By David Bunting
GRADUATE STUDENT IN ECONOMICS
UNIVERSITY OF OREGON

and

Jeffery Barbour
GRADUATE STUDENT IN ECONOMICS
FLORIDA STATE UNIVERSITY

Interlocking Directorates in Large American Corporations, 1896-1964*

An examination of interlocking directorates in major American businesses since 1896 indicates that the incidence of interlocking has declined considerably in this century.

Industrial America experienced two vast and fundamental changes between 1896 and 1905. First, large corporations, stigmatized as "trusts," became the predominant business form. The 100 largest corporations not only increased their average size four times during this ten-year period, but in addition, gained control of 40 per cent of the nation's industrial capital.[1] Most of these organizations were new; many were less than ten years old. Second, certain fundamental property rights disintegrated. Corporate shareholders found it nearly impossible to exercise the ownership rights of their stock. More than one stockholder, when questioning some corporate proposal, was told simply to "vote for it first and discuss it afterwards." [2]

These circumstances – new, huge, apparently uncontrollable organizations – naturally created concern. Depending upon the enumerator, 300 to 700 corporations were created, promoted, and

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[1] David Bunting, "The Rise of Large American Corporations: 1896–1905," (Ph.D. dissertation, University of Oregon, in preparation), Chapter II.

[2] Alexander D. Noyes, *Forty Years of American Finance* (New York, 1909), 344.

floated after 1896.[3] Many of these quickly disappeared into new promotions; some were frauds; most enjoyed indifferent success; a few returned handsome dividends.[4] Nearly all were promoted as devices to gain large dividends through the elimination of competition, the consolidation of inefficient organizations, and the exercise of large-scale economies.[5] Yet these supposed benefits failed to convince many citizens. Instead, these promotions appeared to be merely financial machinations to replace local enterprises with national consolidations.

Many corporate promoters were unscrupulous megalomaniacs, bent on creating financial empires. Since social and legal constraints were lacking, megalomania prevailed and "empires" were created. These in turn attracted other similarly inclined individuals who attempted to construct their own giant enterprises or capture those already in existence. Titanic financial battles ensued. Well known examples include the Harriman-Hill fight over the Chicago, Burlington & Quincy, the Standard Oil-Lawson-Heinze dispute in copper, and Morgan's termination of C. W. Morse's chain banking activities.

Out of this chaos arose "communities of interest" wherein various properties were shared. Thus, Hill and Harriman compromised with Northern Securities, the Pennsylvania Railroad purchased stock in competing lines, Standard Oil interests collaborated with the National City Bank, and J. P. Morgan constructed voting trusts. Because this activity was limited to a few principals, the public, lacking power, was excluded. Control of much of American finance and industry passed into the hands of a few individuals.

Over the years, the magnitude of this control has been studied and restudied with the common conclusion that financial oligarchies controlled the economy then and still exercise that control today. In 1905, Seno Pratt, an editor of the *Wall Street Journal*, identified "the seventy-six men who make up the 'Business Senate' of the United States — what they control — their cliques and parties."[6] Pratt further stated, "In practical operation . . . the stock company

[3] Seven hundred ninety-three trusts (453 industrial and 340 local or "natural") are listed in the *Congressional Record*, XXXVI (1903), pp. 1848–1854; 628 trusts are found in the *Congressional Record*, LI (1914), 14218–14221; Moody has 445 industrial, utility, and transportation trusts, see John Moody, *The Truth About The Trusts* (New York, 1904), 453–477.

[4] Some well known failures and frauds are found in Arthur S. Dewing, *Corporate Promotions and Reorganizations* (Cambridge, Mass., 1914); the viability of these promotions is indicated by Shaw Livermore, "The Success of Industrial Mergers," *Quarterly Journal of Economics*, L (1935–36), 68–95.

[5] Noyes, *Forty Years of American Finance*, 118.

