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PUBLIC UTILITY FINANCING

1930-35

BY

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UNIVERSITY OF MICHIGAN
SCHOOL OF BUSINESS ADMINISTRATION
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ANN ARBOR
1936

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AUTHOR'S NOTE

The author's interest in public utility finance began to develop in 1920 when, as an employee of a public utility company, he participated in "customer ownership" campaigns and watched the financial development of his employer company. During this period contacts and acquaintances were made, and later, circumstances permitted their expansion to a circle of utility executives without whose friendly assistance the writer's research in problems of public utility finance would have been quite impossible. The "friendly assistance" was seldom accompanied by complete agreement in ideas, but equally seldom was it a medium for conveying false information or a barrier to facts. Patient and time-consuming co-operation on the part of utility executives, in interviews and by correspondence, has aided materially in the preparation of this study and in other research projects.

Equally co-operative and helpful were investment bankers whose interest in the subject matter of this study was in common with the writer's. Mere acknowledgment is small payment for the assistance rendered by the business men in the utility industry and in the banking field.

The staff of the Bureau of Business Research performed its usual indispensable functions in the preparation of manuscript, editing, and proofreading. Particular acknowledgment is due to Mr. Roy Lyon, Research Assistant in the Bureau, for his careful work on the technical task of compiling the statistical evidence used in the treatment of the subject of diversification in Chapter 5, and for assisting in the laborious task of classification which is the basis for discussion in the earlier chapters. Colleagues on the faculty of the School of Business Administration were more than helpful with their suggestions and criticisms.

The author assumes all responsibility for the reasoning and conclusions contained in this study. It should be emphasized at the outset, however, that these conclusions constitute no more than suggested lines of reasoning which attempt

an orderly and logical presentation of the questions involved. They are not intended to apply categorically to the financial practices of all utilities nor to the policies of all holding companies. If they serve as an outline for discriminating study of specific problems and situations, their enumeration has not been in vain.

MERWIN H. WATERMAN

Ann Arbor, Michigan
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PUBLIC UTILITY FINANCING, 1930-35

SUMMARY AND CONCLUSIONS

The critic of public utility financial policies and practices who approaches his subject with prejudice is certain to be wrong; and equally wrong will be the utility company management that is set in its ways and policies. The utility situation is inherently dynamic. Conditions affecting the industry are in a constant state of flux, and the evolutionary process is carrying the utility business through and into ever changing operating and financial phenomena. Unwillingness or inability to adapt financial policies to these new and changing conditions must inevitably lead the industry to the same fate that faces the country's railroads. An important although not the major contributing factor to the present-day railroad defaults lies in adherence to financial policies that characterized the pioneering days of that industry. There has been almost no adaptation to changing conditions, and now the status of many railroad companies seems hopeless. If the utility industry should likewise persist in the policies which characterized its pioneering days and which may have been partially justified in that stage of its development, the inevitable end will be financial chaos.

This study was begun with the conviction that utility financial policies do have and will continue to have an important influence on the ability of utilities to meet their obligations to customers and investors. The immediate subjects of investigation were the financial practices of the utilities as they are reflected in the purposes and uses of security contracts and in the financial relationships between operating and holding companies. As the study progressed it became evident that the existence of a great variety of practices and situations would preclude any number of broad general conclusions, but data were available from which suggestive recommendations could be built. In a sense, this study raises more questions than it answers, but it is believed that questions, ade-

quately annotated and provided with material for intelligent consideration, may prove as valuable in the solution of specific problems as would categorical conclusions.

Analysis of the utility financing which took place during the years 1930 to 1935 leads to some interesting and significant conclusions regarding financial policies in the industry. There was a complete change of motivation during the period which was closely related to the economic and political characteristics of the depression. On the verge of recovery, the utilities were still handicapped by factors which precluded the sale of other than refunding issues. The economic and legal conditions of the investment market, as well as those pertaining to the utility industry itself, led to changes in capital contracts and methods of security distribution. Some of these changes seem quite illogical, while others exemplify practices that were of material benefit to the industry, its consumers and its investors.

Consideration of the financial implications of holding company affiliations in the public utility field involves one in complexities, claims, and counterclaims that defy classification. The entire holding company terrain, having been the battleground of so many investigations with varying degrees of bias, has been trampled into unrecognizable shape by the armies of facts and fictions generated by Congressmen, Senators, hired propagandists, lobbyists, and other soldiers of fortune. As a matter of reasonable fact, the author's previously written conclusion, reached after an earlier analysis of holding company policies in general, still holds true: "There is some good in the worst of them and some bad in the best of them."¹

In the present study a number of particular points of financial contact between holding companies and subsidiaries were chosen for observation. It is evident that public utility holding companies are becoming less and less effective as financial instruments necessary to the welfare of the utility industry. The weaknesses that once may have justified parental

¹ "Financial Policies of Public Utility Holding Companies," *Michigan Business Studies*, Vol. V, No. 1 (1932).

assistance in matters of finance have tended to disappear in those holding company systems whose subsidiaries have been developed with a reasonable degree of respect for principles of good management. In the field of financial activity the future public utility holding company will be forced to find a new justification for itself, and this will be largely in terms of the investment trust ideal. Advantages of diversification claimed for holding companies have failed to materialize except as they apply to long-time trends. This all serves to indicate that the combination of reasonably sized operating utilities adds but little to the financial stability of the industry and that holding company financial operations beyond those involved in making equity investments will be increasingly hard to justify.

INTRODUCTION

Since 1929 the utility industry has lived through a very trying but, from the standpoint of the analyst, a very interesting period. The technical problems of production, transmission, construction, and the like, although not completely obliterated, have been forced very much into the background. In their stead have risen problems of self-preservation which have been essentially business problems: those of load building, rate making, and financing. The last has assumed particular importance because of this industry's participation, along with every other industry, in the financial excesses of the years just prior to 1930.

The crash of 1929 and its subsequent reverberations magnified the fact that public utility finance is a very important phenomenon. By its very nature the utility business is one requiring large capital commitments, and partly as a result of this fact investors in the industry are many and diverse. Further, the use of the holding company form and its domination of the industry have led to multiplication of the number of investors. These conditions have caused the public utility business to become "vested with a public interest" quite different from that to which the legalists are wont to point in their discussions of the relationships between utilities and consumers of utility services.

It is the purpose of this study to take cognizance of this public interest in public utility finance by offering the results of an analysis of utility financing during the years 1930 to 1935. The history of this short six-year period affords the opportunity to observe rather radical changes in methods and purposes of capital raising which will be made the basis for most of the subsequent discussion. It is to be hoped that critical analysis of these changes will provide a clear and unbiased picture of the industry's financial problems and perhaps give rise to some reasonable suggestions as to their acceptable solution.

Obviously no current discussion of utility affairs can avoid the holding company problem, but this study will avoid it except in so far as it is related to matters of utility finance. In that respect it plays a part sufficient to justify its constituting the subject of two chapters of this monograph.

For the most part the usual sources of published information were used in obtaining the data compiled in connection with this study. The *Commercial and Financial Chronicle's* records of security offerings comprised the main source of that information, and these were supplemented by Moody's reports on the subject.¹ The various classifications of offerings were arrived at after examination of the characteristics of each issue and offering. Every effort was made to assure the greatest possible accuracy in the classifications and compilation, a card file being built up with a card record for every issue of domestic utility corporations in the years subsequent to 1929. The writer well recognizes that, particularly for the years 1930 to 1932 inclusive, the possibilities for error and omission were rather great. For the subsequent years, improvement in publicity standards assured a completeness of information which gives greater authenticity to the classifications than was possible for the earlier years. However

¹ The amounts of total utility financing used for classification in this study exceed those reported by the *Commercial and Financial Chronicle* in its periodic reports on "Character and Grouping of New Corporate Issues in the United States." This fact gives some assurance regarding the inclusiveness of the data upon which this study is based.

inaccurate the actual dollar figures may be, the relationships developed by the classification and the comparisons of yearly totals are believed to present a reasonably accurate picture of the changing characteristics of utility financing.

For all utility financing effected since the passage of the Securities Act, analysis was based on the information furnished in the prospectuses issued in connection with public offerings. In the instances of unregistered offerings, the issuers co-operated in most cases by furnishing the writer with the necessary comparable data. Thus, practically all financing by domestic operating and holding companies was included in the study.

In general the comments in this study are confined to the gas and electric companies as comprising the major part of the public utility industry. There are occasional references to electric railway and communications companies, usually as exceptions to remarks applying to the gas and electric branches of the industry. This specialized consideration is justified, not by the fact that the railway and communications divisions present no financial problems but by the fact that their problems are so different as to preclude satisfactory concurrent discussion.*

* The statistics on security offerings do include, however, the issues of electric railway and communications companies.

CHAPTER 1

PURPOSE AND MOTIVATION

A good background against which to view the recent financial problems of public utilities may be achieved by painting with statistics of total financing colored with the details of motivation. Table 1 not only sets forth the changing annual totals of capital issues but also indicates the changing purposes which actuated the financing. It is first to be noted that in 1930 the grand total of financing done was not at a depression level but rather approached the two and one-half billion dollar mark which had measured the approximate amount of security flotations for the better years of 1927 to 1929. The decrease to the nominal figure of less than \$93,000,000 for total offerings in 1933 is doubtless the reflection of two facts that will be discussed subsequently: the lack of investment incentive and the passage of the Securities Act of 1933. The increase in 1934, although resulting in financing in terms of hundreds of millions, still failed to restore the volume which characterized the industry in the so-called boom days. Not until 1935 was there a recurrence of a billion dollar year. Behind these facts are questions of causation which demand further consideration, and it is the purpose of the immediately subsequent discussion to present these questions together with certain factors which may contribute to answers.

EXPANSION FINANCING

It seems safe to assume that the amount and character of financing in any industry constitute important barometric readings, indicating the extent to which the industry is progressing and the conditions which surround its operation. Reference to the purpose classification in Table 1 shows that funds devoted to expansion comprised an ever decreasing amount until 1935—and the upturn in that year was relatively insignificant. Even the inclusion of funding operations, which so often are the direct result of delayed capital financing, failed

TABLE 1—PUBLIC UTILITY SECURITY OFFERINGS CLASSIFIED BY PURPOSE, 1930-35

Purpose	1930	1931	1932	1933	1934	1935
Expansion:						
Amount offered	\$1,916,794,855	\$ 799,886,937	\$207,935,448	\$16,834,278	\$ 6,233,800	\$ 17,659,109
% of total	80.5	51.2	38.1	18.2	3.3	1.4
Funding:						
Amount offered	202,668,558	163,014,974	108,741,327	1,390,000	38,738,700	57,186,488
% of total	8.5	10.4	19.9	1.5	20.7	4.4
Refunding:						
Amount offered	262,317,739	590,227,150	192,017,420	64,662,500	97,988,300	1,206,621,150
% of total	11.0	37.8	35.2	69.7	52.2	93.2
Refinancing:*						
Amount offered	_____	9,962,000	36,737,500	9,844,700	44,560,200	12,955,000
% of total	_____	0.6	6.8	10.6	23.8	1.0
Total	\$2,381,781,152	\$1,563,091,061	\$545,431,695	\$92,731,478	\$187,521,000	\$1,294,421,747

* Changes in capitalization effected by extensions and exchanges and involving neither public offerings of securities nor court reorganizations.

to influence the trend except to introduce the lag that might be expected under such conditions. The expansion needs of the industry thus reflected in its financing are characterized by a decided staying power through 1930 and subsequent drastic decline to the point of practical disappearance.

Why the industry continued to sell securities through the year 1930 may be traced in large part to the apparent acceptance of a "boot-strap" philosophy which dictated a continuance of the industry's expansion program beyond the point of immediate needs. It will be recalled that shortly after the stock market crash in 1929 President Hoover called a series of industrial conferences designed to encourage a renewal or speed-up of construction activities. Among the several conferences was that of the utility industry held in Washington on November 27, 1929, on which occasion the utility executives assured Mr. Hoover that, in the interests of prosperity, they would spend over \$1,800,000,000 during 1930 for "construction, expansion of facilities, and maintenance of existing properties." Mr. M. S. Sloane, then President of the National Electric Light Association, stated: "The electric light and power, manufactured and natural gas and electric railway utilities contemplate the expenditure of \$1,400,000,000 during 1930 for new construction and expansion of facilities, an increase over the corresponding expenditures for 1929 of \$110,000,000."¹

Precisely how far the industry went in the fulfillment of its "contemplated" program, it is difficult to say, but there is every indication that the spirit of the resolution was carried out. In previous years much of the so-called expansion financing had been devoted to the expansion of holding company systems through the purchase of new companies, but by 1930 such activities had been somewhat retarded by market conditions. It may therefore be concluded that the \$1,916,794,855 labelled "expansion" in Table 1 was spent largely for the purpose of new construction.

The eventually recognized hopelessness of such vain efforts to create demand by increasing capacity is reflected in

¹ As reported in the *New York Times*, November 28, 1929.

the picture of financing after 1931. The use of money for expansion purposes practically ceased, while funding operations were continued only long enough to convert bank loans and short-time financing into long-time contracts. Certainly this records a significant lesson of experience which, once learned, should not be forgotten. The main business of public utility companies comprises the generation of gas and electricity and not the generation of economic demands. Incidentally, the failure of the utilities' magnanimous spending to effect material improvement in business might well have been taken as indicative of results to be expected from more recently planned and currently attempted programs of governmental expenditure designed to encourage demand for both producers' and consumers' goods.

Performance figures in the three major branches of the utility industry taken together registered a drop of 16 per cent from 1930 to the low levels of 1932 and 1933. Kilo-watt-hour production went down thirteen billion from 96 to 83; telephones in the American Telephone and Telegraph system declined three million from 18.4 to 15.4; and production of manufactured and natural gas went from 2.3 billion cubic feet to 1.9 billion, a drop of four hundred million.² Certainly in such conditions there was no motivation for expansion, nor can there be such until the excess capacities created by depression losses are near full utilization. In 1935, however, electric power production reached and passed its 1930 record and in that year we find the first increase in expansion financing. In 1934, only \$6,233,800 of utility financing, or 3 per cent of the year's small total, could, by any stretch of the imagination, have been caused by expansion requirements of the industry. From 1935 data we are able to compute nearly a 200 per cent increase in this item, which jumped to \$17,659,000. Of course, when this is compared with 1930's two-billion-dollar³ expansion financing, or even with the eight hundred million⁴ of 1931, it is still woefully small, but at least it evidences a move in an encouraging direction.

² Industry statistics contained in Moody's manual of *Public Utilities*.

³ These two figures include some monies used for holding company system expansion as well as those used for physical expansion.

There is little question that most of 1935's "new money" was to be used for financing physical additions and betterments rather than for mere corporate expansion. In every case, the issuer of securities for expansion purposes was an operating company.⁴ No publicly raised funds were devoted to any new holding company expansion programs, although some, by indirection, were used to facilitate property mergers designed to enlarge and strengthen certain operating units. For the most part, the money was devoted to new construction of generating and distributing equipment, and it represented the first commitments of any size for this purpose since 1932. These are indications that financing for expansion may increase as the industry's output continues to hit new peaks, although it may yet be some time before the capital expenditures of the 1930 and 1931 era are completely utilized. Thus, with the increased demands of better business we may once again be able to establish a motive for new capital expenditures, although, like the story-book defectives, we must establish not only motive but also an opportunity before we can conclude that utilities are ready to proceed with expansion financing in any volume.

After March 4, 1933, the utility industry found itself face to face with the problems of the New Deal. Those of most immediate portent were represented by security regulation and government competition. In the latter there was and is an effective barrier to utility expansion. Quite aside from the reasonableness or constitutionality of government power projects, it is not to be expected that the industry can invite commitments of private funds to finance expansion in competition with utilities financed and subsidized by federal, state, or municipal corporations. On this score, therefore, we can be certain that the "motive" to finance any considerable volume of expansion will not present itself until the current public ownership plans are delimited.

The passage of the Securities Act of 1933 in May of that year presaged a new era in corporate financing and materially

⁴ There was only one parent company offering for any purpose in 1935—that of Pacific Lighting Corporation.

affected the utility situation. Uncertainties of interpretation led to a real fear of the liability provisions of the Act affecting issuers and underwriters, but 1934 amendments to the law eased this burden and thus for only a short period could the new regulation have been blamed for the stoppage of utility security offerings. In fact, even before the Act was amended there was evidence that real need for financing could surmount the alleged difficulties. American Water Works and Electric Company effected the registration and sale of \$15,000,000 of bonds in March, 1934, although amendments were not passed until June 6 and did not become effective until July 1. Since this latter date there has been abundant evidence that utility financing has been, is being, and will continue to be done. Occasion will be made in a later section to discuss in detail the influence of security regulation on methods of utility financing; mention is included here only to emphasize the fact that lack of incentive rather than lack of opportunity accounted for the paucity of financing in the years subsequent to the enactment of security legislation.

