Jel JOURNAL OF ECONOMIC ISSUES
Vol. XVI No. 4 December 1982

The Transfer of Control in Large Corporations: 1905-1919

David Bunting
and
Mark S. Mizruchi

In 1905, *Wall Street Journal* editor Sereno S. Pratt examined the control of large American corporations and found that, despite its republican form, "in practical operation, . . . the stock company is subject to autocratic or oligarchical control. The stockholders do not vote—they send proxies that are held by the powers that be. . . . It is not difficult for a small group of financiers to dominate properties worth billions of dollars, belonging to thousands of investors, who have really no voice in their management" [Pratt 1905, pp. 6704–5]. Twenty-five years later, A. A. Berle, Jr. and G. C. Means made a similar argument, but suggested that power "ultimately (lay) in the hands of management itself, a management capable of perpetuating its own position" [Berle and Means 1932, p. 124].

While both Pratt and Berle-Means believed that the inability of owners to effectively exercise ownership rights led to their usurpation by other, better organized forces, they disagreed as to who actually seized control. Berle and Means assumed that managers took control from shareholders. On the other hand, Pratt concluded that shareholders had long lost out to

The authors are, respectively, Professor of Economics, Eastern Washington University, Cheney, and Assistant Professor of Psychiatry and Biostatistics, Scientific Computing Center, Albert Einstein College of Medicine, Bronx, New York. *An earlier version was presented at the 1980 Business History Conference. G. William Domhoff offered many perceptive comments.*

Copyright © 2001 All Rights Reserved

individuals who broadly can be described as "finance capitalists."[1] These views can be reconciled if, in the evolution of the control of large corporations, managers succeeded finance capitalists rather than owners. Once this is recognized, then the commonly accepted Berle-Means explanation for the separation of ownership from control becomes incomplete because it does not consider the process by which the control of large corporations shifted from finance capitalists to managers, and becomes misleading by failing to indicate that financial control of American industry preceded management control.

The possibility that control by finance capitalists was an integral step in the development of large corporations immediately raises an important issue: While the idea of management control is based on an analysis of the locus of control in particular companies, financial control is based on the location of control in the structure of intercorporate relations. By ignoring this structure, Berle and Means may have come to believe that a dispersal of corporate stock directly resulted in the rise of management control, when in fact, as Pratt indicated, it had already resulted in control by finance capitalists.

It is our view that between about 1900 and 1919 financial control of large American corporations became institutionalized as large firms established complicated relationships with most other large companies. These relationships were established by various individual finance capitalists who actively sought them. Near the end of the period these people came under heavy public attack because their influence on the policies of particular companies was thought to be nearly absolute. Congress enacted national legislation to curtail their activities while, coincidentally, many retired from active business or died. However, the control and the relationships established did not disappear. Instead, they were transferred to various subordinates, later identified as managers by Berle and Means. We contend that this institutionalization of financial control resulted in the establishment of enduring relationships among companies, and that the transfer of control from finance capitalists to managers merely resulted in many people doing what only a few did before. While the demonstration of the separation of ownership from control should not be depreciated, it seems to us that comprehension of the full process leading to it is as interesting and as potentially suggestive about the development of U.S. Big Business as the separation itself. Scholars have routinely assumed an owner-manager dichotomy; we maintain that this is incorrect, that different types of control are involved, and that the network of corporations in addition to single companies constitutes a basic unit for analysis.

Copyright © 2001 All Rights Reserved

Control

Control in any corporation has two distinct meanings. On the one hand, operating control entails daily supervision of the corporate asset. At this level, since input factors combine to produce goods and services, there is a close association between control and specific economic activities. On the other hand, policy control involves the ability to generally specify how the corporate asset will be utilized. At this level, general rules and procedures governing the physical corporation are formulated. Since policy control represents ultimate authority and operating control immediate authority, our study is concerned with the possession and transfer of the former, not the latter, in large corporations.[2]

Owners control corporations in a policy sense when they invoke their legal rights and select directors who choose managers to operate the company consistent with the owners' desires. Or, directors can control by selecting managers to operate the company in their interest and not necessarily that of the owners. This situation might arise for reasons such as those Pratt and Berle-Means indicated: owners are too numerous to combine or communicate, suffer indifference or deception, or possess trivial economic interest or divergent investment objectives. Finally, managers can control by selecting themselves or their alter egos as directors. This situation could occur when owners are unable to act as indicated above or when non-stockholding persons lack an outside basis such as control of credit or possession of information to compel their selection as directors.

These three methods of control have a common point—domination of the board of directors (see [Berle and Means 1932, p. 69]). Owners control through their ability to determine the board; directors control their office; managers control in their capacity as directors. Defining corporate control in this manner implies that physical control of the corporate asset does not determine control and that a listing of the board of directors is an enumeration of those individuals who actually control the corporation. It also implies that the rather common view that directors "do not direct" and are virtually powerless in corporate affairs is incorrect. M. L. Mace [1971] is the usual authority cited as supporting this view. In his study, Mace implied that directors functioned mostly as "corporate elders" who allow operating control wide discretion while providing advice and counsel as well as generally acting as the "corporate conscience" [Mace 1971, p. 206]. He also indicated that some directors served to ensure harmonious relations between companies, to retain existing business relations, and to signal the general business community that certain relationships exist

Copyright © 2001 All Rights Reserved

[Mace 1971, p. 201]. Thus, the claim that directors have no power is incorrect, even based on Mace's analysis. While it is likely that some directors have greater influence than others, it still remains that collectively they control their respective corporations.

