

Legal Reform of Corporate Governance and Shareholder Orientation in Germany

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Introduction

Corporate governance (CG) has been a much debated topic in German business, finance and academia since at least the 1990s. Designed to manage and control the firm in the presence of separation between ownership and control, a distinct national CG system had emerged over time. This framework featured many institutional peculiarities which were largely stipulated by national commercial law. While the system was firmly in place until very recently, external developments such as financial globalization and European integration called for extensive reforms which were gradually enacted by the German legislator. Arguably, these reforms have shifted the system towards greater consideration for the interests of investors in the capital markets, putting shareholder value creation on the agenda of German businesses.

Employing a German-specific CG Indicator, a comprehensive panel fixed effects econometric model and a large panel database on over 120 exchange-listed German firms, this article tries to investigate whether we can find evidence for a

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statistically significant and positive relationship between shareholder-friendly reforms of CG laws and firms' shareholder value generation, as well as associated market expectations. The empirical results show some evidence in support of the research hypothesis. However, this is only true if market measures are employed, reflecting market expectations rather than actual shareholder value generation.

Functions and Systems of Corporate Governance

Straddling the topics of legal science, corporate finance and organizational theory, CG is broadly defined as the system organizing the management and control of corporations on behalf of various stakeholders' interests. Any CG system is a unique combination of mutually reinforcing governance instruments in a specific regulatory framework, with the common purpose of minimizing agency costs arising from asymmetric information and associated issues of adverse selection and moral hazard due to hidden action (Witt, 2006; Berndt, 2002; Heinrich, 2002). Generally, so-called insider and outsider systems of CG are distinguished.

Outsider systems are often associated with Anglo-Saxon countries with capital market-oriented financial systems where equity is a preferred source of corporate financing, and shares are spread among dispersed shareholders. Stock corporations are led by a single board of directors, which is appointed and controlled by shareholders who can exercise voting rights with relative ease and power. Corporate takeovers occur frequently, providing an important tool for disciplining managers' behavior and protecting shareholders' interests. Accounting and disclosure standards are relatively transparent, and executives are commonly incentivized to act in line with shareholders' interests, e.g. through stock option compensation schemes. (Matthes, 2000; Heinrich, 2002; Witt, 2006). By contrast, insider systems serve the interests of various stakeholders in addition to equity

shareholders, such as creditors, employees, the state or even society as a whole. Hence, shareholder value is merely one among many firm objectives. Insider systems are characterized by bank-based financial systems, and bank loans are the mainstay of corporate financing. What is more, financial intermediaries are also active players in CG. In Germany, this was evidenced by the omnipresence of bank representatives on stock corporations' supervisory boards, the body in charge of controlling the management board on behalf of a firm's owners. Share ownership was highly concentrated in a complex network of capital cross-holdings colloquially known as "Deutschland AG". Individual shareholders had little say in corporate affairs, and their powers were heavily curtailed by legal provisions such as voting rights limitations. Hostile takeovers of German firms were next to impossible due to a lack of adequate legislation. Reporting standards were strongly geared towards creditors' interests, reflected by conservative accounting methods and low managerial transparency. Furthermore, there were no legal provisions on management incentives worth mentioning. (Boehmer, 2003; Hackethal, Schmidt, and Tyrell, 2005; Heinrich, 2002; Matthes, 2000; Witt, 2006).

As legislative interventions at the national level, such as provisions on property rights, contract and civil law, enforcement devices and financial market regulation may influence CG at the firm level (Berndt, 2002), it is worth investigating whether the recent reforms in Germany are associated with improved shareholder value creation. However, there is no straightforward approach as empirical research typically focuses on the relationship between either law and finance, or CG and economic performance. Law and finance is typically concerned with cross-country studies and employs standardized measures of investor protection and accounting standards while research on CG and economic performance mostly looks at firm-specific CG measures and relates them to firm-specific profitability and associated market valuation.