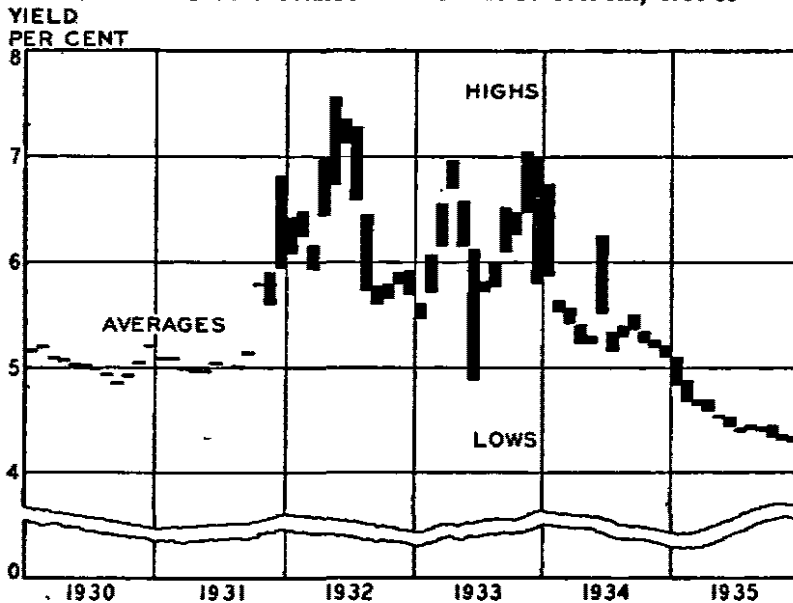
REFUNDING *

Financing for the purpose of refunding security issues is inspired either by the pressure of maturities or by the desire to call and cancel capital contracts which are unnecessarily expensive or otherwise onerous. Reference again to Table 1 will indicate the ever increasing relative importance of refunding financing in the history of security offerings during the years 1930 to 1935. However, this increased importance was only relative in the years 1932, 1933, and 1934, because the dollar amounts of securities sold for such purposes during that period were quite insignificant. During the years 1932 to 1934, interest costs on utility bond issues were so high as to preclude the profitable sale of most such issues. Chart 1, showing the monthly highs and lows of yields on twenty utility bonds, serves to show the recent history of market reaction

* The discussion and Table 2 in this section were adapted from the author's article "A Billion-Dollar Year in Utility Financing," *Public Utilities Fortnightly*, Vol. XVII, No. 5 (February 27, 1936.)

to utility bonds and measures the relative costs of bond financing during the years 1930 to 1935. Largely as a result of the market conditions depicted in this chart, the nation's utilities were compelled to adjust their programs of financing, and the volume of refunding is found to vary inversely with

CHART 1—PUBLIC UTILITY BOND YIELDS BY MONTHS, 1930-35*



* Charted from "Public Utility Bond Yields," published by Moody's Investors Service; monthly average yields prior to November, 1931; monthly high and low yields subsequently.

the yields on utility bonds. It may be concluded that, during the years 1932, 1933, and 1934, refunding issues were offered largely under pressure of maturities, because prices were too low to encourage any call financing. In 1930 and 1931 there was probably considerable refunding motivated by the desire to call outstanding issues before maturity, but it was in 1935 that this sort of financing reached unprecedented volume.

In 1935, the volume of financing increased so substantially and its purpose was so predominantly refunding (93

per cent) that we are led to further inquiry into what may seem to be the beginning of another new era. In time to come, 1935 may well be recalled by the utility industry as the year of the big redemptions, for these phenomena were quite as remarkable during that year as were the floods and quakes that served to mark other years in the minds of those affected. This characterization is indicated because the year was a period in which over a billion dollars' worth of utility securities, largely bonds, were called by their issuers. Investors were asked to take back their money, or else subscribe to the billion dollars of new securities offered for sale with much lower interest rates.

As of December, 1934, Moody's estimate shows that there were approximately \$14,720,000,000 of public utility bonds outstanding in the name of United States companies. Thus, the financial activities of the year 1935 may be said to have forced a turnover of 7.4 per cent in utility bond investments; this in addition to the normal maturities of the period. The call movement got under way late in March, when the Pacific Gas and Electric Company called \$45,000,000 of its 5½ per cent bonds, for which it substituted capital costing it 4.15 per cent. Gradually the momentum of the procedure increased, with two issues offered in April to finance redemptions, two in May, five in June, and ten in July. The offerings reached a peak of thirteen in September, and October and November also saw considerable call financing. December was necessarily quiet for all utility financing in view of the mist of legal indecision then surrounding utility registrations under the Holding Company Act, and the only significant issues in that month were those of Southwestern Bell Telephone Company and Southwestern Gas and Electric Company. The former, being a telephone company, was unaffected by the Act, while the latter is a constituent of the one large utility holding company that chose immediately to comply with the registration provisions of the law—namely, Middle West Corporation.

As indicated above, the course of the bond market itself accounted largely for the scope and timing of these call offerings. The steady and almost uninterrupted rise in utility bond

TABLE 2—DETAILS OF PUBLIC

Month	Issuer	Called		
		Amount	Interest Rate	Interest Cost
March	Pacific Gas & Electric Co.	\$ 45,000,000	5.50%	\$ 2,475,000
April	Consol. Gas, Elec. Lt. & Power Co. of Balt.	9,943,000	4.75	472,293
	Southern Calif. Edison Co., Ltd.	68,360,000	5.00	3,418,000
May	San Diego Consol. Gas & Elec. Co.	15,868,000	5.32	845,380
	Temescal Water Co.	600,000	6.50	39,000
June	Commonwealth Edison Co.	29,500,000	5.09	1,502,500
	Southern Utah Power Co.	500,000	6.50	32,500
	Consumers Power Co.	2,582,000	5.00	129,100
	Pacific Gas & Electric Co.	32,928,500	5.00	1,646,425
	Central Hudson Gas & Electric Corporation	8,882,000	5.00	444,100
July	The Cleveland Railway Co.	4,709,000	6.00	282,540
	Connecticut Light & Power Co.	7,358,500	5.32	391,265
	Consol. Gas, Elec. Lt. & Power Co. of Balt.	7,326,000	4.50	329,670
	Southern Calif. Edison Co., Ltd.	32,000,000	5.00	1,600,000
	Cleveland Elec. Illuminating Co.	40,000,000	5.00	2,000,000
	Duquesne Light Co.	70,000,000	4.50	3,150,000
	Associated Telephone Co., Ltd.	8,300,000	5.00	415,000
	Public Service Co. of Northern Illinois	15,650,000	6.50	1,017,250
	Northern Ohio Telephone Co.	1,513,500	5.50	83,243
	Southern Calif. Gas Co.	14,816,000	5.21	771,650
August	Bangor Hydro Elec. Co.	272,500	5.50	14,988
	Public Service Elec. & Gas Co.	65,000,000	4.50	2,925,000
	Camden & Rockland Water Co.	800,000	5.00	40,000
	Public Service Co. of New Hampshire	5,400,000	5.00	270,000
	Coast Countries Gas & Elec. Co.	4,000,000	5.00	200,000
	Muncie Water Works Co.	600,000	5.00	30,000
September	Savannah Elec. & Power Co.	2,648,400	6.88	182,393
	Philadelphia Suburban Water Co.	16,230,500	4.87	796,630
	Southern California Edison Co., Ltd.	23,950,725	7.00	1,676,551
	Southern California Edison Co., Ltd.	20,300,000	5.00	1,465,000
	Consumers Power Co.	15,872,000	5.00	793,600
	Connecticut Power Co.	1,685,500	5.00	84,275
	Pacific Gas & Elec. Co.	20,225,000	5.00	1,011,250
	Detroit Edison Co.	49,000,000	5.00	2,450,000
October	Atlanta Gas Light Co.	3,967,000	6.00	238,020
	Long Island Lighting Co.	1,419,600	5.00	70,980
	Pacific Lighting Corporation	9,769,000	5.00	488,450
	The Dayton Power & Light Co.	18,860,000	5.00	943,000
	Illinois Bell Telephone Co.	48,726,200	5.00	2,436,310
	Pennsylvania Telephone Corporation	5,200,000	5.00	260,000
	Virginia Elec. & Power Co.	32,694,000	5.00	1,634,700
	Blackstone Valley Gas & Elec. Co.	6,114,000	5.00	305,700
	Columbus Railway Power & Light Co.	19,877,300	4.72	938,363
	November	New Haven Water Co.	1,950,000	4.50	87,750
Orange & Rockland Elec. Co.		1,250,000	5.00	62,500
Missouri Telephone Co.		700,000	6.00	42,000
Public Service Co. of Northern Illinois		9,570,000	7.00	659,900
Monongahela West Penn Public Service		22,993,900	5.35	1,223,050
Central Maine Power Co.		15,061,500	5.10	768,690
Los Angeles Gas & Elec. Corporation		37,181,500	5.48	2,037,938
Ohio Edison Co.		43,215,500	5.51	2,374,153
Public Service Co. of New Hampshire		10,379,000	4.50	467,055
Iowa Southern Utilities Co.		4,937,500	7.30	360,334
Kansas Power & Light Co.		25,662,100	5.77	1,480,066
California Water & Telephone Co.		1,566,000	5.77	89,555
New York & Queens Elec. Lt. & Power Co.	10,000,000	6.00	600,000	
Metropolitan Edison Co.	11,710,900	5.00	585,545	
December	Lockhart Power Co.	1,423,500	6.00	85,358
	Southwestern Bell Telephone Co.	48,836,400	5.00	2,441,830
	Biddeford & Saco Water Co.	862,500	5.00	43,125
	Southwestern Gas & Electric Co.	19,602,000	5.18	1,014,822
Totals for bonds called†		\$1,064,250,725		\$54,717,697
Averages for bonds called‡			5.14%	

* Principal plus premium.

† Net cost of new money after bankers' commissions, but before other expenses of issue.

‡ "New Money Rate" applied to "Capital Outlay."

§ Difference between old "Interest Cost" and "New Money Cost."

|| Average on two or more called issues.

PUBLIC UTILITY FINANCING, 1930-35 493

UTILITY BOND REDEMPTIONS IN 1935

Issues		Results of Call Financing				
Call Price	Premium	Capital Outlay*	New Money Rate†	New Money Cost‡	Annual Savings§	Per Cent Decrease in Annual Cost
105.00	\$ 2,250,000	\$ 47,250,000	4.15%	\$ 1,960,875	\$ 514,125	20.77
105.00	497,150	10,440,150	3.80 (est.)	396,726	75,567	16.00
105.00	3,418,000	71,778,000	4.00	2,871,120	546,880	16.00
103.60	589,020	16,457,020	4.11	676,384	168,896	19.98
102.00	12,000	612,000	5.37	32,864	6,136	15.73
103.79	1,115,000	30,615,000	3.98	1,218,477	284,023	18.90
88.75	56,250	645,750	7.40	32,838	338	7.04
105.00	129,100	2,711,100	3.89	105,462	23,638	18.31
104.00	1,340,881	34,269,381	3.88	1,329,652	316,773	19.24
106.00	454,460	9,336,460	3.61	337,046	107,054	23.88
104.00	188,360	4,897,360	5.13	251,235	31,305	11.08
106.40	471,173	7,829,673	3.80	297,528	93,737	23.96
105.00	366,300	7,692,300	3.55	273,077	56,593	17.17
105.00	1,600,000	33,600,000	3.97	1,333,920	266,080	16.63
104.24	1,695,000	41,695,000	3.72	1,551,054	448,946	22.45
104.43	3,100,000	73,100,000	3.53	2,580,430	569,570	18.08
106.30	539,500	8,839,500	4.24	374,795	40,205	9.69
105.00	782,500	16,432,500	4.67	767,398	249,852	24.56
105.00	75,675	1,589,125	4.38	69,606	13,637	16.38
103.39	500,090	15,316,090	4.06	621,833	149,817	19.42
105.00	13,675	286,175	3.89	11,131	3,857	25.73
104.50	2,925,000	67,925,000	3.50	2,377,375	547,625	18.72
102.50	20,000	820,000	4.52	37,064	2,936	7.34
105.00	270,000	5,670,000	3.70	209,790	60,210	22.30
105.00	200,000	4,200,000	4.00	168,000	32,000	16.00
100.00	-0-	600,000	5.15	30,900	900	3.00
103.29	87,282	2,735,682	5.24	143,530	39,043	21.41
103.36	546,948	16,777,448	4.06	681,164	109,466	13.85
101.50	3,592,609	27,543,334	3.28	903,421	773,130	46.11
105.00	1,465,000	30,765,000	4.00	1,230,600	234,400	16.00
104.00	634,880	16,506,880	3.67	605,802	187,798	23.66
107.50	126,412	1,811,912	3.67	66,497	17,778	21.10
105.00	1,011,250	21,236,250	4.00	849,450	161,800	16.00
105.00	2,450,000	51,450,000	3.91	2,011,695	438,305	17.89
102.00	79,340	4,046,340	4.81	194,629	43,391	18.23
105.00	70,980	1,490,580	4.00	59,623	11,357	16.00
101.00	97,690	9,866,690	4.82	475,574	12,876	2.64
105.00	943,000	19,803,000	3.67	726,770	216,230	22.93
105.00	2,436,310	51,162,510	3.48	1,780,455	635,855	26.92
104.83	251,500	5,451,500	4.12	224,602	35,398	13.61
104.07	1,332,480	34,026,480	4.07	1,384,878	249,822	15.28
103.06	186,940	6,300,940	3.98	250,777	54,923	17.97
105.00	983,865	20,861,165	4.03	840,705	97,658	10.36
104.69	91,500	2,041,500	3.60	77,577	10,173	11.59
105.00	62,500	1,312,500	4.00+(est.)	52,500	10,000	16.00
96.00	28,000	672,000	5.70	38,304	3,696	8.80
100.00	-0-	9,570,000	3.74	357,750	302,150	45.78
104.80	1,103,395	24,097,295	5.06	1,219,323	3,727	0.30
104.77	719,171	15,780,671	4.20	662,788	105,902	13.78
105.28	1,961,758	39,143,258	4.03	1,577,473	460,465	22.59
104.72	2,137,337	45,352,837	4.18	1,891,569	482,584	20.33
103.00	311,370	10,690,370	3.71	396,613	70,442	15.08
101.44	71,334	5,008,834	6.06	303,535	56,799	15.76
103.79	973,012	26,635,112	4.46	1,187,925	292,141	19.74
104.41	68,993	1,634,993	5.20	84,968	4,587	5.12
100.00	-0-	10,000,000	3.50	350,000	250,000	41.67
105.00	585,545	12,296,445	4.00	491,858	93,687	16.00
101.34	19,050	1,442,550	4.90	70,685	14,673	17.19
105.00	2,441,830	51,278,430	3.47	1,779,362	662,468	27.13
102.50	21,563	885,063	4.30	38,058	5,067	11.75
103.07	601,398	20,203,398	4.32	872,787	142,035	14.00
104.69	\$49,934,826	\$1,114,185,551	3.93%	\$43,799,647	\$10,918,050	19.95

† Offerings totalling \$16,496,000 and consisting of three privately offered refunding issues are not included in this table because of lack of data regarding the details of the offerings. It is possible that other private deals may have escaped attention.

Note: Italics indicate opposites.

prices which began in September, 1934, brought money costs early in the year 1935 into the range where refunding operations would be profitable.

Table 2 is included because it exemplifies in detail the effects of call financing on the individual issuing utilities. The totals and averages indicate general tendencies which such financing created with respect to the industry and to its investors. In the interpretation of these data, it is necessary to note that the amounts called do not coincide exactly with the amounts issued in replacement because in a number of instances the call was financed in small part out of the redeemer's treasury. Similarly, the "Capital Outlay," composed of par values of called issues plus premiums paid, is not a precise measure of financing done. However, in the interest of consistency and comparability, the "New Money Rate" was applied to this "Capital Outlay" to determine the "New Money Cost," which, in turn, represents the annual interest these utilities would have had to pay had their refinancing simply replaced old capital contracts with new ones without adding to or subtracting from their treasury funds. The "New Money Rate" was computed to represent the rate of annual capital cost to the companies. It was based on the net proceeds of their security sales after payment of underwriting commissions but before other expenses of issue, such as registration expenses.⁶

With these minor though necessary qualifications in mind, we may proceed to the conclusion that, during 1935, the public utilities of the country effected a saving of \$10,918,050 per annum in capital costs by calling \$1,064,250,725 of securities which had been requiring cash outlays at the average rate of 5.14 per cent annum and substituting therefor new bond contracts the effective annual cost of which was, on the average, 3.93 per cent. To consummate this saving, the industry paid out \$49,934,826 in call premiums and incurred other expenses of issue in an amount estimated to be \$8,000,000.⁷ In addition to the saving of \$10,918,050 in interest charges effected

⁶ Computation assumed life of issues based on maturity dates.

