

# The Structure of Interlocking Directorates and Corporate Power in the U. S. and Japan through Social Network Analysis

Fumitaka Iwanami

1. Background: Intercorporate Relationships as Social Relations
2. The Theoretical Model of Intercorporate Personal Relations and Corporate Power
3. Social Network Analysis in Intercorporate Relationships
4. The Structure of Intercorporate Network in the U.S. and Japan
  - (1) Interlocking Network through Social Network Analysis
  - (2) The Clique of Multiple Directors
5. Conclusion

## 1. Background: Intercorporate Relationships as Social Relations

Corporate scandal occur frequently and are a global problem. In order to tackle this one particular problem to be solved is how to check and monitor corporate behavior and corporate power structure. In order to comprehend an enterprise and society, in this paper, I will focus on the power balance between the corporate power and the stakeholder, paying particular attention to inter-corporate relations as one of the social relations among enterprises. An interlock is created when two companies share the same director ; such a director, sits on two or more boards, is termed as a multiple director. The typology of interlocks is based on the intensity of an interlock between any two companies.

I consider that inter-corporate relations influence directors' activities, particularly corporate power and the top-management function of individual companies, by means of constraint conditions. Zeitlin indicates that research must focus at the outset on the complex relationships in which a single corporation is itself involved, namely, the relationships between it and other corporations; the forms of personal union or interlocking between corporate directorate (Zeitlin, [1974] pp.1101-1102.). In order to elucidate the structure of intercorporate relations, which applies the graph theory of mathematics to social structure analysis and this employd to measure intercorporate pesonal relations. Accordingly, in this paper, I will focus on the structure of intercorporate personal relations

among enterprises within the networks of US and Japan. Further, I will attempt to clarify the structure of interlocking directorate networks, because they depend on the system of intercorporate relationships in which the individual corporations are implicated.

Intercorporate relations comprise a variety of capital, commercial, and personal connections among individual corporations. Since intercorporate personal relations act at the board level, or the top management level where strategic decisions are made, in this paper. I will focus on intercorporate personal relations<sup>1)</sup>.

		Analysis Unit	
		Enterprise	Person
Analysis Level	Agent	Organizational perspective	Social-background perspective
	System	Interorganizational perspective	Class-hegemony perspective

**Figure1 Perspective of Intercorporate Network**

Source: Stockman, Ziegler and Scott (eds.) [1985] *Networks of Corporate Power*, Polity Press, p. 5.

The analysis of intercorporate personal relations can be classified into organizational, social background, interorganizational, and class-hegemony perspectives (Figure1). On the interorganizational perspective, intercorporate relations are regarded as a factor of the environment around individual companies and as a factor to make decision regarding the operation. In this paper, I will attempt to analyze of intercorporate personal networks based on the interorganizational perspective.

Multiple directors that form an interlocking network possess an opportunity to obtain inside information about individual companies, and they perform the function of communicating the relevant information about one company to the other company. In contrast, outside, independent, or non-executive directors obtain information and opinions from outside the company and function as the advisers on ideas evolved within the executive. Therefore, multiple directors function as the representatives of the systems of finance capital as a whole.

Consequently, intercorporate personal relations at a top-management level, are regarded as an information channel that influences corporate power, particularly the strategic decision making of the top-management<sup>2)</sup>. I consider that observing the structure

---

1) With regard to research on the ownership and control of large enterprise groups in the 1990s, see Nakata [1998].

2) For the significance of the research on business administration on interlocking directorates, see

of interlocking directorate is informative, since it exists relatively independent of intercorporate shareholding

## 2. The Theoretical Model of Intercorporate Personal Relations and Corporate Power

In this paper, I investigate intercorporate personal relations as one aspect of social relations among large corporations. In order to achieve this, firstly, I introduce classical studies on interlocking directorates. Previous research on interlocking directorates between banks and non-financial enterprises was conducted by Jeidels O.[1905], Hilferding R.[1910], and Lenin V. I.[1916] as the basis for their analyses of economic power.