However, it is very difficult to document the role of directors in the exercise of corporate control. Few directors have revealed their experiences, not only because the topic is extremely sensitive, but also because they are unwilling to expose their intimate business dealings to public scrutiny and possible condemnation. Nonetheless, a few examples have been found that provide a general indication of the uses of control at high levels in large corporations.

Perhaps one of the most vexing problems in oligopolistic markets is the avoidance of mutually destructive policies. An unfriendly act by one competitor invites retaliation by another, which invokes further acts and usually results in slight short-run gain to either. Resolution of such disputes often requires extraordinary steps to reaffirm mutually acceptable business tactics. For example, in 1901 a struggle over control of northwest railroads led to a corner in Northern Pacific stock that threatened the financial stability of the entire nation [Noyes 1909, pp. 294–309]. The leading financial capitalist of the era, J. P. Morgan, was questioned under oath about the dispute:

> QUESTION: Mr. Morgan, you know that the Union Pacific, of course, was a competing line with the Burlington. You know that it had attempted to wrest your property away from you; what was the object in putting their representatives on the board?
>
> J. P. MORGAN: Simply to show that there was nothing that the Northern Pacific management, or J. P. Morgan & Company, or anybody, which had bought the Burlington, to show that they were acting under what we know as a community of interest principle, and that we were not going to have that battle on Wall Street. There was not going to be people standing up there fighting each other [Peter Power v. Northern Pacific Railway Co. 1902, vol. 2, p. 179].

James J. Hill, who was associated with Morgan in the dispute, was also asked about the inclusion of these opposing interests on the Burlington board:

> J. J. HILL: I think Mr. Morgan said: Here, we will put Mr. Harriman on this board, and Mr. Schiff, too, to show them we are not afraid of them. . . . They feared we would swallow them or something. . . . I told them no; we were developing an entirely different section of the country. . . . I think that largely led to those people being put into the Burlington board that

Copyright © 2001 All Rights Reserved

> they might be witnesses; that there was nobody going to dig pitfalls, etcetera, for them in that country [Peter Power 1902, vol. 1, p. 157].

Directors in this situation served most of the functions Mace indicated. They represented an attempt to resolve a difficult dispute and an effort to reestablish mutually acceptable business strategies. They also represented fearlessness or acquiescence and provided information to preclude further treachery.

Morgan also demonstrated the information function of directors when he testified about the precise relationship between Northern Pacific and J. P. Morgan & Company:

> Q: I mean the daily conference between you and the members of your firm who were directors [of Northern Pacific], that was the way you got your advice as to the wishes of the board?
>
> A: They would tell me what the board wanted, but I did not deal with them as members of the board, I was not acting with them in that capacity.
>
> Q: I understood that, but I mean as channels of communication?
>
> A: Channels of communication, yes [Peter Power 1902, vol. 2, pp. 197–8].

Finally, Morgan directly asserted the role of directors in corporate affairs by denying that a majority of stock ownership gave corporate control:

> A: Adding their holdings of both stocks together, they had at that time a majority, but that did not give them control.
>
> Q: Well, what ordinarily controls a corporation besides a majority of stock?
>
> FRANCIS L. STETSON, Morgan's attorney, interjecting: The Board of Directors.
>
> MORGAN: The Board of Directors and the conditions under which the stock is issued.
>
> STETSON: So the Supreme Court has decided [Peter Power 1902, p. 202].

Examples of control and its uses from another perspective were reported by Henry Morgenthau.[3] Early in 1900 he formed the Central Realty Bond & Trust Company, the first large New York City real estate investment trust company. His board of directors was composed of "at least half a dozen of the greatest financial giants of the day—men who, as heads of enormous and often clashing interests, represented nearly every

Copyright © 2001 All Rights Reserved

element in the epic struggle for the financial supremacy of America" [Morgenthau 1922, p. 64]. Morgenthau sought directors who could lend his company status, provide it with financial assistance, secure business for it, and facilitate amenable relations with potential financial competitors. He got James Stillman, "the leading bank president," Frederic P. Olcott, "the leading trust company president," A. D. Juilliard and James N. Jarvie, "the two best known and most influential [board] members of the Mutual Life Insurance Company, the largest investor in mortgages on New York City real estate," as well as Henry O. Havemeyer of the sugar trust, and James H. Hyde of Equitable Life Assurance [Morgenthau 1922, p. 58, 61, 65]. Although some of these directors were bitter business rivals—Jarvie and Havemeyer in sugar, Stillman and Olcott in banking, Juilliard and Hyde in insurance—they all sat together on the Central Realty board because of its extraordinary potential for themselves and their companies.