[6] Seno S. Pratt, "Our Financial Oligarchy," *World's Work*, X (1905), 6704.

is subject to autocratic or oligarchical control. The stockholders do not vote – they sign proxies . . . . 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 vote in their management. This power of control may occasionally be lost; the stockholders may revolt, or rival capitalists buy in, but in general it can be perpetuated." [7] Speaking in the Senate in 1908, Robert La Follette continued Pratt's argument: "the statement that the business of the country in a national sense is controlled by less than 100 men – by less than 50 men, aye by a mere handful of men, requires the citation of no authority further than the list of directors of transportation, industrial, and financial trusts, combinations, and corporations of the country. The official records of these institutions are in themselves the proof." [8] Thirty years later, after examining the largest 250 American corporations, the National Resources Committee concluded that "it is apparent from the foregoing analysis that the corporate community, though not formally organized, does build up into significant and more or less interrelated interest groupings . . . . The main importance of the corporate community . . . lies in the controls exercised over the policies of the larger corporations, through them affecting the whole American economy." [9]

Peter C. Dooley, using a corporate sample similar to that of the National Resources Committee, compared control in 1964 [10] with that of 1935. He found: "The institution of the interlocking directorate is extensive and enduring. Most of the large corporations have been interlocked with other large corporations for many decades." [11]

Finally, a 1969 Federal Trade Commission report on corporate mergers states that "The present study . . . provides voluminous evidence that the existing law on interlocking directorates is inadequate and that interlocks among our great corporations are especially inimical to competition because the economy has become increasingly concentrated among a few hundred corporations." [12]

Despite this extensive study, the phenomenon of interlocking directorates has yet to be cast in historical perspective. Dooley's

[7] *Ibid.*, 6704–6705.

[8] *Congressional Record*, XLII (1908), 3795.

[9] U.S. National Resources Committee, *The Structure of the American Economy: Part I. Basic Characteristics* (Washington, 1939), 163.

[10] Dooley discusses his results as if they describe interlocking in 1965; however, his bibliography indicates he used 1964 data. See Peter C. Dooley, "The Interlocking Directorate," *American Economic Review*, LIX (1969), 314–323.

[11] *Ibid.*, 322.

[12] U.S. Senate, Committee on the Judiciary, Subcommittee on Antitrust and Monopoly, *Economic Report on Corporate Mergers: Part 8a* (Washington, 1969), 27.

study shows little change in interlocking between 1935 and 1964, but the extent of interlocking before 1935 is unknown. Pratt and La Follette argued that extensive interlocking existed during the zenith of "finance capitalism," but offered little systematic data to support their contentions. Consequently, it is not known if the practice of interlocking directorates developed concurrently with the rise of large corporations during the great merger movement or sometime later as these corporations established themselves in the economy.

In the following pages we examine the persistence of interlocking directorates among the 100 largest industrial corporations, fifty largest public utilities, twenty-five largest transport companies, twenty largest banks, and twelve large investment houses from 1896 to 1905, and for the years 1935 and 1964.[13] For industrial, utility, and transport organizations our sample includes all corporate directors as well as the eight highest ranking officers for each corporation about whom we could locate data for the appropriate years. Managers are included so that all possible direct interlocks can be discovered. However, since managers of banks and investment houses were difficult to identify, we included only the directors or partners of these organizations.

Data and Methodology

For 1905 and before, we used the *Manual of Statistics* as our basic source. This publication, a yearly financial handbook, has heretofore not been utilized. We found it superior to the yearly *Manuals* of *Moody's* and *Poor's* as well as the *Financial Chronicle*. It is better organized, contains fewer errors and includes more information than any other source we could locate.[14] Included in the *Manual* are data on industrial corporations for such things as capitalization, dividends, stock prices, directors, officials, products, and a brief financial history. It also contains similar data on railroads, traction enterprises, and (in summary form) on banks. Also, since *Moody's* did not begin until 1900 and *Poor's* concentrated on railroads, the

[13] We are assuming these organizations maintained their approximate relative position in the economy from 1896 to 1964. The only data we have for the 100 largest industrial corporations supports this assumption. In 1899 the 100 largest industrials (including mining) held 35.2 per cent of U.S. industrial capital; by 1904 this share increased to 42.9 per cent. See Bunting, "The Rise of Large American Corporations," chapter II. In 1935, the 100 largest manufacturing corporations held 40.8 per cent of manufacturing assets; by 1964 this share was 45.8 per cent. See U.S. Senate, *Economic Report on Corporate Mergers*, 173.

[14] For an extended discussion of the *Manual of Statistics* see Bunting, "The Rise of Large American Corporations," chapter I.

Manual appears to be the only handbook of any merit existing prior to 1900. However, as the *Manual* does not include bank directors, the *Bankers' Directory and Collection Guide* was used to identify these individuals.

