

Projekt ansökan 1999 10 21**The Impact of Business Groups/Alliances on Executive Compensation and Firm Performance. Sweden 1985 – 1997****1. Introduction**

Business groups and business alliances are networks or relational structures that combine features of markets and firms, but are distinctly different from each. The significance of social networks in social life is well documented, but their role in the economic sphere is less well explored (see the seminal work of Granovetter 1985, 1994). The variety and richness of networking structures make general or exhaustive theories difficult, and adding to the problem is a lack of relevant and sufficiently detailed data. In addition, economists, following the seminal work by Coase (1937), have tended to focus on the two extreme types of economic organization, markets on the one hand and firms on the other, without devoting sufficient attention to intermediate forms of organization.

In this project we propose to use a newly released and unique data set of Swedish publicly traded firms to study economy-wide network structures among large firms. Our data allow identifying at least three network structures, that are known to be important, but which researchers have not been able to study sufficiently and distinctively. These are CEO interlocks (top managers of different firms serving on each other's supervisory boards), board interlocks (supervisory boards of different firms sharing the same outside board member), and equity interlocks (cross-ownership of shares or common ownership by third parties). In particular, our data allow us to distinguish between the three types (sometimes summarily referred to as interlocking directorates) and to study them jointly.

We attempt to identify the impact of corporate networks on firm performance along several dimensions. In particular, we will focus on the following questions:

1. How do CEOs interlocks influence CEO pay? How has the relationship changed over time?
2. How do business groups influence firm performance? How has the relationship changed over time?
3. How have Swedish publicly traded firms' alliances with respect to equity, board and CEO interlocks developed over the period 1985 to 1997?

2. Data base

The data base we use, Corporate Governance 85, contains information about all publicly traded companies on the Swedish Stock Market (A1 list) during the period 1985-1997. The data base already exists and contains unique information on firm characteristics, financial information, and information on CEOs and boards of directors that have not previously been available for research in the present form.

The information in the data base is drawn from four basic sources: the annual reports for all publicly traded firms on the A1 list on the Swedish stock market, Sundqvist ownership data service for the same firms 1985 – 1997, and Öhmans financial data service and Findata for the same period.

From the annual reports information has been gathered about equity, debt, number of employees, industry, type of stock, loan structure, and geographic region of the headquarters. Furthermore, from the same source information has been collected about the CEO, such as name, title, age, salary (fixed, bonus and stock options, firm shares) for the years during the 90s, and names of the board members. We have recently received permission to gather information about board members and CEOs in the data base for research purposes (Data inspection permission September 1998 ärende nummer Dnr 2149-98).

From Sundqvist's Ägardata we have information about the two largest controlling shareholders and their stakes in each firm, measuring both capital and voting power. From Öhmans finansdata we collect information about market value, the geographic region where the headquarters is situated, and the size of the geographic region.

Findata provided us with financial data such as alpha and beta values for inputs in the calculation of abnormal returns.

3. Business groups

Existing research on business groups with certain structural network characteristics claims that business alliances may improve firm performance (e.g., Fields 1995). Furthermore, research claims that business groups substitute for more well developed financial markets and obtain scarce resources, offer economies of scale, overcome problems associated with inefficient product markets, engage in research and development, and contend more effectively with foreign competition (e.g., Aoki 1982).

There is an abundance of research on one type of interlock (see Haunschild and Bechman (1998 for a survey). A large body of literature focuses on board of directors interlocks, when member firms acquire shares in each other and place representatives on each other's boards. But interlocks do not always follow equity (e.g., in USA). Empirical findings are sometimes contradictory or at best inconclusive (Mizruchi and Galaskiewicz 1993, for a review) and lack of relevant data limits the inferences (Aoki 1982). Hence very little systematic knowledge or empirical evidence exists concerning the performance effect of group affiliation (except for research by Khanna and Rivkin 1999 on international comparison of emerging markets and by Keister 1999 on SOE business groups in China).