Morgenthau also explained how James Stillman, "a close second to Morgan," made National City Bank into one of the most powerful financial institutions in the country:

> He made it a leader in financing of industry by attracting to his Board of Directors the heads of the greatest enterprises in the country. These men brought to his bank not only money for deposit, but they brought what the subtle Stillman prized even more, and that was their knowledge and their brains. At his board meetings Stillman learned, at first hand, the inside facts about every business in the country, and this priceless information gave him the key to all the mysteries of financing that lay at the bottom of his success, and at these meetings Stillman had for the asking the advice and counsel of the shrewdest businessmen in the land [Morgenthan 1922, p. 77].

These examples of the uses of control illustrate the importance of the distinction between operating and policy control. Further, they demonstrate that those who controlled corporations used that control to mediate disputes, protect interests, acquire information, and facilitate personal endeavors. These directors also provided information, created respectability, and secured business for their companies. In conclusion, it seems clear that corporations were controlled by their boards of directors and that this control was used to enhance and protect a corporation's interests as circumstances dictated.

Transfer of Control

Although directors exercise policy control, their actual role in corporate governance is "largely advisory and not of a decision making nature,"

Copyright © 2001 All Rights Reserved

and serves mostly "to temper the inclinations of presidents with de facto control, and . . . contribute to the avoidance of excesses" [Mace 1971, pp. 197, 181]. Control of this type is largely negative and oriented toward steering a general rather than a specific course of action. However, in dealing with other corporations and in successfully surviving in a universe of hostile oligopolies, directors assume a much more positive role. As shown by the Northern Pacific episode and Morgenthau's experiences, directors must formulate agreements and understandings while resolving disputes and misunderstandings. In this capacity directors become corporate diplomats seeking accommodations with suppliers, customers, competitors, and lenders as well as with actual or potential friends and foes.

Perhaps the most positive form of corporate diplomacy is when a director of one company becomes a director of another company as well. This action, establishing a formal relationship between two otherwise independent entities, can have many possible consequences. As Mace indicated with reference to investment bankers, it might result in access to inside information, an identification of mutual interests, a declaration of good sponsorship, an indication of captive relationships, a signal to third parties, or a method for getting business [Mace 1971, pp. 128–53]. While it is difficult to determine the effects of any particular interlock, the overall effect of the activity is to establish a rather complicated network of formal relationships among the group of interlocked companies. Those in the network might be linked directly through an exchange of directors or indirectly through other members once, twice, or even three times removed. But whatever the degree of indirection, the relations that establish the network serve as a device for companies to negotiate on matters of mutual concern (for details, see [Mizruchi 1982]). In the following pages, we will consider this notion of a network in greater detail, under the assumption that changes in network relationships disclose changes in corporate relationships.

Previously we indicated that it is probable that only a subgroup of directors participate in corporate governance. For example, Berle-Means found that "approximately 2,000 men were directors of the 200 largest corporations in 1930. Since an important number of these are inactive, the ultimate control of nearly half of industry was actually in the hands of a few hundred men" [Berle and Means 1932, p. 46, fn. 34]. These active directors can be further subdivided into those whose interests concentrate on one corporation and those whom we will call "intercorporate leaders," whose interests transcend any particular company.[4] In effect, there was a hierarchy of directors, based on relative influence in general corporate affairs. At the lowest and least important level are many inactive direc-

Copyright © 2001 All Rights Reserved

tors; next in the hierarchy are active directors involved with a specific company; finally, at the highest level, are found intercorporate leaders involved with many corporations. It is our contention that these latter directors exercised the type of control observed by Pratt and ignored by Berle-Means.

While intercorporate leaders can be defined in a number of ways, we will identify them as interlocked directors because, as shown above, the interests of an interlocked director transcend those of any particular corporation. This definition is especially appropriate for the period of our study (1905–1919) in that lists of interlocked directors have been found, in fact, to contain nearly all of the major finance capitalists then known to be active [Bunting 1976, p. 15]. While this definition fails to identify intercorporate leaders formally affiliated with only one company, it is probable that other specifications will not be much more accurate. Sufficient information does not exist for company-by-company examinations, while financial press surveys suffer from insufficient coverage. Sometimes stock ownership is used to define controllers. Not only does this method fail to explain the control of mutual insurance companies like Mutual Life and New York Life, but also there are examples such as Equitable Life Assurance where absolute ownership could not control [Keller 1963, pp. 246–49]. In addition, as Pratt found, finance capitalists owned little stock in the companies they controlled. Sometimes, judgmental "circles of control" or "webs of influence" were used to identify active directors [Moody, 1904]. While superficially vague, this method is based largely on interlocking directorates and is therefore similar to ours. Finally, it is possible that directors holding multiple positions were, in fact, inactive. Based on biographical sources and historical accounts, we have been unable to identify any of the people on our lists as inactive. Instead, we found that our lists included most of the era's major finance capitalists, either by inclusion or by representation. Thus, we conclude that those who actually controlled large corporations can be identified by their interlocks. This group of intercorporate leaders were the finance capitalists that Pratt contended had financial control of American industry.