In a seminal contribution on law and finance, López de Silanes, La Porta, Shleifer, and Vishny (1998) find that countries with common-law systems exhibit high investor protection relative to civil-law systems (typically associated with Anglo-Saxon and Continental European countries, respectively), and a negative relationship between shareholder concentration and investor protection. Relevant in terms of CG, they include an investor protection index, and an accounting standards score. In a related study, La Porta, Lopez-de Silanes, Shleifer, and Vishny (1997) suggest a positive relationship between countries' investor protection standards and the relative size of stock markets, the number of listed firms and initial public offerings. While these results are enlightening, the authors strongly focus on voting rights while there may be other, country-specific aspects relevant for investor protection. Similarly, measuring the mere quantity of included accounting items may not accurately reflect the quality of the system. Furthermore, countries' legal investor protection and accounting standards are likely to be endogenous, raising concerns about causality. It may thus be more revealing to investigate the effects of legal change, rather than legal origin.

Addressing this issue, Haselmann, Pistor, and Vig (2010) investigate the effects of legal changes of creditor rights on loan supply in twelve Eastern European transition economies during the 1990s. They employ fixed effects panel regression methodology with bank level data as explained variables, while their creditor rights index serves as the explanatory variable of interest, reflecting legal standards at the country level. The idea is to tackle the endogenous nature of legal institutions which has hampered previous research on law and finance and also captures the effects of unobserved heterogeneity. Generally, it has become customary to measure countries' financial development in terms of indices. A well-known example is the World Bank's annual Doing Business report, which measures countries' investor protection standards in a score of select provisions on

managerial transparency liability, and shareholders' ease of filing lawsuits (World Bank, 2013). In a similar vein, the Heritage Foundation's Index of Economic Freedom measures the "rule of law" in countries in terms of property rights protection, provisions against corruption, and "regulatory efficiency" (Miller, Holmes, Feulner, Kim, and Riley, 2013).

There is also a growing literature on the relationship between CG and economic performance, but little work exists on the effects of relevant legal standards on firm performance. Employing a panel fixed effects model to control for country and industry-specific, time-invariant heterogeneities, Rajan and Zingales (1998) find that industries with high external financing needs grow relatively faster in countries with higher financial development and related CG standards, notably accounting standards. Using panel data on firms from 38 countries, Himmelberg, Hubbard, and Love (2002) find that firms' cost of capital increases with share ownership concentration, which in turn decreases in countries' investor protection standards, and further suggest that a strengthening of investor protection laws and their enforcement improves capital allocation and associated growth. While reasonably addressing legal change, they isolate ownership concentration as one particular agency conflict affecting firms, thus neglecting interdependencies with other relevant aspects of CG. High share ownership concentration is another common criticism about the country's traditional system, along with excessive bank control and associated transparency issues. Their effects on firm performance are analyzed by various authors who come to contradictory conclusions, possibly due to a lack of industry-specific variables and a lacking focus on the change of control over time (see Boehmer (2003)).

Using panel data on 100 exchange listed German firms covering the years 1996-99, Tuschke, Sanders, et al. (2003) find that corporate divestitures (i.e. the reduction of ownership concentration) are positively associated with subsequent firm perfor-

mance, as are the adoption of stock incentive plans and international accounting standards. However, this holds only for market measures of firm performance like market capitalization, but not for book measures such as return on sales. While reasonably addressing specific German CG issues and managerial incentives, the focus on voluntary firm-level CG reforms raises new concerns of endogeneity as it is not a priori clear whether such reforms actually cause higher shareholder returns and expectations, or whether increased market orientation leads to the gradual adoption of adequate CG standards. The focus of this article, however, is on the effects of changes in CG legislation at the national level on shareholder value at the firm level. These reforms and how they are used to construct a legal indicator will be discussed in the following section.

