total value of all major holdings (not the total Mcap of the listed companies)

Tab. 8 The structure of the change in the number of voting blocks held by the 'top 7' institutional owners

Held at Dec 31, 1997	118
Deductions:	
In companies subject to mergers and acquisitions	(13)
In delisted or liquidated companies	(12)
Disposed of	(22)
Total deductions	(47)
Additions:	
In companies subject to mergers and acquisitions	6
Acquired in companies listed at Dec, 31, 1997	10
Acquired in companies listed after Dec, 31, 1997	16
Total additions	32
Net Change	(15)
Held at May 2, 2001	103

Fig. 6 The cross-holdings among the top 7 holders of voting blocks in the German listed companies on May 2, 2001



Tab. 9 Regression of the ownership concentration on company characteristics

	Dependent variables	
	Herfindahl Index	C1
Constant	0.511***	67.433***
Age	2.36E-02	1.09
Size	-5.99E-02	-1.12
Geography (2)	1.07E-03*	9.81E-02*
Economic Sector	-9.77E-02*	-10.9*
Regulation	-4.56E-02	-6.258
DAX 30	-3.13E-01***	-30.591***
Adjusted R square	0.059	0.069

N = 454 i.e. the number of companies listed on May 2, 2001 on which all the analysed characteristics were available. For the definition of the dependent and independent variables see the appendix.

The asterixes show the significance at 10% (*), 5% (**), and 1% (***).

Appendix

The description of variables used in the regression of the structure of holders of voting rights on company characteristics and the regression of ownership concentration on company characteristics

Name	Definition	Source and comments
Age	0 if a company was listed after the end of 1997, 1 otherwise	BaWe; data on holdings in voting rights was analysed for the end of 1997 and for May 2, 2001; the distinction between listed and non-listed on the former date was applied as a variable of age
Size	Log at the base of 10 of market capitalisation as at May 2, 2001	Morgan Stanley Dean Witter, London
Geography	The percentage share of a given type of holders in the total value of voting rights kept by all holders seated in the Land where a company is headquartered	Based on data from BaWe and Morgan Stanley Dean Witter, extended by the author's research. For the discussion on this data as well as the location of the holders of voting rights in German listed companies see Wójcik, 2001.
Economic Sector	0 for services and 'New Economy' industries, 1 for manufacturing and 'Old Economy' industries	Based on the classification by Morgan Stanley Capital International (MSCI, 2000), the author grouped industries in the following manner: 0 – health care, financials, IT, telecom, and utilities 1 – energy, materials, industrials, consumer discretionary and staples
Intra-Financial	1 for a financial company, 0 otherwise	The author identified the sector for each of the analysed companies.
Herfindahl Index	$\sum S_i^2$	Where: $i = 1, \dots, n$ n - the number of holders, S_i - the percentage of voting rights held by a holder in a company.
C1	The percentage share held by the largest holder of voting rights in a company	BaWe
Geography (2)	The percentage share of the total value of voting rights of all listed companies headquartered in a Land, held by entities seated in the same Land	Based on data from BaWe and Morgan Stanley Dean Witter, extended by the author's research. E.g. for a company from Hesse: The percentage share of entities seated in Hesse in the total value of voting rights of all listed companies headquartered in Hesse. This variable represents a proxy of the closeness of a Land's corporate control market.
Regulation	1 for a company from the financial or utilities sector, 0 otherwise	The author identified the sector for each of the analysed companies. Financial and utilities sectors are considered as more regulated than other sectors (Demsetz and Lehn, 1986)
DAX 30	1 for a company included in the DAX 30 index, 0 otherwise	Deutsche Boerse Group, website DAX 30 is the most elite index on the German stock exchanges. It includes the largest, and at the same relatively liquid stocks.