We are interested in how this control changed in the years between 1912 and 1919. These years, as well as 1905, selected for an earlier comparison, represent approximate dates in the shift from financial to management control of large corporations. Up through 1912 there was a clear tendency for a few intercorporate leaders to control increasing numbers of companies; however, by 1919 this trend had been reversed. Yet, while the type of control changed at the level of the individual firm, the network of intercorporate relations created in the years prior to 1912 continued with little

Copyright © 2001 All Rights Reserved

modification. In effect, the dominance of individual finance capitalists declined, but their manager-successors continued existing policies with respect to other companies.

To examine this argument, for each of the years indicated we selected a sample of large companies that contained the largest 100 industrials, 25 railroads, 20 banks, and ten insurances as well as 12 large investment houses. For industrials and insurances, we measured size by assets; for rails and banks, we used capitalization (issued stock plus funded debt); we selected for investment houses after an extensive literature review because size data were not then disclosed. (A major source was [Carosso 1970] and the citations therein.) The names of all directors or partners and, in the case of industrials and railroads, top eight officers, were recorded and then processed to determine the extent of interlocking for each year. Specific data sources included *Moody's, Poor's, Manual of Statistics, Insurance Year Book, Banker's Directory and Collection Guide,* and *New York Stock Exchange Directory,* among others (for details, see [Bunting and Barbour 1971]). Overall, the companies in our sample represented a considerable fraction of the assets or capital in their respective economic sectors, ranging from about 30 percent for industrials and banks to more than 70 percent for insurances and railroads. Finally, it should be noted that since interlocks were determined on an exact name-match basis, any spelling or punctuation error would cause the match to fail. Thus, any measurement error would lead to an underestimation of the extent of interlocking.

Table 1 presents summary statistics on interiocking for the three years selected. (Director data could not be found for two 1905 industrials.) The total number of directors and positions increased steadily over time. On the other hand, the number of interlocked corporations remained almost

Table 1. ***Summary Statistics; Interlocking, 1905–1910***

Total:	*1905*	*1912*	*1919*
Corporations	165	167	167
Directors	1944	2110	2262
Positions	2542	2761	2834
Dir/Pos	76.5	76.4	79.8
Interlocked:			
Corporations	145	140	143
Directors	312	324	347
Positions	910	975	919
Dir/Pos	34.3	33.2	37.8

Copyright © 2001 All Rights Reserved

unchanged, the number of interlocked directors increased, and the number of interlocked positions rose and then fell. The decline in interlocked positions from 1912 to 1919 indicates that some change occured in interlocking practices during the period. Between 1905 and 1912, the ratio of directors (total or interlocked) to positions declined, indicating that fewer directors of either type held more positions of either type. However, by 1919 this trend reversed and the ratios began to rise, indicating that relatively more directors held fewer positions.

Greater detail on this shift can be seen by comparing the cumulative distributions of interlocked persons, companies, and positions for 1912 and 1919 as found in Tables 2 and 3, respectively. In 1912, 324 directors with 975 positions interlocked about the same number of companies as did 347 directors in 1919 with 919 positions. However, when we consider directors occupying more than two positions, it is apparent that a quantitative change in affiliating practices took place between the two years. In 1912, for example, nine directors, each with a least nine positions, linked a total of 57 companies, or about a third of the sample. In 1919 only two directors held nine positions and they linked less than half as many companies. Similar conclusions apply to the number of positions held. In 1912, 44 directors holding at least five directorships occupied 298 positions; by 1919, these figures were 24 and 150, respectively. Thus, a comparison of the two years reveals a clear pattern: while the number of interlocked companies remained virtually unchanged, the number of heavily interlocked directors sharply declined. We attribute this decline to the passing of individual finance capitalists as a dominant force in corporate control.

A dramatic indication of this decline is found in Table 4, which shows the number of positions occupied in 1919 by directors who held four or

Table 2. *Cumulative Directors, Companies, and Positions Interlocked: 1912*

Cum. Pos. Held	*Cum. Num. Dirs*	*Cumulative Num. Companies*						*Cumulative Num. Positions*					
		Ind	*Tran*	*Ins*	*I.H.*	*Bank*	*Tot.*	*Ind*	*Tran*	*Ins*	*I.H.*	*Bank*	*Tot.*
2	324	78	25	7	11	19	140	370	241	54	29	281	975
3	134	59	25	5	9	19	117	211	168	28	19	169	595
4	71	54	25	5	6	19	109	135	116	17	13	125	406
5	44	43	24	4	5	18	94	94	88	11	11	94	298
6	27	38	22	4	3	15	82	75	65	8	6	59	213
7	17	33	20	4	2	14	74	54	45	7	5	42	153
8	12	29	19	4	2	14	68	45	34	5	4	30	118
9	9	26	16	4	1	10	57	39	26	5	2	22	94
10+	6	21	12	3	1	7	44	29	19	3	2	14	67