Jeidels, on the whole, claimed the following concerning the relations between banks and industries, based on the development of banking in Germany. Intercorporate personal relations between banks and industries existed between many companies, where banks were allowed to intervene in the management of the companies as being members of the supervisory board. Therefore, with regard to the relations between banks and industries, Jeidels' assertion comprehended and applied the original model of bank control, which states that banks have control over industrial companies.

Hilferding emphasized that the auditors were dispatched from the banks as a member of the supervisory board of industrial companies, focusing on the capital flow on banks. Intercorporate personal relations between banks and industries were understood as a means for banks to monitor these companies that they were related to and which served their interest. Therefore, command of power centered on the auditors who dispatched from banks.

Jeidels and Hilferding argued the superiority of banks in the intercorporate personal relations between banks and industries. They insisted that in the then German banking system, the banks could control the industries on the ground of this superiority. In contrast, Lenin insisted "A personal union, so to speak, is established between the banks and the biggest industrial and commercial enterprises, the merging of one with another through the acquisition of shares, through the appointment of bank directors to the Supervisory Board (or Boards of Directors) of industrial and commercial enterprises, and vice versa" (Lenin, [1916] Chapter 2). Moreover, he claimed that "the concentration of production; the monopolies arising therefrom; the merging or coalescence of the banks with

industry – such is the history of the rise of finance capital and such is the content of this term” (ibid., pp.53-54.). In other words, intercorporate personal relations are considered to be a fusion and coalescence between mega banks and the largest industries, and not those of control and subordination.

Secondly, I provide an outline of contemporary study on interlocking directorates, using a classified model of corporate power in intercorporate relations designed by Scott J. (Stokman, Ziegler, and Scott [1985]). In this paper, I consider the model of management control/resource dependence, bank control, and finance capital.

In the model of management control and resource dependence on interlocking directorate, Berle A. and Means G. C. [1932] have proposed management control, pointing out the existence of a high level of share dispersal in large corporations. Following this, numerous managerialists based and developed their arguments on this claim. Currently, managerialists are in dispute over the ultimate consequences of this type of inside control. Enterprises in which there is a high level of share dispersal continuously scan their environment through interlocks. Internal or executive directors of enterprises have enhanced opportunities for action. In this model, interlocking directorates are understood from the point of view that interlocks accelerate cooperative behavior, maintaining autonomy and utilizing reciprocal resources such as capital, technology, information, and so on. On the other hand, in the model of constrained managerial control, Herman, E. S. [1981] argues that outside or non-executive directors who are on the boards may be able to limit managerial options.

In the model of bank control, interlocks are created for the purpose of control. Representative scholars insisting on this model are Fitch R. and Oppenheimer M. [1970a, b, and c] and Kotz D. M.[1978]. According to this model, based on capital and commercial relations, a bank may attempt to exercise control over another in order to maximize its own advantage. The model of bank control has broadly stressed this type of interlock. However, bank interlocks do not result from attempts at control. Non-financial companies seek a vertical interlock with banks and other financial institutions in order to ensure easier access to capital. Since those companies are well placed in comparison with banks, they tend to find themselves in a better position to obtain capital.

The concept of hegemonic domination can be used, albeit not the bank control model proposed by Mintz B. and Schwartz M. [1985]. Owing to the position of banks in the flow of capital in the intercorporate networks, banks evolved into hegemonic enterprises.

Consequently, interlock networks create a pattern of financial hegemony.

The model of finance capital identifies the specific role of banks and other financial institutions. Finance capital represents the fusion of banking and industrial monopoly capital. In other words, banking and non-financial capital fuse to form finance capital. In such a model banks and financial institutions occupy central positions in the network. Therefore, it is necessary to understand finance capital as involving distinct forms of intercorporate relation.

Therefore, in this paper, when I consider interlocking directorates within large corporations as the channels of institutional information in an intercorporate network, I adopt the finance capital model that appears to be useful in understanding the structure of the network in consideration.