⁷ Expenses reported for registered issues averaged 0.71 per cent of par. (See Chap. 3, p. 54.)

through new bond offerings, there was also a saving of \$204,251 in preferred dividends effected by the preferred stock calls of the Cleveland Electric Illuminating Company and the Consolidated Gas, Electric Light and Power Company of Baltimore in their sale of lower rate preferred stocks. These changes were made at a premium cost of \$1,528,170. In all, it may be said that there was a financial saving by the utilities of \$11,122,301 per annum for an outlay of \$59,462,996.

The most outstanding saving effected by refunding operations during 1935 was that of the Southern California Edison Company, which reduced its charges to the extent of \$773,130 per annum, or 46.11 per cent, by replacing its 7 per cent preferred stock with 3.28 per cent money raised through its sale of serial debenture bonds. The low cost of new money in this instance was due, in part, to the high prices secured on the short-term end of the serials offered. Second prize went to the Public Service Company of Northern Illinois, which effected a 45.78 per cent reduction in interest costs through a private offering at 3.74 per cent cost to redeem its 7 per cent debentures at par. This feat may be taken as evidence of complete recovery from the Insull difficulties which enmeshed this company in 1932 when the 7 per cent debentures were issued to meet maturities and obligations. The apparent saving of 42 per cent to the New York and Queens Electric Company was merely bookkeeping, for the parent, Consolidated Gas Company of New York, saved as stockholder what it lost as bondholder of the \$10,000,000 of 6 per cent bonds redeemed. A number of the savings may be attributed in part to the "clean-up" effected by redemption; companies such as Columbus Railway Power and Light, Los Angeles Gas and Electric, Ohio Edison, and Iowa Southern Utilities redeemed varieties of small expensive issues to substitute one large and more economical issue. The two small cost increases that developed in the year's redemption operations apparently reflected refinancing designed to bail out parent companies that had made subsidiary advances which they wished to recover.

Evidently there are three classes of persons vitally affected by the results of refunding such as that effected in 1935 and

by the possibility that such activity may continue in the future. Saving \$10,918,050 per annum in interest costs literally amounts to taking that sum out of the pockets of bond investors and putting it into the pockets of stock investors, some spilling out to benefit the public in the process of transfer. The federal Government will get a share in the form of increased income taxes and excess profit taxes in so far as the reductions in interest increase the amount of taxable income.⁹ In time, the consuming public may also get a share of the saving as lower capital costs tend to find reflection in lower utility rates required by regulatory authorities. The extent to which this latter effect may be realized is unknown inasmuch as capital costs comprise but one of a number of factors bearing on regulated rates of return.

Of immediate interest, however, are the implications of all this as relating to the stockholders, the common stockholders in particular. The effect of such savings on the earnings per share of the issuing companies' stocks will depend in part on the accounting procedure adopted in each instance to provide for the unamortized bond discount and expense of the called issues¹⁰ and the amounts paid in call premiums. If both of these items are immediately charged to surplus, the effect will be an immediate increase in share earnings. If the amounts are amortized gradually, the extent to which share earnings will be affected will be determined by the period of amortization. But aside from the accounting aspects, it is immediately evident that the cash outlay for premiums and expenses in connection with 1935 redemptions will absorb the annual savings for about six years, and after that time the saving will accrue and add \$9,500,000¹¹ to each year's earnings for common stockholders as compared with income prior to the calls.

⁹ On a similar basis, state governments would receive part of the savings where state taxes are spread on an income basis.

¹⁰ Unamortized bond discounts and expenses are *not* factors which contribute to the cost of redeeming unamortized issues, and thus they cannot enter into a logical decision regarding the profitability of redemption based on alternative costs.

¹¹ This assumes payment of federal income tax at maximum 1936 rate (15 per cent) on interest savings of approximately \$11,500,000.

The value of this saving may be variously considered from the issuers' standpoint: for the fifty-four companies involved in one or more of the 1935 calls detailed in Table 2, it reduced fixed charges and increased margins of safety to the betterment of their credit; also, it provided a source of increased equity earnings in amounts ranging as high as \$700,000 in one case and as high as \$500,000 in a number of cases. In the aggregate, the savings are worth some \$298,000,000, assuming money to be worth 4 per cent and the effective period of the saving to average twenty-five years. It is an interesting incidental note that in thirty-four out of the sixty-one cases of call financing the stockholder beneficiaries of 1935's activities were holding companies.

If we view this matter from another angle we see who are the losers in such transactions; the stockholders' benefit is necessarily the bondholders' loss. True, the bondholders receive their premiums in case of call, but the same figures used above may be used again to measure their sacrifice. In 1935 bondholders received \$49,934,826 in payment for an annual cut of \$10,918,050 in income. To institutional investors this call financing presented a serious problem, as it did to any one whose budget may have been tuned to the interest return on securities in his portfolio. To reinvest funds resulting from calls necessarily meant reinvestment at lower market rates: 20 per cent lower if we assume that the new investment was made in similar securities. In fact, it was this very necessity that catered to the success of 1935's call financing; a relative paucity of investments suitable for institutional and trust fund commitments assured the utility issuers that the call funds would in a large measure come back to them through purchase of the newly offered issues.

There are things at once tragic and comic in anticipation of the future of these offerings. As the average maturity date of the above-mentioned $3\frac{1}{2}$ to $4\frac{1}{2}$ per cent bond contracts is twenty-seven years hence, what if, in that interim, there is either inflation or restoration of capital demands sufficient to raise interest rates to former levels? What will be the market price of these issues and how will the investors feel? On

the other hand, it is difficult to imagine the conditions under which it might be profitable for the Southern California Edison Company to call its recently issued \$73,000,000 of $3\frac{3}{4}$ per cent bonds at $107\frac{1}{2}$ or for the Pacific Gas and Electric Company to call its \$40,000,000 of 4 per cent bonds at 110. Those are the top call prices on the issues named. Of course, the practical factor accounting for the issuers' willingness to include such high call premiums is the improbability that such cheap contracts ever will be called; if they are, it will be in a money market strange to behold.

This detailed description of 1935 refunding and its results has been included not, primarily, because it implies a continuation of such a volume of redemptions but rather because it turns the spotlight on the conditions which justify such financial activity and magnifies the effects of refunding inspired by cheap money. When, if, and as long as market conditions like those of 1935 exist, there will be the obvious incentive to redeem 5 per cent contracts with 4 per cent money. Companies in a position to sell issues at or near this average cost are probably guilty of nonfeasance to stockholders if they fail to do so.

A summary of the motives for utility financing in the years since 1931 characterizes the security offerings as those designed to put or keep the financial house in order; just housekeeping—no expansion. Many companies were able to devote their financial efforts to profitable ends during this period—particularly after the recovery of the market in 1934. Some merely struggled for continued existence; and others, financially speaking, have given up the ghost. Those situations that have lent themselves to or demanded attention in a form of refinancing or reorganization will be discussed in a later chapter on "Methods of Security Distribution" because the method as well as the motive for such procedures is of vital importance.

CHAPTER 2

CHARACTERISTICS OF SECURITY CONTRACTS

The nature of security contracts used by modern corporations as means of raising capital is influenced by three factors. The conditions peculiar to the issuer have a bearing inasmuch as management will seek to establish with investors contractual relationships which fit the corporate and financial needs of the enterprise and of those in control thereof. Secondly, the necessity of selling the securities in consummating the capital raising process will demand attention to the market, and thus, at least by indirection, the investors have their say about the types of capital contracts to be used. In the third place, particularly in the public utility industry, the various regulatory bodies have authority to influence the general type of security to be offered by granting or withholding authorization of issue.

It is the purpose of this section to examine certain trends that have appeared in the public utility financing of recent years and to analyze those trends and characteristics as they are affected by the market and by the financial needs of the industry. No attempt will be made in this discussion to evaluate the influences of financial regulation of the sort exercised by state administrative bodies, since this, for the most part, is restraining in character and bears little relation to formulation of policy. The following analysis is, on the other hand, devoted specifically to a criticism of financial policies and their execution as reflected in security contracts.

DEBT vs. EQUITY FINANCING

The data in Table 3 are introduced as the basis for the observation that ownership of public utilities became decreasingly popular during the years 1930 to 1935. Knowledge of the market price reactions to utility equities further substantiates the statement and emphasizes its seriousness from the standpoint of utilities that were in financial need.

TABLE 3—AMOUNTS OF DEBT AND EQUITY FINANCING BY UTILITIES, 1930-35

Type of Issue	1930	1931	1932	1933	1934	1935
Bonds:						
Amount offered	\$1,281,010,500	\$ 979,331,500	\$393,813,600	\$43,239,000	\$114,021,000	\$1,265,430,900
% of total	53.8	62.7	72.2	46.6	60.8	97.8
Notes:*						
Amount offered	333,948,500	230,237,000	142,813,000	40,344,700	73,500,000	-----
% of total	14.0	14.7	26.2	43.5	39.2	-----
Preferred stock:						
Amount offered	212,618,888	155,227,211	6,620,875	-----	-----	20,701,947
% of total	8.9	9.9	1.2	-----	-----	1.6
Common stock:						
Amount offered	554,203,264	198,295,350	2,184,220	9,147,778	-----	8,288,900
% of total	23.3	12.7	0.4	9.9	-----	0.6
Total	\$2,381,781,152	\$1,563,091,061	\$545,431,695	\$92,731,478	\$187,521,000	\$1,294,421,747

* Maturities less than six years.

The stock market in 1930 afforded the opportunity for some equity financing, but it is interesting to note that, of the half billion total of that year's common stock offerings, \$410,000,000 were offerings of telephone companies. American Telephone and Telegraph sold \$235,000,000 to the public, and most of the proceeds apparently were used to absorb its share of its own operating company offerings. With this domination of residual equity financing by the telephone utilities, little was left to represent equity money for the gas and electric industry—even in the relatively optimistic year of 1930. In the years subsequent to 1930 common stock played a nominal part, both relatively and actually, as a source of utility capital; this of necessity in face of no demand for equities of any kind. Those companies which did succeed in raising equity funds were the Gibralters like American Telephone and Telegraph, which raised another \$70,000,000 in 1931, and Edison Electric Illuminating Company of Boston, which broke the ice in 1935 with the 82,889 \$100-par shares which it sold at \$150. Some of these equity distributions were accomplished by use of privileged subscriptions to blue chip stocks; in other cases, the issuers were companies with strong holding company backing that enabled them to collect most of the equity funds from their parent companies. Among the latter were companies like North American Light and Power, whose equities were taken by North American Company to provide funds for maturing notes, and Brooklyn Edison, which turned to its parent, the Consolidated Gas Company.

Preferred stocks were also out of style, their advantages having been eliminated by declining earnings and by a loss of the customer market that had been used previously in the so-called customer ownership campaigns. After 1930, utilities were unable to offer successfully a security which in years of declining revenue affords neither security nor speculative opportunity. The exceptions to this generalization occurred during some of the years in the case of very strong operating companies like Pacific Gas and Electric Company, Public Service Corporation of New Jersey, Philadelphia Electric Com-

pany, and (in 1935) Cleveland Electric Illuminating Company and Consolidated Gas of Baltimore.

It is evident that companies in the utility industry were not able to strengthen their equity positions materially during the period under observation; a situation quite to be expected in view of market and earning conditions. Even in 1935 successful equity offerings represented so small a proportion of total utility financing as to indicate that neither 1935's improved utility earnings nor the recuperation of the stock market was sufficient to bring about a corresponding improvement in equity financing possibilities. The market for gas and electric utility equities failed to come back much above 1932 values, whereas the aggregate values of industrials surpassed the higher 1931 levels.¹ This handicap to equity financing was amplified by the practical fact that in many situations operating company stocks were not available for public sale because of holding company interest therein. Therefore, the only residual equities that could be used for financing were those of parent company organizations; equities which could not come back much in 1935 in face of the anti-holding-company legislation of that year. It was an intrastate operating utility that did come forth with the sole common stock offering; namely, Edison Electric Illuminating Company of Boston. It seems reasonable to conclude that the only feasible common stock financing of utilities in the near future will be confined to similar independent operating units which are beyond the range of the Holding Company Act of 1935 and whose earnings are within reach of the amounts necessary to support their equities. Operating constituents of holding companies may in some instances find a continued source of equity funds in the parent organizations. The history and limited possibilities of this source will be discussed subsequently in consideration of holding company financial aid.

¹ Standard Statistics' indexes show December averages as follows:

	<i>Industrials</i>	<i>Utilities</i>
1935 _____	109.8	92.8
1932 _____	51.6	88.6
1931 _____	65.2	102.2

The possibilities for sale of operating company preferred stocks are, on the other hand, seemingly nearer. Cleveland Electric Illuminating Company has demonstrated that the possibility exists and a market may be made for refunding and expansion issues. It cannot be the same institutional market that has existed recently for mortgage bonds, but there seems to be no reason why 6 per cent and 7 per cent operating company preferreds may not be profitably replaced with lower dividend issues if current conditions persist.² The effect of such a procedure on the public relations of utilities that sold their now outstanding issues to their customers would be a matter to be reckoned with, however.³

All that has been said about the paucity of equity financing reflects itself in a discussion of the predominance of debt financing. During the years 1930 to 1935 most of the money available for investment was, in a very real sense, "scared money." So recently had investors been burned in the speculative fires kindled with common stocks that those who survived seemed to seek the shelter of credit contracts. How this reacted on utility financing is amply demonstrated in Table 3, previously referred to; debt offerings constituted 100 per cent of utility financing in 1934, 91 per cent in 1933, and over 98 per cent in 1932 and 1935. While in 1930 and 1931 the percentages of total were somewhat smaller, the amounts of debt financing were greater than in any year under observation except 1935. Truly the outstanding characteristic of the capital offerings was that of contractual security.

In addition to the predominance of debt financing in recent years, there have been developments within this class of financing itself which are worthy of some note. They seem to be indicative of trends in the form of utility debt contracts and for this reason are significant, for even if the

² Central Illinois Light Company (a Commonwealth and Southern Corporation subsidiary) on April 29 offered \$11,146,400 of 4½ per cent preferred stock at \$102 to redeem a like par amount of 6 per cent and 7 per cent preferred stock.

³ Customer ownership campaigns, if renewed, will present new problems under the Securities Act unless exemption can be assured by keeping all transactions intrastate.

TABLE 4—PUBLIC UTILITY BOND OFFERINGS CLASSIFIED BY SECURITY, 1930-35

Security	1930	1931	1932	1933	1934	1935
Mortgage:						
Amount offered	\$ 544,955,500	\$822,056,500	\$337,539,600	\$42,239,000	\$ 67,021,000	\$1,202,360,900
% of total	42.5	83.9	85.7	97.7	58.8	95.0
Collateral trust:						
Amount offered	11,125,000	14,525,000	9,565,000	1,000,000	25,000,000	-----
% of total	0.9	1.5	2.4	2.3	21.9	-----
Debenture:						
Amount offered	724,930,000	142,750,000	46,709,000	-----	22,000,000	63,070,000
% of total	56.6	14.6	11.9	-----	19.3	5.0
Total	\$1,281,010,500	\$979,331,500	\$393,813,600	\$43,239,000	\$114,021,000	\$1,265,430,900

current proportion of debt offerings declines, bonds will continue to play an important role in utility financing and the type of bond contracts will continue to affect utility investors and managers to a significant degree.

BOND SECURITY

In this country we are prone to think of mortgage bonds as the last word in security. The father to this thought doubtless lies buried in the very land which served as security for farm and other real estate loans and which we have been brought up to consider as one of the ultimate sources of value. In utility financing there appears to have been a "back to the land" movement. Table 3 called attention to the relative increase in bond financing during the years 1930 to 1935. The data in Table 4 emphasize the increased use of secured issues, particularly the use of operating company mortgage bonds, as compared with unsecured, general credit obligations of utility companies.

Searching for the reasonableness of and trying to trace the logic in this trend which carried unsecured debenture issues nearly out of the picture, we are immediately confronted with a very practical supposition. Probably the investors demanded the security of mortgage bonds, and the issuers could not afford to ignore the market's reaction even had they wished to do so. This leads us to the query as to whether investors, individual and institutional, are logical and reasonable in their demands for pledged property as security for loans. An affirmative answer to this question must be based on our willingness to believe in the indestructible value of land, and further, to believe that the pledge of business property carries with it a similar implication of security. While, in view of recent experiences with real estate speculation and its accompanying losses, we may find it difficult to accept the first premise enthusiastically, on the whole we may be willing to admit its truth as a long-run proposition. It is the strength of this conception that continues to make farm and home mortgages instruments of value under all but the most depressed conditions.

To advance similar arguments for the security of corporate mortgage bonds is logically more difficult, if not impossible. The modern instruments of finance, as used by public utilities, are secured not so much by land as by a combination of land, capital, and conditions. The land involved is quite inevitably and permanently devoted to one specific use, and the capital invested in plant and equipment is just as inevitably tied to the land and thus also to the same use. The conditions referred to are those of production, market, and management; pledge them if you will, but they can avoid and escape the lien drawn by the most dexterous legal talent. When the conditions which have been the basic source of profit change for the worse, the land, plant, and equipment are practically worthless as security for a loan of any size. What would be more hopeless and valueless as security for a bond issue than an electric railway abandoned because of lack of earnings? Nothing, except a gas plant or electric station abandoned for the same reason—and yet those are precisely the kind of assets pledged to secure public utility mortgage bonds. Only in cases of most obvious mismanagement is there any reason to believe that receivers, trustees, or bondholders could recreate value where a board of directors had failed to produce profits.