Copyright © 2001 All Rights Reserved

Table 3. ***Cumulative Directors, Companies, and Positions Interlocked: 1919***

Cum. Pos. Held	*Cum. Num. Dirs*	*Cumulative Num.* *Ind*	*Tran*	*Ins*	*I.H.*	*Companies* *Bank*	*Tot.*	*Cumulative Num.* *Ind*	*Tran*	*Ins*	*I.H.*	*Positions* Bank	*Tot.*
2	347	78	25	9	12	19	143	388	211	71	36	213	919
3	121	63	24	8	8	18	121	202	125	28	16	96	467
4	50	54	22	6	3	14	99	101	78	15	8	52	254
5	24	43	19	5	3	13	83	64	42	11	3	30	150
6	14	35	15	5	2	11	68	46	25	9	2	18	100
7	9	26	12	5	2	8	53	35	16	6	2	11	70
8	3	13	8	2	1	3	27	14	8	2	1	3	28
9	2	9	7	2	—	2	20	9	7	2	—	2	20
10+	2	9	7	2	—	2	20	9	7	2	—	2	20

more positions in 1912. The sharp reduction in holdings is obvious. By 1919, 22 (31 percent) of the original 71 intercorporate leaders were not interlocked while another 22 occupied three or fewer positions. For any other number of positions held except one, the 1919 figure is half or less than its 1912 equivalent. Essentially, two factors account for this decline. Beginning early in the twentieth century, financial control of large corporations came under repeated attack in the press and Congress (for example, see [La Follette 1908a and 1908b]). In 1905 a struggle over control of Equitable Life led to a New York State investigation whose disclosures greatly excited public opinion although its remedies had little lasting effect [Keller, 1963]. In 1912, the Pujo Committee investigated the control of money and credit and, while not "proving" control, found its potential existence through a "high degree of financial concentration in New York City. . . . It was centralization of financial power, the diverse, subtle, and personal nature of its influence, and the absence of any public control over it that worried the committee and disturbed so many Americans"[Carosso 1970, p. 153].

Out of this investigation came legislation prohibiting certain forms of industrial, railroad, and banking interlocking. Moreover, it appeared at the time that if these prohibitions were to fail, even more stringent ones would have been enacted. Hence, directors began reducing their directorships. At the same time, many of the people found by Pratt to constitute a financial oligarchy in 1905 had died or retired by 1913 and were not replaced by individuals of similar influence [Keys 1913, p. 400]. This trend, as Table 4 reveals, continued up to 1919. Thus, finance capitalists declined as a dominant force in the control of large corporations partly because of public harassment, partly because of actual or potential pro-

Copyright © 2001 All Rights Reserved

hibitions, and partly as a consequence of death or retirement (for additional details, see [Mizruchi 1982, chap. 7]).

Table 4. ***Number of Positions Held by Directors with Four or More Positions in 1912***

Number Positions	1912 N	1912 %	1919 N	1919 %
0–1	—	—	22	31
2–3	—	—	22	31
4	27	38	9	13
5	17	24	7	10
6	10	14	4	6
7	5	7	5	7
8+	12	17	2	3
Total	71	100	71	100

While the relative influence of finance capitalists declined, the relationships they had established with other corporations remained, although somewhat altered in form. This can be shown by analyzing and comparing the network of corporate affiliations that resulted as intercorporate leaders sought to resolve oligopolistic disputes, form alliances, secure information, and generally seek accommodations in a universe of large companies. As opposed to a concentration on single economic units, the network approach seeks to examine corporate activities in relation to those of all other corporations. One of the major findings of this method is the suggestion that large corporations, at least within the twentieth century, do not exist as independent entities. Instead, they are all directly or indirectly linked through a series of formal relationships [Fennema and Schijf 1978].

As Table 5 shows, for each of the years considered the great majority of companies formed a single, continuous network. In 1905, 145 companies, or 88 percent, were members: in 1912, 137 (excluding three that formed their own separate group) or 82 percent belonged; in 1919, 143 or 86 percent were in the network.[5] Within this system, the maximum distance in successive interlocks from one company to another was six in 1905, declining to five in the following years. This diameter figure means that two companies were indirectly linked, at the extreme, through five others. A more precise measure of corporate affiliating tendencies is the average distance of one company to another. The figures in Table 6 indicate that in any year, any two companies were, on average, connected through two others.