For each year we ranked the largest industrials, rails, utilities, and banks by their capitalization. Capitalization was defined as the book value of issued stock plus funded debt at par. In the case of banks, funded debt was replaced by undivided surplus. Investment houses, chosen from the *New York Stock Exchange Directory*, were selected on the basis of notoriety as indicated in the literature of the period and in later studies.[15] Data were reduced to punched cards and ranked by various computer routines.

An examination of contemporary sources indicates that our method of ranking by capitalization rather than by assets omitted few important corporations. In fact, asset value could not be used because most industrial corporations did not publish these data in the earlier years. Further, data that were published are highly suspect.[16] Finally, we regressed assets on capitalization for forty-seven industrials and fifty railroads and found that our measure understates asset size by approximately 10 per cent.[17]

For 1935 we used the corporations included in the National Resources Committee study. We had difficulty identifying prominent investment houses and consequently were forced to rely on the 1936–1937 *Bankers' Almanac and Yearbook*. Data on corporate directors and managers were taken from various 1936 editions of *Moody's*.[18] For 1964 we took the appropriate largest industrial corporations, transport companies, public utilities, and banks listed in Fortune's *Directory*. Directors and managers of these organizations were taken from *Moody's* as above. Investment house directors were taken from the Commerce Clearing House's *New York Stock Exchange Directory*. Particular houses were selected by a local financial expert.

When data collection was completed, we had approximately 40,000

[15] See, generally: *United States Investor*, X–XVI (1899–1905); Matthew Josephson, *The Robber Barons* (New York, 1962 reprint of 1934); and Gustavus Myers, *History of the Great American Fortunes* (New York, 1909, 1936).

[16] David F. Hawkins, "The Development of Modern Financial Reporting Practices among American Manufacturing Corporations," *Business History Review*, XXXVII (Autumn, 1963), 135–147.

[17] For industrial corporations: Assets = 1.11 *(capitalization), R^2 = .9993, t = 284,27, N = 48. For railroad corporations: Assets = 1.09 *(capitalization), R^2 = .9922, t = 138.68, N = 50.

[18] These manuals, for any given year, primarily included information regarding the preceding year. For example, unless specifically indicated otherwise, *Moody's* for 1936 contained 1935 information.

names on punched cards. This information was then analyzed in an effort to measure the extent of interlocking.

Various methods can be used to interlock independent organizations. Management and directors can interlock, spheres of influence might exist, third parties may coordinate activities, reciprocal relationships might be established, or joint ventures formed.[19] In addition, interlocking can be classified as "primary" or "secondary," depending upon the "main business" interest of the individuals involved.[20]

Because our data are crude, we ignored all forms and classes of interlocking except those by directors and managers. Presently, we have no means of identifying third parties, influence spheres, reciprocal relationships, or joint ventures. We are also unable to determine the main business interests of the 1,300 to 3,400 individuals included in each of the years we consider.

Therefore, we simply give all interlocks equal weight.[21] The number of directorship and management positions held in independent organizations indicates the number of interlocks for a given person. Similarly, the number of outside positions held by directors and managers of a given corporation indicates the enterprise's interlocks with other organizations. Totals for either of these show the extent of individual or organizational interlocks in the economy. Finally, to facilitate exposition, we hereafter treat management positions as directorships. Thus, when we indicate that an individual held seven directorates, we actually mean this individual was director and/or one of the eight highest ranking officers in seven independent organizations.

Our method of counting individual and corporate interlocks is illustrated in the following example. Suppose individuals A, B, and C held positions in corporations X, Y, and Z as indicated:

Individual	Corporations Directing	Total Positions Held
A	X, Y, Z	3
B	Y, Z	2
C	Y, Z	2

[19] For discussions of various methods see: Dooley, "The Interlocking Directorate," 315; Corwin D. Edwards, *Maintaining Competition* (New York, 1964 reprint of 1949), 137; U.S. House of Representatives, Committee on the Judiciary, Antitrust Subcommittee, *Interlocks in Corporate Management* (Washington, 1965), 9–10; and U.S. Senate, *Economic Report on Corporate Mergers*, 198.

[20] U.S. National Resources Committee, *Structure of the American Economy*, 307.

[21] This method has ample precedent. See *Ibid.*, 163; Dooley, "The Interlocking Directorate," 314–16; and U.S. House of Representatives, *Interlocks in Corporate Management*, 9. In fact, this method is used in every study of interlocking we have found.

That is, A was a director of X, Y, and Z, while B and C each directed Y and Z. The total number of positions held then enumerates the number of interlocks for each person. Thus, A was involved in three interlocks and B and C in two each.