### 3. Social Network Analysis in Intercorporate Relationships

Social network analysis focuses on the patterns of the relationships between actors (individuals, groups, organizations, or other formations) and not on the individual characteristics of these actors. In this paper, I will specify the structure of interlocking directorates through the methods of social network analysis<sup>3)</sup>.

First, I will measure the centrality score of individual corporations, constituting the network. Local centrality (henceforth, centrality) refers to the immediate connections of the companies and is typically measured by its adjacency. Therefore, a central company, has a large number of degree between its neighbors. By measuring the centrality of individual corporations, it is possible to identify those companies that hold relatively individual central positions (Scott, [2000] pp.82-84.).

Second, I will examine the cohesion of a network. The cohesiveness of a network is represented by the features of the network as a whole. Here, the single most frequently used measure of cohesiveness is density. Density is the ratio of the actual number of lines in the network to the number of lines that would be present if all the points were connected to all others. It is calculated using the formula taken from Scott (see Scott [2000] p.75.). Further, I proposed that density is useful in longitudinal comparisons of the same partial network over time.

---

3) For detailed explanation on social network analysis, see Freeman, L.C., White, D.R., and Romney, A. K. [1989]. Further, for a detailed explanation on the methods of analysis in this paper, see Scott [2000].

$$D = \frac{L}{N(N-1)/2}$$

$L$  : the number of lines

$N$  : the number of points

Third, I will identify the internal structure of a network by nesting the components. The basic image in a nested analysis is that of a contour map, wherein each component is nested within a larger component. It has been proposed that the method of nesting is based on utilizing the multiplicities on the lines as a measure of intensity; this multiplicity-based measure results in the identification of m-cores. In this paper, an m-core is referred to as a nested component that forms a chain of points connected by lines of a specified multiplicity (Scott, [2000] pp. 108-110.). Further, an average or an increase in the multiplicity of the lines is considered as the cutoff criterion.

#### 4. The Structure of Intercorporate Network in the U.S. and Japan

##### (1) Interlocking Network through Social Network Analysis

By conducting a comparative study on the interlocking directorates of General Motors as a typical modern corporate enterprises in the 2003 U.S. network and on Mitsubishi Heavy Industry as a typical modern corporate enterprises in the 1994 and 2003 Japanese network, I attempt to clarify the structure of interlock networks.

First and foremost, I measured the centrality score of the individual corporations that constitute a network. In the interlocking network of GM, companies that hold a high adjacency score expand spread their business through globalization (Table 1). Citicorp, with an adjacency score of 25 and J. P. Morgan, with that of 18 are the largest banking holding companies; in this network, the largest financial institutions and industrials, hold a relatively high score of adjacency I consider these financial institutions as the center of information; thus, there are a significant number of interlocks within many companies.

Next, in 1994, I measured centrality score of individual corporations in the interlock network of Mitsubishi Heavy Industry (Table 2). In Japan, although auditors do not participate in decision making of the board of directors, in this paper, both the director and the auditor are regarded as the members of the top-management, on account of the nature of the auditor's duty to inspect the decision making of the boards and business transactions. In the interlock network, 35 corporations had 10 or more interlocks; further there were 5 financial institutions among the 35 corporations. The core corporations

(Mitsubishi, Mitsubishi Heavy Industry, Mitsubishi Electric, Mitsubishi Bank, etc.) of the Mitsubishi Presidents Club had several interlocks; in particular, Mitsubishi, a general trading company, had the maximum interlocks in this network. In 2003, 10 corporations had 10 or more interlocks, with 2 financial institutions among them. Similarly to the network in 1994, the core corporations of the Mitsubishi Presidents Club had relatively many interlocks. By measuring the centrality, it was confirmed that there was a decrease in the number of individual corporations that had a high centrality score, and that the high adjacency score of the corporations in the 2003 network was lesser than that in the 1994 network. Further, in the 1994 network, corporations belonging to the Hitachi group, Matsushita Electric group, and Tokyu Railway group constituted the network that was 2 distance from Mitsubishi Heavy Industry; these had a relatively high centrality score.