Because any two companies can be interlocked by more than one director, ties rather than interlocks were used to determine the extent of cor-

Copyright © 2001 All Rights Reserved

Table 5. *Summary Statistics, Networks: 1905–1919*

		1905		*1912*		*1919*	
Number Corporations		145		137		143	
Maximum Diameter		6		5		5	
Average Distance		2.57		2.33		2.50	
Ave. Ties per Corp.		371		316		355	
Ties:							
First Order	(%)	927	(9)	1048	(11)	780	(8)
Second Order	(%)	4167	(40)	4711	(51)	4400	(43)
Third Order	(%)	3956	(38)	3053	(33)	4111	(41)
Fourth Order	(%)	1390	(13)	504	(5)	862	(9)
Total	(100)	10440		9316		10153	

porate relationships. Formally, a first-order tie is a direct interlock; a second-order tie, an indirect interlock; a third-order tie, an interlock through two other companies, and so on. However, whereas a company can have any number of direct or indirect interlocks with any other company, it can have only one direct or indirect tie. In 1905, the number of ties—that is, the number of connections—required to link one company with all others in the network averaged 371. This figure declined in 1912, indicating that the network was becoming more dense, but increased thereafter as the connectivity among companies weakened. Table 5 includes the number and percentage of first- (or direct), second-, third-, and fourth- or more order ties for each year. From 1905, the time of Pratt's "financial oligarchy," to 1912, the percentage of first- and second-order ties increased, reflecting the efforts of intercorporate leaders to bring large companies under common control. On the other hand, from 1912 to 1919 the percentage of first- and second-order ties declined, reflecting the diminished influence of finance capitalists.

It is important to note that despite the decline in direct or near-direct affiliations, about the same number of companies continued to remain closely connected to one another. If the intercorporate relationships established up to 1912 by finance capitalists had been severed, then we would expect not only a sharp decline in low-order connections but also in connections of any order as well as in the absolute number of companies linked. This did not happen. Instead, as intercorporate leaders lost influence, their activities were continued by others who had assumed control of the companies involved. We have shown in Table 3 that the number of directors with many interlocks sharply declined by 1919; yet Table 5 shows that about the same number of companies remained connected, although more indirectly. The cause of this change in form but not sub-

Copyright © 2001 All Rights Reserved

stance was the replacement of a few intercorporate leaders, each holding a large number of positions, by a larger number of director-managers, each holding a small number of positions. In other words, while the control of individual companies passed from finance capitalists to managers, the relationships among these companies continued without significant alteration.

The effects of changes in corporate control can also be demonstrated by examining changes in the network relations of identical companies at different points in time. This method focuses directly on the connecting activities of directors by eliminating possible distortions in affiliating patterns caused by sample turnover or by unusually heavily interlocked directors in particular years. The 1905 and 1912 networks had 102 companies in common. The year-by-year order matrix of their connections is found in Table 6. If, between the two years, no changes occurred in the network these companies composed, then only the main diagonal would contain nonzero figures because a first-order link in the earlier year would be continued in the later one, a second would continue as a second, and so on. As can be seen, this did not happen. Instead, while most 1905 first-order links continued in 1912, some became second-, third-, or even fourth-order. Similarly, some second-order links later became first- or third-order. Overall, the upper off-diagonal triangle contains all of the increases in indirect affiliating order while the lower off-diagonal triangle contains all the decreases. From one year to the other, 63 percent of all the connections remained unchanged in order, 20 percent became more direct, and 16 percent less direct. Thus, between 1905 and 1912 there was a slight tendency for companies to become more closely affiliated. This is also shown by the row and column percentages, with the totals for the first- and second-order connections increasing from 60.8 percent in 1905 to 63.7 percent in 1912.

Table 6. ***Network Mobility: 1905–1912***

Year				*1912*			
	Order	*1*	*2*	*3*	*4+*	*Total*	*%*
	1	435	187	31	3	656	12.7
	2	177	1794	488	16	2475	48.1
1905	3	35	586	918	119	1658	32.2
	4+	3	63	182	114	362	7.0
Total		650	2630	1619	252	5151	100.0
%		12.6	51.1	31.4	4.9	100.0	

The year-by-year order matrix of the 1912 and 1919 networks, which had 104 companies in common, is found in Table 7. Compared to the previous table, this one shows a sharp tendency for the order of affiliating to become more indirect over time. For example, more direct 1912 links

Copyright © 2001 All Rights Reserved

were broken in 1919 than maintained, while a large number of second-order connections became third-order. Overall, 58 percent of all connections remained unchanged in order, 11 percent became more direct, and 30 percent less direct. The row and column percentages also show this change. In 1912, 74.6 percent of all network affiliations were first- or second-order; by 1919, this figure had fallen to 61.4 percent. This pattern exactly parallels those previously discussed. Its importance is that although companies ceased to be as closely connected in 1919 as they were in prior years, they nonetheless remained connected. As intercorporate leaders, especially those holding at least four positions, declined in influence, they were replaced by directors who held fewer positions, which reduced the opportunities for direct links, thereby forcing more indirect second- and third-order connections. In other words, the intercorporate relationships established by a relatively few directors between 1905 and 1912 were continued by a much larger number in 1919 and thereafter (see [Mizruchi 1982]).