We determined the number of interlocks for a given enterprise in a similar manner:

Corporation	Officials Involved in Outside Corporations	Total Interlocks With Other Corporations
X	A, A	2
Y	A, A, B, C	4
Z	A, A, B, C	4

Specifically, X is interlocked with two other corporations through individual A, while Y and Z are each interlocked four times, twice each through A and once each through B and C.

The most obvious method for determining the extent of interlocking is simply that of counting the number of corporations interlocked. This is done in Table 1 which reveals, for years in which sufficient data exist, that 80 per cent or more of the 207 organizations included in our sample were interlocked with at least one other large corporation. By itself, however, this statistic fails to consider the number of individuals or the number of positions interlocked.

TABLE 1

NUMBER OF COMPANIES INTERLOCKED

Year	Interlocked Corporations	Non-Interlocked Corporations	Information Missing
1896	112	32	64
1899	170	21	21
1901	181	16	10
1905	184	21	2
1935	178	27	2
1965	184	23	0

Source: All tables are constructed from data in the authors' samples.

In Table 2, we calculate the number of individuals directing the corporations included in our sample and distribute them by the number of positions held. Interestingly, the percentage holding only one position increased slightly from 1896 to 1964. More interesting is the overall percentage decline in individuals with multiple positions after 1905.

In Table 3, we distribute positions which are weighted by the

TABLE 2

FREQUENCY OF DIRECTORS BY NUMBER OF POSITIONS HELD

Year	Number of Positions										Number of Directors
	1 %	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10+ %	
1896	85.0	10.0	2.4	1.1	0.6	0.4	0.4	0.1	—	—	1290
1897	84.5	9.6	2.7	1.6	0.4	0.6	0.2	0.1	—	0.1	1245
1898	84.6	8.9	3.2	1.6	0.8	0.2	0.5	0.2	—	0.1	1481
1899	85.1	9.2	2.7	1.2	0.8	0.4	0.2	0.2	0.2	0.1	1918
1900	84.3	9.6	2.8	1.3	0.9	0.3	0.4	0.1	0.2	0.3	2015
1901	84.4	9.9	2.6	1.1	0.7	0.6	0.3	0.1	0.1	0.3	2031
1902	83.7	9.4	3.7	1.2	0.9	0.4	0.3	0.2	—	0.3	2123
1903	83.7	9.4	3.6	1.2	0.9	0.6	0.1	0.1	0.1	0.3	2118
1904	82.9	10.1	3.5	1.4	0.8	0.5	0.2	0.1	0.1	0.3	2238
1905	82.4	10.0	4.2	1.4	0.7	0.5	0.4	—	0.2	0.3	2232
1935	86.4	9.2	2.8	1.0	0.4	0.1	—	0.1	—	—	2718
1964	88.3	8.5	2.4	0.5	0.3	—	—	—	—	—	3397

Table 3

Relative Frequency of Positions Held By Directors

Year	Number of Positions										Number of Positions
	1 %	2 %	3 %	4 %	5 %	6 %	7 %	8 %	9 %	10 %	
1896	67.8	16.0	5.8	3.5	2.5	1.9	2.2	0.5	—	—	1617
1897	66.7	15.1	6.5	5.1	1.6	2.7	1.3	0.5	—	0.6	1581
1898	65.5	13.8	7.4	4.8	3.1	0.9	2.6	1.3	—	0.6	1912
1899	66.4	14.3	6.3	3.6	3.3	1.7	1.1	1.0	1.5	0.9	2459
1900	64.6	14.7	6.4	4.1	3.4	1.1	1.9	0.6	1.0	2.1	2629
1901	64.8	15.2	6.0	3.3	2.7	2.7	1.6	0.3	0.7	2.7	2645
1902	63.4	14.2	8.4	3.6	3.4	1.9	1.5	1.1	—	2.5	2803
1903	63.3	14.1	8.2	3.6	3.2	2.8	0.8	0.9	0.6	2.5	2802
1904	62.1	15.2	7.8	4.3	3.0	2.0	1.2	1.1	0.6	2.8	2988
1905	61.1	14.9	9.3	4.3	2.5	2.0	2.1	—	1.2	2.6	3006
1935	71.5	15.2	6.9	3.4	1.7	0.4	0.2	0.7	—	—	3285
1964	75.8	14.6	6.1	1.8	1.4	0.2	0.2	—	—	—	3954

