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CORPORATE NETWORKS IN POLAND: INTERLOCKING DIRECTORATES

AND BUSINESS SYSTEMS

MARTA DROBNIK 1051

A Project carried out under the supervision of Professor Álvaro Ferreira da Silva

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Abstract

Aiming at filling a gap in the literature, which has been concentrated on USA and Western-European Countries, this paper analyzes the Polish corporate network based on interlocking directorates among 125 top companies in the country. To determine the characteristics of the network and its implications for the business system the exploratory Social Network Analysis is conducted. It is found that the Polish network is fragmented and the interlocks appear mainly along companies from financial and chemical sectors. Basing on comparison with Germany it is suggested that the Polish network will be growing in size and density in the future.

Keywords: corporate network, interlocking directorate, social network analysis, Poland

Table of Contents

Introduction

"Networks embody a relational rather than a transactional or atomistic view of the organization and this brings new challenges of understanding more about the origins, evolution and management of relationships." (Heracleous and Murray, 2001:138) This holds true especially in nowadays' turbulent and rapidly changing business environment, where the inter-company ties at different organizational levels can serve multiple practical functions. Facilitating communication, applying mechanisms of cooptation and monitoring, as well as gaining access to valuable information are, among others, commonly thought to be the ones justifying the formation of interlocking directorates – ties at the board level (Dooley, 1969).

Interlocking directorate as such occurs when a person affiliated with one organization sits simultaneously on the board of directors of another organization (Mizruchi, 1996). Combined on a country level interlocks branch out into networks connecting various companies through their boards of directors. Thus, being easily identifiable in trustworthy publicly available sources, "interlocks have become the primary indicator of interfirm network ties" (Mizruchi, 1996) and so have been widely analyzed and interpreted.

To date however, the majority of the empirical work has been conducted in the United States and Western Europe, with omission of the Central and Eastern European countries. Poland as such one, being a prime example of successful economic transformation and evolution to market economy in the region, bears high potential for a valuable analysis of the corporate networks in this setting, for no case alike has ever been presented in the literature before.

The purpose of this paper is to investigate the structure of the interlocking directorates in Poland given the economic and legal framework of the national business system (characteristics of the board system, ownership issues, governance regime, and the specific characteristics of the country, due to its relatively recent move to a market economy) (Nowak et al, 2008). In the course of analytical process the following research questions are being addressed:

1. What are the characteristics of the corporate networks in Poland? What do the networks look like?

2. What are the main factors determining the network characteristics?

3. What are the implications of the network characteristics for doing business in Poland?

By answering the foregoing questions the paper contributes to the existing literature in both, exploratory and descriptive way. Firstly, it presents the data collected and the statistical (quantitative and graphical) analysis. Secondly, using a comparative approach it positions the results obtained for the Polish interlocking directorates' network among the results for other countries, formerly put forth by researchers.

The report begins with a brief review of the existing literature on the topic of corporate networks and interlocking directorates. Secondly, the collected data set is presented and the methods applied in the analysis are explained. The next part describes the results obtained in the analysis followed by conclusions in a form of comparison of the Polish networks with those observed in other countries.

Research on Corporate Networks: A Brief Review

The problem of interlocking directorates and the public discussion about it first flared back in the early twentieth century, when the problem was originally identified in the United States (Dooley, 1969). The 1913 Pujo Report (U.S. Congress, 1913) – a study of the industrial sector and the main New York banks – indicated that the linkages between competing firms were detrimental to market competition. The Clayton Act (of the next year) prohibited the interlocking directorates between the companies from the same industry, but not interlocks as such (Pennings, 1980).

A shift in the focus of organizational studies from the internal to the environmental perspective in the 1970s and 1980s brought even greater attention to the researches of interlocking directorates as they provided a simple evidence of inter-organizational relations (Mizruchi and Galaskiewicz, 1993). From this period also date first significant developments in network analysis, as well as the theoretical explanations for the reasons underlying the creation and the existence of interlocks (Dooley, 1969; Allen, 1974; Pennings, 1980).