Table 7. ***Network Mobility: 1912–1919***

Year		*1919*					
	Order	*1*	*2*	*3*	*4+*	*Total*	*%*
	1	355	376	77	1	809	15.1
	2	170	1979	943	92	3184	59.5
1912	3	29	364	765	133	1219	24.1
	4+	1	10	36	25	72	1.3
Total		555	2729	1821	251	5356	100.0
%		10.4	51.0	34.0	4.7	100.0	

We have documented the process by which control of large corporations was transferred from a few finance capitalists to a larger number of corporate directors. The precise reasons for this transfer are many. Continued public hostility, opportunistic political harassment, prohibitory legislation, and threatened punitive actions all tended to restrict individual participation to a few companies. Bernard Baruch, whose financial career spanned both types of control, thought economic growth and complexity were the causal factors:

> Rather often I am asked why it is that we do not have any present-day equivalents to the financial giants who dominated Wall Street at the turn of the century. . . . I believe the main reason why Wall Street has lost that quality of dramatic personal adventure which was so marked in my youth will be found in the astonishing extension of the range and area of economic interests covered by the market's activities [Baruch 1957, p. 133].

Copyright © 2001 All Rights Reserved

Some intercorporate leaders sought to perpetuate their control through their sons, usually with little success. For example, James J. Hill designated his son James N. as his successor. However, the son did not seem to be cut from the same cloth as the father, nor did the father seem ready to actually relinquish control during his lifetime. The result was ambiguity and dissatisfaction, with Hill first considering another son and then non-family managers [Martin 1976, pp. 574–78]. There were numerous variations on this episode, all of which concluded with the son unable or unwilling to exercise control as his father did (for other examples, see [Burr 1927 and Sinclair 1981]).

Other finance capitalists were unable to find successors because they based their control on force of personality, an attribute that cannot be transmitted. The disintegration of the Harriman empire is a case in point:

> Where now is the kingdom of Harriman? All men know the authority of the one man who by his genius and courage created this greatest of all railroad systems is now split amongst a dozen men and delegated to officers in the four corners of the country, so that no man may boast that he controls the policy or dictates the destiny of the Union Pacific itself, less yet the other dozen great corporations that hung on the word Harriman [Keys 1913, p. 4078].

These problems of succession mostly were resolved by default. When some intercorporate leader died, retired, or failed, he was succeeded by his subordinates, all of whom were directly involved with the operation of distinct parts of his corporate network. Practically no other form of succession was possible because no other group was sufficiently familiar with the companies involved. However, whereas previously the separate parts of the network of companies were controlled by one person, now separate people controlled major parts. This result, which we showed led to a large number of directors continuing their established intercorporate relationships, also led Berle and Means to conclude that large corporations were manager-controlled. What they failed to realize was that by the time of their study in 1930, intercorporate relations had become institutionalized and were no longer an obvious factor in the control of large companies.

Conclusion

We have sought to show that both the notion and evolution of corporate control is more complicated than is commonly assumed. On the one hand, control can involve physical possession of the corporate asset or the more nebulous ability to dictate use of the asset. If control is thought to be based

Copyright © 2001 All Rights Reserved

on possession, then it always leads to the owner-manager dichotomy because by definition, possessors who are not owners must be managers. Control based on the ability to dictate use is much more difficult to establish because there is no clear association between a company and those who dictate its activities. We have argued that directors had this power, although only a subset chose to exercise it. Identified as intercorporate leaders, this subset was defined by its extra-company activities, which, during the period we examined, consisted of interlocking directorates. We contended that large companies formed interlocks so they could amenably resolve disputes as well as protect their interests, signal rivals, and generally survive in a hostile environment.

Control in this sense of interlocked directors specifying overall policy implies that one cannot make precise distinctions between companies. If a director, or a group of directors, contributes to the formulation of policies governing two corporations, can these two economic units be considered independent of each other? Further, we showed that between 1905 and 1919 a large fraction of large American companies were connected together into a formal network. Can any company in this situation be assumed to function independently of any other? We would contend that they cannot, and that their network constitutes a practical solution to the theoretical problem of oligopolistic interdependence. Additionally, denial of the independence assumption implies that large companies should be analyzed collectively rather than separately. However, this methodological shift requires a theoretical foundation that does not now seem to exist.

On the other hand, the introduction of heavily interlocked directors as finance capitalists into the evolution of corporate control requires that some consideration be given to their influence on the development of large companies. We argued that this influence essentially involved establishing a series of formal relationships with other large companies to create a basis for harmony and commonality. We also examined the transfer of control of large companies from finance capitalists to managers. As finance capitalists suffered public attacks or restrictive legislation and as they died or retired, their influence in corporate affairs lessened. For a variety of reasons, they were rarely succeeded by other finance capitalists. Instead, control of their various companies passed, mostly by default, to subordinates who had been retained to manage particular companies. However, while financial control disintegrated into managerial control at the level of the individual firm, the intercorporate network established by the finance capitalists persisted. Thus, although the form of control changed, the structure of relations among large companies remained virtually unaltered, a situation that seems to have continued to this day.