The obvious conclusion seems to be that, as protection to investors against losses caused by serious declines in utility earnings, mortgage security is useless. The tangible and intangible property that is customarily pledged to secure utility bonds has little or no substitute use value, and seldom indeed would scrap value be a significant amount in face of the typical utility funded debt. Further, the pledge of specific assets provides no greater incentive for management to pay its interest and principal obligations promptly than does the unsecured promise to pay which characterizes general credit obligations. In either case default results in receivership or bankruptcy (as defined in the 1934 amendment to the Federal Bankruptcy Act), and ultimately there occurs a reorganization which probably will require sacrifices on the part of creditors whether their claims are secured or unsecured.

Under ordinary circumstances, long-term debt contracts written on an unsecured basis would have to share their position with short-term merchandise, bank, and general creditors, whereas mortgage bond issues are expected to guarantee their holders a preferred claim as compared with that of the unsecured group. However, in any public utility situation so bad as to give importance to the matter of relative lien position of credit claims, it would doubtless be true that a mortgage would not assure preference ahead of unsecured claims incurred by management for labor and materials essential to the operation of the utility. In spite of its varied interpretations, the doctrine established by federal courts in a railroad decision of 1878, known as the rule in *Fosdic vs. Schall*, is still effective. This "rule" presumes that a railroad company receiver will recognize that a railroad's floating debt is a prior claim, the theory being that of defense to labor and to the small supplier of materials who, prior to the date of receivership, advanced to the carrier services and supplies necessary to its operation. There seemed to be tacit acceptance of the application of this rule to operating utilities in the reorganization of the Duquesne Gas Corporation, in which case the trade creditors received payment in full while mortgage bondholders came out with 1.6 cents on the dollar. Therefore, it would seem safe to conclude that all public utility floating debt, with the probable exception of bank loans and other extraordinary claims, would enjoy a preferred position over all funded debt whether secured or not.

From this discussion, it would appear that mortgage debt is no better than unsecured debt as a means of credit financing by public utilities. Of course, the existence of both secured and unsecured bonds in a financial structure marks the latter as securities of decidedly inferior position. But in situations where a utility has only unsecured issues outstanding, it is the contention that, other things being equal, such credit instruments would be just as good as secured bonds with respect to certainty of payment and position in reorganization.

In spite of these theoretical arguments and suppositions, the fact is that tendencies toward secured issues have continued

and grown in the course of recent financing. Apparently, less and less faith has been put in the general credit of operating utilities. Examination of the few offerings of unsecured debenture⁴ bonds in recent years may provide some clue as to the reasons for their more and more limited use. During 1930 some very acceptable financing was done with debenture issues; Brooklyn Union Gas Company raised \$18,000,000 with a twenty-year issue sold at a price to yield 4.80 per cent, and Southern New England Telephone Company sold \$10,000,000 of forty-year debentures to yield 4.85. The average yield on all bonds issued during that year was 5.2 per cent, while the utility bond market in general was here and there around 5 per cent, as expressed by Moody's average. Evidently debenture bonds could be sold on a reasonable basis by operating companies whose financial structures contained no secured issues, which would naturally have prior lien. In 1931—before the October break in the bond market—Consolidated Gas and Electric Company of New York did a \$60,000,000 job of twenty-year debenture financing at a price to yield 4.42 per cent, and even in 1932, when the average yield on all bond financing jumped to 5.8 per cent, this company repeated with \$30,000,000 more at 5.44 per cent. There were no debenture issues in 1933, but in 1934 Chicago District Electric Generating Corporation took the prize with \$10,000,000 of serial debentures which cost the company 5.34 per cent. The debenture offerings increased in 1935 to six issues totaling \$63,000,000, and all represented cheap money. In all but two of these cases, however, the issues were relatively short-term serials. Of the long-term issues, one, sold by Monongahela West Penn Public Service Company, was a debenture issue of a company with mortgage bonds outstanding, and the other was a holding company issue by Pacific Lighting Corporation. Thus it is evident that there has been no "pure and simple" long-term debenture financing by operating companies since 1932.

⁴ The term "unsecured debenture" is not redundant, because there have been issues of "secured debentures." However, the normal concept of the debenture in this country is that of a long-term, unsecured promise to pay.

The paucity of such issues probably results from the difficulty of marketing unsecured bonds. Blind faith in mortgage security has been catered to in order to create investor appeal. Further, the existing limitations on investment choice by institutional investors, who have comprised the major portion of the bond market in recent years, has been a very important and practical consideration dictating the use of mortgage issues. The laws of most states have codified the mortgage faith by requiring that public utility investments of banks and trusts be confined as they are in New York state by the specification that "such bonds must be part of an issue of not less than one million dollars and must be *mortgage bonds secured by a first or refunding mortgage* on property owned and operated by the corporation . . ."⁸ This provision applies specifically to gas and electric utilities, whereas separate mention of telephone utilities carries the same requirements except that the bonds must be part of an issue of not less than five million dollars. Confronted with such dogmatism, utilities would be defying fate if they attempted a large distribution of debenture bonds in the narrowed market that would exist after the elimination of bank and trust funds and those funds influenced by bank and trust fund policy.⁹ Therefore, regardless of earnings, financial structure, and other significant economic considerations, it would seem that mortgage bonds will comprise the bulk of utility debt as long as the industry is substantially dependent on institutional investment.

Holding companies have been throughout their history the most consistent users of debenture contracts, and the decline in public offerings of such companies has accounted for the largest part of the decrease in unsecured debt offerings. In 1930, \$676,830,000 out of the total \$724,930,000 of debentures sold were those of parent and sub-holding organi-

⁸ Annotated Consolidated Laws of New York, Art. VI, Sec. 239, subdivision 12, paragraph g.

⁹ Consolidated Edison Company of New York successfully defied fate with its \$70,000,000 offering of April, 1936:

\$35,000,000 of 3¼% Ten-Year Debentures at 101.

35,000,000 of 3½% Twenty-Year Debentures at 99½.

zations; in 1931, all of the \$142,750,000 were such, and in 1932, \$41,000,000 out of \$46,709,000 were holding company issues. Only in 1934 did the debenture offerings comprise those of operating units, and in 1935 holding companies again were dominant. If holding companies are to issue debt contracts, the offering of specific security seems even more fruitless and vain than in the case of operating units. Only securities are available for the pledge, and collateral trust issues can be only as good as the earning capacity of the pledged securities permits. The American Water Works and Electric Company collateral issue of 1934 (\$15,000,000) was secured by a lien on stocks of subsidiaries which comprised the issuer's assets, and the only excuse for the pledge in this instance lay in the fact that \$11,000,000 of unsecured debentures were already outstanding. The collateral behind the refunding issue did effect a significant relative difference in lien position and facilitated sale by the creation of a debt claim prior to other debt obligations. The collateral trust issues of Brooklyn-Manhattan Transit during the same year were secured by pledge of mortgage bonds of operating units and thus were, in effect, mortgage liens.

The case for unsecured holding company debentures was materially weakened by the Insull disclosures of 1932, which revealed that inadequately drawn debenture contracts had permitted pledge of operating subsidiary securities for bank loans and thus removed assets and earning power from support of the Insull Utility Investments Corporation and Corporation Securities Company. Little as one may think of the significance of security liens as compared to general credit obligations of holding companies, one thing is obvious: Such legal claim on security assets is practically essential unless and until debenture bond contracts are so drawn as to prevent any possibility of subsequent pledge of income-producing assets for any purpose whatsoever.⁷ If such an arrangement could be accomplished, the only danger accruing to debenture holders would be that of dilution from creation of other unsecured

⁷ The Insull indentures referred to above permitted pledge of assets for loans made "in the ordinary course of business."

debts; a danger admittedly more prevalent in the case of holding companies than in the case of the operating units. Of course the threat of loss from depleted earning capacity will be ever present, but no pledge of holding company assets can minimize the seriousness of that threat.

PROVISIONS FOR DEBT RETIREMENT

The scramble for safety and security that is indicated in the previous discussion of mortgage *vs.* debenture bonds also finds reflection in other phases of the bond contracts that were drawn in the depression years. Examination of the bonds offered during the years 1930-35 indicates an ever increasing tendency to include in the indentures some sort of provision for debt retirement; special efforts were made to maintain or improve the position of issues by contractual control of utility income. Whereas such provisions appeared in only 28 per cent of 1930's bond offerings, they were attached to 31 per cent of 1931's contracts, 45 per cent of 1932's, 46 per cent of 1933's, 84 per cent of 1934's, and 82 per cent of the contracts in 1935. Incidentally, inasmuch as this interesting trend accompanied an increase in the use of mortgage bonds and a decrease in holding company offerings, it cannot be said that the weakening of lien positions necessitated these increased safeguards.

Seeking a justification for this trend in utility bond contracts, one is immediately confronted with the presumption that the investment market has been demanding these retirement provisions under penalty of higher yields if they were omitted. Obviously, if such was the case, the utilities had little choice in the matter, for they could not afford to pay higher costs in order to avoid including retirement provisions. Perhaps President Roosevelt also influenced matters when he recommended that utilities, as well as railroads, should provide for systematic debt retirement through sinking funds.⁹

⁹ "The expressed hope of the president that from the standpoint of sound financing public utilities will set up some form of sinking funds, and he appeared to think that the tendency is actually that way." (Reported by the *New York Journal of Commerce*, January 10, 1934.)

With due respect for the intelligence of the investment market as reflected in its offering prices, one is tempted to question the reasonableness of these demands as applied to the utility industry. There may be a number of possible justifications for the inclusion of systematic debt-retirement provisions in bond contracts, but do they exist in the case of public utility issues? Obviously, if a business is a unit in a decadent or wasting-asset industry, all debt financing should be accompanied by an amortization program that would retire debt at least as fast as, if not faster than, the earning assets disappear. Even if a business is in a static condition, neither expanding nor contracting, there would be a strong argument for debt retirement out of earnings, because profitable use of borrowed funds cannot long continue under such conditions. Static business is usually that which feels the full force of competitive elements, and, historically, a static condition has been the prelude to decadence.

It is largely a matter of opinion whether the utility industry qualifies, under this reasoning, as a business whose debts should be amortized rather than refunded and thus perpetuated. It should be recognized at the outset, by both issuers and investors, that the latter's real interest in the situation lies in the maintenance of value and earnings behind their bonds and that the mere existence of physical assets does not necessarily insure earning capacity. Under ordinary conditions, the need and demand for public utility services should result in the earnings which, according to orthodox economic theory, are a necessary consequence of demand at a price higher than cost of production. At the present moment government activities, particularly those carried on in the names of taxation, production "yardsticks," conservation of natural resources, and holding company regulation, may lend weight to the thought that perhaps the utility industry as a private business is decadent; demands for utility services are tending to be diverted to sources of supply with which private utilities cannot successfully compete. Although it is difficult for a reasoning person to believe that utility earnings, and thus property, will be destroyed either with or without "due proc-

ess of law," it may well be that sufficient pessimism pervades the market to make investors demand the additional protection that comes from contractual debt retirement. Of course, a further pessimistic influence confronts us in the form of railroad financial history; the economic conditions which have contributed to the financial embarrassments of the railroads have emphasized the dangers of debt when its creation is based on the false assumption that the mere fact of investment in public service industries will guarantee a continuous profitable return.

Any conclusion that might be drawn from these considerations would necessarily have to be modified in the light of political tendencies. But, if we could assume the normal working of economic forces unhindered by destructive governmental projects, the present outlook would not seem to call for contractual utility debt retirement as a protection against serious and permanent declines in earning power. As a matter of fact, the industry is just outgrowing its adolescent waywardness and is still far from the weakness of senility. As yet we see no signs of market saturation, and the technical problems of production and distribution have been subjected to relatively satisfactory solution only within the last twenty years. The situation of the electric railways, which have apparently outlived their economic usefulness in most localities, finds no parallel in the gas, electric, and communications fields. The economic doom of the industry does not seem sufficiently probable to necessitate its immediate anticipation in the capital contraction which debt retirement presumes to accomplish.

Closely related to the rather long-run considerations involved in the discussion of maintenance of value and earnings is the more immediate factor of the industry's ability to carry debt obligations profitably and successfully through the ups and downs of revenues and earnings. In many, if not most, industrial companies debt has been regarded as a more or less temporary expedient of capital raising. Both the market and the issuer have recognized the inherent business risks not only of long-run decadence but also of temporary inability to meet obligations as a result of cyclical declines in earnings. In the

presence of such risks, it would seem that contractual provisions for debt retirement are adequately justified. Utilities, on the other hand, have traditionally enjoyed relatively stable earnings, and, in so far as this tradition is well founded, the element of business risk is reduced and the dangers of default due to temporary recessions are minimized. Even though the recent earning experiences of utility companies have reiterated the warning not to take this stability story too seriously, it is doubtful whether reasonably margined debt issues of operating companies need retirement provisions for protection against defaults caused by fluctuating earnings.

For holding company bond issues, however, the danger of default from temporary lack of earnings may be a real one; how real will necessarily depend on the nature of the revenue characteristics of the issuing company. Those holding companies which hold only common stocks of subsidiaries whose own bonds and preferred stocks are outstanding in the hands of the public are in a position quite analogous to that of industrial concerns whose revenues react violently to changes in business activity. Public utility holding companies with only such residual equities are faced with the typical utility business risk plus a financial risk measured by the extent of outstanding claims on operating earnings prior to their residual interests. Under such circumstances, the financing of holding companies obviously should be most conservative in all respects, and, if debt contracts are used at all, the introduction of well considered debt-retirement programs would constitute one element of conservatism. Currently, there is again the political factor aimed specifically at the disintegration of holding companies which introduces not an element of risk but an element of certainty to the effect that holding company debts ought to be retired by January 1, 1938.⁹

Another situation in which sinking-fund provisions do have particular value arises in the sale of relatively small bond issues which do not and cannot enjoy the market facilities available to those large issues of bonds which achieve list-

⁹ The effective date of the "disintegration" provision of the Holding Company Act (sec. 11, par. b).

ing privileges and active trading. Both individual and institutional investors are necessarily interested in the purchase of securities whose market price continuously reflects inherent values; and they fight shy of bonds whose lack of market advantages may result in difficulties of liquidation. To such issues, periodic sinking-fund purchases contribute an effective support; prices are kept up and liquidation opportunities are afforded. The retirement provisions may help to provide a secondary market that would otherwise be non-existent or dependent on sporadic over-the-counter trading. In Kansas Power and Light Company's bond issue offered in 1932 we find a prime example of the use of a sinking fund to enhance marketability. The Kansas company offered \$7,500,000 of 6 per cent bonds at 91½ in February, 1932, and part of the supporting indenture comprised an agreement to redeem \$42,000 of these bonds each month. The effects were shortly demonstrated in the demoralized bond market of May, 1932, when the prices quoted on this issue remained five points or more above similarly secured 6s of the same company. Certainly the difficulties of distribution of this issue would have been materially greater had it not been for the repurchase support written into the contract.

The effects of these considerations are reflected in many of the practical problems of utility financial management and the sale of utility bonds. It is obvious that debt-retirement clauses in the bond contracts of expanding companies increase the need for new financing and call for the sale of more bonds than would otherwise be necessary to maintain a given debt ratio. Even in more nearly static situations, regulated utility earnings are often insufficient to provide for dividend payments and also for reduction of total debt; hence, resort must be had to the ancient practice of "borrowing from Peter to pay Paul." Peter in some cases is a bank, sometimes a parent company, but eventually such temporary advances are again funded, usually as part of larger programs of financial expansion.

There are those who argue that including debt-retirement provisions in bond contracts is good for the corporate

morale. Utility managements are forced by such provisions to give greater attention to debt than the mere payment of interest requires, for they must also worry periodically about repayment of principal. If a given amount of equity trading is to be maintained, the contraction of particular issues increases the frequency with which the management must go to the market and review its operations and finances before the investment banker, the Securities and Exchange Commission, and the investor. It is further argued that periodic retirement eases the strain of maturities. This is doubtless true in some cases, but instances to be cited later will indicate that the contribution in this respect is usually rather nominal. From the standpoint of internal financial management, the advantages seem more spiritual than practical, but acceptance of this view need not lead to the conclusion of "no justification" because there may be cases in which the management can profit from spiritual guidance.

