*SOCIAL PROBLEMS, Vol. 29, No. 2, December 1981*

# THE STRUCTURE OF INTERCORPORATE UNITY IN AMERICAN BUSINESS*


BETH MINTZ
University of Vermont

MICHAEL SCHWARTZ
State University of New York, Stony Brook



This paper examines the structure of intercorporate unity in the United States through an analysis of interlocking directorates. Our findings suggest that the major organizing institutions within the corporate world are the largest New York commercial banks, themselves united by a small number of prominent insurance companies. These institutions lend an order to corporate affairs and maintain a loose unity among firms. Although sources of conflict remain, patterns of director interlocks emphasize the capacity for cohesion supplied by the financial sector and suggest that mechanisms for conflict resolution reside within U.S. business.


Sociologists and political scientists have, for the last 20 years, debated the distribution of power in modern industrial society. Elite unity has been a continuing theme, largely because it is fundamental to the competing theories and because the recent proliferation of structural Marxist analyses has focused attention on the unity of capitalist enterprise (Esping-Anderson *et al.*, 1976; Gold *et al.*, 1975; Offe, 1973; Poulantzas, 1973).

Although earlier research on power structures emphasized cohesion and commonality within the business sector, lately, sources of conflict and lines of cleavage have attracted attention. Within the corporate community interests differ and needs diverge; examples of potential sources of conflict abound. In the steel industry import tariffs protect domestic producers at the expense of domestic purchasers (*Business Week*, 1977b). Similarly, to the extent that horizontal integration within the energy industry is limited, coal and oil share an interest antithetical to nuclear energy (Medvin, 1974). Steel, aluminum, and glass manufacturers compete for soft drink container markets (*Business Week*, 1977b); liberal-conservative divisions continue (Weinstein, 1968); and regional interests compete with trends toward national unity (Markusen, 1978).

At the same time, however, a fundamental shared interest persists in preserving the system of private accumulation (O'Connor, 1973; Offe 1973). Given the contradiction between individual interests and the overriding needs of the capitalist class, recent research has attempted to identify mechanisms capable of transforming individual corporations into a united, hegemonic social force. Structural Marxists have posited a process in which the state is the focal point of intercorporate conflict, which it resolves by imposing policies expressing an overall class interest. A state apparatus is created which stands above individual elements of the economy and represents their common interest; thus, class unity is maintained (Block, 1977; Esping-Anderson, *et al.*, 1976; Gold *et al.*, 1975; Mollenkopf, 1975; Poulantzas, 1973). Conflicts between corporations are forcefully resolved: the state mediates steel import tariffs and enacts container deposit legislation to regulate relations among the steel, aluminum, and glass industries.

There are also a significant number of cases in which the corporate community has overcome internal conflicts without the aid of the state. Weinstein (1968) and Eakins (1966) have demonstrated that social welfare policy developed within the corporate community before being

* An earlier version of this paper was presented to the annual meeting of the American Political Science Association, Washington, D.C., September, 1977. The authors thank the National Science Foundation and the University of Vermont Institutional Grant Program for their support, William Atwood, James Bearden, Daniel Clausen, Lewis Coser, Peter Freitag, Carolyn Hendricks, and Eugene Weinstein for their help and the anonymous *Social Problems* reviewers for their comments.

adopted by government.[1] Shoup and Minter (1977) make a similar case for the origins of post-Second World War foreign policy, while Ratcliff (1979-80) has demonstrated the capacity of the St. Louis business world to operate in a unified manner. Policy planning organizations such as the Council on Foreign Relations and the Council for Economic Development define programs which serve the interests of business as a class (Domhoff, 1970, 1971, 1979), while Useem (1978, 1979) has described an inner group within the capitalist class, whose members transcend the narrow interests of individual enterprise. Thus, there are several possible mechanisms for the articulation of a general class interest. This paper concentrates on the structure of intercorporate relations and uses interlocking directorates to analyze patterns of interaction which might reflect unifying forces within the corporate world.

## SOURCES OF INTERCORPORATE POWER AND UNITY

Whitt (1979-80) demonstrates that business unity can be achieved, even in the face of visible conflict of interest. What must be explained are the sources of this unity and the basis for the resolution of conflicts. With this in mind, we catalogue the sources of intercorporate power and unity which could suppress the interests of one firm in favor of the needs of another. We then evaluate whether intercorporate interlock patterns reflect any of the following relations and assess whether these relations could be routinely used to coordinate capitalist activity.

*Stockholding By Capitalist Families*: Although managerialism, the ascendant theory of the firm in U.S. economics and sociology, argues that stockholding is no longer a prevalent instrument of corporate control, stock ownership remains an important source of intercorporate power and coordination. Researchers have demonstrated the inadequacies of managerialist evidence and uncovered new forms of stockholding which were inconsequential when Berle and Means (1968) first enunciated the separation of ownership and control (Burch, 1972; Chevalier, 1969; Kotz, 1978; Villarejo, 1961; Zeitlin, 1974). The high level of stock dispersion characterizing the modern corporation means that ownership of a concentrated block of shares in an organization carries with it the potential for control. Ownership of large blocks of stock in *more* than one organization allows an individual capitalist (or a capitalist family) to create a coordinated set of policies among firms. This coordination may suppress competitive behavior among companies, resolve supplier-customer conflicts or encourage cooperation that would otherwise have no reason to exist. In this manner, common stockholding can result in harmonious arrangements among otherwise competitive corporations.

*Intercorporate Stock Ownership*: Coordinated sets of policies among companies can be established through intercorporate ownership. Any firm which holds a controlling block in another company can impose policies which serve its own interest, even in cases in which the controlled organization suffers. Vertical integration can function in just this manner, helping to suppress intercorporate conflict. No one knows the extent of intercorporate ownership, but most stockholding research suggests it is widespread (Kotz, 1978). Even without systematic research, however, its importance is underscored by the persistence of mergers and conglomerate expansion.

*Institutional Stockholding*: This device began with the first successes of the Congress of Industrial Organizations' campaign for pension funding after the Second World War. The increasing proportion of investment capital residing in these funds makes them important. Professional managers in the trust departments of major banks make decisions for various clients,

1. These examples of unified corporate action do not imply that the power of the business world was unrestrained or that corporate needs were unhampered by the intrusion of popular interests. The social welfare policies developed by the business community in the 1930s, for example, were a response to massive discontent amid economic depression (Domhoff, 1970). Similarly, Freitag (1978) found the formation of regulatory agencies to be the result of corporate response to pressure exerted from below.



pension funds, and endowments. By 1977, institutional investors of this sort accounted for 60 percent of all stocks traded in the United States (*Newsday*, 1977). This concentration has enormous potential for controlling and coordinating the behavior of individual as well as groups of corporations:

> As institutions buy and sell ever larger blocks of stock, they develop greater power in corporate affairs—power they occasionally exercise with the impact of a sledge hammer. . . . When institutions sell as a group they can have a devastating effect on a company—squelching financing and expansion plans and sometimes destroying morale (*Business Week*, 1970:53,55).