Legal Reforms and the Corporate Governance Indicator

The traditional German CG system was challenged by several economic and political developments which surfaced simultaneously during the 1990s. Notably, European political and economic integration gained momentum during that time and numerous European Union legal initiatives called for greater capital market integration, with particular focus on CG policies starting from the 2000s (Beckmann, 2007; Heinrich, 2002). These initiatives resulted in a series of policy guidelines and directives which had to be translated into law by the national governments. In this course, many provisions of the German commercial laws were found at odds with these guidelines and were consequently altered or abolished. At the same time, and more importantly perhaps, remarkable changes took place both in the German firms and financial institutions which were so closely linked in the old insider system. Those banks and insurances (notably Deutsche Bank and Allianz) which had been at the center of the old "Deutschland AG" shifted the

focus of their business away from industrial holdings and loan supply towards more profitable activities such as investment banking, thereby retreating from their central role in Germany's CG system (Beyer, 2003; Hackethal, Schmidt, and Tyrell, 2005). Consequently, large German corporations increasingly turned towards (international) equity investors in order to meet their financing needs. Not only did a growing number of German firms seek listing in overseas stock exchanges, but international investors also showed increased interest in the German equity market (O'Sullivan, 2003). Among these were so-called institutional investors such as large pension funds, insurances, and other investment firms, often from Anglo-Saxon countries. These investors allocate substantial funds to equity titles, creating pressure on firms to pursue shareholder value generation and to adopt capital market friendly measures of CG (Beckmann, 2007). This was also thought to improve the market valuations of German corporations' stocks which had been low compared to their Anglo-Saxon counterparts, in part due to their relatively lower profitability which was in turn attributed to Germany's seemingly outdated insider system of CG (Erlen, 2002; Streeck and Höpner, 2003). The viability of the system was further challenged by a severe economic downturn in the early 1990s (O'Sullivan, 2003) and a series of prominent corporate crises and mismanagement scandals throughout the decade. The demise of large corporations such as the steel producer Metallgesellschaft, construction firm Philipp Holzmann, or electrical equipment producer AEG sparked a public debate about the control efficiency of German supervisory boards, the role of banks, deficits of internal risk management and conflicts of interests due to extensive personal interrelationships within the insider system (Albers, 2002; Beckmann, 2007; Ipsen and Pfitzinger, 2003). In sum, the above developments called for extensive reforms of the CG system, aiming at greater capital market orientation and shareholder value generation, which was subsequently addressed both at the firm and at the

legislator levels.

To reflect the quality of the most relevant legal standards and their change over time, I propose a corporate governance indicator (CGI). Following mainstream approaches, the CGI is also structured along the dimensions of investor protection and transparency. Investor protection reflects legal provisions protecting shareholders' rights (e.g. in the annual meeting), their claims (e.g. of small against large blockholders), and the enforcement of standards (e.g. through supervisory authorities). Transparency, on the other hand, tries to capture the most relevant disclosure requirements on managerial activities and financial reporting. In addition, the CGI also reflects legal incentives supposed to align managerial actions with investors' best interests. German examples include the introduction of a law regulating executive compensation with stock options and a tax reform exempting firms from capital gains taxes in the case of divestitures of corporate holdings (which were often unprofitable but maintained for tax reasons). The CGI focuses on twelve legal reform acts passed between 1994 and 2009, encompassing 19 legal reform measures of interest which explicitly address those issues of investor protection, transparency, and incentives that were so frequently criticized about the old system.

Landmark legal reform acts include the Second Financial Market Development Act of 1994, the 1998 Corporate Transparency and Control Act, the Transparency and Disclosure Act of 2002, the Accounting Law Reform Act of 2004, and the 2005 Corporate Integrity and the Modernization of Shareholder Action Act, to name just a few. These reforms altered many existing laws, particularly the Stock Corporations Law and the Commercial Code, but also introduced new laws such as the Securities Trading Law. All legal reform measures and how they are included in the CGI (either as investor protection (IP), transparency (T), or incentive (INC) items), are summarized in table 1, along with the most important laws

they altered, the year they came into effect, a description of the factual change they brought about and how this addresses specific German CG issues. A dummy representation of the CGI can be found in table 2.