Mizruchi (1996) presents a comprehensive review of the reasons for the formation of interlocking directorates distinguishing: collusion, cooptation and monitoring, legitimacy, career advancement, and social cohesion. These reasons argue respectively that the interlocks: (1) occur between competitors to facilitate horizontal integration (Penning, 1980), (2) are means of reducing the environmental uncertainty and implying control, especially over financing and access to resources (Pfeffer and Salancik, 1978) (3) can leverage the specific company's position and power in the network (Useem, 1979), (4) are created by individuals aiming at developing their own careers (Zajac, 1988) or (5) represent social ties among members of the upper class (Mizruchi, 1996).

Another stream of literature focuses on the value that corporate network analyses can provide to studies on national business systems. It is argued that regardless of the theoretical approach, interlocking directorates' analyses yield insight into the firms' behaviors and the characteristics of the national business systems. Thus, a large share of the topic's literature focuses on providing the empirical evidence of the actual extent and structural characteristics of the networks. The most substantial work was obviously conducted in the United States (Miruchi, 1982; Windolf, 2002). In Europe Windolf (2002) studied the data on interlocking directorates in the largest corporations in Great Britain, France, Germany, Switzerland and the Netherlands, whereas van Veen and Kratzer (2011) compared the networks within the EU-15 countries. Single analyses have been conducted also in South-East Asia (Ong et al, 2003; Au et al, 2000) and Australia (Murray, 2000).

The studies observed some structural differences originating in the kind of board system in use, specific ownership structure, governance regime, as well as the variety of capitalism (following another stream of literature, which will not be explored here – for all, see Hall and Soskice, 2011). Country-specific factors have been defined on the basis of the historical backgrounds and the characteristics of business systems of the countries (van Veen and Kratzer, 2011). Research tends to suggest that the corporate networks can actually serve as a simple proxy for defining the business systems of a country (Santella et al, 2009).

To author's best knowledge, however, none of the former studies confronts the topic with the reality of a post-communist Central-Eastern or Eastern European country. Only Windolf (2002) mentions the region vaguely in a rather descriptive approach not

substantiated in any empirical research. This already suggests a need for a more precise analysis in the area.

Taking into consideration the fact that the historical determinants of doing business in a country with such history are considerably different from those (Western European) studied before, and remembering that the economic behaviors of companies are always embedded within a wider institutional background, this paper aims at providing a comprehensive analysis of the interlocking directorates in Poland and placing them in perspective of the former studies. Poland, over 20 years after the successful transformation into a market economy, is now at the high point to look at the business structures there and therefore provides a good starting point for including Eastern recent market economies into a broader analysis of corporate networks in a comparative perspective.

Poland's National Business System

Business systems are naturally linked to the institutional environments in which they develop. While all market economies decentralize control over economic activities, the nature of relations between the entities and the way the control is exercised varies considerably from country to country. (Whiteley, 1992) Therefore it is crucial to put it in the right institutional context.

Historical Determinants

In the late 80s the socialist led Poland was facing substantial economic problems originating in the consistent lack of systemic reforms. As a result, in 1989, when the first post-Communist government came to power, the Polish economy demonstrated

several structural characteristics, craving for a radical strategy towards rapid transformation into the market economy (Sachs, 1992).

The comprehensive program of reforms for Poland implemented by the new Minister of Economy – Leszek Balcerowicz (1997), outlined three crucial policies: the economic liberalization and introduction of the market competition; the macroeconomic stabilization and the privatization. The latter was considered the most important from the business system perspective, as it involved the actual transfer of ownership from the state to the private sector (Sachs, 1992) and in consequence enabled the restructuring of the state owned enterprises and the recovery of production.

As result, Poland quickly outperformed economically all the other countries in the region, achieving the return to positive growth in less than three years (Kołodko, 2007). Furthermore, over the following eighteen years it has increased the GDP by more than any other post-socialist country and more importantly has exhibited the ability to compete in and with the Western European markets (Sachs, 1992).