**Table1 Centrality in Intercorporate Personal Network around GM**

Adjacency	Corporation
25	Citicorp
18	J. P. Morgan Chase & Co.
15	E.I. Du Pont Co.
15	Sara Lee Corp.
14	Mobil Corp
13	General Electric Co.
13	RJR Nabisco
13	Pepsico Inc.
12	Smith Wesson Holding Co.
12	Pfizer Inc.
11	General Motors Corp
11	International Steel Co.
11	Coca Cola Co.
11	Champion Technology Holdings Ltd.
10	International Paper Co.
10	United Technologies Corp.
10	Monsant co.
10	Gannet Co.
10	Georgia Pacific Corp.
9	International Aluminum Corp.
9	Whirlpool Corp
9	AT & T
9	Rockwell Automation Inc.
9	Sears Roebuck Co.
9	H.J.Heinz Co.
9	Kraft Foods Inc

Source: The data are obtained from Mergent (2003) *Mergent Industrial Manual 2004*, Mergent and Mergent (2003) *Mergent Bank & Finance Manual 2004*, Mergent.

Note 1: Corporations holding relatively high score of centrality are noted in this table.

2: The mark \* shows financial institutions.

**Table 2 Centrality in Intercorporate Personal Network around Mitsubishi Heavy Industry**

1994		2003	
Adjacency	Corporation	Adjacency	Corporation
45	Impreial Hotel	20	Mitsubishi Corporation
37	Tokyu Corporation	14	Kirin Breweries
34	Dai-ichi Mutual Life Ins.*	13	Mitsubishi Heavy Industry
30	Hitachi Ltd.	13	Japan Ari Line System
29	Mitsubishi Corporation	13	Aeon
26	Tokyu Recreation	12	Millea Holdings*
25	Tobu Railway	11	Nikon
23	Tokyu Car Manufacturing	11	Lawson Inc.
23	Izu Railway	10	Meiji Life Ins.*
23	Nippon Life Ins.	10	Coca-Cola Central
22	Mistubishi Electric	9	Mitsubishi Logistics
21	Hokyu Hotel Chain	9	Mitsubishi Tokyo Financial*
20	Asahi Breweries	9	Pioneer
17	Matsushita Electric Industry	9	Asahi Breweries
17	Shochiku	9	Chubu Electric Power
17	Toei	9	Itochu Corporation
16	Japan Airprot Terminal	9	Japan Airport Terminal Co.
15	Tokyu Construction	9	Mitsubishi Securities*
15	Tokyu Store	8	Nichirei
15	Tokyu Department Store	8	Hokkoku Bank*
15	Tokyu Travel Agency	8	Kentucky Fried Chicken Japan
15	Fukoku Life Ins.*	7	Mitsubishi Electric
14	Meiji Life Ins.*	7	Mitsubishi Material
14	N K K	7	Mitsubishi Estate
14	Shiroki Manufacturing	7	Daido Steel
14	Chubu Electric Power	7	Okamura Corporation
13	Mitsubishi Heavy Industry	7	Diamond City
13	Mitsubishi Oil	6	Honda
13	Keihin Ele. Ex. Railway	6	Matsuya Co.
12	Arabian Oil	6	P. S. Mitsubishi Construction
12	Odakyu Realestate	5	Nissin Foods
11	Mitsubishi Bank *	5	Mitsubishi Steel Mfg. Co.
11	Mtsubishi Motors	5	Mitsubishi Motors
10	Mitsubishi Estate	5	Nippon Oil
10	Japan Air Line	5	Shin-Etsu Chemical
9	Mitsubishi Construction	5	Shin-Etsu Polymer
9	Mitsubishi Material	4	Kinki Coca-Cola Bottling
9	Matsuya	4	Diamond Lease*
8	Nikon	4	Sakai Chemical Industry
8	Ryoden Trading	4	Ryoshoku Ltd.