Panel Database and Empirical Strategy

I construct an panel database on over 120 German corporations listed in the various segments of the Frankfurt stock exchange, covering a timespan of twenty years (1992-2011, where available). Any financial intermediaries such as banks and insurances are excluded as they are subject to a much more particular regulatory framework that goes beyond general CG issues. Firms headquartered overseas and incorporated in foreign legal forms are also excluded.

To measure shareholder orientation and profitability, both market and accounting variables were obtained. The market variable employed is average historical market capitalization, calculated as the product of the share price and the number of shares outstanding, on an annualized basis. This reflects a firm's valuation by investors towards whose interests the legal reforms were geared in the first place. As an accounting variable I use basic earnings per share (EPS), computed as net income available to common shareholders divided by the weighted average shares outstanding and including the effects of all one-time, non-recurring gains and losses (e.g. resulting from corporate divestitures). It should be noted that market capitalization is a forward-looking measure reflecting investors' expectations on firm profitability, while EPS reflects actual earnings from the past period, as reported in annual statements. I further include several macro and firm level control variables to account for alternative explanations. Macro control variables include the annual averages of the IFO institute's monthly business situation index for models of EPS, while the IFO business climate index is used for models of market capitalization. These indices serve as macro analogues for GDP growth

and growth expectations, respectively. To reflect inflation, I include the consumer price index on Germany from the World Bank's World Development Indicators database. Firm-specific control variables include firms' effective interest and tax rates, as well as firm size in terms of the (logged) number of employees. All firm specific variables were downloaded from the Bloomberg database. Only fourteen firm-year observations were excluded as outliers. In total, there are 1,606 firm-year observations of market capitalization, and 1,989 observations of EPS, covering 129 firms.

To investigate the research question, a panel data regression model with fixed effects is applied. Using firm-level data, the following specification is tested:

$$y_{it} = a + \beta X_{it} + \gamma CGI_{t-1} + \delta_i + \epsilon_{it} \quad (1)$$

where i denotes firms and t denotes years. The dependent variable, y , alternatively stands for EPS, or the log of market capitalization. Macro and firm-specific control variables are included in the vector X . CGI is the legal indicator, and γ is the associated coefficient of interest, capturing the response of the dependent variables to the legal change. δ_i denotes firm fixed effects, that is, unobserved and time-invariant firm-specific characteristics affecting profitability. Finally, ϵ_{it} denotes the error term.

One major reason for using panel data is to resolve the issue of omitted variables (Wooldridge, 2002). In my model, this unobserved variable is represented by the term δ_i , and is assumed to differ between firms, but to be constant over time. In terms of my study, one could imagine that some firms are systematically more profitable than others due to the superior productivity of their workforce, or due to firm-specific voluntary CG measures that go beyond legal requirements. However, as the parameter of interest is γ , the undesired

residual needs to be taken care of. This is done by the so-called fixed effects or "within" transformation (Wooldridge, 2002). Assuming that the explanatory variables are strictly exogenous conditional on the unobserved effect, i.e. $(u_{it} | X_i, CGI, \delta_i) = 0, t = 1, 2, \dots, T$, equation (1) is first averaged to obtain the cross section equation

$$\bar{y}_i = a + \beta \bar{X}_i + \gamma \overline{CGI} + \delta_i + \bar{\epsilon}_i \quad (2)$$

where $\bar{y}_i = T^{-1} \sum_{t=1}^T y_{it}$, $\bar{X}_i = T^{-1} \sum_{t=1}^T X_{it}$, $\overline{CGI} = T^{-1} \sum_{t=1}^T CGI$ and $\bar{\epsilon}_i = T^{-1} \sum_{t=1}^T \epsilon_{it}$.