Legal Context

The success of the Polish transformation was highly supported by the formation of the modern capitalistic institutions – the commercial law, private corporate ownership and the independent judicial system to enforce the other two (Sachs, 1992). The efforts put through to harmonize the Polish commercial law with the European Union's acts (primarily to facilitate Poland's accession in the EU) also played an important role in the process (Balcerowicz, 1997).

As a result, the commercial companies in Poland, as we know them today, have been defined. Their statutory mandatory organ – Board of Directors, can consist of at least one individual. Supervisory Board is a complementary body; mandatory for joint-

stock companies and optional for the limited liability ones. Most of them, however, choose to appoint the Supervisory Board, for its members serve as the advocates of the shareholders' interests through governance and supervision of the directors.[1] Out of the three main known board systems, i.e. the Anglo-American unitary system with only a board of directors (Great Britain, USA), the German two-tiered system with a board of directors and the supervisory board (Austria, Germany, the Netherlands) and the Latin system, allowing to either opt for one or the other (Belgium, France, Italy), Poland definitely follows the German model, where the executive directors run the operations, while the supervisory board represents the shareholders' and employees' interests, reviews the major decisions and appoints or fires the members of the board of directors (Whiteley, 1992).

Importance of FDI in the Business Environment

As a consequence of the general liberalization of the Polish economy after the reforms, as well as the evolution of the commercial law regarding foreign investment, taxation and trade, a significant inflow of large international corporations in a form of foreign direct investments (FDI) could be observed (Kołodko, 2007).

Poland has become an important target for FDI primarily through privatization (the acquisition of the state-owned enterprises to foreign investors was finally possible) and the follow-up investments in earlier established ventures. The inflow of the FDI has not lost in pace even after the Poland's accession to EU in 2004, exceeding the projections by over 20% (Ancyparowicz, 2009).

Because of the huge role that the foreign corporations play in the Polish business system the analysis conducted in this paper will include the foreign-owned firms

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[1] The Act of 15 September 2000 of the Code of Commercial Companies (Journal of Laws No. 94, pos. 1037), as amended.

operating in Poland. Their omission would, to the author's best knowledge, lead to exclusion of an important part of the business structure. Furthermore, including the foreign firms in the analyzed sample may also unveil, if the interlocking directorates are going to be used as a way to overcome the "liability of foreignness".

Data and Methodology

This exploratory study of corporate networks using the interlocking directorates as a proxy brings several methodological issues. The primary of them is the data set construction. While all the studies on corporate networks in different countries list the analyzed companies by their assets, the size of the samples can differ from country to country. The variations can originate in the specifics of the study itself, or the country based factors. A comparative study of current and historical situation would use consistent samples for both periods – usually influenced by the availability of the historical data (Au et al, 2000). On the other hand, the research conducted in USA would typically use a larger sample, basing on the size of the country and the economy (Windolf, 2002).

In the absence of study- or country-specific factors researchers tend to choose a sample of 100 non-financial firms and 25 financial institutions (van Veen and Kratzer, 2011). Thus, the sample used for this study will follow this pattern, also because it facilitates the comparison with other countries.

In consequence, the sample comprises the 125 largest corporations in Poland defined by their assets, with 100 of them being the largest non-financial and the other 25, the top financial institutions in the country (15 banks and 10 insurance and fund management companies). The data set was constructed on the basis of information

contained in the ranking of the 500 largest companies in Poland published annually since 1992 ("Lista 500 – 2011")[2]. Additional data on the economic characteristics of the analyzed corporations was obtained from their annual reports, as well as other publically available sources such as companies' websites, etc. It is also important to mention that the list includes holdings and foreign firms, if only they meet the criterion of the size of the assets.