Source: The data are obtained from Toyo Keizai Shinposha (1991) *Yakuin Shikiho(Corporate Directors Directory)1 994*, Tokyo: Toyo Keizai Shinposha and Toyo Keizai Shinposha (2003) *Yakuin Shikiho(Corporate Directors Directory) 2004*, Tokyo: Toyo Keizai Shinposha.

Note 1: Corporations holding relatively high score of centrality are noted in this table.

2: The mark \* shows financial instistutions.



A centrality analysis was applied to the network; the results of the analysis confirmed the impression formed through the number of interlocks. Therefore, it was established that financial companies and the largest industrial companies in the U.S. network and general trading companies, major industry companies, and financial companies in the Japanese network are the key nodes in the network<sup>4)</sup>.

As the next step, I applied the cohesiveness of the network as a whole in both the U.S. and Japan. In the U.S., the network density score was 0.0110 in 2003. In Japan, it increased from 0.0056 in 1993 to 0.0074 in 2003. In Japan, I consider that this shift of cohesiveness is affected by the collapse of the bubble economy and the continuing recession. Furthermore, in the range of 2 distance in these networks, intercorporate relations are considered as having the tendency of being reorganized as a result of changes in the number of corporations that constitute the networks.

In addition, I identified the internal structure of the network by nesting the components, based on the multiplicity of the line which constituted the a network, in order to measure the hierarchical structure of the network. In the U.S. network, the cut off criterion was assigned at 2 degrees or more. Three components were indentified as the nested components (Table 3). Further, the 13 companies that consisted the nested components were divided into the components based on the identification criterion 4 (2 companies), criterion 3 (3 companies), and criterion 2 (8 companies). These companies were financial institutions and non-financial enterprise extending globally. In particular, it was found that strength of interlocking is stronger financial institutions, because they consist in the upper components.

**Table 3 Nested Components in the GM Interlock Network**

Componet Criterion	Member Corporations
4	Citicorp, E.. I. Du Pont
3	Mobil Corp, Sears Roebuck, J. P. Morgan Chase,
2	General Electric, Pepsico Inc., GM, Pfizer Inc., Champion International, H. J. Heinz, AT & T, GMAC

Source: The data are obtained from Mergent (2003) *Mergent Industrial Manual 2004*, Mergent and Mergent (2003) *Mergent Bank & Finance Manual 2004*, Mergent.

---

4) In Japan, directorates are being frequently dispatched among major banks and industrial companies. Based on an analysis on these, I have already confirmed that dispatching directorates trace the structure of intercorporate ownership. See Iwanami, [1997].

**Table 4 Nested Components in the MHI Interlock Network**

1994		2003
Member Corporations	Component Criterion	Member Corporations
Izu Railway, Tokyu Corporation	7	
Tokyu Industry, Tokyu Construction	6	
Tokyu Hotel Chain, Tokyu Car, Shiroki	5	
Tokyu Land, Tokyu Recreation, Tokyu Tourist, Tokyu Store, Tokyu Department Store, Tobu Railway, Tobu Store, Fukoku Life Ins., Shochiku, Toei, Toei Chemical, Kabuki-Za	4	
Mitsubishi Heavy Industry, Mitsubishi Motors, Matsushita Electric Industrial, National Housing, Torii Pharmaceutical, Nikka Whisky Disttilling, Kaigen, Asahi Brewerise, Sakai Chemical Industry, Secom, Dowa Mining, Nohmi Bosai, Fujita Kanko	3	Mitsubishi, Mitsubishi Heavy Industry, Mitsubishi Motors
Mitsubishi, Mitsubishi Electric, Mitsubishi Steel Mfg, Mitsubishi Bank, Mitsubishi Estate, Mitsubishi Construction, Mitsubishi Shindoh, Mitsubishi Materials, Meiji Life Ins., Tokio Marine & Fire Ins., Nikon, Diamond City, Toyo Engineering Works, Fujikoson, Japan Radio, Asahi Breweries, Kinki Coca-Cola Bottling, NKK, Tokyo Shiyaringu, Godo Steel, Nippon Steel, Nippon Steel Chemical, Dai1 Denko, Hitachi, Hitachi Cable, Hitachi Soft, Nissei Sangyo, Hitachi Plant, Hitachi Credit, NEC, Matsushita Electric Works, Sotetsu Transport, Jasco, Imperial Hotel, Daiichi Hotel, Tokai Kisen, Tokyo Dome	2	Kirin Breweries, Mitsubishi Electric, Mitsubishi Financial, Mitsubishi Material, Kinki Coca-Cola Bottling, Nikon, Mitsubishi Estate, Nichirei, Chrysler, Meiji Life Ins., Mitsubishi Securities, Nippon Kakoki, Millea Holdings, Kirin Beverage, Coca-Cola Central Japan, Kentucky Fried Chicken Japan