Apart from the lack of consistent findings and relevant data the definition of business groups differs. For instance, Leff (1978:663) defines business group as a group of companies that does business in different markets under common administrative or financial control whose members are linked by relations of interpersonal trust on the bases of similar personal ethnic or commercial background a business group. Encarnation (1989:45) refers to Indian business houses, emphasizing multiple forms of ties among group members. Powell and Smith-Doerr (1994:388) state that a business group is a network of firms that regularly collaborate over a long time period. Granovetter (1994:454) argues that business groups refers to an intermediate level of binding, excluding on the one hand a set of firms bound merely by short-term alliances and on the other a set of firms legally consolidated into a single unit. Williamson (1975, 1985) claims that business groups lie between markets and hierarchies. Khanna and Rivkin (1999) suggest

that business groups are typically not legal constructs though some regulatory bodies have attempted to codify a definition.

The research literature on business groups/alliances clearly shows that business groups can be based on different types of alliances such as bank relationships (e.g., Frank and Myer 1994 for Germany and e.g., Kojima 1998 for Japan), interlocking board directorates (Mizruchi and Galaskiewicz 1993), owner alliances (Kim 1991, for Korea), information sharing (Japelli and Pagano 1993), joint ventures (Berglöf and Perotti 1994), and cartels (Green and Porter 1984).

The research also shows that business groups' structure varies across corporate governance systems. Japan's keiretsu are organized either vertically or horizontally and develop across industries. The keiretsu generally include a bank, a holding or a trading company, and a diverse group of manufacturing firms (Lincoln et al. 1992). In contrast, Korea's Chaebol are typically controlled by a single family or a small number of families and are uniformly vertically organized (Kim 1991). Business groups in Taiwan, *guanxi qiye*, tend to be small, loosely integrated entities with a didactic managerial style, as opposed to the authoritarian style common in Korean and Japanese groups (Fields 1995). Chinese business groups have developed their own unique structure: the groups are large multi-industry entities with strong ties to the state but not to particular families (Keister 1999). Most of this research stems from emerging market countries. Countries such as Sweden and Germany have recently experienced major changes in the business group structure; crossownership and pyramids have gradually disappeared. Yet we know very little about the effects of the business groups and even less about the effect of new business structures.

Theories about the benefits and costs of business groups

Interorganization theory suggest that interlocking directorates, a common component of business group structure, will improve performance because they enhance interfirm communication and otherwise reduce transaction costs (Williamson 1985). Business group membership benefits firms because the groups **economize on control**: thus the groups are effective to the extent to which they avoid overorganization by keeping contracts implicit and modes of monitoring informal (Williamson 1985, Lincoln et al. 1996, p.69 for an application of transaction cost ideas to a study of the consequences of business groups). Informal finance arrangements, often based on trust among well-acquainted parties, reduce risks by reducing the amount of information unknown to each party and the costs associated with investigating potential borrowers (Williamson 1981).

Generally, long-term relationship bring incentive benefits and coordination benefits to firms. First, along term relationships involves trust, which leads to less formal monitoring and makes less costly to provide incentives. Second long-term relationships also lead to coordination benefits, since they often develop coded and simplified communication (Milgrom and Roberts 1992).

Other benefits from business group alliances as mentioned in the literature are: Factor inputs such as entrepreneurial talent (Leff 1978), capital (Lomnitz and Perez-Lizaur 1987), and political or bureaucratic power in the country in question, for exemple politically connected families in Pakistan (White 1974), Latin America (Strachan 1976). The potential costs of business groups are less understood? Some scholars mention problems with nepotism and generation transfer (Lomnitz and Perez-Lizaur 1987). Others

claim that networks may not be all about economic efficiency but about institutional legitimacy, political power, and social fitness (Di Maggio and Powell 1983). In our study, we intend to give particular consideration to these and other costs, at the firm and the economy level.

4. Corporate networking and executive compensation

One of the important variables in the analysis of firm performance is executive compensation (Murphy 1998). Recently, a large number of studies have explored the influence of firm profitability, investment decisions, ownership structure, and other variables on executive compensation, as well as some of the reverse links, but we know of no work that puts the question into the context of corporate networks.