TABLE 4

ABSOLUTE NUMBER OF DIRECTORS HOLDING MULTIPLE POSITIONS

Year	Number of Positions Held									Number of Directors
	2	3	4	5	6	7	8	9	10	
1896	129	31	14	8	5	5	1	—	—	193
1897	119	34	20	5	7	3	1	—	1	190
1898	132	47	23	12	3	7	3	—	1	228
1899	176	52	22	16	7	4	3	4	2	286
1900	193	56	27	18	5	7	2	3	5	316
1901	201	53	22	14	12	6	1	2	6	317
1902	199	78	25	19	9	6	4	—	6	346
1903	198	77	25	18	13	3	3	2	6	345
1904	227	78	32	18	10	5	4	2	7	383
1905	224	93	32	15	10	9	—	4	7	394
1935	250	76	28	11	2	1	3	—	—	371
1964	288	80	18	11	1	1	—	—	—	399

number of people holding them.[22] Immediately apparent is the relative rise of individuals occupying one position in the years after 1905. In 1905, 61 per cent of the positions existing in our sample were occupied by individuals who held only one position. By 1935 this percentage had increased to 72 and by 1964 to 76 per cent. Thus, contrary to Dooley's findings, interlocking directorates have declined rather than increased over time. We find more interlocking in 1905 than in 1935 and more in 1935 than in 1964. Dooley's conclusions differ from ours primarily because our study includes a more comprehensive period of time.

Another indication of decline in interlocking is found in Table 4 where the absolute number of directors holding multiple positions is shown. Despite a nearly 50 per cent increase in the number of positions from 1905 to 1964, individuals holding positions in two independent organizations increased but 30 per cent. Further, there was an absolute decrease in office holders for all other multiple positions greater than two.

In summary, the percentage of directors and managers who held one or two positions has remained nearly constant over time. Furthemore, the frequency with which a single position is held has increased since 1905. Finally, even though the number of positions available for interlocking has grown over the same period, the absolute number of directors holding multiple positions, with one exception, has declined.

The number of interlocked companies might lead to the conclusion that the interlocking directorate has been used almost uniformly as a means of concentrating control throughout the twentieth century. As Table 1 reveals, the number of interlocked corporations remained within three of the 1901 level of 181 for every year examined thereafter. However, while the number of interlocked corporations remained virtually the same, the extent to which they were interconnected declined greatly. By 1964, the total number of interlocks among these companies fell to less than half its 1905 peak as shown in Table 5. The intensely interlocked corporation has vanished. For example, in 1905 directors and managers of the twenty most interlocked companies held 1,221 positions in other enterprises, an average of sixty-one interlocks per company. By 1964 this average had fallen to twenty-four.

[22] That is, we multiply the number of individuals by their number of positions and divide by total positions for each year.

Table 5

Yearly Number of Interlocks Among the Top 207 Companies

Year	(1) All Interlocked Companies	(2) 20 Most Interlocked Companies	(3) 40 Most Interlocked Companies	(4) 60 Most Interlocked Companies	(5)[a] Mean No. of Interlocks
	Number of Interlocks				
1899	2258	853	1351	1658	13
1905	3369	1221	1887	2360	18
1935	1779	586	948	1211	10
1964	1551	485	774	993	8

[a] Column (5) = (column (1))/(number interlocked companies).

Table 6

Cumulative Number of Corporations Interlocked

Number of Interlocks per Company	Number of Corporations					
	1896	1899	1901	1905	1935	1964
>100	0	0	0	1	0	0
80–99	0	0	1	3	0	0
60–79	1	1	4	9	0	0
50–59	2	2	10	11	0	0
40–49	2	11	16	20	1	1
30–39	4	22	31	38	7	3
25–29	9	30	40	48	15	8
20–24	15	40	52	56	23	16
15–19	30	51	67	79	43	29
10–14	46	78	89	107	70	61
8–9	54	87	103	118	88	83
6–7	61	109	117	136	112	107
4–5	79	131	139	154	129	129
3	92	141	149	166	139	145
2	101	152	163	175	152	162
1	112	170	181	184	177	184
No Interlocks	32	21	16	21	27	23
No Data	64	21	10	2	3	0
TOTAL	208	212	207	207	207	207