The policy preferences of large institutional holders have become a major force in determining and directing corporate policies and a potentially important means of suppressing intercorporate conflict.

*Lending Relationships*: In 1977, non-financial corporations invested $236.5 billion, of which $102 billion (43 percent) was borrowed, $71 billion of it from financial institutions (*Business Week*, 1978). With more prospective borrowers than available capital, major corporate lenders can decide which projects will be pursued and which will remain unfunded. A corporation in need of capital, therefore, cannot afford to violate the norms set by the lenders. Occidental Petroleum, for example, found it difficult to borrow money during the early 1970s because its corporate policy had undermined bank confidence (*Business Wvek*, 1977a).[2] American Cyanamid, a company with no outstanding debt, was dissuaded from allowing a subsidiary to go bankrupt by bankers who said they would refuse future loans to the firm. In such ways banks regularly use outstanding or prospective loans to intrude into the internal affairs of companies; the power of capital control is an important means of coordinating intercorporate policy. As James Ling, the most spectacular conglomerateur of the 1960s, told *Fortune* (1973:234) "Keeping the bankers happy is the most important thing in business."

*Joint Ventures*: Until the early 1960s, General Motors and Exxon jointly owned the Ethyl Corporation, producer of lead additives for gasoline. This provided an ongoing point of contact and cooperation between the two firms (*Forbes*, 1978). While such a joint effort was unusual before the 1960s, it is commonplace today. The 1974 *Moody's Industrial Manual* lists over 200 such ventures among corporations in the *Fortune* 500 listings. This tactic is an important means of reducing intercorporate conflict and producing inter-organizational unity.

*Lending Consortia*: The business press contains daily announcements of lending arrangements between major industrial corporations and consortia of large financial firms, mainly banks and insurance companies. Such arrangements have become normal because even the largest banks cannot independently provide the huge amounts of capital needed for corporate use. Lending consortia demand cooperation from their members. Since it is difficult to withdraw, the interest of each bank is tied to the collective enterprise. The consortium must, therefore, develop and maintain devices for creating and enforcing common policy. This basic structure of corporate financing provides the potential for united action by a large group of banks. Since the number of major commercial lenders in the United States is quite small, the existence of large consortia force the financial community to adopt a united policy on any particular corporation.[3] This unity, coupled with the power which comes with capital control, suggests that lending consortia are a source of immense potential and actual power in U.S. corporate life.

*Customer-Supplier Relationships*: The dependency of borrowing firms on financial institutions makes corporate policy vulnerable to influence from the money supplier. A similar relationship

2. The company overpromoted its potential in the late 1960s and miscalculated oil tanker demand in the early 1970s.

3. Eight major New York commercial banks are responsible for over 50 percent of all industrial bank loans; 50 banks account for over 70 percent.

can develop when one company buys goods, raw materials, or finished products from another. The Budd Company, a major manufacturer of auto parts, sells 40 percent of its product to the Ford Motor Company (*New York Times*, 1974). The Kellwood Company, an apparel manufacturer, sells over 50 percent of its output to Sears (Moody's, 1974). In both cases the potential for control is obvious: Ford and Sears could arrange to buy from other suppliers. While there is no evidence that either firm has used the threat of such action to extract concessions from Kellwood or Budd, the potential for such leverage exists.

The U.S. economy is laced with inter-industry dependencies of this sort. The auto industry depends heavily on the steel industry; steel in turn depends on coal. Individual corporations operate in the context ?f such broad interdependencies. Each firm must find a way to control and regulate its supply of raw materials and the markets for its products. In so doing a corporation may seek ongoing relationships both with major suppliers and customers, creating still other sources of intercorporate unity and cohesion. Such widespread relationships are often complex. A company may hold stock in a firm upon whom it depends for resources in order to guarantee supplies. A loan relationship between a bank and a non-financial organization may be congruent with institutional stockholding or may coexist with bank holdings in a competing firm. The varieties of relationships are limitless; the issue for researchers is to study the patterns which emerge from these ties.

## INTERLOCKS AS AN INDICATOR OF INTERCORPORATE POWER

Investigating interlocking directorates is a promising, though complicated, way of studying the internal structure of the business community. Although the connection between director interlocks and the exercise of intercorporate unity is not always direct, careful analysis has yielded useful results (Allen, 1974; Bearden *et al.*, 1975; Dooley, 1969; Fennema and Schijf, 1979; Mariolis, 1974; Mizruchi and Bunting, 1979; Mokken and Stokman, 1979). We use patterns of director interlocks to trace connections among major corporations and to differentiate among the sources of intercorporate unity discussed above. Using this information we analyze the mechanisms which create business structure. We assume that interlocks often reflect power and unity among firms (Mokken and Stokman, 1974). This is a vexing issue at best, requiring further analysis of the correlation between interlocks and intercorporate relationships. Every type of power or unity source discussed above is reflected by interlocks some of the time. During an important crisis period at LTV, for example, BankAmerica—the leading lender—did not have a representative on the corporation's board. This did not, of course, prevent BankAmerica from playing a crucial role in the crisis (Loving, 1973). During the Penn Central bankruptcy, on the other hand, lenders were always well represented among directors (Daughen and Binzen, 1971). Ford has never interlocked with the Budd Company despite the massive dependent relationship between them, while Sears has maintained consistent ties with Kellwood Corporation which is analogously dependent. This imperfect, but consistent, correlation between intercorporate relationships and director interlocks has been demonstrated by researchers representing a variety of viewpoints (Allen, 1974; Fitch and Oppenheimer, 1970; Gogel, 1976; Kotz, 1978; Medvin, 1974; Menshikov, 1969; Mintz, 1978; Pfeffer and Salancik, 1978).

There is not sufficient evidence for us to analyze the many different intercorporate relationships directly. The study of interlocks, however, poses two problems: (1) Many of the relationships we seek to study are not represented by director interchanges. (2) There is often no known relationship between firms linked by interlocks. Interlocks often represent friendship ties, or even window dressing, on a prestigious board of directors (Mace, 1971).[4] We do not claim to have

4. For a discussion of the importance of interlocks, see Koenig and Gogel (1979); Palmer (1980a,b); and Sonquist and Koenig (1978).



solved these problems. Nevertheless, we feel our method extracts the maximum information from these relatively crude indicators and suggests some of the main lines of force within the corporate community.

We try to determine the extent and stability of corporate interlocks, and to discern whether their patterns suggest unifying relationships within the capitalist class. To do this, we focus our attention on those organizations which are central in the corporate network, that is, those companies with the largest number of interlocks and whose interlocks tie them to other highly interlocked corporations. Specifically, we examine: the types of corporations that are most important to determining the structure of the interlock network; the stability of network position over time; different roles within the network; and which firms tend to occupy which positions within the network.