Copyright © 2001 All Rights Reserved

Notes

1. Sullivan cautions that "the promoters and captains of industry were so varied in position and quality that one cannot speak of them as a group" [Sullivan 1927, p. 316]. Yet he failed to heed his own advice and followed the practice of every other historian of the period by adopting a label to identify the collection of men whose activities he was describing: "titans" [Sullivan 1927, p. 338]. Other writers used "interests," "bankers," "financiers," "magnates," "capitalists," and similar variations. Still others did not personify and used "Wall Street," "community of interest," "the System," "trusts," "finance," and so on [compare Sullivan 1927, pp. 326–29; Noyes 1909, pp. 284–354; and Youngman 1907]. We have adopted the phrase "finance capitalists" to emphasize that we are considering a special class of people within a capitalistic system. Since these people were involved in financial transactions that usually had great impact on the economy, we selected the adjective "finance" rather than "large," "big," "immense," or "humongous" to identify the particular capitalists of our interest. Later in the paper the phrase will be operationally defined.
2. For a modern discussion of control see D. M. Kotz [1978, pp. 14–22], whose analysis, from a slightly different perspective, is similar to ours.
3. "I have not heard of any man who had intimate business relations with the financial giants of that period, who has described, from his own experience, the intrigues and passions, the personalities and methods, of those men who dominated the financial structure of America" [Morgenthau 1922, p. 64]. "I propose to give the reader a picture of the way in which some financial deals were made in 'Wall Street,' and the control of corporations bandied about by a nod of the head, frequently given as a reward for a personal favor, or withheld as punishment for a personal slight" [Morgenthau 1922, p. 66].
4. The phrase "intercorporate leaders" is based on the "interorganizational leaders" concept of R. Perrucci and M. Pilisuk [1970].
5. A shortest path net work was calculated using R. W. Floyd's algorithm [Floyd 1962]. In a matrix w of k by k size where k = number of corporations, let element $w(i,j) = 1$ if corporations i and j are interlocked and $w(i,j) = 0$ if not interlocked. The kth iteration of w contains the shortest paths between any two elements if the elements are calculated by $w(k,i,j) = min(w(k-1,i,j), w(k-1,i,k) + w(k-1,k,j))$.

References

Baruch, B. M. 1957. *Baruch: My Own Story.* New York: Henry Holt.
Berle, A. A. Jr., and G. C. Means. 1932. *The Modern Corporation and Private Property.* New York: Macmillian.
Bunting, D. 1976. "Corporate Interlocking: Part I—The Money Trust." *Directors and Boards* 1 (Spring): 6–15.
Bunting, D., and Jeffrey Barbour. 1971. "Interlocking Directorates in Large

Copyright © 2001 All Rights Reserved

American Corporations, 1896–1964." *Business History Review* 45 (Autumn): 317–35.
Burr, A. R. 1927. *The Portrait of a Banker: James Stillman, 1850–1918.* New York: Duffield.
Carosso, V. P. 1970. *Investment Banking in America.* Cambridge, Mass.: Harvard University Press.
Fennema, M., and H. Schijf. 1979. "Analyzing Interlocking Directorates: Theory and Methods." *Social Networks* 1 (May): 297–332.
Floyd, R. W. 1962. "Algorithm 97: Shortest Path." *Communications of the Association for Computing Machinery* 5 (June): 345.
Keller, M. 1963. *The Life Insurance Enterprise, 1885–1910.* Cambridge, Mass.: Harvard University Press.
Keys, C. M. 1913. "The New Democracy of Business." *World's Work* 25 (February): 400–20.
Kotz, D. M. 1978. *Bank Control of Large Corporations in the United States.* Berkeley: University of California Press.
La Follette, R. M. 1908a. "Consolidation of Banking and 'Big Business.'" Congressional Record, 60th Congress, 1st Session, 42 (part 4): 3435–56.
La Follette, R. M. 1908b. "Critics Answered—Trust Control Analyzed." Congressional Record, 60th Congress, 1st session, 42 (part 4): 3793–805.
Mace, M. L. 1971. *Directors: Myth and Reality.* Boston: Division of Research, Graduate School of Business Administration, Harvard University.
Martin, A. 1976. *James J. Hill and the Opening of the Northwest.* New York: Oxford University Press.
Mizruchi, M. S. 1982. *The American Corporate Network: 1904–1974.* Beverly Hills: Sage Publications.
Moody, J. 1904. *The Truth About The Trusts.* New York: Moody.
Morgenthau, H. 1923. *All in a Life-time.* Garden City, N.Y.: Doubleday, Page.
Noyes, A. D. 1909. *Forty Years of American Finance.* New York: G. P. Putnam's Sons.
Perrucci, R., and M. Pilisuk. 1970. "Leaders and Ruling Elites: The Interorganizational Bases of Community Power." *American Sociological Review* 35 (December): 1040–56.
Peter Power v. Northern Pacific Railway Co. 1902. "Special Examiner's Transcript—Defendant's Testimony," U. S. Circuit Court, District of Minnesota, Equity Case 526.
Pratt, S. S. 1905. "Our Financial Oligarchy." *World's Work* 10 (October): 6704–14.
Sinclair, A. 1981. *Corsair: The Life of J. Pierpont Morgan.* Boston: Little, Brown.
Sullivan, M. 1927. *Our Times II: America Finding Herself.* New York: Charles Scribner's Sons.

Copyright © 2001 All Rights Reserved