On theoretical grounds this is surprising in one sense, because the literature on corporate networks suggests they affect management in many important dimensions, of which executive performance and pay is clearly one (Galaskiewicz and Burt 1991, Mizruchi 1992, among others). Research has shown that interfirm relations affect power (Bonachich and Roy 1986), philanthropy (Galaskiewicz and Burt 1991), political behavior (Mizruchi 1992), the likelihood of acquisition (Palmer et al. 1995), and CEO compensation (Meyersson 1994).

In another sense this lack of analysis is less surprising, because there is no well-established theoretical framework on which a statistical analysis could be grounded, to assess the impact of corporate networks on executive compensation.

The Swedish case, however, reveals an interesting, even astonishing feature of the problem, which provides a promising starting point for a statistical and a theoretical analysis. In preliminary econometric work with our data base, we have found that there seems to be a strong positive statistical correlation between a CEO's network status and her compensation. More precisely, the CEO's network centrality, measured in terms of Freeman's degree centrality, enters highly significantly in several different cross-sectional regressions of CEO compensation on a number of different variables measuring CEO and firm characteristics, and the regression coefficient suggests that the impact of centrality is quantitatively relatively large. By oversimplifying the statistical result, it seems that each extra board position taken on by a CEO in our sample increases her pay from her own firm by an average of 60000 SEK.

This striking result merits further empirical and theoretical investigation. Empirically, we need to extend the regression analysis to more years, include different control variables, and adjust the regression model to take various theoretical hypotheses into account. Theoretically, we have to formulate the relevant predictions of existing economic theory in an empirically testable form. We have formulated two classes of theoretical explanations, efficiency or firm value-increasing explanations on the one hand and opportunistic or value-decreasing explanations on the other.

As these explanations appear to be useful building blocks for some of the other questions we intend to investigate as well, we will briefly outline them here. Into the first class we have grouped the following hypotheses :

1. Adverse Selection Hypothesis: Adverse selection implies that CEOs' talents differ and are difficult to assess, and a seat on an outside board signals CEO ability.

2. Cartel Hypothesis: CEOs can enforce or sustain cartels better if they are on the board of other companies (in particular, of the same industry), and this activity is valuable to the firm.
3. Political Economy Hypothesis: Inter-company ties are valuable for economy-wide political lobbying by the corporate sector, and the individual company may profit from being prominently represented in this process.
4. Information Hypothesis: By sitting on other company boards, CEOs obtain knowledge about other companies and industries that improves management decisions.

The second class of theories comprises the following hypotheses :

1. Back Scratching Hypothesis: A network of interlocking board positions allows CEOs to collude to raise each other's wages.
2. Herding Hypothesis: CEOs seek personal inter-company ties in order to learn about and imitate their peers, which is useful because CEOs want to behave in the same way as other managers (better be wrong with the herd than the possibly only one to be right).
3. Influence Cost Hypothesis: Individual pay raises result from wasteful lobbying inside corporate networks driven by reward-seeking individuals.

Clearly these hypotheses are not necessarily mutually exclusive, and their scope and bite need to be clarified. Yet they seem to offer an array of explanations capable of providing a theoretical structure for the empirical analysis. The purpose is to describe the structure of the networks and its relation to pay level in order to draw some inferences from the empirical analysis. For instance, if board interlocks are common over industries rather than exclusive for their own industry, the political influence model is more likely than the cartel hypothesis.

Method

We will perform multivariate regressions in order to discriminate among the various models. The endogenous variable is the total compensation of the CEO, and the exogenous variable, CEO interlocks, will be measured by Freeman's centrality measures such as degree, betweenness, and closeness (Wasserman and Faust 1994). Typical control variables, such as industry, market value, ownership/business group, and human capital variables are included in the analysis.