Our population was drawn from *Fortune Magazine*, which publishes an annual list of the largest U.S. corporations of the following types: industrials, utilities, transportation companies, retailers, commercial banks, insurance companies, diversified financials, and miscellaneous firms. We included all companies which appeared in any year from 1962 to 1973. To accomodate the opinion that investment banks are crucial to intercorporate networks, we added to our data the 50 largest bond managers during the 1960s (Hillstrom and King, no date). The number of firms in our investigation varied from year to year as certain corporations disappeared because of mergers and bankruptcies while others appeared, often constructed from several firms too small for inclusion in their own right. Using techniques which are now well established (Bearden *et al.*, 1975; Bunting and Barbour, 1971; Mariolis, 1975) we obtained complete listings of the boards of directors for each company for the years 1962 and 1966. For each individual who created an interlock—i.e., who sat on more than one board in our list—we identified specific office and principal affiliation. In 1962, our population included 1,131 of the largest U.S. corporations; in 1966, 1,111 companies were included. Although this is a large data base, it represents only a small proportion of the business world. Nevertheless, we feel that the major corporations are the appropriate sample with which to investigate the question of intercorporate unity.[5]

## THE INTERLOCK NETWORK

The corporate network is both extensive and intensive. Of the 1,131 firms in our 1962 data, 989 were tied by varying degrees into a single, continuous network. The average firm was tied directly to 10 other firms. Thus the largest U.S. corporations are linked by a dense network of overlapping directorships. This suggests a degree of collective leadership and information exchange which, by itself, might produce intercorporate unity (Koenig and Gogel, 1979; Scott, 1979; Useem, 1979).

We counted the interlocks of each corporation to analyze the roles played by different firms. This revealed great inequalities: besides the 142 companies not tied into the network, there were 111 which interlocked with only one other organization. This group included such prominent institutions as E.F. Hutton & Co., Fidelity Life Insurance, and Singer. Despite their size and fame, these firms appear to be unimportant figures in intercorporate relationships. On the other hand, 39 corporations were tied to more than 30 firms each. Most connected were Equitable Life (78 interlocks to 62 corporations), J.P. Morgan (72 to 59), and Chemical Bank (70 to 57). These companies are the key units in the network. The number of interlocks is not, however, a satisfactory measure of network position. Consider Singer and Fidelity Life, each with one interlock. In 1962, Singer interlocked with General Cable, a firm with 27 ties of its own. Fidelity Life, on the other hand, interlocked with Household Finance, which maintained only one other tie. Clearly, Singer was more integrated into the interlock system than Fidelity. However, if we trace the net-

5. For details of data collection, see Bearden, *et al.* (1975); Mintz (1978); and Mintz and Schwartz (1981).

TABLE 1

*Twenty Most Central Corporations, 1962, 1966, 1969**

| Corporation | Type | Centrality Rank 1962 | Centrality Rank 1966 | Centrality Rank 1969** |
|---|---|---|---|---|
| Morgan (J.P.) | Bank | 1 | 2 | 8 |
| Chase Manhattan | Bank | 2 | 3 | 5 |
| Equitable Life Assurance | Ins. | 3 | 1 | 2 |
| Chemical New York | Bank | 4 | 4 | 1 |
| New York Life | Ins. | 5 | 12 | 11 |
| Citibank | Bank | 6 | 5 | 4 |
| Metropolitan Life | Ins. | 7 | 6 | 6 |
| Southern Pacific | Trans. | 8 | 19 | — |
| Mellon | Bank | 9 | 11 | — |
| Manufacturers Hanover | Bank | 10 | — | — |
| A T & T | Utility | 11 | 7 | 3 |
| Penn Central | Trans. | 12 | — | 20 |
| I.N.A. | Ins. | 13 | — | *** |
| Bankers Trust | Bank | 14 | 17 | — |
| General Electric | Ind. | 15 | — | — |
| U. S. Steel | Ind. | 16 | 9 | 7 |
| Westinghouse Electric | Ind. | 17 | 10 | — |
| Charter New York | Bank | 18 | — | — |
| Harris Bancorp. | Bank | 19 | — | — |
| Phelps Dodge | Ind. | 20 | — | — |
| Lehman Bros. | Inv. | — | 8 | *** |
| United California Bank | Bank | — | 13 | 1 |
| General Motors | Ind. | — | 14 | 17 |
| International Harvester | Ind. | — | 15 | 16 |
| Pacific Mutual | Ind. | — | 16 | — |
| First Chicago | Bank | — | 18 | 9 |
| Western Bancorp. | Bank | — | 20 | — |
| National City Corp. Cleveland | Bank | — | — | 12 |
| General Foods | Ind. | — | — | 13 |
| Colgate-Palmolive | Ind. | — | — | 14 |
| Cummins Engine | Ind. | — | — | 19 |
| I.B.M. | Ind. | — | — | 18 |
| Mutual of New York | Ins. | — | — | 10 |
| Burlington Northern | Trans. | — | — | 15 |

Notes:
* Centrality scores are assigned to each firm within a data year and range from 1, the most central corporation of the intertie network to n, the least central or most isolated unit present. In 1962, for example, J.P. Morgan was the most central company in the system, Chase Manhattan the second, while Jim Walter Corporation was among the least central organizations with a rank of 1003.
** Source: Mariolis (1975)
*** Not included in the Mariolis data set.

work further, we discover that Household Finance's one tie was to a firm with many interlocks, while General Cable maintained 27 ties to only lightly interlocked companies. This sort of locational complexity makes it impossible to judge the relative importance of all 989 different firms in the network.

Thus, we used a mathematical technique, described in detail by Mariolis *et al.* (1979), Mintz (1978) and Mizruchi and Bunting (1979), set forth by Bonacich (1972), and first used in interlock research by Mariolis and Schwartz (1972) and Mariolis (1975), to evaluate the position of each corporation. We have based our analysis upon this evaluation, which we term centrality.[6] Central

6. Centrality is defined as $C_i \sum_{j=1,\, i\neq j}^{n} r_{ij} C_j$ where: $r_{ij}$ = the intensity of the interlock between corporation i and corporation j; $C_j$ = the centrality of corporation j; n = the number of corporations; and $r_{ij} = \frac{b_{ij}}{\sqrt{d_j}}$ where: $b_{ij}$



TABLE 2

*Percent Hub Centrality of the 20 Most Central Corporations, 1962, 1966*

| | 1962 | 1966 |
|---|---|---|
| Commercial Banks | 83.4% (N = 9) | 78.3% (N = 9) |
| Life Insurance Companies | 77.6% (N = 3) | 66.3% (N = 4) |
| Other Financial | 58.0%* (N = 1) | 81.4%** (N = 1) |
| Non-Financial Firms | 53.3% (N = 7) | 55.5% (N = 6) |

Notes:
* Diversified Financial
** Investment Bank

corporations are the organizing units of the system and the focal points of the network of intercorporate personnel exchange. From centrality analyses flow our judgments about the relative standing of the major firms in the U.S. economy.