Source: The data are obtained from Toyo Keizai Shinposha (1991) *Yakuin Shikiho(Corporate Directors Directory)* 1994, Tokyo: Toyo Keizai Shinposha and Toyo Keizai Shinposha (2003) *Yakuin Shikiho(Corporate Directors Directory)* 2004, Tokyo: Toyo Keizai Shinposha. Comparing nested component in U.S. network and in Japan.

Note 1: Corporations holding relatively high score of centrality are noted in this table.

2: The mark \* shows financial institutions.

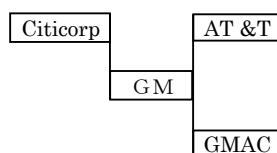
In Japan, I examined the hierarchical structure of the network and indentified the internal structure of the network by nesting components (Table 4). In 1994 and 2003, the cut off criterion was assigned at 2 degrees or more. In 1994, the nested components consisted of 76 companies of which 6 components were identified. The Tokyu group companies that belong to the upper components had several multiplicities of interlocks within the Tokyu Railway group. Interlocks among the member companies of the Tokyu Railway group tended to overlap; this is characteristic of the Tokyu Railway group

interlock. 13 companies belonging to criterion 3 components contained constituting companies of each component that decreased in proportion to the upper components. With the exception of the Tokyu Railway group, constituting companies of each component are mainly financial institutions and non-financial enterprises including Mitsubishi Heavy Industry, Mitsubishi Bank, Matsushita Electric industrial, and so on. In 2003, the nested components that consisted of 19 companies and were differentiated into 2 levels; these components consisted of the core companies belonging to the Mitsubishi Presidents Club. The decline from 1994 to 2003 can be explained in terms of “the stagnant 10 years” in Japan. Nevertheless, in both 1994 and 2003, financial institutions and non-financial companies belonged to the upper components. Therefore, since the member companies of the Mitsubishi group constitute the upper components, these companies strengthen the interlocking directorates among these companies.

## (2) The Clique of Multiple Directors

This section will examine each of the components in order to assess at an assessment of the actual role played by financials in intercorporate networks. Based on the core of multiple directors, the clique of multiple directors is described as an intercorporate network. In this paper, the companies that are examined are members of nested components with a cut off criterion of 2 or more. In the U.S. network, the clique consisted of 4 companies, namely, Citicorp, AT&T, GM, and GMAC (Figure 2) that comprised 2 financials and the 2 largest industrials. The network patterns of interlocking resulted in a flexible structure, comprising the grouping of the largest banks and the largest industrial enterprises. The resulting grouping may be termed as the spheres of influence. In the cliques, mega financials and the largest non-financials fuse to form finance capital; thus, banks do not form the basis for the exercising of control over non-financials in the network. These spheres of influence form the major areas of interest within an extensive network.