Subtracting equations (1) and (2) yields the fixed effects transformed equation

$$(y_{it} - \bar{y}_i) = \beta(X_{it} - \bar{X}_i) + \gamma(CGI_{t-1} - \overline{CGI}) + (\epsilon_{it} - \bar{\epsilon}_i) \quad (3)$$

where the fixed effect term has been wiped out, and the coefficients of interest can be consistently estimated. Due to the large size of the sample, I use heteroskedasticity-robust standard errors in all specifications to account for possibly different variance structures across firms (Wooldridge, 2002) and serial correlation in the idiosyncratic error terms. Specifying robust standard errors is equivalent to clustering standard errors on the firm level and produces consistent estimators even when disturbances are not identically distributed over firms and in the presence of autocorrelation, as long as there are many firm observations, and disturbances are uncorrelated across firms (StataCorp, 2009).

Alternatively, I test the hypothesis by running the dynamic panel regression specification

$$y_{it} = a + \alpha y_{i,t-1} + \beta X_{it} + \gamma CGI_{t-1} + \delta_i + \epsilon_{it} \quad (4)$$

where one lag of the dependent variable is included as an explanatory variable. The idea is that previous period EPS or market capitalization may be highly explanatory for the observed current period value. Model coefficients are estimated from the first differenced equation

$$\Delta y_{it} = \alpha \Delta y_{i,t-1} + \beta \Delta X_{it} + \gamma \Delta CGI_{t-1} + \epsilon_{it} \quad (5)$$

where the undesired panel effect has again been eliminated. More obviously than in specification (3), the coefficient of interest, γ , captures the effects of legal change. However, this specification is prone to dynamic panel bias arising from the systematic correlation between the lagged dependent variable and the idiosyncratic error term. Therefore, an estimator is employed that constructs GMM type instrumental variables from the lagged levels of the dependent variable to produce consistent estimators, and works in the presence of low-order serial correlation in the error terms (StataCorp, 2009). Post-estimation tests for serial correlation were conducted to ensure the validity of the used moment conditions and to determine the appropriate lags for constructing the GMM-type instruments.

Regardless of the specification, endogeneity is an important concern, and is thus addressed in various ways. First and foremost, the dependent variables are at the individual firm level, while most explanatory variables are at the macro level. Notably, the variable of interest (CGI) reflects changes in codified national legal standards. Firms are involuntarily subject to these standards unless they relocate to other jurisdictions, an eventuality I have controlled for by excluding such firms from the sample. Furthermore, the legal reforms were largely driven by external trends such as financial globalization and European integration. The specification further exhibits a lagged design on the variable of interest, to alle-

viate concerns of potential reverse causality. Finally, in specifications featuring the lagged dependent variable as an explanatory factor, I employ an instrumental variable technique to address the dynamic panel bias.

Results

The results for the models of market capitalization and EPS are presented in tables 3 and 4, respectively. In both tables, column 1 shows that the coefficient on the CGI is positive and highly significant for both models. Next, I include macro and firm control variables as described in the previous section. Column 2 shows that the legal variable is still positive and highly significant for market capitalization, while the coefficient loses its significance for the model of EPS. In both models, the coefficient on the business climate/situation is positive and significant as expected, while the coefficients on the other control variables are mostly insignificant or very small. Column 3 shows the results from the dynamic specification, where one lag of the dependent variable is included, and the coefficient estimates are obtained from equation (5). The coefficient on the legal variable is positive and significant at the 95 percent confidence level for EPS, and at the 99 percent level for market capitalization. What is more, the signs of the coefficients on virtually all control variables are highly consistent with expectations. The overall model fit is significantly better in models of market capitalization.

Next, the regressions from columns 1 to 3 are repeated, but the legal variable is now disaggregated into components of investor protection, transparency, and incentives. The results of the respective horserace regressions are found in columns 4 to 6 of tables 3 and 4. In models of market capitalization, the coefficient on investor protection is positive and highly significant in specifications with and without control variables (columns 4 and 5), and also in the dynamic specifica-

tion (column 6). However, the signs of the transparency and incentive coefficients are negative unless the dynamic specification is employed (although only the coefficient on incentives in the specification without control variables is significant). Furthermore, previous period market capitalization appears to be highly explanatory for the current period's value. Overall, the dynamic specification in column 6 exhibits high significance for nearly all coefficients of interest, and the signs of all parameter estimates are highly consistent with expectations.