This significant decline is further indicated by Table 6. In 1905, forty-eight companies, nearly a quarter of our sample, were interlocked twenty-five or more times; by 1964 this number had fallen to eight. In 1905, twenty corporations were interlocked forty or more times; yet in both 1935 and 1964, only one corporation was inter-

locked to this extent. This absolute decline becomes even more noteworthy when it is observed that the total number of directorships available in these companies increased substantially over the period studied. Table 7 depicts this increase:

TABLE 7

INDEX OF TOTAL DIRECTORSHIPS ON THE 207 COMPANIES, 1896 = 100

Year	1896	1899	1901	1905	1935	1964
Directorship Index	100.0	152.1	163.6	185.9	203.2	244.0

If the proportion of directors holding multiple positions had remained constant from 1905 to 1964, then, *ceteris paribus*, the number of interlocks in 1964 would have been 4,400. Actually, only 1,551 interlocks are found, about a third of those expected. A final example of the decrease in the intensity of interlocking is found in Table 8, which is self-explanatory.

TABLE 8

OUTSIDE POSITIONS HELD BY THE DIRECTORS OF THE TWO MOST HEAVILY INTERLOCKED CORPORATIONS

Year	1896	1899	1901	1905	1935	1964
Number of Interlocks:						
(1) Most Heavily Interlocked Corporation	65	78	89	118	40	41
(2) 2nd most Heavily Interlocked Corporation	56	51	77	98	39	37

In summary, these tables show a clear, significant decrease in the intensity of corporate interlocking since 1905. We cannot isolate the cause with the information now available. But, unlike other research on the subject, this study includes periods both preceding and following the Clayton Act. The trends we have depicted seem consistent with the hypothesis that anti-interlock legislation did have some impact. Although the Clayton Act prohibitions were severely circumscribed and easily avoided, corporations were aware of their existence. We cannot positively demonstrate that legal activity made interlocking less attractive, but something altered the pattern of events. The flow toward corporate interlocking ceased and its use began to shrink. However, the above tables also reveal a substantial amount of corporate interlocking. Although the intensity with

which the device is used has lessened, the interlocking directorate still persists as a means of concentrating economic control.[23]

Decline of "Prominent Interlockers"

We have demonstrated that the intensity with which the top corporations were interlocked decreased dramatically from 1905 to 1964. However, we must still consider the question of a "financial oligarchy." Have its numbers and influence changed over time?

Table 4 revealed the number of individuals in multiple positions. Although many of these individuals held but two offices, the table nevertheless indicated that a few persons occupied a relatively large number of positions. Indeed, some of these men were so prominent that they could, in the words of Pratt, be considered members of the American business senate. By 1964, this "senate" had apparently ceased to exist. Either prominent individuals were no longer involved with as many companies, or they were unwilling to let their power become apparent. In the latter case they may have used lieutenants to sit in their places to insure that their views were known.

These conclusions arise from an examination of all individuals holding four or more separate positions and the companies they interlocked.[24] The most impressive manifestations of the decline of extreme multiple position holding can be seen in the second and fifth columns of Table 9. Whereas individuals held as many as fifteen positions in 1905, no individual held even half that number in 1964.

An indication of the underlying motives for occupying multiple positions can be found in Table 10 where we determined the proportion of "prominent interlockers" involved in one or more sectors.[25] Our results depict a predominance of intersectoral position

[23] In light of the recent controversy over the bankruptcy of the Penn Central Railroad, we calculated the proportion of nonfinancial corporations included in our sample which were interlocked with one or more of the twenty largest banks in 1964. We found that 68 per cent of the largest 100 industrials, fifty utilities, and twenty-five railroads were interlocked with at least one large bank. Most interlocked with the banks were industrials (75 per cent), followed by rails (67 per cent) and utilities (50 per cent). Thus a large part of American productive capacity is linked to these large commercial banks via interlocking directorates. One need not have much imagination to visualize the magnitude of these percentages should commercial banks in general, rather than the largest twenty such banks, be considered.

[24] We selected four interlocked directorships rather arbitrarily. We do not suggest that this particular number has some special significance in and of itself. Further, we make no claim that the number of interlocking positions held is a perfect ordinal, much less cardinal, measure of economic influence. We maintain only that an individual who holds a relatively large number of positions is likely to have an influence in the business community.

[25] Industrials, railroads, public utilities, and banks each constitute a sector. Since investment houses were not interlocked with each other (see Table 1), we combined them with banks for this discussion.