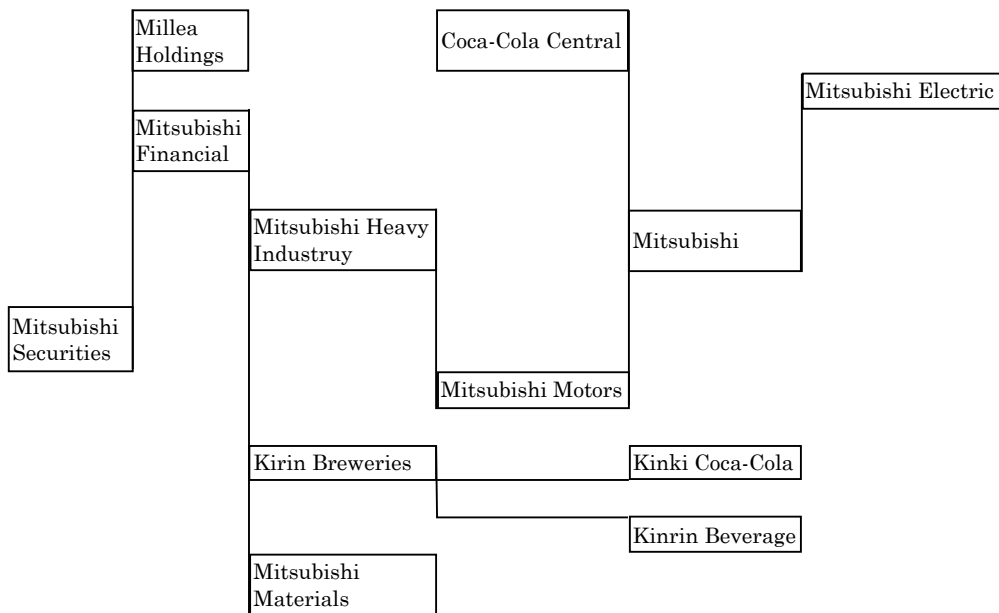
**Figure 2 The Clique of Multiple Directors**



Source: The data are obtained from Mergent (2003) *Mergent Industrial Manual 2004*, Mergent and Mergent (2003) *Mergent Bank & Finance Manual 2004*, Mergent.

In the Japanese network, the clique consisted of 12 companies, namely, 2 Mitsubishi financials and the 10 largest industrials, comprising mega financials and the largest industrials (Figure 3). The patterns have resulted in a rigid structure of tight, because the largest financial institutions and the largest industrial enterprises belong to the same group of enterprises. In the cliques, since large financials and large industrials coexist, the grouping appears to form a kind of interest group; in the other words, a banks and industrials centered interest group.

**Figure 3 The Clique of Multiple Directors and Multiple Auditors**



Source: The data are obtained from Toyo Keizai Shinposha (2003) *Yakuin Shikiho (Corporate Directors Directory) 2004*, Tokyo: Toyo Keizai Shinposha.

## 5. Conclusion

Since an enterprise is a constituent of civil society, I consider that intercorporate relations from an aspect of social relations. Further, I consider the structure of intercorporate relations as social relations from an interorganizational perspective. Using the technique of social network analysis, I confirm the feature of intercorporate relations concerning typical large business enterprises in the U.S. and Japan.

Banks, other financial institutions, and large industrial companies occupy central positions in the U.S. intercorporate networks. They exercise a considerable influence

on the flow of capital and that of information regarding the availability of capital and investment opportunities. Moreover, general trading companies, large industrial companies, and banks hold central positions in the Japanese intercorporate networks. They exercise a considerable influence on the flow of capital and that of information concerning strategic decision making. Enterprises conducting businesses worldwide hold a central position in the networks both the U.S. and Japan. Therefore, a sphere of influence exists in the network and the interlocks, which lead to a structural constraint, affect the decision making of individual enterprises.

However, since my focus is on the relevancy between intercorporate relationships and individual companies, examining the relevancy between multi-stakeholders and individual companies falls outside the scope of my study. In order to comprehend the relations between an extensive stakeholder in society and enterprises from an interorganizational perspective, it is necessary to clarify the power structure of large corporate enterprises relation to enterprises and society.