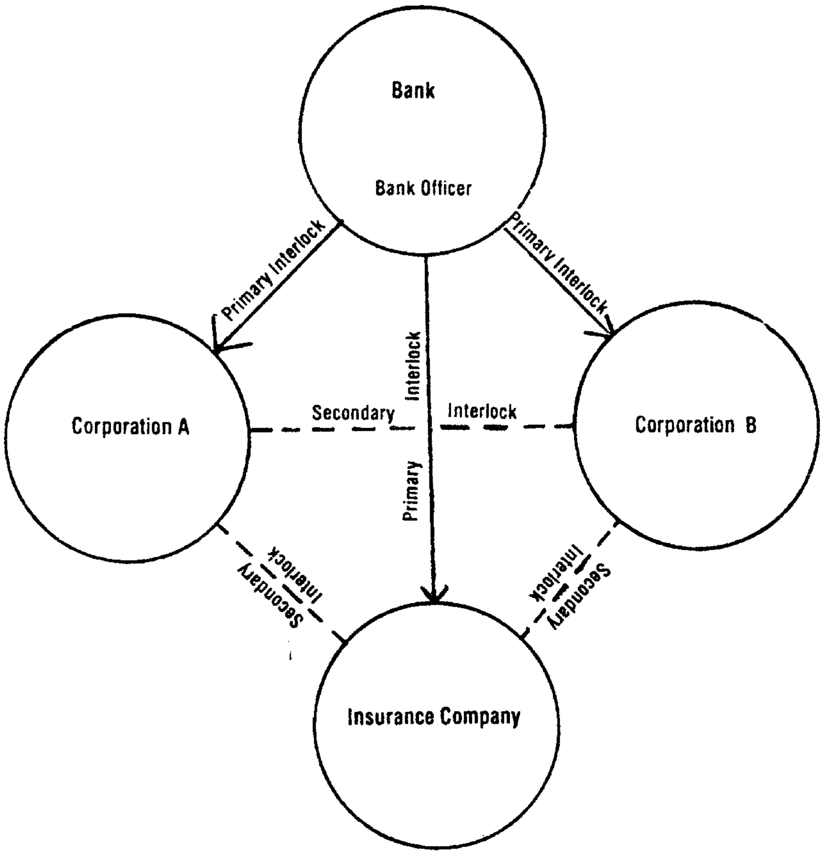
Table 1 shows the 20 most central corporations of 1962, 1966, and 1969, and identifies the focal points in the network of intercorporate relations—the financial institutions.[7] Each year they are dramatically over-represented in the top 20; they hold at least eight of the top 10 positions, and only in 1969 do they fail to hold each of the five top ranks. Thus, the most consistent members of the network elite are financial institutions. If industrial interdependence were a major axis around which intercorporate relations turned, we would expect major utilities, large industrials, and crucial transportation companies to be the stable, central nodes. Instead, only U.S. Steel and American Telephone and Telegraph Co. (AT&T) attain top listing in all three years. The absence of BankAmerica—the largest commercial bank—suggests that corporate lending and institutional stockholding are the bases for inclusion among the most central organizations. BankAmerica is not among the most important corporate lenders or institutional investors; its size results from its retail business. Indeed, the top corporate banks are exactly those at the top of our list: Morgan, Chase, Chemical, and Citibank. The life insurance companies are also those most heavily involved in corporate finance.

Financial institutions, it appears, are the organizing units of the interlock network and the most prevalent sources of intercorporate power and unity. Their resource base of institutional stockholding and control of capital gives them the power to mediate intra-class conflict.

High centrality can derive from different sorts of network configurations. A firm is highly central if (1) it is the center of a vast array of interlocking corporations or (2) its interlocks, though few in number, are with companies which are themselves centers. These two sorts of organizations would seem to play rather different roles in the network. The former, which we call a "hub," creates groups of firms around itself; the latter, which we call a "bridge," unites these hubs.[8] Hubs are of the most interest because they are strategically located as organizing elements of the networks. Bridges, although still important to a system as a whole, do not perform the same function of cohesion maintenance.

= the number of interlocks between corporation i and corporation j; $d_j$ = the number of directors on the board of corporation j.
For details of this method, see Bearden *et al.*, (1975); Mariolis (1975, 1978); Mariolis, Schwartz and Mintz (1979). For a comparison of different measures of centrality, see Mizruchi and Bunting (1979).
7. The 1969 figures are taken from Mariolis (1975) and are based upon a restricted sample of 797 firms. Some small inconsistencies between the first two years and 1969 may be due to this difference.
8. For a detailed discussion of this logic, see Mintz (1978).

FIGURE 1




To determine which highly central corporations were bridges and which were hubs we divided each corporation's interlocks into two categories: those with firms which are less central than the corporation in question, and those with firms which are about as central or more central. By this method, we can judge what proportion of an organization's centrality is hub centrality (derived from less important firms) and what proportion is bridge centrality (derived from firms about as important as itself). Table 2 shows the proportion of hub centrality for the top 20 corporations in 1962 and 1966, grouped according to firm type.[9]

Once again, financial institutions dominate. They derived over 75 percent of their centrality from hub relationships, while non-financials averaged only a little above 50 percent. Even highly central non-financials achieve their importance largely because of their relationships to banks and

9. Hub centrality is defined as: $H_i = C_i - \Sigma C_j$ when $C_j > .8\,C_i$ where $H_i$ = hub centrality of corporation i; $C_i$ = total centrality of corporation i; $c_j$ = total centrality of corporation j. For the matrices reported in Table 2, therefore, hub centrality is derived from interlocks with firms whose centrality scores were less than 80 percent of the score of the company in question. Data for 1969 were not available.



TABLE 3

*Twenty Most Central Corporations of the Primary Interlock Networks, Hub Analysis, 1962 and 1966**

| Corporation | Type | Centrality Rank 1962 | Centrality Rank 1966 |
|---|---|---|---|
| **Morgan (J.P.) | Bank | 1 | 2 |
| **Citibank | Bank | 2 | 1 |
| **Chase Manhattan Corp. | Bank | 3 | 6 |
| Bankers Trust | Bank | 4 | 8 |
| **Chemical New York Corp. | Bank | 5 | 9 |
| First Chicago Corp. | Bank | 6 | 5 |
| **New York Life | Ins. | 7 | 15 |
| Continental Illinois | Bank | 8 | 4 |
| Lehman Bros. | Inv. | 9 | 7 |
| Harris Bancorp. | Bank | 10 | — |
| International Harvester | Ind. | 11 | 20 |
| Manufacturers Hanover | Bank | 12 | — |
| Sears | Retail | 13 | — |
| National Distillers & Chem. | Ind. | 14 | — |
| Mellon Corp. | Bank | 15 | 10 |
| Goldman Sachs | Inv. | 16 | — |
| Charter New York | Bank | 17 | — |
| **Equitable Life Assurance | Ins. | 18 | — |
| Penn Central | Trans. | 19 | 16 |
| Proctor & Gamble | Ind. | 20 | 18 |
| United California Bank | Bank | — | 3 |
| **A T & T | Utility | — | 11 |
| Marine Midland | Bank | — | 12 |
| Penn Mutual | Ins. | — | 13 |
| **Metropolitan Life | Ins. | — | 14 |
| Illinois Central Ind. | Ind. | — | 17 |
| Northern Pacific Ry. | Trans. | — | 19 |