For each company from the list the data on executive and non-executive (supervisory) positions was extracted from the National Court Registry[3]. The result was an extensive database with a total amount of 1092 board positions, including 513 executive and 579 non-executive positions, which constituted the input data for conducting the network analysis based on the interlocking directorates. It is important, however, to remember that this study analyses the **relations between the companies** created through the interlocking directorates and **not the interlocking directors themselves.**

The analysis was conducted accordingly to the methodology of Social Network Analysis (SNA), which examines the separate nodes of the network and the relationships between them. The results can be represented by the statistical measures describing the characteristics of the network, as well as depicted in graphical way as sociograms. From numerous publications on the SNA methodology the book "Exploratory Network Analysis with Pajek" (de Nooy et al, 2005) was chosen as a main reference for this study, because it not only provides an extensive tutorial on the SNA application (Pajek), but also summarizes the most important concepts used here.

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[2] http://www.lista500.polityka.pl/rankings/show
[3] http://www.krs-online.com.pl

In the course of analysis firstly the main features of the Polish network are described through the computation of the aggregate network indicators, in particular: the number of components, number of firms in the first component, number of isolates, number of ties and their density, different centrality measures. This allows to capture and model the general topography of the network and creates the ground for the second step of the analysis, where the comparative approach tries to place the Polish network in the context of other countries' networks.

All the necessary network statistics' calculations were conducted using the Social Network Analysis (SNA) open source software called Pajek[4] (de Nooy et al, 2005).

Polish Corporate Network

Composition of the Data Base

The main questions underlying this research are to determine what kind of structure do the corporate networks in Poland have? Why the structure indeed looks like it looks? And what the consequences for the actual business system are? Before moving to the main topic however, several important remarks emerging from the database observation should be stated.

Firstly, it is striking how many of the top companies operating in Poland are actually not Polish at all – almost 70% of them are foreign firms. Significant is also a low percentage of state owned enterprises (Table 1). This all can be seen as a result of the vast and buoyant privatisation in the early '90s, as well as consequence of the constant inflow of follow-up foreign direct investment in the later periods.

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[4] Download from: http://vlado.fmf.uni-lj.si/pub/networks/pajek/

Table 1. Nationality of Firms

	Number of Firms	Percentage
Foreign Capital	85	68%
Private Domestic Capital	30	24%
Public Capital	10	8%
Total	125	100%

Regardless of the reasons underlying this situation, it is important to notice and include the foreign companies in the analysis, for it is a way to investigate whether they are going to influence the size and characteristics of the corporate network of the country.

General Characteristics of the Polish Network

The interlocking directorates are created only by the board members who hold two or more positions. In Poland, alike or even more significantly than in many other countries the multiple directors are still in minority. As shown in the Table 2, within the 125 companies analyzed with the total number of 1092 board positions only 27 interlocking directors were found. Most of them (over 92%) only hold two positions. Two directors sit simultaneously on the boards of three different companies and no director occupies four or more positions. The Polish network does not have the so-called "heavy linkers" (Au et al, 2000) – the directors who are highly interlocked in a large number of boards, and consequently act as the network connectors.

Furthermore, the companies in the network are linked with each other through a low density of connections (Table 2). Density can be explained as a ratio between the number of the ties observed and the total possible number of ties, given the number of analyzed companies. It measures the tightness of interorganizational connections and how cohesive the structure of the ties between the firms is (Santella, 2009). The

observed density of 0.0033 means that only 0.33% of all the possible connections are present. Such a low density index suggests that the Polish network is not very broad.

Table 2. Network Indicators

Number of Firms – N	125
Number of Directors – D	1092
Interlocks	27
Interlocks (as % of D)	2,47%
Interlocked Firms	35
Interlocked Firms (as % of N)	28%
Components	7
Firms in the First Component	6
Firms in the First Component (as % of N)	5%
Isolates	90
Isolates (as % of N)	72%
Density	0,33%
Degree Centrality	0,029373
Betweenness Centrality	0,000899

Figure 1 shows the configuration of the Polish network and graphically supports the above statement. Each of the vertices of the chart represents a company labelled with its acronym (see: Annex 1). Every line between two vertices signifies that at least one interlocking directorate occurs between the two companies.