Table 9

Multiple Positions Held

Year	Number of Individuals: 7 or more positions	5 or more positions	4 or more positions	Most positions individually held
1896	6	11	33	8
1899	13	36	58	11
1901	15	41	63	14
1905	20	45	78	15
1935	4	17	45	8
1964	1	13	31	7

holding. Although this finding does not explain precisely why corporations interlock, it gives some indication of motivation. Apparently, many industrial leaders sought positions to facilitate the operations of the corporations they represented. They wanted their empires to function smoothly and therefore they utilized interlocks to obtain reliable transportation, secure credit, and acquire other similar advantages.

Table 10

Number of Sectors in Which Prominent Individuals Held Positions

Year	No, of individuals holding 4 or more positions	No. exclusively in 1 sector	No. in 2 sectors	No. in 3 sectors	No. in 4 sectors
1896	33	1	9	15	8
1899	57	4	20	24	9
1901	63	2	17	32	12
1905	78	2	25	34	16
1935	44	0	11	25	8
1964	30	1	7	15	7

Table 11 investigates these relationships in more detail. For this table we calculated the percentage of prominent individuals holding positions in each sector. From this, a general pattern of association emerged: one or more industrials, a bank, and in earlier years, a railroad. Also shown is the increasing importance of positions in industrials and banks relative to those railroads and utilities. Most impressive is the fact that by 1964 every person holding four or more positions represented one or more industrial corporations.

Table 11

Per Cent of Prominent Individuals Holding One or More Positions in A Given Sector

Year	No. of indiv.	% holding X or more positions in respective sectors					
		3 or more indust.	2 or more indust.	1 or more indust.	1 or more utility	1 or more railroad	1 or more financial
1896	33	6.1	9.1	48.5	87.9	78.8	72.7
1899	42	31.6	50.9	77.2	61.4	66.7	66.7
1901	63	23.8	44.4	69.8	54.0	77.8	79.4
1905	78	29.5	59.0	79.5	60.0	68.0	70.5
1935	44	36.3	68.1	81.8	56.8	72.7	81.8
1964	30	41.9	90.3	100.0	51.6	51.6	87.1

However, caution is advised. First, these individuals may have been concerned mainly with amassing power rather than facilitating operations. But more crucially, these tables show only obvious positions held outwardly by prominent individuals. As was pointed out years ago during the Pujo hearings, "Interlocking directories are but one of many manifestations of the real evil – the interlocking control of corporations in the same or allied fields of business . . . . The interlocking control is the vice . . . . There may be some doubtful advantage in forcing big business to substitute dummy directors for interlocking directorates; but certainly this does not solve the great evil of the Money Trust." [26]

Thus, a decrease in the number of powerful individuals and the positions which they held does not prove that Pratt's "Business Senate" has lost its power. Perhaps it has become more secretive and less direct or perhaps the efficiency of interlocking has increased.

It might be argued that the number of interlocking positions held is not a useful analytical tool for screening prominent individuals from the hordes of corporate directors. Frederick L. Allen, dealing with 1905, selected ten financiers (and a number of likely alternates) who were "not necessarily the most important men of Wall Street . . . but among the most important." [27] Table 12 lists these men and the number of positions they held.

Of Allen's top ten individuals, our indicator of directorships held clearly points to seven of these as "Captains of Industry." Of the three remaining, J. D. Rockefeller had retired,[28] W. K. Vanderbilt

[26] This conclusion is quoted in U.S. House of Representatives, *Interlocks in Corporate Management*, 28.
[27] Frederick L. Allen, *The Lords of Creation* (New York, 1966 reprint of 1935), 83–85.
[28] *Ibid.*, 83.

TABLE 12

ALLEN'S TEN CAPTAINS OF INDUSTRY AND THEIR ALTERNATES (1905)

Captains of Industry	Number of Interlocking Positions Held	Alternates	Number of Interlocking Positions Held
J. P. Morgan	9	J. J. Hill	4
G. F. Baker	11	E. H. Gary	5
J. Stillman	14	A. W. Mellon	4
E. H. Harriman	11	C. T. Yerkes	0
J. D. Rockefeller	retired	H. C. Frick	6
W. Rockefeller	10	C. M. Schwab	2
H. H. Rogers	7	D. G. Reid	4
J. H. Schiff	7	W. L. Elkins	0 (13)
W. K. Vanderbilt	3	T. F. Ryan	7
J. R. Keene	0	H. L. Higginson	4
		J. W. Gates	3

eschewed business,[29] and J. R. Keene operated for speculation, not control. We also included Allen's alternates in Table 12. Four failed to be identified by our indicator. Of these, Elkins was dead (his 1901 positions are in parenthesis),[30] Yerkes was dying,[31] Gates had been squeezed out,[32] and Schwab was occupied with Bethlehem Steel.[33] We conclude that our method identifies the most generally recognized business leaders.