Notes:
* Because of differences in data collection, the 1969 network does not permit this analysis.
** Included among the most central firms in the 1962, 1966 and 1969 full interlock networks.

other financial firms and not primarily from interlocks representing joint ventures or customer-supplier relationships. Thus, the dominant financials—Morgan, Chase, Equitable and Chemical—were all over 70 percent hubs in both years. Chemical had a hub centrality of 99 percent in 1966. On the other hand, the two most consistent industrials—AT&T and U.S. Steel—scored 54 percent and 45 percent respectively in 1962, and 44 percent and 45 percent in 1966. These firms simply did not act as organizing units of the system.

We have already suggested that the pre-eminence of banks and insurance companies in the network may reflect the power of loans and institutional stockholding in intercorporate affairs. The analysis of hub centrality demonstrates that highly central industrials derive their importance within the interlock network from their connection to a handful of financial institutions and not from hub-like connections to a wide variety of companies. This suggests that: (1) major industrial firms act as bridges connecting the financial hubs of the system; and (2) the centrality of the interlock structure is one dimensional: financial institutions form the core organizing centers of the intertie system while highly central industrial firms link these potential centers of intercorporate coordination and unity.

Tables 1 and 2 indicate that commercial banks and insurance companies play similar roles in the interlock network. However, this evidence is weakened by the close relationship between the two. Figure 1 illustrates this problem: if an officer of a bank represents the firm on one insurance company and two other corporations, the officer creates three primary interlocks for the bank. At the same time, however, the officer creates ties between the insurance company and the other

TABLE 4

*Percent Hub Centrality Primary Interlock Network, 1962, 1966*

| | 1962 | 1966 |
|---|---|---|
| Commercial Banks | 76.4% (N = 10) | 69.9% (N = 9) |
| Insurance Companies | 40.2% (N = 3) | 21.9% (N = 2) |
| Non-Financial Firms | 32.5% (N = 7) | 35.8% (N = 9) |

two firms. Thus, while the original interlocks might represent meaningful structural relationships, these secondary ties could be superfluous. Nevertheless, when centrality is measured, the insurance company will be credited with these interlocks. Moreover, when hub centrality is calculated, both the insurance company and the bank would be analyzed as hubs in relationship to the other two firms. To control for this, we excluded all secondary interlocks from the network, re-analyzed the data, and then recalculated hub centrality.[10]

As Table 3 shows, the centrality analysis on the primary interlock network yielded similar results to that of the full network. While there are some differences in rank and stability of rank between the two systems, 83 of the 100 entries in the two tables overlap. Financial institutions remain disproportionately represented. The top 20 corporations of the primary network of 1962 contain 13 financials of interest—11 banks and two insurance companies. The 1966 top 20 also contains 13 relevant financials—10 banks and three insurance companies. The seven financials which appear in all three years of Table 1 also appear among the strong tie top 20. And of the five firms in the system included among the most central units in each of the five categories of Table 1 and Table 3 combined, all are financial institutions; four of the five are major commercial banks.

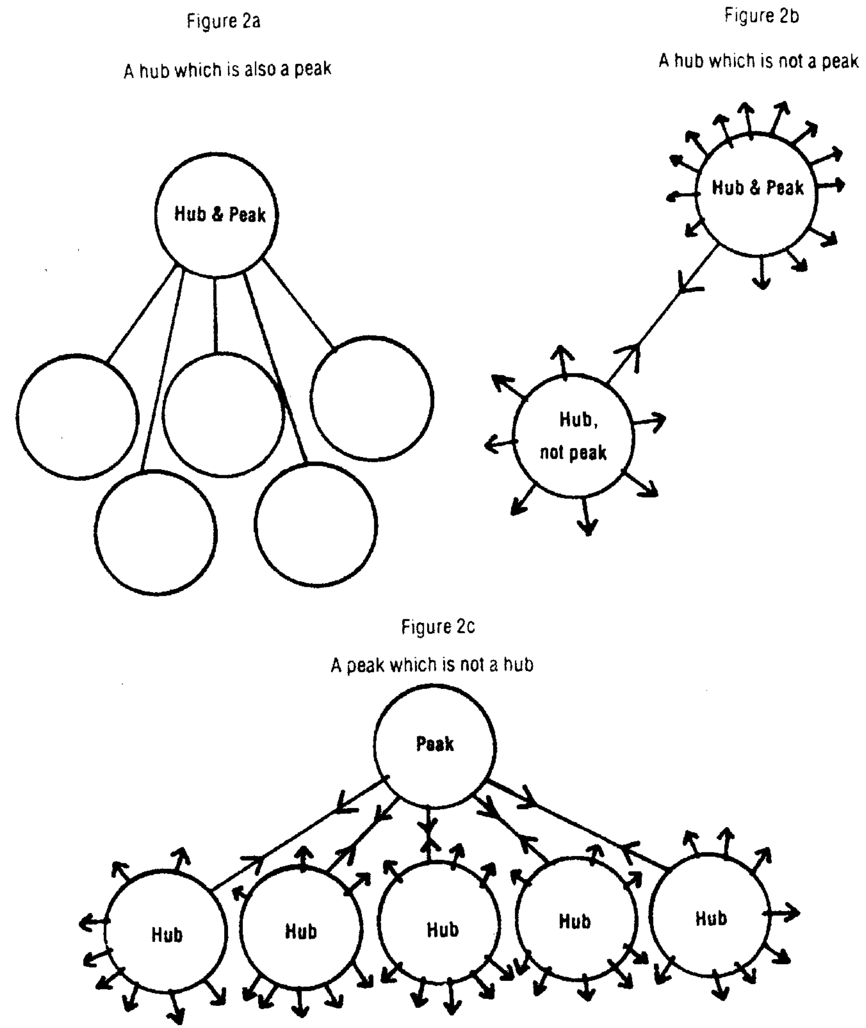
Table 4 shows the differences in hub centrality between banks, insurance companies, and non-financials of the primary network. Commercial banks remain the hubs of the system, but insurance companies now look more like non-financials. In 1962, 40.2 percent of their primary interlock centrality derived from hub relationships; by 1966, hubs accounted for only 21.9 percent. The remaining ties were to highly central firms, commercial banks in particular. This is strong evidence that insurance companies derive much of their importance from intimate relationships with commercial banks and that they are a major unifying force among these financial centers. In 1962, Equitable maintained three interlocks with Chase and four with Chemical Bank. It also maintained ties with regional banks in Chicago, St. Louis, Cleveland, Dallas and Detroit. Metropolitan Life maintained four ties with Chase and two with Citibank, as well as four regional financial interlocks. New York Life tied to four top commercial banks and two major regional banks. Thus, insurance companies are major bridges in the network, though their role is somewhat different than non-financial bridges. They are more intimately tied to commercial banks and generally more extensively interlocked; they are, therefore, hubs in their own right. This, we believe, reflects their role as suppliers of finance capital, in contrast to the more limited linking function played by industrial companies.