Several separate components and isolates of the network can be identified in the picture (Figure 1). Components can be defined as the sets of vertices through which it is possible to reach other vertices (de Nooy, 2005). In this sense the components are the sets constructed of three or more companies. The first component is the one with the highest number of linked vertices. On the other hand the companies not connected with any of the others will be called isolates. The Polish sample generated 7 separate components with the first component containing only 6 companies. Ninety companies, constituting 72% of the whole sample, are isolates (Table 2). The low number of firms in the biggest component of the network, as well as a high percentage of isolated firms indicate that the network is very fragmented – which is clearly visible in the Figure 1.

Figure 1. The Polish Network (2011)
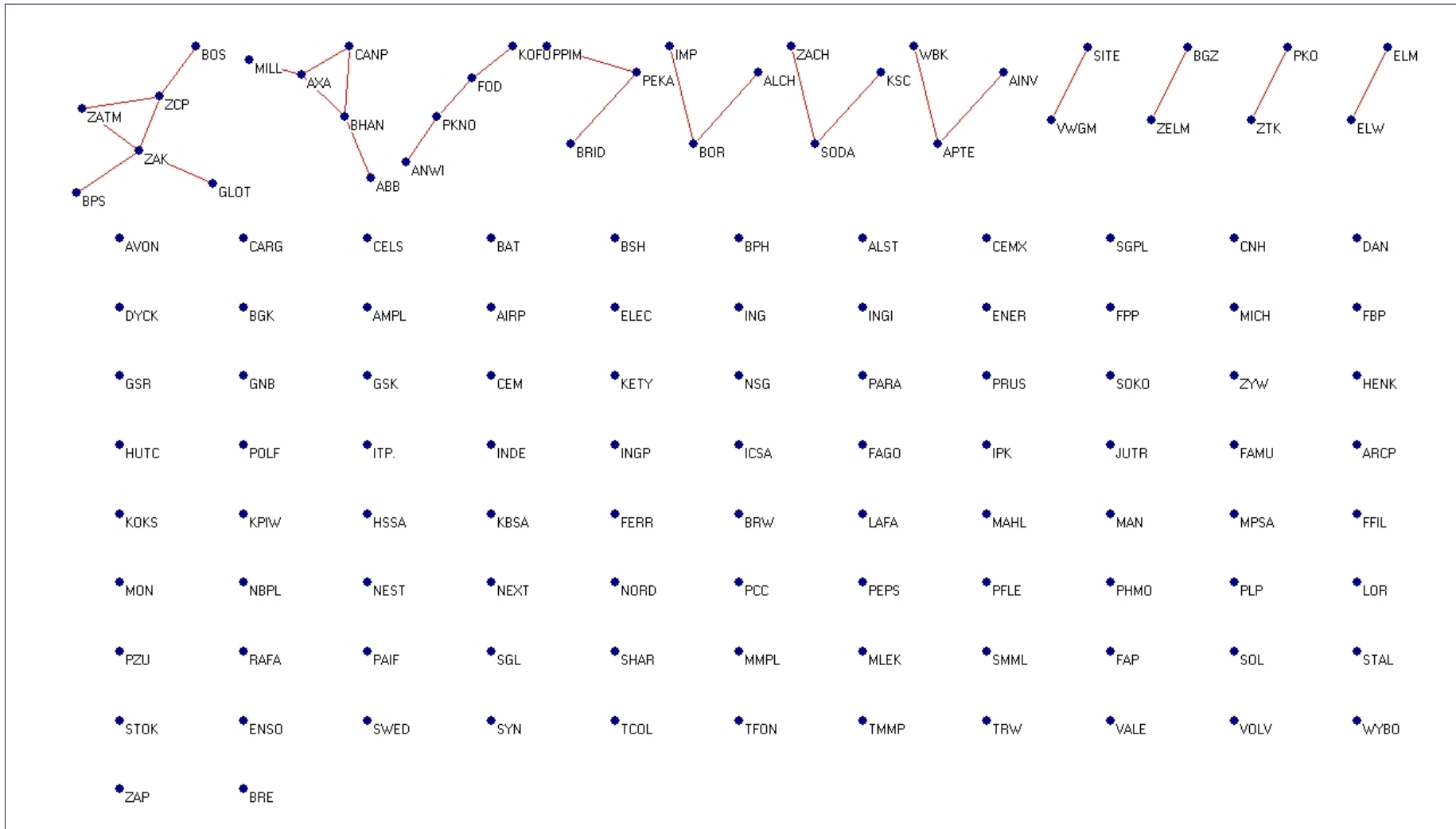
Another important feature of the network is the strength of the existing connections. It is reflected in the multiplicity of the particular connection and is measured by the number of the interlocking directors between each particular pair of linked companies (Au, 2000). The Pajek Software generates a simple report on the number of single and multiple lines in the network. There are 26 lines in total in the Polish network – 22 single and four multiple (Table 3). The highest value of the line equals to 3, which means that there are three interlocking directors sitting at the same time on the boards of the two analyzed companies. There are also three other lines with value of 2, however the vast majority of lines (over 84%) is single, which indicates in general a low level of the strength of the connections.