Recent practice of utility corporations in connection with sinking fund provisions is indicative of a wide variety of ideas on the subject. The extremes are represented by the Cleveland Electric Illuminating Company's \$40,000,000 issue of July, 1935, which contained no provision for contractual periodic retirement, and the \$10,000,000 issue of the Pacific Lighting Corporation in October which provided for specific annual contributions to a sinking fund. Similar in effect to the latter was the agreement of the Edison Electric Illuminating Company of Boston to spend annually, beginning in 1941, an amount equal to 1 per cent of the company's total debt on retirement by purchase or call of bonds from its recent \$53,000,000 issue. As between these cases there is no doubt of intent; they do or they don't. The Cleveland company did not wish to tie itself to a promise of debt reduction and therefore made no such gesture to attract the market. That its position was sound in view of the circumstances surrounding its properties and earnings may be indicated by the fact that the \$40,000,000 issue was sold at a price to cost the company 3.72 per cent per annum—not a bad figure even in the fa-

vorable bond market of July, 1935. Without implying that the presence of retirement provisions caused the difference in cost, we may note that the Boston Edison financing cost 3.40 per cent per annum. It is not apparent that there were any very fundamental internal reasons for these differences in retirement provisions, although the asset-debt ratio of the Boston company was slightly less favorable than that of the Cleveland unit; both companies are reputable operating utilities with no economic factors indicating that the one should contract its debt while the other might indulge in perpetual indebtedness. No significant reason can be discerned why, beginning in 1941, the Boston Edison should either contract its capital by \$530,000 per annum or increase its equity through investment of earnings in debt calls by the amount of \$530,000 per annum. Certainly the Boston issue is not so small as to need the market support that will come from an annual 1 per cent purchase, although it might be possible that the annual retirement, small though it will be, will have an appreciable effect on the floating supply of the issue. In cases where large blocks of bonds are bought by institutional investors with no intention of sale prior to maturity, a very moderate annual retirement will render considerable support to the trading market.

In the case of the Pacific Lighting Corporation, the promise to retire annually \$500,000 of its ten-year \$10,000,000 issue offered in October, 1935, does make a material contribution to relief of the maturity burden: 50 per cent of the debt will be taken care of during the life of the contract. This issuer is strictly a California holding company whose operating units are already quite well developed; hence, there are grounds for the belief that no large sums need be used for expansion within the next decade. The company will undoubtedly wish to remain intrastate in character to avoid the jurisdiction of the Holding Company Act, and, within the localities now served, large capital contributions by the parent company may not be needed. Of late this company has been paying \$3 per annum on its 1,608,631 shares of common stock. The sink-

ing fund agreement literally says to the stockholders that, in the future, 35 cents per share of earnings must be devoted to debt retirement. Providing the company's corporate earnings continue at the current rate of \$3.66 per share (as of 1934), the \$3 dividend payment may be maintained together with the retirement distribution without causing a depletion of total capital; in fact, a balance of 31 cents per share will still remain under such conditions as a contribution to new investment.

Less clear-cut in their purpose and workings are a number of other types of retirement provisions found in contracts which attempt to recognize the market's apparent desire for increasing equity protection behind bond issues and at the same time avoid the necessity of using the issuer's funds for debt retirement. The mortgage bonds of the Southern California Edison Company are "protected" by the provision that an amount equal to 3 per cent¹⁰ of the company's total debt must be deposited annually in a special "Trust Fund," which fund may be drawn on for replacement of retired property, purchase of new property, or retirement of bonds. Obviously, the extent to which the provision will increase the equity behind this issue will depend on the amount spent either on bond purchases or for the acquisition of new property not used as a basis for certification of additional bonds. The amounts spent for replacements can only tend to maintain the status quo with respect to the ratio of debt to assets.

The new "first mortgage" indenture behind the bonds of the Consumers Power Company contains a similar provision to the effect that an amount equal to 1 per cent of total debt shall be deposited annually in a sinking fund; however, in this case, \$125,000 per year *must* be spent for debt retirement and the balance of the 1 per cent *may* be spent for construction of "permanent extensions, enlargements or additions" or for debt retirement. There is greater assurance of equity increase in this contract, although attention should be called to the fact that one dollar used to retire debt results in greater

¹⁰ Recently raised from 2 per cent by supplemental indenture.

relative benefit to bondholders in terms of the asset-debt ratio than a dollar spent for new and unbondable assets.¹¹

Another contractual method apparently designed to effect only a continuance of the status quo in the matter of debt-asset proportions is typified by that used in the indentures of Standard Gas and Electric Company subsidiaries. The Duquesne Light Company's \$70,000,000 issue of July, 1935, is characteristic. The indenture provides for a so-called "Maintenance and Renewal Fund," to which fund the company agrees to pay annually the amount, if any, by which 12½ per cent¹² of gross earnings exceeds the amounts spent for (a) "maintenance, repairs, renewals, or replacements," (b) "net bondable expenditures,"¹³ and (c) purchase of bonds secured by the indenture. The fund itself may be used at any time for any of these purposes. Quite obviously, only the use of funds for the last-named purpose could result in any material strengthening of the equity. If new assets are purchased and mortgaged up to the 75 per cent limit allowed, the asset-debt ratio will not be at all improved unless the debt is in excess of 75 per cent of assets to begin with. A further limit to the protective significance of these provisions lies in the fact that only the difference between 12½ per cent and the normal costs of maintenance and repairs will ever find its way into this fund. For the Duquesne Light Company it is found that the annual charges for maintenance and repairs run 5 per cent or better of gross revenues, while depreciation charges are about 9 per cent of the same figure; in fact, it is common in the gas and electric industry for the total of these two expenses to range in the neighborhood of 14 per cent of gross. Consequently, the amount available for debt retirement is confined to 12½ per cent minus 5 per cent for maintenance—a

$$^{11} \text{Ratio } \frac{\$2 \text{ debt}}{\$4 \text{ assets}} \text{ reduced by } \$1 \text{ debt retirement} = \frac{\$1}{\$3} = \frac{\$5 \text{ debt}}{\$15 \text{ assets}} \text{ ratio,}$$

$$\text{whereas ratio } \frac{\$2 \text{ debt}}{\$4 \text{ assets}} \text{ reduced by } \$1 \text{ asset addition} = \frac{\$2}{\$5} = \frac{\$6 \text{ debt}}{\$15 \text{ assets}} \text{ ratio.}$$

¹² 15 per cent rate provided in issues of Wisconsin Public Service Corporation and San Diego Consolidated Gas and Electric Company.

¹³ Some indentures, such as that of Northern States Power Company, clearly state "net bondable expenditures not used as a basis for the issuance of bonds."

maximum of $7\frac{1}{2}$ per cent of gross, assuming no replacements, renewals, or additions. If depreciation charges representing annual losses of investment value are typically about 9 per cent of gross, it may be concluded that the expenditure of the $7\frac{1}{2}$ per cent balance for replacement would leave nothing for debt retirement and fall short of guaranteeing the maintenance of the asset-debt ratio. Of course, adequate depreciation charges, if earned, would tend to effect adequate maintenance of investment quite aside from the provisions of the indenture.

It is further suggested that, from the investor's standpoint, this method of protection may prove not only inadequate but also illogical. Decline in gross revenues is at once the signal for declining earnings and value and for a retardation in the potential rate of debt retirement. The investor is thus confronted with the anomaly that, the better the earnings and more secure the debt, the faster the debt may be retired. Poor earnings and reduced values, on the other hand, tend to perpetuate the debt. This situation is just the reverse of that encountered by the corporation itself, which finds to its advantage that the burdens of performance are automatically reduced as earnings fall off.

From this great variety of treatments accorded the matter of debt retirement, it is difficult to draw generalizations. But perhaps the safest and most reasonable conclusion may be to the effect that no generalizations are needed or fitted to the situation. As implied earlier, economic reasoning tends to belittle the need of and use for contractual debt-retirement provisions. If such provisions are to be used, there is much to be said for the simplest forms of contract which provide that definite sums be spent periodically for retirement only; these satisfy any market demand for sinking funds, and the burden may be budgeted accurately and definitely by the issuer's financial officers. Or, if a company is definitely faced with a condition that calls for capital contraction, it might be advisable to recognize this situation by reverting to the issuance of serial bonds, as did the Southern California Edison Company in its 1935 issue of serial debentures. This com-

pany, with rather unique frankness, has committed itself to capital disbursements of \$2,000,000 and \$3,000,000 per year until 1940—presumably in recognition of a declining need for capital. The serial maturities will be adequately covered by the amount of depreciation charges, but debt retirement will restrain the use of funds for maintenance of total investment. Or again, the occasion of an excessive debt ratio might very well call for debt retirement provisions designed to pull a financial structure into conservative shape as soon as possible. Late in 1935, Southwestern Gas and Electric Company effected a refunding by sale of \$20,500,000 of bonds while the book value of the company's plant account grossed only \$27,000,000 and total book equity registered less than \$13,000,000. In face of such an obvious need for debt reduction, the company committed itself to a ten-year debt retirement program by issuing \$4,500,000 of the above bonds in serial debenture form with \$450,000 due annually.

Concerning the more complicated formulae for setting retirement and equity protection provisions, we stop with the observation that the formula has yet to be devised which is an adequate substitute for good management either as a protection to bondholders or as a profit maker for stockholders. If a situation actually seems to justify permanent debt and the market can be persuaded to accept bonds without retirement provisions, a reputation for sound and honest management, coupled with "adequate maintenance"¹⁴ provisions in the indenture, should suffice to create debt contracts that will be marketable on a favorable basis.

CONVERSION FEATURES

With what might seem at first thought like extreme inconsistency, the utilities have resisted the tendency to create conversion possibilities in their bond contracts. This is in contrast to the utilities' own policies in earlier years and to the policies

¹⁴ The indenture behind the 1935 issue of the Edison Electric Illuminating Company of Boston not only contains a promise of "adequate maintenance" of physical property but also requires that this be certified by an independent engineer and that the company make a cash deposit in the amount of any deficiency.

of industrial companies reflected in their 1935 and 1936 bond offerings. In the 1935 market it was said that all one needed to do to sell an industrial bond issue was to make it convertible into stock, because the conversion option provided the buyer with a hedge against rising prices and interest rates which would depreciate his bond but tend to increase stock values. Back in 1930, more than 20 per cent of the utility bonds offered were convertible, and even in 1934 about a quarter of the year's nominal \$114,000,000 carried the conversion privilege.¹⁸ In a bond market like that of 1935 which afforded only high prices and minimum yields to utility bond buyers, it might have been expected that conversion privileges would have been demanded to protect long-term 3½ per cent commitments from the potential ravages of increased money rates.

There are a number of factors which account for the abandonment of utility bond conversion features even in face of a general market preference for such hedging instruments. In the first place, most conversion privileges had been confined to the offerings of parent or sub-holding companies, and the decline in such offerings in itself accounts for the fewer conversion rights in recent years. Few indeed are the holding companies which are willing to permit the possibility of reduced control that would result from conversion of operating company debt into voting equity securities; hence operating company convertible issues have generally been confined to independent units. In 1934, Virginia Electric and Power Company, a constituent of Engineers Public Service Company, did offer bonds carrying conversion options one of which permitted exchange of each \$1,000 bond for ten shares of common stock, but this offer stands as an isolated exception.

In addition to the above limitations dependent on matters of corporate control, there is the generally accepted opinion that in the case of utilities conversion rights cannot afford the typical hedging protection. Effective hedging is impossible in a situation where equity values do not tend to react oppositely to bond values in face of rising prices, and utilities

¹⁸ A few of these conversion privileges permitted only exchange of notes or bonds for other notes and bonds, no shift to equities being possible.

are believed to be unable to profit from commodity price increases in the manner of industrials. The inertia in rate structures under regulation does minimize the possibility that utility prices can be raised to match increased operating expenses, and offers instead the possibility that equity values may suffer if expenses rise faster than revenues. This point of view evolves from an inflationary psychology, however, and would not seem to be equally applicable to a situation in which increased interest rates, and thus lower bond prices, might be merely the accompaniment of generally improved business conditions. Under the latter conditions utilities would be in a position to capitalize on the fact that, in general, the industry operates under decreasing cost conditions. Thus, even at fixed rates, increasing volume would almost inevitably mean a more than corresponding increase in profits, and this, in turn, should materially enhance the value of equities in reasonably capitalized utility companies.

But again, assuming that there would be an increase in equity values accompanying a fall in low-coupon bond prices, holding companies would not be willing to share their interest in the appreciation unless forced to do so by some untoward circumstance.

The most significant factor in the 1935-36 market was the apparent and continued willingness of buyers to absorb 3½ per cent to 4 per cent bonds at par or above. Obviously, no utility will need to "sweeten" its offerings as long as such conditions exist. There is no point to an invitation for bondholders to join the equity party at a time when debt is most profitable and most easily borne, unless that invitation is necessary to the successful sale of a debt contract. Furthermore, since such arguments as exist in favor of permanent corporate debt apply most pertinently to operating public utilities, there is no excuse for issuing convertible bonds as a sale of stock for future delivery.

When, as, and if holding company financing comes back, there will doubtless be a recurrence of convertible issues, because the enhanced risk and leverage possibilities provide a justification similar to that involved in industrial offerings.

The possibilities of conversion contracts as means of holding company debt retirement were evidenced in the 1934 issue of American Water Works and Electric Company. Fifteen million dollars of 5% Convertible Collateral Trust bonds were offered by this company on February 28, 1934, at 105. The bonds were convertible into common stock at \$20 per share to March 1, 1936, \$30 per share after March 1, 1936, to March 1, 1938, and so on to \$60 per share from March 1, 1942, to maturity. At the date of the bond offering, American Water Works and Electric Company common was quoted at 22. By February, 1936, the price had reached 30, and as a result \$12,000,000 of the bonds were converted to take advantage of the \$20 rate which expired on March 1, 1936.¹⁸

¹⁸ As reported on March 3, 1936, by H. H. Porter, President of American Water Works and Electric Company.

CHAPTER 3

CAPITAL COSTS AND METHODS OF SECURITY DISTRIBUTION

In finance as in any phase of business management, costs are matters of prime importance. The costs of capital to the public utility are of significance to management because the margin between such capital costs and operating profits comprises the stockholders' real measure of successful performance. Further, capital costs are important to the investor because of their inevitable reflection in yields on securities purchased, and even the consumer can be involved by the eventual, if not immediate, effect of money costs on utility rates.

The elements affecting capital costs, both explicit and implicit, are in part controllable by management in the sense that financial management may effect a choice among alternative policies involving various costs and benefits. Also, there are items of financing cost created through the regulatory process which may have an important bearing on financial policies and procedure. It is the purpose of this section to examine various factors which have influenced the financing costs of the utilities in recent years and to attempt an evaluation of policy and practice in the light of the needs and characteristics of the industry.

METHODS OF DISTRIBUTION

A discussion of the methods of security distribution evolves itself primarily into a consideration of the functions and performance of investment bankers. During the years 1930-35 there have been some apparent changes in the relationships between bankers and utilities which may have a significant effect on methods of utility finance. In 1930, 1931, and 1932, the predominance of banker distribution is indicated by the fact that investment bankers participated in an ever increasing proportion of total utility offerings, and especially of bond offerings. Table 5 shows the extent of this participation in total financing year by

TABLE 5—METHODS OF DISTRIBUTION USED IN PUBLIC UTILITY SECURITY OFFERINGS, 1930-35

Method of Distribution	1930	1931	1932	1933	1934	1935
Underwriting by investment bankers:						
Amount offered	\$1,697,864,328	\$1,319,361,428	\$498,401,100	\$73,739,000	\$118,965,000	\$1,106,740,847
% of total	71.3	84.4	91.4	79.5	63.4	85.5
Private sale:*						
Amount offered	8,000,000	115,931,529	2,312,775	-----	36,565,000	163,432,000
% of total	0.3	7.4	0.4	-----	19.5	12.6
Privileged subscription:						
Amount offered	675,916,824	117,836,104	17,875,820	9,147,778	-----	17,763,900
% of total	28.4	7.5	3.3	9.9	-----	1.4
Exchange:						
Amount offered	-----	0.7	4.9	10.6	17.1	0.5
% of total	-----	9,962,000	26,842,000	9,844,700	31,991,000	6,485,000
Total	\$2,381,781,152	\$1,563,091,061	\$545,431,695	\$92,731,478	\$187,521,000	\$1,294,421,747

* In the years subsequent to 1933 this classification refers exclusively to issues offered under conditions which served to exempt them from provisions of the Securities Act as being other than "public offerings."

year and demonstrates that in the more recent years bankers have been playing a slightly less important part in the sale of utility securities. Not only has the bankers' dollar volume declined but they have been confronted with a loss of their former proportion of utility offerings because of shifts to other methods of distribution.

In the past, the sale of utility securities by privileged subscription has been confined largely to stock offerings—usually common stock offerings. This tendency has survived with insignificant variations in spite of the fact that many modern corporate charters contain waivers of the pre-emptive rights of shareholders. The only common stock offering since 1932 occurred in 1935, when Edison Electric Illuminating Company of Boston offered shares at \$150 to old stockholders. There is no reason to believe that this technique will be abandoned, for it affords an almost certain method of equity financing when markets are favorable; hence, when there is again occasion for any volume of common stock distribution, old investors will probably still be a market for new shares at less than current market prices.