A central, stable core of banks and insurance companies, dominated by the New York "money market" institutions, are the foundation of the interlock system. Commercial banks serve as major hubs which connect a number of less central firms, especially national industrial corporations. Insurance companies, although hubs, maintain strong links with major and minor banks and, therefore, create connecting bridges among them. With some exceptions, large, nationally visible industrials are important only temporarily. Their centrality derives largely from connections to major financial firms. At the same time, they maintain many, less important ties to other,

10. For details of these methods, see Bearden *et al.* (1975); Mintz (1978); Mintz and Schwartz (1981).



FIGURE 2




Hub: a firm which is connected to other firms less central than itself.

Peak: A firm which is more central than any firm to which it is connected.

often local, industrials and help unify the system. Their role in the interlock network, then, is two-fold: they bridge the major banks and, at the same time, create links which tie local groupings into the national system.

## DIVISIONS WITHIN THE INTERLOCK NETWORK

To identify potential divisions within the interlock network we looked for network "peaks". A peak is a firm which is more central than any firm to which it is directly connected. Figure 2 illustrates the difference between a hub and a peak. Note that the main node is connected to five other companies which have no other interlocks. The main node is the most central firm; it derives its centrality from relations with five organizations much less central than itself. Figure 2b shows two main firms, one with 14 interlocks, the other with eight. The firms are linked through a bridging interlock. The company with eight ties is not a peak, because it connects to a more central corporation. It is a hub, however, since most of its centrality derives from the eight interlocks with less important nodes. Figure 2c shows five firms with eight interlocks and one with five interlocks. Each of the former are hubs, since the bulk of their centrality derives from seven interlocks with lesser companies. The remaining firm is the peak, because its five ties are each with corporations less central than itself. It is not a hub, however, because all of its interlocks are with highly central nodes. In analyzing the entire network, peaks may appear at the center of a dense and highly interconnected area or in relatively unimportant, sparsely connected sections. Peaks thus provide us with an indication of local dominance without necessarily indicating importance in the network as a whole.[11]

We focus here on primary interlocks since secondary ties can distort peak analysis in much the same manner ~~as it distorts the hub network~~. Table 5 provides a list of all peaks found among the 100 most central corporations of 1962 and 1966. The pattern is striking; the only firms appearing as peaks in the primary network are financial institutions. This is powerful evidence for the primacy of financials as central, organizing nodes of the interlock network and it is further evidence that financial relationships are the fundamental building blocks of intercorporate unity.[12] Moreover, the list of peaks indicates lines of cleavage in the network. Five of the New York money market banks appear, indicating that they maintain separate relationships with the subordinate firms which act as bridges among them. These special relationships may trace potential lines of competition among the financial units, which are individual spheres of influence exerting pressure against the structural interdependence of these lending institutions.

At the same time, these results reinforce our distinction between commercial banks and insurance companies. Commercial banks account for the vast majority of all system peaks in both 1962 and 1966. Only one insurance company is included in this category. Even investment banks, with relatively low inclusion levels among the most central firms of the intertie system, outnumber insurance firms as network peaks. This suggests that, by and large, insurance companies maintain their centralizing role within the network. Unlike commercial banks which potentially organize individual spheres and demarcate possible cleavage points within the interlock network, insurance companies are conspicuously absent from this category.

Even on the local level, commercial banks are peaks. Continental Illinois and First Chicago, two of the most important Chicago financial institutions, appear in both 1962 and 1966. Mellon National, the principal Pittsburgh-area bank and the cornerstone of the Mellon family fortune, appears in both years as well. Regional commercial banks, such as Charter New York, Northwestern National Bank, United California Bank, and Marine Midland, are also system peaks. This suggests a regional pattern similar to that at the national level: business communities appear to be organized around local banks which are the focal point of local economies.

The prominent position of financial institutions, both national and regional, within the corporate world has been widely documented (Allen, 1974; Bearden *et al.*, 1975; Dooley, 1969; Federal Trade Commission, 1951; Gogel, 1976; Kotz, 1978; Levine, 1972, 1977; Mizruchi, 1980; National Resources Committee, 1939; Rochester, 1936; U.S. Congress: House, 1967, 1968; Warner and Unwalla, 1967). In fact, the concept of interest group—coined by Sweezy in the

11. For a discussion of the method of peak analysis, see Mariolis (1977).
12. When peak analysis is performed on the complete network, the results are more ambiguous. While peaks are most frequently banks, they are by no means always financials.



**TABLE 5**

*Corporate Peaks, 1962 and 1966 (Primary Interlocks Only)*

| | Location | Centrality Rank 1962 | Centrality Rank 1966 | Years Listed as Peak |
|---|---|---|---|---|
| New York Market Banks* | | | | |
| J.P. Morgan | NYC | 1 | 2 | 1962, 1966 |
| Citibank | NYC | 2 | 1 | 1962, 1966 |
| Chase Manhattan | NYC | 3 | 6 | 1962, 1966 |
| Bankers Trust | NYC | 4 | 8 | 1962, 1966 |
| Chemical New York | NYC | 5 | 9 | 1962, 1966 |
| Manufacturers Hanover | | | | |
| Other Money Market Banks | | | | |
| First Chicago | Chicago | 6 | 5 | 1962, 1966 |
| Continental Illinois | Chicago | 8 | 4 | 1962, 1966 |
| Mellon | Pittsburgh | 15 | 10 | 1962, 1966 |
| Regional Banks | | | | |
| Harris Bancorp | Chicago | 10 | 36 | 1962, |
| United California Bank | L.A. | 36 | 3 | 1962, 1966 |
| National City Corporation | Cleveland | 52 | 31 | 1962, 1966 |
| Northwestern National | Minnesota | 58 | 25 | 1962, 1966 |
| Cleveland Trust | Cleveland | 64 | 81 | 1962, |
| Marine Midland | NYC | 80 | 12 | 1962, 1966 |
| Charter New York | NYC | 17 | 58 | 1962, |
| National Detroit | Detroit | 85 | 61 | 1966 |
| Investment Banks | | | | |
| Lehman Bros. | NYC | 9 | 7 | 1962, 1966 |
| Goldman Sachs | NYC | 16 | 27 | 1962, 1966 |
| Lazard Freres | NYC | 25 | 69 | 1962, 1966 |
| Insurance Companies | | | | |
| Penn Mutual | Philadelphia | 41 | 13 | 1966 |

Note:
* Money market banks are major commercial lenders who handle the bulk of interbank lending.