#### References:

- Charkham, J. P. (ed.) [1994] *Keeping Good Company: A Study of Corporate Governance in Five Countries*, Oxford: Clarendon Press.
- Fitch, R. and Oppenheimer, M. [1970a-c] "Who Rules the Corporations?", *Socialist Revolution*, 12: pp.93-127, 5: pp61-114, 6: pp 33-94.
- Herman, E. S. [1981] *Corporate Control, Corporate Power*, Cambridge: Cambridge University Press.
- Hilferding, R. [1910] *Finance Capital*, (reprinted [1981] London: Routledge and Kegan Paul.)
- Jeidels, O. [1905] *Das Verhältnis der deutschen Großbanken zur Industrie mit besondere Berücksichtigung der Eisenindustrie*, Leipzig: Verlag von Duncker & Humblot.
- Hosoi, K. [2006] *Kohporeito-Pawah no Riron to Jissai (Theories and Facts of Corporate Power: Structural Analysis of Intercorporate Relationship by the Intercorporate Approachs)*, Tokyo: Dobunkan.
- Iwanami, F. [1999] "The Structure of intercorporate Personal Relations among Large Japanese Corporations", in: Albach, F., Gortzen, U., and Zobel, R.(eds.) : *Information Processing as a Competitive Advantage of Japanese Firms*, Berlin: Edition Sigma, pp.193-210.
- Kotz, D. M. [1978] *Bank Control of large Corporations in the United States*, Berkeley: University of California Press.
- Lenin, V. I. [1916] *Imperialism the Highest Stage of Capitalism* (reprinted English edition : [1970] Foreign Languages Press.)
- Linton, L.C., White, D.R., and Romney, A.K.(eds.) [1989] *Research Methods in Social Network*

- Analysis*, George Mason University Press.
- Mintz, B. and Schwartz M. [1985] *The Power Structure of American Business*, Chicago: The University of Chicago Press.
- Nakata, M.[1998] "Ownership and Control of large Corporations in Contemporary Japan", in : Hasegawa, H. / Glenn, D.H.(eds.) : *Japanese Business Management: Restructuring for Low Growth and Globalization*, London: Routledge, pp. 128-162.
- Nakata, M., Hosoi, K., and Iwanami, F.[1997]: *Kigyo Kan no Jinteki Network (Intercorporate Personal Network)*, Tokyo: Dobunkan.
- Pennings, J. M. [1980] *Interlocking Directorates*, San Francisco: Jossey-Bass.
- Scott, J.P. and Griff,C.[1984] *Directors of Industry*, Cambridge: Polity Press.
- Scott, J.P., Nakata, M., and Hasegawa, H. [1993] *Kigyo to Kanri no Kokusai Hikaku: (A Comparative Study of Business and Management: Anglo-American type and Japanese type)*, Tokyo: Chuo Keizaisha.
- Scott, J.P.[1997] *Corporate Business and Capitalist Classes*, Oxford: Oxford University Press.
- Scott, J.P. [2000] *Social Network Analysis: A Handbook*, London: Sage Publications.
- Scott, J.P.[2001] *Power*, Cambridge: Polity Press.
- Stokman, F.N., Ziegler, R., and Scott, J.P.(eds.) [1985] *Networks of Corporate Power: A Comparative Analysis of Ten Countries*, London : Sage Publications.
- Takada, T., Mintz, B., and Schwartz M. (eds.) [1996] *Gendai Kigyo no Shihai to Network ( Corporate Control, Capital Formation, and Organizational networks: Intercorporate Relations in Japan and the United States)*, Tokyo: Chuo University press.
- Zeitlin, M. [1974] "Corporate Ownership and Control: The Large Corporation and the Calitalist Class", *American Journal of Sociology*, Vol.79, No.5, 1073-1119.