5. Business groups and performance

Miyashita and Russel (1994) speculate that there is a causal relationship between interfirm ties and firm performance (Japan). This relationship has not been demonstrated empirically (Mizuchi and Galaskiewicz 1993, for a review).¹

In the U.S. it has been difficult to find a positive effect of interlocks on firm profits, in part because interlocks often form when a firm is in financial decline (Rickardson 1987). In other corporate governance systems, however positive results have been found for

¹Other interfirm ties than interlocking directorates may be more consistent predictors of firm performance (Mizuchi and Galaskiewicz 1993, p. 57). For instance interfirm credit systems improve performance, particularly where financial markets are weak (for New England, Lamoreaux 1994).

instance, Keister found positive results for SOE forming business groups in China (1999).

Khanna and Rivkin (1999) find econometric evidence that particular inter-firm networks materially affect the broad patterns of economic performance of business groups in 12 of the 13 emerging markets investigated. Chang and Choi (1988) demonstrated that the Korean Chaebol outperform all other classes of domestic firms in the economy including those affiliated with smaller Chaebol and unaffiliated firms. Keister (1999) shows that business groups around SOEs in China perform better than the firms with no business group alliances.

Fisman and Khanna (1998) show that Indian group affiliates are better able than unaffiliated firms to overcome the effects of infrastructure shortages. Recent evidence from Japan demonstrated that keiretsu membership reduces variation in firm performance (Lincoln et al. 1996). The monitoring function taken by banks in groups such as keiretsus or in German corporate system, however, indicates that banks' role is overstated, partly because firms capitalize through retained earnings and foreign financial markets, and banks' representatives have not incentives to monitor them. (Kojima 1998, Franks and Mayer 1995). Our study will ask the following question:

2. Do Swedish publicly traded firms that belong to business groups perform better than firms without that kind of affiliation?

Method

We will perform a multivariate regression where the endogenous variable is firm performance and the exogenous variable is network measures of firm alliances based on equity. Firm performance is measured by indicators of performance such as Tobin's Q, abnormal return, and changes in market value from one year to the next. Network measures are constructed by block modeling procedures where clusters of business groups based on equity relationships between firms are identified (Wasserman and Faust 1994 chapter 10).

6. Changes in business alliances

In industrialized countries such as Germany and Sweden, business groups based on ownership, pyramids, and cross-ownership have decreased over the last ten years. If business groups are efficient tools to enhance control, then why do alliances based on equity disappear? An associated question is how other types of alliances, such as board interlocks not based on equity, developed over the 10 years studied. How have interlocking directorates changed, given that ownership structure changed? Are equity-based alliances and interlocks not based on equity substitutes or complements? Hence, we ask:

3. How have Swedish publicly traded firms' alliances with respect to equity and board and CEO interlocks developed over the period 1985-1990?

Method

This question will be analyzed in a more descriptive way. Cluster analysis by block modeling will be performed for alliances based on equity and on CEO and board interlocks.

The work will be linked to the European Corporate Governance Network

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Forskningsetiska aspekter

Datainspektionen meddelade tillstånd om personregister till Databasen Corporate Governance 85, DNR 2149-98.

Kostnads motivering

Datorinköp motiveras av att analysarbete innebär körningar av stora datamängder. En sådan dator bör vara en pentium och på ca 10 – 15 Gb. Programvara behöver köpas såsom nätverksprogrammet UCINET.

Rese- och administrativa kostnader motiveras på följande sätt. Eftersom forskarna arbetar i olika länder kommer telefonkontakt behöva användas i särskild hög utsträckning samt särskilda projektmöten att anordnas. Forskningsarbetet kommer på sedvanligt sätt granskas av de internationell forskarsamhället vilket bl a innebär att uppsatser presenteras på konferenser (ex. American Sociological Association och European Economic Association).

Tidsplan

Vår 2000 – höst 2000 matchning av findata och corporate governance 85 databasen. Nätverksanalyser, regressionsanalyser och statistisk sammanställning genomförs. Hösten höst 2000 påbörjas uppsatsskrivning. Vår 2001 presentation av uppsatser på seminarier och konferenser. Höst 2001 slutlig skrivning

Publicering

Vi har ambitionen att publicera forskningsarbeten i internationella akademiska forskningstidskrifter och i svenska tidskrifter och dagstidningar.