National Resources Committe (1939) report and generally used to refer to clearly defined clusters of corporations tied together by financial dependence, stock ownership, and family connections—has been a centerpiece of research in this field for more than 40 years. Our results reflect the centrality of the New York financial institutions (Levine, 1972) as well as the increasing integration of the national network (Allen, 1974). They also show the tendency of regional corporations to cluster around local financial institutions (Sonquist and Koenig, 1975).

The regional banks, identified as peaks, are subsidiary centers beneath the major organizing units of the system. These regional centers tie into the larger network either through insurance companies or bridges created by area firms with national outreach. Thus, First Chicago has direct interlocks with Equitable Life Insurance and Mutual of New York, and is also tied to Sears, which in turn interlocks with Chemical. United California Bank is tied into the national network through Celanese, which maintains a double interlock with Bankers Trust of New York. And Marine Midland is tied to Chemical Bank through General Reinsurance. The overall result is an integrated unit, tied together into a national system and then divided into regional centers.

The portrait which emerges from this analysis reflects both unity and structural cleavage within the community of big business. The main organizing institutions are four major New York commercial banks with national prominence and international presence: Chase Manhattan, J.P. Morgan, Chemical, and Citibank. Each is the hub of a massive network of interlocking and interdependent corporations. The hubs, in turn, are united by common interlocks with three major insurance companies—Equitable Life, Mutual of New York, and Metropolitan Life—each of which has long-term relationships with two or three of the main banks. A select group of non-financial firms, including U.S. Steel and AT&T, also help tie the hubs together. Other major industrials create temporary bridges among the major commercial banks. Thus, the centrifugal tendencies of the competing commercial bank hubs are countered by the bridges.

The system has two potential sources of conflict: national interbank conflicts and national-regional cleavages. These conflicts are inhibited and conditioned by the interdependencies created by insurance companies and national industrials on the one hand, and locally based national corporations on the other. Periodic corporate crises alternately mobilize unified activity and impose competitive divisons on the system. When we compare these opposing forces of potential cleavage and interdependency with the structure of the corporate world of the 1930s (National Resources Committee, 1939), we find support for Baran and Sweezy's (1966:17) argument that, over time, "a whole series of developments have loosened or broken the ties that formally bound the great interest groups together." Our data suggest, however, that although the formal ties characterizing interest group formation of the 1930s have been replaced and the boundaries become fluid, financial institutions have maintained unifying positions within the intertie system.

Thus, although Baran and Sweezy (1966) assumed that the breakup of interest groups left the corporate world with few mechanisms for conflict resolution, our findings suggest that financial arrangements remain the fundamental source of intercorporate unity, even in the absence of differentiated groupings. We recognized the importance of joint ventures and customer supplier relationships in this regard but view them as secondary. What on the surface looks like an undifferentiated mass of interlocks, we argue, is in fact a highly structured system with the capacity for order. Inter-firm relationships, then, are organized by the predominance and pre-eminence of financial relationships and the clearly defined division between banks and insurance companies. Moreover, the structure of regional-national relations, organized along financial lines, provides further order to the daily and yearly activities of modern U.S. big business.

## CONCLUSION

Recent research on elite unity has concentrated on identifying mechanisms capable of resolving two contradictory tendencies within the capitalist class: conflicts of interest among competing firms or industries on the one hand, and the shared needs of the corporate world on the other hand. Inter-organizational unity can stem from the sources within the business sector itself. Our study explored the latter realm and found another mechanism with the potential for maintaining cohesion within the corporate sector: financial institutions, and commercial banks in particular.

The structure of the interlock network suggests that the largest corporate actors are integrated, and conflict and disorganization are contained by overriding pressures toward unity. Though order and chaos reside side by side, long-range processes favor financial interests. Nevertheless, the state still participates in intercorporate conflicts; anti-trust suits are brought against industrial giants. Non-governmental policy planning organizations have also played an important role in maintaining elite unity, and the business world has demonstrated its ability to organize without any visible outside help. Thus, elite unity is maintained through overlapping processes of interest resolution: no one primary mechanism is sufficient to accomplish this task.

## REFERENCES


Allen, Michael P.
1974 "The structure of inter-organizational elite cooptation: Interlocking corporate directors." American Sociologial Review 39:393–406.
Baran, Paul and Paul Sweezy
1966 Monopoly Capital. New York: Monthly Review Press.
Bearden, James, William Atwood, Peter Freitag, Carolyn Hendricks, Beth Mintz, and Michael Schwartz
1975 "The nature and extent of bank centrality in corporate networks." Paper presented at the annual meeting of the American Sociological Association, San Francisco, September.





Berle, A. and G. Means
1968 [1932] The Modern Corporation and Private Property. New York: Harcourt, Brace and World.
Block, Fred
1977 "The ruling class does not rule: Notes on the Marxist theory of the state." Socialist Revolution 7:6–28.
Bonacich, Philip
1972 "Techniques for analyzing overlapping memberships." Pp. 176–86 in Herbert Costner (ed.), Sociological Methodology. San Francisco: Jossey-Bass Inc.
Bunting, David and Jeffrey Barbour
1971 "Interlocking directorates in large American corporations, 1896–1962." Business History Review 45:317–335.
Burch, Philip
1972 The Managerial Revolution Reassessed. Lexington, Kentucky: D.C. Heath & Co.
*Business Week*
1970 "Why the big traders worry industry." July 25:53–61.
1977a "Why Wall Street now loves Occidental Petroleum." January 10:36–37.
1977b "Steel's sea of Trouble." Sept 19:66–88.
1978 "Companies jockey to nail down credit lines." January 30:62–64.
Chevalier, J.M.
1969 "The problem of control in large American corporations." Antitrust Bulletin 14:163–180.
Daughen, Joseph R. and Peter Binzen
1971 Wreck of the Penn Central. Boston: Little Brown.
Domhoff, G. William
1970 The Higher Circles. New York: Random House.
1971 "How the power elite set national goals." Pp. 210–219 in Robert Perucci and Marc Pilisuk (eds.), The Triple Revolution Emerging. Boston: Little Brown.
1979 The Powers That Be. New York: Random House.
Dooley, Peter
1969 "The interlocking directorate." American Economic Review 59:314–323.
Eakins, David
1966 "The development of corporate liberal policy research in the United States. Unpublished Ph.D. dissertation, University of Wisconsin.
Esping-Anderson, G. Roger Friedland, and Erik Olin Wright
1976 "Modes of class struggle and the capitalist state." Kapitalistate 4(5):186–220.
Federal Trade Commission
1951 Report on Interlocking Directorates. Washington, D.C.: U.S. Government Printing Office.
Fennema, Meindert and Huibert Schijf
1979 "Analyzing interlocking directorates: Theory and methods." Social Networks 1:297–332.
Fitch, Robert and Mary Oppenheimer
1970 "Who rules the corporations?" Socialist Revolution, Parts I-III 4:73–108; 5:61–114; 6:33–94.
*Forbes*
1978 "No more whales." May 29:85.
*Fortune Magazine*
1973 "Jim Ling tries his wings one more time." June: 139.
Freitag, Peter
1978 "Class struggle and the rise of government regulation." Paper presented at the annual meeting of the American Sociological Association, San Francisco, September.
Gogel, Robert
1976 "Interlocking directorships and the American corporate network." Unpublished Ph.D. dissertation, University of California, Santa Barbara.
Gold, David, Clarence Lo, and Erik Olin Wright
1975 "Recent developments in Marxist theories of the state." Monthly Review 27:29–43.
Hillstrom, Roger and Robert King
A Decade of Corporate and International Finance. New York: IDD, Inc. No Date.
Koenig, Thomas and Robert Gogel
1979 "Models of the significance of interlocking corporate directorships." American Journal of Economics and Sociology 38:173–86.
Kotz, David
1978 Bank Control of Large Corporations in the United States. Berkeley: University of California Press.
Levine, Joel
1972 "The sphere of influence." American Sociological Review 37:14–27.
1977 "The network of corporate interlocks in the United States." Paper presented at the annual meeting of the American Sociological Association, Chicago, September.