Table 4 shows that the regression results of the disaggregated CGI on EPS are less consistent with expectations. Only the specification without control variables (column 4) yields statistically significant parameter estimates, however the sign for incentive is again negative and thus inconsistent with expectations. This is not the case in the specifications with control variables and in the dynamic model; however, all parameter estimates of interest are statistically insignificant. Overall, it seems difficult to find evidence for a positive effect of CG reforms on firms' accounting profitability. This also resembles the findings of Tuschke, Sanders, et al. (2003).

Conclusions and Outlook

Generally, the empirical results are most consistent with expectations when market capitalization is employed. This suggests that investors in the capital market reward shareholder-oriented reforms in CG legislation by allocating funds to German equity titles, thus pushing up market prices. This is true for all three specified dimensions of shareholder orientation in CG, namely investor protection, transparency, and incentives. However, when EPS are employed, the results also suggest a positive relationship between legal standards and firm profitability, but significance of the results is highly subject to the model specification. A possible

explanation for these results may be the forward and backward looking natures of the respective market and accounting measures of shareholder value generation. This may suggest that, on average, investors are overly optimistic about the economic effects of governance reform.

In any case, it is worth some thought whether shareholder orientation should actually be the central paradigm of "good" CG that it seems to be today or whether the focus should be on other, more long-term objectives. While the old German insider CG system is unlikely to be revived, its comprehensive stakeholder approach certainly has its merits which may not be adequately reflected by mainstream empirical research. It thus deserves thorough review when designing the corporate governance systems of the future.