We have argued that corporate interlocking, by almost any criterion, declined after 1905. Perhaps this conclusion is best indicated by a general consideration of major economic sectors over time. In Table 13 intrasector interlocks are shown; that is, industrials interlocked with industrials, utilities with utilities, railroads with railroads, and so forth. It can be seen that intrasectoral interlocks for every sector decreased after 1905. It is also interesting that there was a slight increase of industrial interlocking from 1935 to 1964.

Table 14 shows intersector interlocks. These were found by counting the number of positions held by an individual with enterprises in all sectors except his own. For example, in 1902 investment houses were linked eighty-three times with industrials, utilities, railroads, and banks. Again, the decline after 1905 is obvious.

However, calculation of intersector interlocks involves double counting. For example, if an individual held positions with a utility,

[29] *Dictionary of American Biography* (New York, various years), XIX, 176.
[30] *Ibid.*, VI, 84.
[31] *Ibid.*, XX, 606–611.
[32] *Ibid.*, VII, 188.
[33] *Ibid.*, XXII–XXIII, 601–603.

Table 13

Intrasector Interlocks

Year	Industrials	Utilities	Railroads	Investment Houses	Banks
1896	29	47	46	0	25
1897	13	32	55	0	43
1898	50	48	51	0	51
1899	118	62	56	0	39
1900	142	83	74	0	50
1901	114	68	74	0	66
1902	150	72	78	0	58
1903	144	59	94	0	64
1904	158	62	93	0	74
1905	177	78	87	0	64
1935	122	39	31	0	11
1964	131	7	12	0	9

Table 14

Intersector Interlocks

Year	Industrials	Utilities	Railroads	Investment Houses	Banks
1896	120	151	159	42	133
1897	138	172	168	52	142
1898	178	221	202	59	178
1899	262	232	222	62	208
1900	266	246	242	74	216
1901	300	253	245	81	250
1902	357	294	285	83	265
1903	353	276	283	79	312
1904	405	307	310	84	329
1905	405	322	313	84	329
1935	273	234	224	29	318
1964	333	198	174	30	318

railroad, and bank, we consider each sector interlocked twice with each of the others. Thus, our method yields the total interlocks which each sector had with all others, not the total number of interlocks.

Conclusion

We have extensively examined the persistence of interlocking directorates among the largest industrial, public utility, transporta-

tion, banking, and investment corporations and firms in the United States for various years from 1896 to 1964. Briefly, we found that while the number of interlocked corporations has remained constant, the percentage of individuals holding multiple positions and the percentage of multiple positions held by single individuals has decreased from 1905 to 1964. We found that the absolute number of individuals holding multiple positions has remained nearly constant since 1905, despite a nearly 50 per cent increase in the absolute number of positions available. That is, the "intensity" of interlocking as measured by the absolute number of corporate interlocks, the average interlocks per corporation, or the presence of individuals holding large numbers of multiple positions has dramatically declined. Further, we examined intrasector and intersector interlocking and found both types to have declined since 1905. Since this decrease is most obvious in sectors under specific anti-interlocking legislation, we believe legal prohibitions might be effective.

The persistence of interlocking has declined. Why? Perhaps in an earlier, simpler, and smaller economy, interlocking was easier, more convenient, or even necessary. Perhaps interlocks around 1905 merely reflected ownership control. Then, with the diffusion of shareholders, particular owners experienced increasing difficulty in placing themselves in organizations in which they held only minor ownership. Thus, interlocking directorates naturally decreased. Perhaps the utility and banking regulations of the 1930's were influential. The increases in intersector interlocks after 1935 lend support to this explanation. Perhaps we are indirectly measuring a decrease in the scarcity of executives. While these conjectures offer interesting hypotheses, we lack the data to examine them here.

Whatever the reason, interlocks have declined after 1905. Dooley and others missed this decline because their investigations lacked historical perspective. Yet we cannot conclude that interlocking among large corporations has ceased, for such connections still exist in considerable numbers. Moreover, we have focused only on direct interlocks involving the largest American corporations. The discovery of third party relationships, extensive ties with smaller organizations, or measure of interlocking quality might fundamentally change our findings.