The offering of bonds by the so-called privileged subscription method has generally been confined to one sort of situation; that was typified by the offering of convertible bonds in the manner of American Telephone and Telegraph in days gone by. Being convertible into stock, such bonds are treated like stock in their offering. In 1932, however, the "privilege" was used in a manner that was better defined "pressure"; "pressure subscriptions" were offered to holders of Pennsylvania Electric Company's maturing notes to effect the payment of each \$5,000 of notes with \$6,000 of bonds and \$200 of cash. Similarly, the parent of the Pennsylvania company, Associated Gas and Electric Company, offered to all and sundry security holders of Associated and all of its subsidiaries the "privilege" of subscribing to 8 per cent bonds at 100. Obviously this adaptation of the method depends for its success on either sentimentality or fear; and these companies were able to capitalize on the fear of liquidation losses that was so prevalent in 1932.

Only in such unusual circumstances will privileged subscriptions to other than convertible bond issues be used.

Another and similar method of security flotation assumed temporary importance in the worst of depression years and was effective in reducing the bankers' share in total offerings. This method has been classified as exchange financing. It made its appearance in 1931 when four companies¹ appealed directly to the holders of maturing obligations to accept new notes at higher interest rates in satisfaction of maturities. Subsequently this method of financing increased in importance, and in 1933 and 1934 it was used in a sizable proportion of total offerings, as indicated in Table 5. In all cases it was used as a means of modification of debt contracts, usually at maturity. One company, Virginia Electric and Power Company, effectively used this technique early in 1934 to anticipate maturities and simplify financial structure by effecting an exchange not only of 1934 maturities but also of some due in later years. Small cash bonuses were used to encourage the exchange. This exchange and other 1934 exchanges were doubtless influenced by the possibility of avoiding the registration requirements that would have been involved in banker underwritings,² but those of previous years represented other cases of pressure financing. Small or weak companies with issues maturing under market conditions like those of 1932 and 1933 had little opportunity for satisfaction of the maturities by public offerings of new issues; if such issues were salable at all, their costs were exorbitant.

The fact that many such offerings were successful "without benefit of banker" indicates, not a disappearance of the need for the banker function, but merely that bankers could not function under the circumstances. The direct appeal to security holders carried an unwritten threat, or promise, that failure to co-operate would result in default, receivership, and perhaps disintegration of the issuing company. The fact that the threat of

¹ American Community Power Company, Maryland Electric Railway, General Public Utilities Company, and New York Water Service Company.

² Virginia Electric and Power Company published an elaborate brochure in connection with its exchange offer which was probably as extensive and expensive as a registration statement would have been.

economic destruction is a condition precedent to successful exchange financing is perhaps indicated by the failure in 1935 of Standard Gas and Electric Company to carry through such a program. This company tried to effect a five-year extension of some \$25,000,000 of maturing notes, but adequate co-operation was not forthcoming and the company on its own petition was declared bankrupt under Section 77b of the federal Bankruptcy Act. In 1935 objectors, conscientious and otherwise, to the exchange of securities offered by Standard Gas did not have the same fear of alternatives as existed in the dark days of 1932 and 1933. Earnings and values had recovered sufficiently in 1935 so that the legal position of matured note holders was one of some strength, since even bankruptcy would not be expected to destroy completely the value of their securities. It would seem reasonable to conclude that exchange financing by direct offer to security holders is largely an interesting historical incident and one which may not be expected to recur as an effective method of security distribution except under panic conditions.³

In the 1935 figures we find evidence that the investment banker was assuming his old role of distributor, for 86 per cent of utility offerings—mostly bonds—were underwritten, but even this was short of the more complete participation to which bankers were accustomed in former years.⁴ This loss to the banker has been largely due to the numerous instances of direct sale of securities by the issuers to the investors without the intervening middleman. In the twenties, many utilities followed a policy of direct sale of preferred stocks to customers, but in the period under observation only a few scattered instances of this were noted. Rather, the recent offerings have consisted of bonds which have been sold directly to a few large institutional investors, usually four or five in number. It has

³ Incidentally, the Standard Gas and Electric Company's extension offer of 1935, while not underwritten, was favored with the "best efforts" of a group of investment bankers which sought to facilitate the exchange. The offer also represented a registered issue under the Securities Act.

⁴ Banker participation in bond offerings alone ran 90.2 per cent in 1930, 99.9 per cent in 1931, 95.9 per cent in 1932, and 97.7 per cent in 1933.

been assumed that this procedure qualified the offerings as private sales by interpretation of the Securities and Exchange Commission,⁶ and thereby exempted the sale from the provisions of the Securities Act. Such distributions constituted 20 per cent of 1934 offerings; and in 1935, although they made up only 13 per cent of the total, their dollar amount ran over \$163,000,000. In years prior to 1934 the amounts indicated as private sales consisted, for the most part, of offerings of preferred stock to customers. In 1931, American Telephone and Telegraph sold \$70,000,000 of common stock to its employees, and Associated Gas and Electric Company's subsidiary, Mohawk Valley Company, sold \$1,000,000 of debenture bonds through customer ownership campaigns. However, no general distributions to customers of either bonds or stock occurred, and the custom of private sale may very well be characterized as a "post Securities Act" phenomenon.

Two factors have worked together since the passage of the Securities Act in 1933 to account for this shift from banker to private offerings: the explicit and implicit costs of registration and the paucity of investment opportunities for bank and insurance company funds. Presumably the expense of registration⁷ provided an incentive to issuers to avoid that formality and deal directly, where possible, with banks and insurance companies. The latter, for their part, encouraged such deals in high grade issues because they had a superfluity of funds for investment in a very low yield market. Further, such institutions were no longer permitted to participate and "take down" securities as members of underwriting syndicates and they thus lost the concessions from offering prices in the amount of bankers' spreads to which they were accustomed in the days before NRA.⁸ Faced

⁶ The law exempts offerings that are not public but provides no definition of "public" nor any indication of what would not be a public sale. The Securities and Exchange Commission has been equally careful not to commit itself to definition, saying, in effect, that only the circumstances of each situation can provide the answer. (Securities and Exchange Commission Release No. 285, January 24, 1935.)

⁷ Averaged 0.71 per cent of par on the securities issued in 1935.

⁸ The Code of Fair Competition for Investment Bankers, still observed in substance, although its legal status died with the NRA, prohibits participation

with the need of buying large blocks of each of the relatively few offerings anyway, the institutions were in a position to offer issuers higher prices and still buy at lower prices than would have been available to them at public sale. In other words, it became possible not only to save registration expenses but also to split the middleman's profit between buyer and seller by adopting direct sale methods—the same sort of “run-around” so frequently given jobbers and wholesalers in commodity markets.

The interesting question now is whether this recent procedure portends the permanent establishment of security distribution lines that will ignore the underwriter. As long as 1935 investment market conditions continue, the answer would seem to be “Yes” as far as very high grade issues of bonds and notes are concerned. The relative scarcity of good offerings has prevented application of the principles of diversity of investment to any great extent, hence large buyers have been willing to negotiate fewer and larger purchases, and as long as the volume of offerings remains small in comparison with available funds, institutions will continue to effect direct purchases.* However, when, as, and if offerings and yields return to more normal proportions, it may be assumed that the desire for diversification will lead to more and smaller investments, and this would tend to eliminate the so-called “private” market for utility bonds. Also it may be reasonable to expect that utilities may prefer distribution to concentration of their issues in the interests of future markets.

There is nothing to indicate that any great volume of financing can be accomplished by utilities without the aid of investment bankers. A few of the country's prime risks may continue to go directly to banks and insurance companies with their notes and mortgage bonds, but the broader markets avail-

in selling groups and syndicates by other than those “actually engaged in the investment banking business.”

* In a number of instances such direct sales have been facilitated by investment bankers acting as agents—an arrangement that added a small increment to banker revenues without assumption of underwriting responsibilities. In 1935, bankers acted as agents for some \$67,000,000 of the \$163,432,000 of bonds sold “privately.”

able only through syndicate operations must be employed to absorb most large issues of any type. In the background remain problems of resale and other complications of the Securities Act which will serve to prevent extension of the private sale technique. Subsequent administrative rules of the Securities and Exchange Commission may further define the limits of private sale in the public interest, there being some feeling that the general investing public may be offered only the skimmed milk if institutional investors are permitted to absorb the cream of the offerings by direct negotiation with the issuer.

REGISTRATION COSTS—AND BENEFITS

In the foregoing discussion, the costs of registration were mentioned as a factor influencing the tendency to private sale, and such expenses have constituted one cause of complaint against federal security regulation as now embodied in the Securities Act. In the light of this complaint, the writer observed closely the reported expenses incurred in connection with 1935 public utility offerings. That year constituted the first in which there was a sufficient volume of financing to make possible a satisfactory statistical analysis.* Of the 1935 security offerings of \$1,294,421,747, about 87 per cent were registered. The registration expenses on these issues totaled \$7,801,489 or 0.71 per cent of the par value of \$1,093,072,247 for which expenses were reported in prospectuses. The range of expense items on individual issues was considerable, the minimum of 0.38 per cent attaching to the \$53,000,000 issue of the Edison Electric Illuminating Company of Boston and the maximum of 5 per cent applying to the \$700,000 issue of the Missouri Telephone Company. It is obvious that the element of size accounted in large part for the variation in percentage costs, inasmuch as many of the expenses of investigation and reporting are not much affected by the size of an issue. It cost the Boston company \$200,000 to effect registration, while the Missouri com-

* The 1934 financing was commented on by the writer in "The First Year under the Securities Act," *Public Utilities Fortnightly*, Vol. XV, No. 6 (March 14, 1935). There it was noted that registration expenses in 1934 had ranged from 0.1 per cent to 1.1 per cent of the par value of 1934 offerings.

pany paid \$35,000 for its very much smaller issue. Issues of size comparable to that of Boston Edison had costs ranging in the lower brackets: Ohio Edison, 0.39 per cent; Los Angeles Gas and Electric, 0.52 per cent; Detroit Edison, 1 per cent; Southern California Edison, 0.48 per cent; and Pacific Gas and Electric Company, 0.66 per cent. It is significant to note that Southern California Edison's second offering of the year (\$35,000,000), although smaller than its first issue of \$73,000,000, cost less to register even in percentage terms; the first cost \$353,000 or 0.48 per cent, while the second cost \$140,000 or 0.40 per cent. This fact tends to substantiate the deductive reasoning which would lead one to believe that experience with registration procedure tends to a material reduction in such expenses. The relatively high cost of the Detroit Edison registration (1 per cent) was no doubt due, in part at least, to the fact that its offering represented the company's first contact with registration requirements. While comparison of the reported expenses of these companies is not fair in all respects because some items of cost are included by some and excluded by others—for example, some companies assume certain costs of investigation which in other cases are paid by bankers out of underwriter's margins—the writer is satisfied by evidence such as that given above that registration expenses are not excessively burdensome in connection with large or even moderately sized issues and that expense is seldom a valid excuse for failure to register under the Securities Act as now administered.

Further evidence of the really nominal cost of registration is presented in the accompanying breakdown of the expense figures reported by Central Hudson Gas and Electric Company (Table 6). This example is not offered as typical, although it may not be far from that; rather it is presented to demonstrate that, in this one case, most of the costs are not properly called "registration costs" at all. Most of the expenses are those which Central Hudson Gas and Electric Company would of necessity have incurred in an underwritten distribution before the days of the Securities Act and its registration requirements. It is estimated that more than 70 per cent of the total cost of \$179,243.50 would have been spent on this particular financing

even in "the good old days." The questioned percentages in the table are bald assumptions and indicate little more than the known fact that, although the costs referred to might be reduced by non-registration, they would not be eliminated. Thus it is quite evident that differential registration costs comprise only about 30 per cent of the total expenses of issuing securities and corporate complaints about such amounts seems nonsensical and unjustified. It is admitted that the figures quoted do not measure the potential registration costs in situations where they may have been so high as to preclude the possibility of a public offering. However, no one should lose sleep about the inability to effect registration and sale of securities by a public utility which is unable to tell its story for less than \$500,000. If the cost burdens prevent such offerings, so much the better.

It will doubtless continue to be true that the small company will find its registration costs proportionately high,¹⁰ and that may be unfortunate, but surely the explicit costs are nothing that cannot be readily borne by typical public utility companies. In addition to the explicit costs, however, there are the intangible costs of responsibility introduced by the terms of the Securities Act. No one is yet quite sure of the extent of these responsibilities, and there are no means of measuring their cost. All we know is that the Act makes the issuer and its officers and directors responsible for "full and fair disclosure" of pertinent facts, and no court has yet had occasion to interpret the language of the Act or to define the "material facts" for which responsibility must be assumed, either as to inclusion or omission. No doubt some risk is involved in this matter, although 1934 amendments to the Act did somewhat lighten the burden of defense. Underwriters are now required to prove only that they did *not* believe statements of various experts to be *untrue* if they are to avoid financial responsibility for false or misleading statements.¹¹ In the original form of the Act, defendants had to prove that

¹⁰ And so they probably were before the passage of the Securities Act of 1933.

¹¹ Sec. 11, subsection (b), paragraph 3 (c and d) of the Securities Act as amended.

they "did believe that the statements were true." Also the standards of performance required of those who take responsibility for registration statements were reduced from those of a fiduciary to those of a "prudent man in the management of his own property."¹² That the present risks are not unbearable is sufficiently evidenced by the willingness of hundreds of individuals to assume them in connection with the offering of registered issues.

Even though we must add to the dollar costs of registration the responsibility costs, we need not necessarily assume that the issuing utilities derive no net benefit from the registration requirements. The taking of responsibility for statements made in registration really gives the issuer something that he never had before, making pertinent the question: Is this "something" worth the cost? It is true that registration in terms set forth by the Securities and Exchange Commission neither expresses nor implies the Commission's approval of an issue. But the act of registration does set the responsibility for the issue more firmly on the shoulders of the issuer and his associates than common law ever did. Therefore, registration divides security offerings into two classes: those for which some one takes statutory responsibility and those that are "orphaned" and thus confined to private or intrastate sale. This significance attaching to registered issues is necessarily confined to those of going concerns with something to lose. It cannot apply to offerings of fly-by-night promoters of new ventures who can easily comply with the law by truthfully stating that no facts exist. Public utility financing is largely that of going concerns whose managements would normally be unwilling to risk investment and person in falsification. In the light of these conditions, the investment market is immediately confronted with a clear-cut choice among utility issues—or, as is perhaps more likely, the utility issues which no one will sponsor are kept off the market. Immediately, this might seem of little significance, but its ultimate effect, Commission statements to the contrary, will be to reduce the supply of securities offered in face of a given investment demand.

¹² Sec. 11, subsection (c) of the Securities Act as amended.

The general effect of reducing the amount of utility offerings under reasonable administration of the Securities Act cannot but redound to the benefit of registrants in terms of high prices and lower money costs. Funds will be steered away from unregistered issues and kept out of unoffered issues, and while we may sympathize with the company that cannot register because of cost or unwillingness to assume responsibility, that sympathy cannot become so maudlin as to suggest that such a concern is entitled to investment confidence. Admittedly, the high bond prices of 1934-35 are not fair indicators of low costs resulting from registration because they resulted largely from peculiar market conditions, but we do have reason to hope that in the future a greater ease of discrimination between good and bad utility offerings will favor the good ones with cheaper capital.²⁸

From the standpoint of the individual investor, the benefits of security registration will be confined largely to this greater ease of discrimination. It is not the writer's belief that reading the prospectus prepared by the issuer will exert much influence on investment choice. Books can be printed and distributed free of charge, but that will not assure dissemination of knowledge, particularly if the books are printed in Greek—and to many if not most individual investors the typical prospectus is Greek. But again, this need not imply that the requirements for registration and distribution of prospectuses are vain; rather their purposes are served in the responsibility entailed. And although the institutional and professional investors may have no more information today than they were able to compile and compel in days before registration, they may put more confidence in information from the official sources of registration statements and prospectuses. The reaction of these investors to facts and events usually will comprise the strongest market influence and thus serve to

²⁸ Of course wild investor psychology may outweigh reason. It is interesting to speculate whether securities of Insull utilities and others like Tri-Utilities Company and American Commonwealth Power Corporation would have been registered and would have been sold whether registered or not had there been a "Securities Act of 1925."

protect the individual from excessive prices and misguided commitments whether or not he can interpret a prospectus.

In addition to these factors affecting the market to the eventual benefit of the issuer of good securities there is another interesting possibility of benefit. Like it or not, registrants under the Securities Act must have their houses in order, must apply reasonable accounting methods in their record keeping and financial statements, and must know the operating and financial details relating to their properties. These are absolute prerequisites to assumption of responsibility such as regulation imposes. It is obvious that no harm can come from such necessity—and, on the other hand, some good may result. On this point it may be interesting to quote the president of one of the country's large corporations who, in a letter to the writer, said:

I cannot help being impressed with the tremendous amount of labor involved in registering securities, but on the other hand, when the job is completed, the company itself knows more about its property than it ever did before and a public record is built up which, when carried through with a large number of securities, is going to make the better investment securities rest on a great fund of very accurate information.