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Appendix

2. FFG: Zweites Finanzmarktförderungsgesetz (Second Financial Market Development Act)

4. FFG: Viertes Finanzmarktförderungsgesetz (Fourth Financial Market Development Act)

AktG: Aktiengesetz

ARUG: Gesetz zur Umsetzung der Aktionärsrichtlinie

BilReG: Bilanzrechtsreformgesetz

HGB: Handelsgesetzbuch

KapAEG: Kapitalaufnahmeerleichterungsgesetz

KonTraG: Gesetz zur Kontrolle und Transparenz im Unternehmensbereich

KStG: Körperschaftssteuergesetz

StSenkG: Steuersenkungsgesetz

UMAG: Gesetz zur Unternehmensintegrität und Modernisierung des Anfechtungsrechts

VorstAG: Gesetz zur Angemessenheit der Vorstandsvergütung

VorstOG: Vorstandsvergütungs-Offenlegungsgesetz

WpHG: Wertpapierhandelsgesetz

WpÜG: Wertpapiererwerbs- und Übernahmegesetz

Reform Act	Laws Changed/Introduced	Effective	Description of Measure and Relevance for Corporate Governance
Anti-Insider Legislation (IP)	§§ 12-20, esp. § 14 WpHG	1994 (mostly)	Laws are in place prohibiting the use of insider information. This addresses the potential abuse of informational asymmetries against outsiders.
Enforcement/ Supervision Authority (IP)	§§ 3-11, 16, 21, 29 (et al.) WpHG	1995	A federal authority is in place supervising and enforcing the compliance with anti-insider and other corporate governance laws (e.g. the ad-hoc disclosure of facts affecting the stock price).
Voting Rights Disclosure (T)	§§ 21-30 WpHG	1995	Public disclosure is required if a block shareholder attains voting rights above specified threshold percentages. Addresses the lack of transparency of capital holdings.
International Reporting Standards (INC)	§ 292a HGB	1998-2004	Firms may file consolidated annual statements according to accepted international instead of German accounting standards, as an incentive to shift to capital market-friendly reporting.
"Anti-Bank" Voting Rights (IP)	§§ 12, 128, 134, 135 AktG	1998	Bank's proxy voting power is curtailed and multiple/shareholders' interests in the general meeting. Addresses the protection of small shareholders' interests in the general meeting.
Supervisory Board (IP)	§§ 90, 110, 111, 147, 171, 328 AktG	1998	The duties of the supervisory board are clarified as an institution of delegated shareholder control. Addresses the control deficits and conflicts of interest in the old insider system.
Risk/Audit Standards (IP)	§ 91 AktG; §§ 189, 317, 321, 322, 323 HGB	1998 (mostly)	Comprehensive audit requirements and provisions on risk management measures are in place, aiming at shareholder protection.
Stock Option Compensation (INC)	§§ 192, 193 AktG	1998	The supervisory board may decide on stock option compensation schemes as an incentive to align managerial and market interests.
Tax Exemption on Divestitures	§ 8b KStG	2001	Profits associated with firms' divestitures of corporate holdings are exempt from capital gains tax as an incentive to reduce ownership concentration.
Market for Corporate Control (IP)	WpÜG	2002	A legal framework is in place regulating the takeover of capital shares and control over corporations via the capital market, including the potential replacement of management.
Directors' Dealings Disclosure (T)	§ 15a AktG	2002	Management/supervisory board members' sales and purchases of the own company's stock must be disclosed. Increases managerial transparency.
CG Code/ Best Practice (INC)	§ 161 AktG	2002	A widely accepted code of corporate governance best practices is in place. Compliance is voluntary but must be disclosed, creating an incentive to act in line with market interests.
International Reporting Standards (T)	§ 315a HGB	2005	International reporting standards are compulsory for all capital-market oriented stock corporations. Introduces a market-friendly disclosure standard.
Shareholder Lawsuits (IP)	§§ 93, 117, 147-149, 243, 246a (et al.) AktG	2005	Shareholders may easily sue for damages against management and supervisory boards and appeal against general meeting decisions. Improves shareholder protection.
No Share Deposit (IP)	UMAG	2005	Shareholders are not required to deposit their shares prior to and during the general meeting. Aims at increasing voting rights exercise.
Executive Compensation Disclosure (T)	§§ 285, 286, 289, 314, 315 HGB	2006	The disclosure of individual board members' compensation packages is compulsory. Increasing managerial transparency.
Executive Cooling-off Period (IP)	§ 100 AktG	2009	Management board members may not move directly to the supervisory board after the expiry of their terms. Reduces insider bias.
Executive Compensation Adequacy (INC)	§§ 87, 107, 116, 193 AktG	2009	Supervisory board has to set management compensation in line with performance and sustainable growth. Serves to align managerial incentives with shareholders' (long-term) interests.
Proxy Voting by Mail/Electronic (IP)	§§ 118, 121 AktG	2009	Shareholders may personally exercise voting rights without physical presence in the annual meeting, improving conditions for voting rights exercise.

Table 1: Timeline of Legal Reform Measures of Corporate Governance

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Anti-insider Legislation	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Enforcement Supervision Authority	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Anti-Bank Voting Rights	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Supervisory Board	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Risk Audit Standards	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Market for Corporate Control	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shareholder Lawsuits	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
No Share Deposit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Proxy Voting by Mail Electronic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Executive Cooling-off Period	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INVESTOR PROTECTION	0	0	1	2	2	2	5	5	5	5	6	6	6	8	8	8	8	10	10	10
Voting Rights Disclosure	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Directors' Dealings Disclosure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
International Reporting Standards	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Executive Compensation Disclosure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRANSPARENCY	0	0	0	1	1	1	1	1	1	1	2	2	2	3	4	4	4	4	4	4
International Reporting Standards	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0
Stock Option Compensation	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tax Exemption on Divestitures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CG Code Best Practice	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1
Executive Compensation Adequacy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INCENTIVE	0	0	0	0	0	0	2	2	2	3	4	4	4	3	3	3	3	4	4	4
CORP. GOVERNANCE INDICATOR (TOTAL)	0	0	1	3	3	3	8	8	8	8	12	12	12	14	15	15	15	18	18	18

Table 2: Corporate Governance Indicator (Dummy Representation)