Loving, Rush
1973 "LTV's flight from bankruptcy." Fortune Magazine 37:136.
Mace, Miles
1973 Directors: Myth and Reality. Boston: Harvard University.
Mariolis, Peter
1975 "Interlocking directorates and the control of corporations." Social Science Quarterly 56:425-439.
1977 "Interlocking directorates and finance control: A peak analysis." Paper presented at the annual meeting of the American Sociological Association, Chicago, September.
1978 "Bank and financial control among large U.S. corporations." Unpublished Ph.D. dissertation, State University of New York, Stony Brook.
Mariolis, Peter and Michael Schwartz
1972 "Network analysis of corporate interlocks." Paper presented at the Conference on Network Analysis, Math-Social Science Board of the National Science Foundation. Camden, Maine, October.
Mariolis, Peter, Michael Schwartz, and Beth Mintz
1979 "Centrality analysis: A methodology for social networks." Paper presented at the annual meeting of the American Sociological Association, Boston, September.
Markusen, Ann
1978 "Regionalism and the capitalist state: The case of the United States." Kapitalistate 7:39-62.
Medvin, Norman
1974 The Energy Cartel: Who Runs The American Oil Industry. New York: Random House.
Menshikov, Sergei
1969 Millionaires and Managers. Moscow: Progress Publishers.
Mintz, Beth
1978 Who Controls the Corporation? A Study of Interlocking Directorates. Unpublished Ph.D. dissertation, State University of New York, Stony Brook.
Mintz, Beth and Michael Schwartz
1981 Bank Hegemony, Corporate Networks and Intercorporate Power: A Study of Interlocking Directorates in American Business. Unpublished manuscript. State University of New York, Stony Brook.
Mizruchi, Mark
1980 "The structure of the American corporate network: 1904-1974." Unpublished Ph. D. dissertation, State University of New York, Stony Brook.
Mizruchi, Mark and David Bunting
1979 "Influence in corporate networks: An examination of four measures." Paper presented at the annual meeting of the American Sociological Association, Boston, September.
Mokken, R.J. and F.N. Stokman
1974 "Traces of power I and II: Power influence as political phenomenon." Paper presented at the Joint Sessions of the European Consortium for Political Research, Strasbourg, France, April.
1979 "Corporate-government networks in the Netherlands." Social Networks 1:333-358.
Mollenkopf, John
1975 "Theories of the state and power structure research." Insurgent Sociologist 5:245-264.
Moody's Investors Service, Inc.
1974 Moody's Industrial Manual. New York: Moody's Investors Service Inc.
National Resources Committee
1939 The Structure of the American Economy. Part 1, Basic Characteristics. Washington, D.C.: U.S. Government Printing Office.
*Newsday*
1977 "Sizing up the power of the banks." August 7:56.
*New York Times*
1974 "Budd builds on autos." November 10, Section 3:1.
O'Connor, James
1973 The Fiscal Crisis of the State. New York: St. Martin's Press.
Offe, Claus
1973 "The abolition of market control and the problem of legitimacy." Kapitalistate 1:109-116.
Palmer, Donald
1980a "Broken ties: A theoretical and methodological critique of corporate interlock research." Unpublished Ph.D. dissertation, State University of New York, Stony Brook.
1980b "Broken ties: Some political and inter-organizational determinants of interlocking directorates among large American corporations." Paper presented at the annual meeting of the American Sociological Association, New York, September.
Pfeffer, Jeffrey and Gerald Salancik
1978 The External Control of Organizations. New York: Harper and Row.
Poulantzas, Nicos
1973 Political Power and Social Classes. London: New Left Review.



Ratcliff, Richard
1979-1980 "Capitalist class structure and the decline of older industrial cities." Insurgent Sociologist 2(3):60-64.
Rochester, Anna
1936 Rulers of America. New York: International Publishers.
Scott, John
1979 Corporations, Class and Capitalism. London: Hutchinson & Co.
Shoup, Lawrence H. and William Minter
1977 Imperial Brain Trust: The CFR and United States Foreign Policy. New York: Monthly Review Press.
Sonquist, John and Thomas Koenig
1975 "Interlocking directorates in the top United States corporations: A graph theory approach." Insurgent Sociologist 5:196-230.
1978 "Examining corporate interconnections through interlocking directorates." Pp. 53-84 in Tom Burns and William Buckley (eds.), Power and Control. New York: Sage.
U.S. Congress: House of Representatives
1967 Control of Commercial Banks and Interlocks Among Financial Institutions. Washington, D.C.: U.S. Government Printing Office.
1968 Commercial Banks and Their Trust Activities: Emerging Influence on the American economy. Subcommittee on Domestic Finance of the Banking and Currency Committee. Washington, D.C.: U.S. Government Printing Office.
Useem, Michael
1979 "The social organization of the American business class." American Sociological Review 44:553-571.
Villarejo, Don
1961 "Stock ownership and the control of corporations." Somerville, Massachusetts: New England Free Press.
Warner, W. Lloyd and Darab Unwalla
1967 "The system of interlocking directorates." Pp. 121-137 in Warner, Unwalla and Trimm (eds.), The Emergent American Society, Vol. 1: Large Scale Organizations. New Haven: Yale University Press.
Weinstein, James
1968 The Corporate Ideal in the Liberal State. Boston: Beacon Press.
Whitt, J. Allen
1979-1980 "Can capitalists organize themselves?" Insurgent Sociologist 2(3):51-59.
Zeitlin, Maurice
1974 "Corporate ownership and control: The large corporation and the capitalist class." American Journal of Sociology. 5:1073-1119.