Table 3. Multiple Relationships

Total Number of Lines	26
Number of Multiple Lines	4
Proportion of Multiple Relationships	15%
Lines with Value 1	22
Lines with Value 2	3
Lines with Value 3	1

Besides looking at the general network characteristics it is also important to analyze its individual nodes and their specific position in the network. To this end, different centrality measures can be applied, aiming at showing to which extent the whole network is geared around just a few large components (Windolf, 2002).

Firstly, the least sophisticated and most intuitive index has been taken into consideration – the degree centrality (Table 2). It represents the number of ties each node has with its "neighbours". Since it does not take into consideration any other factor (e.g. centrality of the "neighbours") it is just a local centrality measure and alone provides very little information about the network as whole. The analyzed node could indeed have a lot of ties, but as long as the nodes it is connected to do not present high

centrality as well, it could still lie on the peripheries of the network (de Nooy, 2005). Thus, to complete the analysis another index measuring how close one node is to every other node in the network should be used – the closeness centrality. The Polish network, however, is indeed so decentralized that the software is unable to calculate it. The last and the most sophisticated measure of centrality – betweenness defines the specific nodes' importance to the network. The low level of betweenness centrality (Table 2) only proves that the Polish corporate network is not centralized.

Basing on the abovementioned measures and the quantitative analysis the following discussion will focus on providing a qualitative interpretation for the factors and element that can be influential for or influenced by the national business system in Poland.

Implications from and for the Business System

The underlying questions for this part of the analysis are: how could the structural characteristics of the network be explained? How does the national business system influence the network configuration? Are there any specific companies that play a pivotal role in the network?

Examining further the main components in the Polish networks there are several interesting findings to present. Firstly, the vast majority of the interlocking companies represent only two categories – the financial sector (which is not surprising and present in every study on interlocking directorates) and the chemical industry (Table 4). Out of 27 companies in the main components of the Polish interlocking directorates' network, 10 are financial institutions, 9 operate strictly in the chemical industry, 6 are the large direct purchasers and processors of the chemical industry products and only two represent other segments.