These are the words not of a New Deal advocate but of a Republican corporation president, and they were written after a series of experiences with the Securities Act and its administration.

BANKERS' SPREADS

In a previous section there was discussion of the extent of banker participation in security offerings, and avoidance of underwriting fees and expenses was mentioned as one of the possible incentives leading to private sales. The question of bankers' spreads is an interesting one inasmuch as it affects the cost of money to the issuer of securities as well as the yield to the investor. In the long run the services of investment bankers are and will continue to be quite essential to successful utility financing, and close observation of bankers' fees as expenses of such financing is therefore worthwhile.

In 1935 underwriters participated in the public offering of \$1,106,740,847 of utility stocks and bonds and for this participation bankers received \$24,906,383 in underwriting fees and commissions.¹⁴ This amount constituted an average 2.25 point spread between the buying and selling prices of the billion dollars' worth offered under banker sponsorship. Statistics are not generally available to the outside investigator to make possible a comparison of this 2.25 spread with the profit margins enjoyed by bankers in the "good old days," but they are generally understood to have been much higher—at least 50 per cent greater than this figure even for the highest grade issues. The writer had access to one confidential source which indicated that one of the large investment houses was accustomed to take an average margin of 3.5 points on high grade public utility bonds—this for the years 1928 to 1931 when utility risks were considered low. The utility financing in 1934 was insufficient in volume to furnish an adequate clue to underwriting costs subsequent to the passage of the Securities Act, but it may be noted that the spreads ranged from 7 points on San Jose Water Works' \$1,187,000 bond issue to 1.76 points on two note issues of Boston Edison. In a sense, the 1934 offerings represented pioneering effort in the face of unknown regulatory rigors and hence they were not typical in any respect, but by 1935 the path was worn and volume financing returned. From that year's performance it is evident that bankers' margins were much lower than they had been prior to the days of regulation and its accompanying publicity.

The point of interest lies in the observation of the effects, if any, which constant publicity about underwriting margins has had or will have on the costs of utility financing. For reasons that will be developed subsequently, we may well doubt whether 1935's low average of 2.25 was due entirely, if at all, to the publicity feature of the Securities Act. It does follow, however, that knowledge of bankers' margins on the part of investors is apt to lead to their interpretation in terms

¹⁴ As reported to the Securities and Exchange Commission.

of quality of the investment offered and that comparisons will be made on the basis of such knowledge.

Some bankers have expressed a fear of misinterpretation of such facts, implying that issuers will suffer unjustly therefrom. Reverting for the moment to categorical textbook form, one may say that bankers' margins represent their remuneration for the performance of three functions: (1) carrying the security from time of purchase until time of sale, (2) taking the risks of changes in market price during the interim, and (3) effecting the physical job of distribution. Obviously the performance of these functions will require varying degrees of expense to the underwriters of various issues at the same time and of similar issues at different times. The main factors affecting the costs of performance of the underwriting functions are market conditions, which influence the time and effort necessary to effect distribution, the quality of the security as related to the risks involved, and the ease or difficulty of consummating adequate investigation of an issue prior to the underwriting agreement. It is only reasonable to assume that underwriting fees and commissions should vary quite directly with the costs of service involved.¹⁶ It would be unfortunate if market interpretation of bankers' spreads should be in terms of risk alone and thus tend to the conclusion that the quality of investments is to be measured by underwriting margins in the sense that an issue with a 5-point spread is twice as risky or half as good as one with a 2.5 spread. Doubtless, there will be some positive correlation between spread and risk but it should be remembered that quality is only one of the elements affecting cost of performance.

An example may serve to amplify the reasoning here involved. In August, 1935, the Muncie Water Works Company paid bankers 3.5 points to underwrite a bond issue of \$870,000, whereas on October 2 the Atlanta Gas Light Company offered \$5,000,000 of bonds which were sold to the bankers at 2.5

¹⁶ In some of the first offerings subsequent to the passage of the Securities Act, bankers did not assume all of the underwriting functions. Rather they acted as agents agreeing only "to use their best efforts" to sell, or they took options on parts or all of the issues offered. This method was not customary in 1935 underwritings, however.

points below public offering price. The following comparison of investment factors will indicate that there was probably about equal risk in the water company bonds and those of the gas company:

	<i>Muncie Water Works Company</i>	<i>Atlanta Gas Light Company</i>
Issuer	Operating company	Operating company
Security	Mortgage	Mortgage
Purpose of issue	Redemption	Redemption
Maturity	30 years	20 years
Coupon	5%	4½%
Priced to yield	4.87	4.81
Times interest earned:		
Before depreciation	2.61	2.87
After depreciation	2.27	2.42
Ratio of funded debt to assets	.48	.50

At least, it may be concluded that the Muncie company bonds were not weaker than the Atlanta bonds in the proportion of 3.5 to 2.5, the respective banker margins. In both situations it may be said that market risks were at an absolute minimum because of the advancing sellers' market that prevailed during August and October, although the Atlanta Gas Light Company issue might be thought of as involving six times as much market risk as did the Muncie Water Works Company offering since it was six times as large. The costs of distribution must have been at a minimum in each case also, because the utility bond market was approximately the same, as measured by Moody's price averages, on the date of each offering. What then could account for the 40 per cent difference in bankers' spreads? The 2.5 points on Atlanta's \$5,000,000 grossed the bankers \$125,000, while the 3.5 on Muncie's \$870,000 issue grossed \$30,450, and therein would seem to lie the answer. The costs of banker investigation and of the arrangement of details could not have been much less for the small issue than for the large and neither could the minimum costs of distribution; so in this example the size of the issues rather than their quality and risks might very well have accounted for the difference in point spreads. If anything, we might conclude, not that 3.5 was too high for

the Muncie issue, but rather that 2.5 was too high for the Atlanta issue in view of the relative services rendered in connection with the two offerings and the dollar remuneration received in each case.

In spite of the dangers of misinterpretation, which may be avoided by due recognition of differences of underwriting costs in different situations, the publicity accorded bankers' spreads will tend to have one distinct advantage to the issuer—particularly the small issuer. It will tend to obviate the possibility that bankers might take undue advantage of issuers in weak bargaining positions. The mere fact of publicity will prevent the banker from exerting his bargaining power because he will not ordinarily wish to have attention called to his Shylockian activities. Further, if the market cannot explain the spread in terms of cost and obvious risk, it is apt to assume unseen risks in the offering and discount offering price in accordance with this assumption.

Although we do not yet have a definite answer in fact to the interesting question of whether financial operations under the Securities Act, with its attendant requirements for publicity and rules of conduct, will effect material and permanent reductions in underwriting fees, there is legitimate reason for hope. Investment bankers should receive compensation in amounts representing the value of the important functions performed by them, and 1935's low margins may be an indication that competition, publicity, and standardization of distribution methods will combine to prevent undue contributions to either the inefficient or the unscrupulous members of the banking fraternity.

COMPETITIVE BIDDING

No discussion of investment banking techniques would be complete without some consideration of the practice of competitive bidding by bankers for public utility security offerings. In the state of Massachusetts the utilities must invite sealed bids under the direction of the state utility commission.¹⁸ In

¹⁸ "A . . . [public utility] . . . company, under the supervision of the department, issuing bonds . . . , shall invite proposals for the purchase thereof by advertisements in two or more newspapers published in the city or town

New Hampshire a similar procedure has been required since July, 1935, not specifically by statute, but as a matter of Commission policy under the statutory provision that utilities may not issue securities except on approval of the Public Service Commission.¹⁷ In neither case need the utility accept the highest bid, but the sale must be effected at or above par; in New Hampshire, in every instance in which the practice has been followed, the utility has proposed the acceptance of the highest bid and the Commission has so ordered. Table 7 records certain significant information regarding all of the recent¹⁸ offerings of mortgage bonds by Massachusetts and New Hampshire utilities. These data will be used as a basis for consideration of this method of sale as contrasted to the more usual method of co-operative negotiation.

The most striking evidence contained in this array comprises the relatively narrow bankers' spreads representing the gross margins for underwriting services. All below 2 points, these spreads may be compared with the average 2.25 points taken by bankers on all 1935 refunding bond offerings.¹⁹ On the face, it appears that competitive bidding has been the low-cost method of bond distribution as far as the issuers have been concerned. This indication is further substantiated by a comparison of the data in Table 7 with the following similar offerings, none of which carried a spread of less than 2 points and all of which were negotiated in the more orthodox manner:

Consumers Power Co. $3\frac{1}{2}$ s	\$19,172,000	to yield 3.67;	spread 2.0 points
Pacific Gas and Electric Co. 4s	20,000,000	" " 4.00;	" 2.0 "
Detroit Edison Co. 4s	49,000,000	" " 3.91;	" 2.0 "
Dayton Power and Light Co. $3\frac{1}{2}$ s	20,000,000	" " 3.67;	" 2.25 "
Illinois Bell Telephone Co. $3\frac{1}{2}$ s	45,000,000	" " 3.48;	" 2.0 "
New York and Queens Electric Light and Power Co. $3\frac{1}{2}$ s	25,000,000	" " 3.50;	" 2.0 "

where it is situated, if there be such, and in two or more newspapers published in Boston. It may, however, reserve the right to reject any and all bids. If no such proposal is accepted, it may sell the whole or any part of the bonds to any persons or corporations in such manner, at such times, and upon such terms, but in no case at less than the par value thereof to be actually paid in cash, as its directors shall determine.²⁰ (Sec. 15, Chap. 164, Massachusetts General Laws, Tercentenary Edition.)

¹⁷ Public Laws, Chap. 241, Sec. 1.

¹⁸ January, 1935, to April 1, 1936.

¹⁹ See p. 61.

TABLE 7—DATA ON COMPETITIVE OFFERINGS OF MORTGAGE BONDS BY MASSACHUSETTS
AND NEW HAMPSHIRE UTILITIES, 1935 AND 1936

Offering Date	Amount of Offering	Issuer	Coupon Rate	Price to Public	Price to Issuer	Yield	Bankers' Spread
7/19/35	\$53,000,000	Edison Electric Illuminating Company of Boston	3½%	103.79	101.913	3.30%	1.877
8/26/35	5,400,000	Public Service Company of New Hampshire	3¾	102.04	100.76	3.62	1.28
11/20/35	10,379,000	Public Service Company of New Hampshire	3¾	101.75	100.647	3.64	1.103
1/18/36	750,000	Cape and Vineyard Electric Company	4	103.25	101.269	3.81	1.981
2/10/36	950,000	Lowell Gas Light Company	4½	107.0	106.0	4.09	1.0
2/18/36	20,300,000	Connecticut River Power Company	3¾	104.5	103.279	3.47	1.221

[96]

The obvious inference seems to be in favor of competitive bidding to assure the best price to the issuing utility. However, the apparent bargains which were secured in bond distribution effected by this method do raise the question whether bargains are always cheap in the long run. In the first place, it must be recognized that the bond market of 1935 and early 1936 was an unusual one; a real "sellers' market." Bankers' risks were at a minimum and the problems of distribution were practically nil. The narrow spreads on the competitively underwritten issues were perhaps in part the reflections of the minimum risks of the occasion, which led bankers willingly to raise their bids in the expectation that continuance of rising prices would obviate the necessity for supporting the market or carrying unsold bonds. By luck or foresight they were right. While it was rumored that the first New Hampshire issue was a bit "sticky" at first, the rising market soon remedied that situation and all of the offerings subsequently sold above their original offering prices and were still doing so in March, 1936.²⁰

In this connection it is suggested that, if the risk of buying a "pig in a poke" is minimized in a rising market, it will tend to be maximized in an uncertain or falling market. The adaptability of the porcine analogy to competitive bidding for utility bonds is conditioned by the question whether investment bankers could afford to investigate and find out as much about issues which they might not get as they could about issues they were assured of by preliminary contracts with issuers. Knowing less about issues and issuers and facing a possible or probable decline in bond prices, underwriters would be forced in self-defense to widen their spreads and ask for margins sufficient to cover both risk and ignorance. While it is true that the competitive bidding system has worked for years in the municipal bond market and, since 1926, in the market for equipment trust obligations,²¹ it does not follow

²⁰ Except for the Lowell Gas Light Company offering; 106 bid, 106 5/8 asked on March 27, 1936.

²¹ "That the requirement of competitive bidding in the sale of equipment-trust certificates has proved advantageous to the carriers appears to be clearly

necessarily that the method is equally adaptable to the utility situation. In general, the investigatory process necessary to intelligent sponsorship of a municipal issue is less complicated than that involved in offering a corporate issue of any kind. Similarly, equipment trust obligations comprise a class of securities whose values are more or less standard regardless of issuer. A utility banker, on the other hand, would have greater difficulty in getting an assured volume of business for his organization if he had to depend entirely on his luck at bidding; to guarantee such a volume he might have to put out bids on more offerings than could be adequately and intelligently investigated, in view of the greater complexity of factors affecting the values of utility bond issues.

Other points to be noted in judging the actual cheapness of competitive bidding arise from consideration of the functional services of underwriters as previously discussed. In the normal process of minimizing their risks and facilitating distribution, investment bankers are accustomed to furnish their issuer clients with advice and aid in financing on a more or less continuous basis. It follows that the incentive for such service would be largely removed if competitive bidding were the rule, because a banker might see the fruits of his labors go to another when bids were opened. Thus the tendency would be to deprive utilities of that rather intangible something commonly known as a "banking connection." In so far as the advice and aid of bankers are sound and constructive, their loss might be greater than the saving of a quarter of a point or so in spread. An instance occurred in connection with one of the competitive bid offerings here discussed which may

established by its effect on the spread between the prices paid by the bankers for these obligations and the prices at which they have been sold to the public. This spread, computed as a weighted average, which stood at \$1.80 per hundred in 1925, prior to the inauguration of competitive bidding, declined to \$1.47 in 1926, . . . , fell sharply to \$0.89 and \$0.78 in 1929 and 1930, declined once more to a low point of \$0.43 during the first six months of 1931; and not only was this spread, reflecting marketing costs, much smaller for equipment obligations than for bonds throughout the period, but its decline was conspicuously more marked for the former than for the latter." I. L. Sharfman, *The Interstate Commerce Commission* (New York: The Commonwealth Fund, 1935), Part III, Vol. A, p. 575.

reflect recognition of these factors; this issuer rejected a high bid and accepted a very slightly lower one offered by a banking house of former association. It should be emphasized, however, for the benefit of those who have forgotten, that the advice of investment bankers has not always been worth its hire; there is occasion for discrimination when speaking of the value of such service to a corporation.

Without further evidence, it is impossible to conclude definitely regarding the relative value of competitive bidding and co-operative negotiation for utility bond offerings. There is some reason to believe, however, that the favorable showing for the former method in 1935 was in part due to the small number of issues so offered in such a greedy market. The issues were all good ones which a number of bankers would have liked to sell, and for a bit of "increment business" they may have been willing to shade their margins and trust to luck. Obviously, any differential so accounted for could not continue if the relative volume of issues so offered should increase materially.

A practical result of requirements like those in the Massachusetts law may be noted in the abnormal paucity of bond financing by the utilities of that state during recent years. Not until July, 1935, did the Edison Electric Illuminating Company of Boston indulge in any bond financing. This company's custom in the matter of debt financing had for years involved only the periodic sale and refunding of notes—all of three-year or shorter maturities, which securities were by law exempt from the competitive bidding requirement. All during the years 1932, 1933, and 1934 there was but one recorded offering of utility bonds in Massachusetts: \$950,000 of the Lowell Gas Light Company in 1933. In this instance the high bidder was the company's parent, the American Commonwealths Power Company. Later in the year these bonds appeared on the market as an underwritten offering at $99\frac{1}{2}$ to yield 5.52 per cent. What the American Commonwealths Power Company received for the bonds only the seller and the underwriter know, but it was doubtless less than $99\frac{1}{2}$ even though the Lowell Gas Light Company must have received par accord-

ing to law. It is very evident that competitive bidding did not succeed in overcoming the inherent market and issuer risks that characterized this 1933 offering; the parent company had to pay the difference between the price and the value of the securities.

The administrative leeway provided in the New Hampshire procedure may admit a degree of desirable flexibility in bidding requirements that is not present under the Massachusetts law. The experience with competitive bidding in this state is too recent to be conclusive, but it does offer interesting possibilities. The words of Nelson Lee Smith, Chairman of the New Hampshire Commission, on the occasion of Public Service Company of New Hampshire's second 1935 issue are suggestive of the Commission's principles:

From the point of view of the public—both as customer and investor—it is imperative that the securities of its utilities be sold upon terms and conditions, and at prices, which, all things considered, are the best obtainable. In recognition of this fact, the statute empowers this Commission to authorize the issuance of securities only “if in its judgment the issue of such securities upon the terms proposed is consistent with the public good” (P. L. c. 241, s. 3), and “upon consideration of any such application [to] take into account all facts and circumstances which may be relevant to the question whether the proposed issue of securities may be made consistently with the public good” (P. L. c. 241, s. 4). From this it follows that we may withhold permission to issue securities because of objections relating to their proposed amount, type, maturity, interest rate, or price, and that we may call for such affirmative showing as to the reasonableness thereof as, in our opinion, is requisite to a proper determination of these questions.