Meritförteckning 1999-10-21

Projektledare:

Fil Dr Eva M Meyersson
Företagsekonomiska institutionen
Stockholms Universitet
106 91 Stockholm
tel. 08 674 74 39
email: eva.meyerson@fek.su.se
email: Meyersson@usa.net

Adress i USA 1999
121 Heather Lane
Palo Alto
Ca 94 303
USA
650 461 0065

A. Utbildning

1. Doktorsgrad, disputation 28 April 1992. Avhandlingstitel: The Impact of Ownership Structure and Executive Team Composition on Firm Performance. The resolution of a leadership paradox, Sociologiska Institutionen Stockholms Universitet.
2. Visiting scholar Harvard University Department of Sociology 1986-1987.
3. Ekonomexamen, Stockholms Universitet 1982
4. Socionomexamen, Stockholms Universitet 1982
5. Studentexamen, Djursholms Samskola 1972
6. High School Diploma, South High School, Bakersfield, Californien, USA.

B. Nuvarande position

1. Visiting Professor vid W. Haas Business School Berkeley, University of California Berkeley.
2. Research Fellow vid Företagsekonomiska institutionen Stockholms Universitet.

B. Publicerat arbete

1. Staten och bolagskapitalet – om aktiv styrning av statliga bolag, Rapport till ESO expergruppen för studier i offentlig ekonomi Ds 1998:64, medförfattare Susanne Lindh.
2. Lika lön för lika arbete. En studie av svenska förhållanden i internationell belysning. Ur kvinnors och mäns löner – Varför så olika? SOU 1997:136, Arbetsmarknadsdepartementet. Inga Persson och Eskil Wadensjö (RED.) Stockholm: Fritzes 1997 (s.104 –125), medförfattare Trond Petersen.
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5. Lönediskrimineras kvinnor? Ekonomisk Debatt No 1 1997, medförfattare Trond Petersen
6. Kompensationskontrakt för ledningsgrupper i svenska börsnoterade företag, Ekonomisk Debatt No 3 1995.
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11. Avhandling: The Impact of Ownership Structure and Executive Team Composition on Firm Performance. The resolution of a leadership paradox, 1992, Sociologiska institutionen utgiven i IUI:s avhandlingsserie.

C. Opublicerat arbete och/eller arbeten inskickat till tidskrifter

1. Utfallsrelaterade lönesystem, risk och produktivitet, mimeo 1998. Medförfattare Trond Petersen.

2. Are Monitoring and High Intensity Compensation Contracts Complements or Substitutes? Inskickat till Administrative Science Quarterly 1998 September.
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4. The Gender Wage Gap. The case of Sweden 1970 – 1990. 1999, inskickat för publicering. Medförfattare Trond Petersen.
5. Is there a Glass Ceiling. The case of Sweden 1970 – 1990. 1999, inskickat för publicering. Medförfattare Trond Petersen.

Ernst-Ludwig von Thadden,

Born July 9, 1959,

Professor of economics at the Département d’Econométrie et Economie Politique of the Université de Lausanne Switzerland

Research Fellow, Center for Economic Policy Research (London), Program Director, European Center for Advanced Research in Economics, Bruxelles. Associate Editor, *Review of Economic Studies*, *Journal of Financial Intermediation*.

Selected recent publications:

« Short-Term vs Long-Term Interests : Capital Structure with Multiple Investors » (with E. Berglöf), *Quarterly Journal of Economics* 109, 1994. Reprinted in : M.White (ed.), *Financial Distress and Bankruptcy: Economic Issues*, Stockholm: Nerenius & Santerus Publishers, 197.

« Centralized Decentralization: Corporate Governance in the East German Transition », in: M. Aoki and H. Kim (eds.), *Corporate Governance in Transition Economies*, Washington, D.C : World Bank Press, 1995.

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« Blocks, Liquidity, and Corporate Control » (with P. Bolton), *Journal of Finance* 53, 1998.