Table 4. Firms with the Highest Number of Ties in the Network by Industry

Acronym	Name	Number of ties	Sector	Capital	Rank
ZAK	ZAK SA	4	Chemical	Domestic	65
BHAN	Bank Handlowy w Warszawie SA	3	Financial	Foreign	10
ZCP	Zakłady Chemiczne Police SA	3	Chemical	Public	94
APTE	Aviva PTE SA	2	Financial	Foreign	7
AXA	AXA PTE SA	2	Financial	Foreign	24
BOR	Boryszew SA	2	Chemical	Domestic	48
CANP	Can-Pack SA	2	Metal	Domestic	30
FOD	Firma Oponiarska Dębica SA	2	Metal	Foreign	98
PEKA	Bank Pekao SA	2	Financial	Foreign	2
PKNO	PKN Orlen SA	2	Chemical	Domestic	16
SODA	Soda Polska Ciech sp. z o.o.	2	Chemical	Domestic	101
ZATM	Zakłady Azotowe w Tarnowie-Mościcach SA	2	Chemical	Domestic	69

The interlocks created between those companies can be explained through the specific characteristics of the chemical industry put against different interlocking directorates' theories.

The theory says that the frequency of financial interlocking is directly related to the capital intensity of the corporation, when the capital is intermediated by financial institutions. The chemical industry is known to be highly capital-intensive. This provides a valid explanation to such a representation of banks and other financial institutions in the network composition. Corporations with large capital requirements naturally seek access to financial institutions (Allen, 1974) – in the Polish case Can-Pack S.A. (CANP) and the bank Millennium S.A (MILL) in the second component can serve as an example. Moreover, the enterprises of the chemical industry in Poland are the prime example of large enterprises that were one of the main pillars of the communist state-owned and centralized economy. They had been operating for years completely inefficiently, accumulating losses and multimillion debts. The industry, however, presented high growth and profitability potential and so they were one of the first to be privatised. This could not, nevertheless, happen without the banks' control (the credit suppliers), which is still visible today in the boards of directors of these

companies in the form of interlocking directorates, as for example in the companies from the first component of the network - ZAK S.A. (ZAK) and Bank Polskiej Spółdzielczości (BPS).

Secondly, the industry is also highly resource-dependent. Therefore, following the resource control theory, interlocks would appear between companies operating in the same field, but also, on the other hand, between the chemicals producers and the chemicals processors to reduce the environmental uncertainty. Since the industry is producing mainly intermediate goods, the interlocks would naturally appear between the companies on a different level of the value chain to provide better coordination, control and information flow. An example of resource control driven interlocking can be seen between the companies Boryszew S.A. (BOR) and Impexmetal S.A. (IMP) with the latter one being a processor of the intermediate goods produced by the first.

Crucial to mention is also the consolidation trend among the companies constituting the chemical industry in Poland. Accordingly to some economists (Balcerowicz, 1997) Polish chemical industry needs to be fully privatized, restructured and consolidated in order to be considered competitive in the foreign markets, with special regards to European Union. In this sense the interlocking directorates could be seen as a first step of the consolidation processes. For example, the companies from the first component of the Polish network – Zakłady Chemiczne Police S.A. (ZCP) and Zakłady Azotowe w Tarnowie-Mościcach S.A. (ZATM) have already started the process and are committed to go through with it, as well as to restructure the operations.

It is also interesting to look at the companies that are not considered components, but as they are connected through one interlocking director it can be assumed that they are at the early stage of the formation of the network. Two main trends can be observed

here. First, alike in the chemical industry, the interlocking occurs between the crediting bank and the formerly state-owned inefficient, but later privatized and restructured enterprise, e.g. Bank PKO B.P. (PKO) and Zakłady Tłuszczowe Kruszwica S.A. (ZTK). The second trend involves interlocking between the companies in the same industry, but on a different stage of the value chain and can be explained by the strive to vertical integration, and its underlying theory of the resource control, e.g. Volkswagen Motor Polska Sp. z o.o. (VWGM, the producer of cars) and Sitech Sp. z o.o. (SITE, the producer of car seats).

As mentioned before "business systems are naturally linked to the institutional environments in which they develop". The examples quoted above clearly show that the Polish corporate network is deeply embedded in the environment in which it developed. As this environment and the institutions constantly change and evolve, the corporate network in Poland can be expected to follow the process of adaptation to economic, political and social institutions and subsequently change. The question here to answer is about the possible directions of those changes and so the following section tries to investigate them basing on a comparison of the Polish and German corporate networks.