	(1)	(2)	(3)	(4)	(5)	(6)
Corp. Governance Indicator (t-1)	0.098 (0.008)***	0.060 (0.015)***	0.062 (0.008)***			
IFO Business Climate		0.026 (0.002)***	0.022 (0.001)***		0.020 (0.002)***	0.023 (0.002)***
Inflation		0.001 (0.009)	-0.029 (0.006)***		-0.007 (0.006)	-0.028 (0.006)***
Effective Interest Rate		0.001 (0.001)	-0.000 (0.000)		0.001 (0.001)	-0.000 (0.000)
Effective Tax Rate		-0.001 (0.000)***	-0.001 (0.000)***		-0.001 (0.000)***	-0.001 (0.000)***
Employees (log)		0.450 (0.086)***	0.084 (0.081)		0.443 (0.085)***	0.085 (0.082)
Market Cap. (log, t-1)			0.592 (0.040)***			0.579 (0.039)***
Investor Protection (t-1)				0.259 (0.024)***	0.163 (0.031)***	0.054 (0.016)***
Transparency (t-1)				-0.056 (0.047)	-0.011 (0.044)	0.069 (0.024)***
Incentive (t-1)				-0.100 (0.027)***	-0.028 (0.026)	0.071 (0.016)***
Constant	5.714 (0.092)***	-0.541 (1.171)	2.094 (0.733)***	5.615 (0.087)***	0.663 (0.863)	2.034 (0.775)***
Adjusted R^2	0.3732	0.4725	-	0.4091	0.4807	-
Observations	1,606	1,530	1,415	1,606	1,530	1,415

Robust standard errors in parentheses. Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. Columns 1 and 2 report the regression results from specification (1), with and without firm and macro-level control variables. Column 3 reports the regression results from specification (4). Columns 4 and 5 report the regression results on the disaggregated legal variable from specification (1), with and without control variables. Column 6 reports the regression results on the disaggregated legal variable from specification (4).

Table 3: Firm-level regressions (Market Capitalization (log))

	(1)	(2)	(3)	(4)	(5)	(6)
Corp. Governance Indicator (t-1)	0.140 (0.019)***	0.043 (0.028)	0.106 (0.046)**			
IPO Business Situation		0.042 (0.007)***	0.039 (0.008)***		0.043 (0.009)***	0.042 (0.009)***
Inflation		0.039 (0.025)	-0.015 (0.031)		0.033 (0.039)	-0.014 (0.038)
Effective Interest Rate		0.001 (0.001)	0.002 (0.001)*		0.001 (0.001)	0.002 (0.001)*
Effective Tax Rate		-0.007 (0.001)***	-0.005 (0.001)***		-0.007 (0.001)***	-0.005 (0.001)***
Employees (log)		0.174 (0.324)	-0.244 (0.261)		0.175 (0.326)	-0.192 (0.283)
Earnings Per Share (t-1)			0.305 (0.077)***			0.302 (0.080)***
Investor Protection (t-1)				0.237 (0.073)***	0.014 (0.068)	0.045 (0.066)
Investor Protection (t-1)				0.210 (0.101)**	0.110 (0.176)	0.167 (0.183)
Investor Protection (t-1)				-0.136 (0.078)*	0.072 (0.092)	0.157 (0.112)
Constant	-0.136 (0.193)	-8.431 (2.975)***	-0.210 (3.134)	-0.170 (0.199)	-7.963 (4.096)*	-0.933 (3.051)
Adjusted R ²	0.1229	0.1620		0.1330	0.1612	
Observations	1989	1827	1762	1989	1827	1762

Robust standard errors in parentheses. Significance levels: * p<0.1; ** p < 0.05; *** p < 0.01
Columns 1 and 2 report the regression results from specification (1), with and without firm and macro-level control variables. Column 3 reports the regression results from specification (4). Columns 4 and 5 report the regression results on the disaggregated legal variable from specification (1), with and without control variables. Column 6 reports the regression results on the disaggregated value from specification (4).

Table 4: Firm-level regressions (Earnings per Share)