Governance System and Corporate Networks: A Comparison with Germany

Germany was chosen as a country for comparative analysis with Poland for several different reasons. As it was mentioned before the interlocking directorates' network is highly influenced by the business system in place, the economic, political and social institutions, and most importantly the type of governance regime. All of the above listed factors are indeed to an extent similar in both countries, and so provide a solid background for a comparative analysis.

The data on the German network used in the comparison comes from the research on the director's networks in France, Germany, Italy and the United Kingdom (Santella, 2009), and the Windolf's (2002) comparison of the corporate networks in Europe and the United States.

Table 5. Poland and Germany: Network Indicators Comparison

	Poland	Germany
Number of Firms	125	125
Interlocks	27	242
Components	7	2
Firms in the First Component	6	38
Firms in the First Component (as % of N)	5%	30%
Density	0,33%	19,84%
Degree Centrality	0,029373	14
Betweenness Centrality	0,000899	8,219
Proportion of multiple relationships	15%	21,20%

Source: Windolf, 2002; Santella et al, 2009.

Table 5 shows the main network indicators for the Polish and German network. The differences in most of the indices are striking. Within the same number of companies the German network exhibits over 200 more interlocking directorates than the Polish one. While the power of connections measured by the percentage of multiple relationships is stronger, but not significantly, the companies in Germany are linked with each other through a much higher density of connections. The German network is also more centralized, which can be seen both, in the centrality measures, but also in the fact, that the network has only two components, with the first connecting 30% of all the analyzed companies (whereas in Poland it is only 5%).

Those differences may seem surprising, taking into consideration the similarities in terms of the institutional and business context that the two countries exhibit. However, it is important to remember that the formation of the Polish network has begun much later and in a rather harder economic situation than it had in Germany.

It is hard to judge how the Polish network will develop in the following years. The situation should be monitored and reviewed in the future to provide valid information about the directions and reasons behind the network formation. Basing on the German example, however, it can be assumed that the Polish network will continue to grow, both in terms of size, and density. Poland, indeed, seems to be economically moving in the same direction as Germany, only the changes and adjustments happen a little later (Nowak, 2008). It is also possible that the future developments in the Polish corporate network will be more strategically rather than tactically dictated. So far the observed interlocks are determined mainly by the finance- or resource-based reasons. As the network develops other reasons are being observed, such as horizontal or vertical integration (e.g. the consolidation of the chemical industry).

Conclusion

The purpose of this study was to analyze the Polish corporate network through the study of interlocking directorates in 125 largest companies in the country. The main goals were to: recognize the characteristics of the network, find the main factors that determine those characteristics and identify the implications for the business environment in Poland.

The Polish network exhibited a low number of interlocks, low density and strength of the connections, as well as very low centrality. The analysis showed that the network is neither broad, nor tight, but very fragmented. The low level of interrelationship can be seen as an effect of the novelty of the business structure – the corporate network is actually emerging in this period. Naturally so, the first and strongest trends in the

network are linked with the economic transformation of 1990s – mainly the privatization.

Such a narrow network brings several implications for doing business in Poland. Firstly, it suggests that there is no business elite in the country, so the control is not concentrated in the hands of few individuals. Secondly, the low level of centrality implies that the information does not stream within the network (with exception of the chemical industry). Indeed, high centrality of a network implies faster and easier information flow. Moreover, it is important to notice that even though the sample consists in almost 70% of foreign firms, the interlocking directorates in Poland are rather industry-related and not influenced by the nationality of capital. The interlocking directorates in this context cannot be seen as means of overcoming the liability of foreignness. On contrary, the high proportion of foreign firms seems to act as a factor enhancing segmentation and fragmentation of the network.

All things considered, it is important to remember that the creation of network is still in progress, as is the business system, and so further developments in the nearest future can be expected.

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