Acting under this grant of authority, and *because of our view that, under present conditions, competitive bidding constitutes the best method of disclosing the most favorable terms upon which bonds may be issued and sold by a public utility,*²² our authorization of a recent refunding operation by the petitioner herein required “comparable competitive bids secured in compliance with procedures acceptable to this Commission” as the basis for our supplemental order relating to the terms and price of the proposed issue, *Public Service Company of N. H.*, 17 N.H.P.S.C. 268, 273 (1935), and 17 N.H.P.S.C. 303 (1935).

²² Italics supplied by the author.

The results in that instance appear to justify our insistence upon the use of like procedures in similar cases. Therefore, our authorization herein will be subject to the condition that the exact terms and price of the proposed issue be determined after competitive bids have been secured in compliance with the following requirements:

1. A specimen of the specifications or invitation to bid for the issue shall be filed in advance with this Commission. Since the Company wishes to secure offers for bonds of a variety of terms, maturities, and interest rates, such specifications or invitation shall be so phrased as to insure the submission of truly comparable bids. Bidders shall be directed to name all parties associated in a joint bid or tender entered on behalf of a syndicate.
2. A list of those invited to bid shall be filed in advance with this Commission.
3. A statement showing in detail all bids, together with the net proceeds and cost of money to maturity under each, shall be filed promptly with this Commission, such statement to serve as a basis of our supplemental order fixing the terms and price of the issue.

The above condition and requirements are intended to protect the public interest by insuring the issuance and sale of the proposed securities upon the best terms currently obtainable.²³

There may or may not be significance in the fact that, operating under this method of commission authorization, the first 1935 financing of Public Service Company of New Hampshire brought forth eight bids, the second only four bids, and the Connecticut River Power Company offer brought only three bids. The range of bids narrowed considerably as the offerings developed, however; it was about 2.7 points in price on the first, 0.197 points on the second, and 0.9031 points on the last offering, indicating that a large number of bidders is not a requisite to satisfactory price.²⁴

The statement of justification for the New Hampshire procedure, italicized in the above quotation, implies that com-

²³ 17 N.H.P.S.C. 369-371 (1935).

²⁴ Although the number of bidders declined, the number of participants in each bidding group increased. There were 36 participants among the eight bidders in the first case, 32 participants among the four bidders in the second case, and 62 participants among the three bidders for the third and largest issue. Evidently no danger of weak sponsorship and distribution appeared with the decrease in number of bidders.

petitive bidding may not be the order of the day under market conditions different from those of 1935-36. There may be legitimate reason to believe that the distribution of mere refunding bonds in an easy sellers' market does not justify a spread of 2 points or more,²⁵ and that bidding is necessary to effect a reasonable cost of underwriting. If tests of this method of offering fail in a tight money market or when utilities begin to ask for expansion money, the door is open for modification of the Commission's rules. Then the question will be whether banking relationships, which may have been severed in competition for easy sales, will be found necessary to satisfactory prices and distribution.

It has been mentioned previously that the publicity requirements of the Securities Act may have a tendency to keep bankers' spreads from going unusually high.²⁶ It is possible that competitive bidding may provide a complementary service by assisting in the enforcement of the spirit of the Securities Act. Obviously the competing bankers will have to wait for Commission approval and filing of registration statements before they can invite subscriptions. This will assure time for dissemination of information regarding proposed issues and prove an effective barrier to "high-pressure" methods of securing participations and forcing dealer co-operation.

Possibly the appearances in 1935-36 offerings are deceiving as true measures of the long-run possibilities of competitive bidding. The differential advantage may depend almost entirely on the small proportion of good issues so offered. It would seem that issuers could not successfully take advantage of competitive bidding in "fair and warmer" markets and then seek the shelter of banking connections in stormy markets; the law would prohibit it in Massachusetts and psychology

²⁵ In March, 1936, \$90,000,000 of Pacific Gas and Electric Company bonds with a 2-point spread were oversubscribed in one day. \$1,800,000 measured the gross underwriting return for services which must have been relatively nominal. Banks and insurance companies bought the bonds in large blocks. Investigation and registration needs were light in view of the fact that two large issues of the same company had been investigated and underwritten in 1935 by the same bankers.

²⁶ See p. 61.

would tend to prevent it elsewhere. The problem becomes one of evaluation of investment banker services. The task of physical distribution of the securities will be similar under either system, although even there the "quality" of distribution may be better if the bonds of one issuer are always sold by the same bankers to a pre-established clientele. In other respects, the value of the banking service to the issuer will affect the desirability of its maintenance. The usual method of negotiation for issues does not make occasion for comparison of the cost of bankers' services with their value; once a banking connection is established, repeat orders are apt to become a matter of course with little pressure to effect an equation of cost and value. As affecting investors and the market as a whole, the desirability of the alternative methods would depend on whether the heat of competition would lead to overpricing, careless investigations, and deals that would put the banker in an unfavorable position in his relations with his customers. Eventually such results would react unfavorably on the costs of capital to issuers whose offerings had been poorly handled.

INTEREST RATES AND SECURITY PRICES

Last but by no means least among the factors affecting costs of utility capital are money rates in general and their adaptation to the risks of the utility industry. No lengthy discussion of the well-known facts about interest rates from 1930 to 1935 will be included herein; rather we shall be concerned only with the reflection of those facts in costs of utility capital and their influences on utility financing. Chart 1 is a representation of relative changes in utility bond yields as averaged and published by Moody's Investors' Service.

Interest rates and their complement, security prices, are, of course, in part the cause and in part the effect of elements involved in general business conditions. The rather unusual appearance of Chart 1 is likewise the picture partly of cause and partly of effect of conditions in utility financing. The disintegration of the bond market in 1932, 1933, and 1934 was accompanied, as we have noted previously, by the almost

complete disappearance of utility offerings. The known lack of demand for capital in those years carried over through 1934 to 1935 after the markets were stabilized and helps to account for the steady decline in yield rates. There was no evidence at the end of 1935 that low capital costs were serving any function in the encouragement of new capital uses and commitments; their only result was 1935's flood of refunding offerings.

It is interesting to compare with the data in Chart 1 the facts in Table 8, which indicate the average costs of new financing accomplished during the several years under observation. That rates on new offerings were no higher in 1932, 1933, and 1934 is to be explained by the fact that the unfavorable market had stopped all but the most necessitous issues, many of which, it will be recalled, were distributed by means of security exchanges which were quite outside the market influence. The lower rate in 1931 can be traced to the fact that 1931 bond offerings were predominantly those of operating companies, whereas in 1930 parent and subholding companies were still in the market with their higher risk and lower priced issues.

TABLE 8—COSTS OF UTILITY FINANCING AS REFLECTED IN YIELDS ON NEW SECURITY OFFERINGS, 1930-35

Year	Yields* on		
	Bonds	Notes	Preferred Stock
1930	5.2 %	5.4%	6.0 %
1931	4.7	4.6	5.4
1932	5.8	5.9	7.0
1933	5.0	5.2	—
1934	5.0	3.4	—
1935	3.82	—	4.53

* Arithmetic averages weighted by volume.

The writer is willing to commit himself to the conclusion that in utility financing, as perhaps in other fields, variations in the costs of either borrowed or equity capital will not greatly stimulate or retard necessary financing. This statement

must be qualified, of course, to except such abnormal conditions as existed in 1932, 1933, and 1934, and its import is confined to new financing the incentive for which is expansion. If there is opportunity for profitable expansion of utility systems, it will make little difference whether capital costs 3 per cent or 7 per cent, for expansion programs that show promise of earning less than 7 per cent on the investment would seldom be conceived under any conditions. This conclusion is maintained in spite of the fact that public utility holding companies expanded in 1928 and 1929 by paying twenty times earnings for some operating company equities. Unless strategically necessary, it will always be poor business to be satisfied with such a 5 per cent return even in the utility business, and especially when equities alone are involved. The fixed charges usually ahead of utility equities enhance the risk too much to justify such prices unless the future shows positive possibilities of increased return. Even a 1 per cent money market would not make a poor deal profitable.

On the other hand, the universality of the redemption feature in modern capital contracts will make it possible to take advantage of low interest rates whenever they occur. Continuance of rates like those of 1935, which seem to be assured as long as the federal Government persists in its support of the market to facilitate its own financing, practically guarantees that utilities will continue to call and call again until their high coupon issues are replaced with money at the new low rates.

Another effect or accompaniment of interest rates may be noted in the maturities of credit contracts which are summarized in Table 9. Most obvious and most to be expected was the abandonment of short-term issues in the 1935 market. There was a noticeable willingness on the part of issuers to commit themselves to long-term contracts at an average cost of 3.96 per cent,²⁷ the average maturity being 27.2 years. In this average are included a number of issues of serial bonds with one- to nine-year maturities in the series—special arrangements

²⁷ This compares with an average yield of 3.82 as noted in Table 8. Cost is based on net to issuer after underwriting commissions.

designed to accomplish debt retirement. In 1932, 1933, and 1934, the percentages of note issues loomed larger because of the high costs then effective and because, even at high costs, investors were unwilling to buy long-term commitments in face of the unknown risks.

On the other hand, the terms effected in 1935 were not so long as those common in 1930 and 1931. While issuers were willing to tie themselves up to low rates for long periods, the market presumably expressed some dislike to do so. There was a great predominance of thirty-year issues in 1935, there were a number of twenties and twenty-fives, but only two thirty-fives. It is difficult to determine just why the terms seemed to stop at thirty years; the thirty-five-year maturities of Los Angeles Gas and Electric Company and Illinois Bell Telephone Company did not seem to suffer in price for the

TABLE 9—MATURITIES OF UTILITY BOND AND NOTE OFFERINGS, 1930-35

Year	Bonds*		Notes†	
	Per Cent of Total Offerings‡	Average Term (Years)§	Per Cent of Total Offerings‡	Average Term (Years)§
1930	53.8	32.3	14.0	2.4
1931	62.7	36.4	14.7	1.6
1932	72.2	22.8	26.2	2.8
1933	46.6	27.6	43.5	2.6
1934	60.8	16.6	39.2	3.5
1935	97.7	27.2	-0-	---

* Term: 6 years and over.

† Term: 1-5 years.

‡ Total includes equity securities.

§ Arithmetic average of terms of individual issues, weighted by volume.

added five years. Why not add five more years and make it forty? The presumption is that somewhere the market would object and stiffen its resistance to low coupon issues. Chronologically it may be noted that the issuers and bankers felt their way into the 1935 market; early in the year large offerings were for 24, 24, 29, 25, 25 years, then 20, 15, 30, 30, 30, 30, and 30 years, and there, in July, they stopped extending maturity dates. The average for the last six months of that

year was nearer thirty than twenty-seven years. It looks as if the success of the thirty-year contracts was so great that no one cared to experiment with longer terms until October and November, when the above-noted companies floated their thirty-five-year issues. As far as the effects on prices of higher money rates and changing risks are concerned, there is no logic in thirty years; the effect would be almost as great in twenty years or fifty years.²⁸ Furthermore, the economic condition of a company or an industry can be about as accurately forecast for fifty years as it can for twenty. Therefore, it can only be reiterated that there is no particular logic in thirty; it must be just a "feeling."²⁹

²⁸ A 3½ per cent bond would fall to 85 as follows: for a 20-year maturity if interest rose to 4.66 per cent; for a 30-year maturity if interest rose to 4.41 per cent; for a 50-year maturity if interest rose to 4.22 per cent.

²⁹ In New York state, savings bank investments are limited to mortgage bonds due within thirty years, a fact which might tend to affect slightly the market for longer maturities.

CHAPTER 4

HOLDING COMPANIES AND PUBLIC UTILITY FINANCE

The writer has previously herein forsworn any discussion of holding companies except as their activities relate directly to the problems of public utility finance.¹ Therefore, the subsequent comments are confined to observations regarding holding company contributions to the financial characteristics of the industry. The observations are based on examination of recorded facts bearing on specific points where parent organizations have participated in and influenced the financial activities and objectives of public utilities.

At the outset there should be recognition of the fact that the justifiable functions of the public utility holding company are not what they used to be. Regardless of the praise or blame that may be its due for the financial operations or manipulations, as the case may be, of the years prior to 1930, the period 1930 to 1935 will show little that is similar. No one seriously questions the fact that many holding companies made material contributions to the general welfare with the financial aid which they rendered to the end of system development. No one doubts that holding companies provided funds for technical development and extension of utility services that would not have been possible otherwise, at least not at the same speed. But it is equally true that for the most part the developmental, pioneering stage of utility development is, for better or worse, about completed. It may thus be concluded that the great financial contribution of holding companies has similarly reached and passed its zenith. Nowadays holding company financial activity must seek other lines of justification, for neither law nor custom provides corporate pensions on

¹ The author's comments on public utility holding companies have appeared elsewhere: "Are Holding Companies Obsolete?" *Public Utilities Fortnightly*, Vol. XIII, No. 1 (January 4, 1934); "Financial Policies of Public Utility Holding Companies," *Michigan Business Studies*, Vol. V, No. 1 (1932).

which holding companies can retire after they have served their lives of economic usefulness.

This presentation is not designed to suggest punitive measures for past wrongs, but rather it will depict the status quo with the hope that discriminating analysis will delimit and define the reasonable future scope of holding company financial activities. Further, the discussion will aim to establish the conditions requisite to the satisfactory performance of financial service by public utility holding companies.

LOANS AND ADVANCES TO SUBSIDIARY COMPANIES

Among the several possible financial services that holding companies have been and are rendering to operating subsidiaries is that which might be termed banking service. Many parent companies are accustomed to lend funds for shorter or longer periods to subsidiaries for use in financing construction or for meeting outside obligations. Thus the holding company is looked upon as a reservoir of funds which can be tapped as needed by the constituents.

A large number of examples of such advances were examined in the light of surrounding conditions in an attempt to determine the significance and value of such financial services as they were rendered during the years 1930 to 1935. Certainly if there was ever a time when operating utilities could profitably use parental aid in the form of holding company advances, it would have been during those troublous years. A recently publicized incident relating to the value of such holding company services occurred after the Florida hurricane of 1935.² On this occasion the American Power and Light Company sent men and money to rehabilitate wind-torn transmission and distribution systems of Florida Power and Light Company—an operating company so weak financially that its own credit could not have commanded such service from unrelated interests.

It is to be reiterated that the following examples are cited, not that we may pass judgment on the legitimacy of the par-

² On November 19, 1935, G. C. Estill, President of Florida Power and Light Company, announced that hurricane damage had amounted to \$750,000.

ticular holding company activities, but merely that we may test the common sense and practical necessity of holding company banking service under different sorts of circumstances.

On December 31, 1934, the balance sheet of Commonwealth and Southern Corporation recorded the fact that subsidiary companies were indebted to it, the parent company, in the amount of \$2,360,200. Examination of subsidiary balance sheets indicates that during the year 1934 individual advances had been made in approximately the following amounts to the following constituents for the purposes noted: *

\$600,000 to Georgia Power Company to finance replacements

\$232,000 to Gulf Power Company for additions and betterments

\$ 92,000 to South Carolina Power Company for additions and betterments

\$150,000 to Tennessee Electric Company to finance replacements

\$410,000 to Mississippi Power Company to retire debts

In no one of these cases could funds have been raised under advantageous terms from an outside agency, for the credit ratings of all of the companies listed were uniformly weak. The top price for the 5 per cent mortgage bonds of these companies was 84, and prices on the various issues ranged from there down to 40. Gulf Power Company's working capital was negative, and South Carolina's was weak. Evidently the service rendered by the advances was as valuable as the need for funds was important.

To measure the importance of the need for funds in situations like these it behooves one to investigate its cause. In 1934 Commonwealth and Southern Corporation took \$625,000 from Georgia Power Company in the form of common dividends; this in the same year that the operating company needed to borrow \$600,000. Gulf Power Company's need to borrow \$233,000 was preceded by payment of dividends of \$123,000

* Amounts deduced by comparing "due parent company" items among the liabilities of constituent companies on successive balance sheet dates; purpose likewise determined by noting changes in assets and liabilities.

to the lender in 1933 and 1934. The parent company took \$180,000 in common dividends from South Carolina Power Company in 1933 and 1934 and then loaned \$92,000 back to the operating unit in the latter year. Similarly, Tennessee Electric Power Company's need to borrow \$150,000 was accompanied by a dividend payment of \$212,500 to the parent company; in this case nearly \$4,000,000 was paid over in dividends during the years 1930-34 inclusive while the total borrowings for the period reached \$500,000.

On the other hand, the loan to Mississippi Power Company was more in the nature of a charity contribution; that company, in spite of a thick equity, ran deficits trying to pay its preferred dividends out of earnings. There was no "take" in this instance; it was all "put," but in all of the other examples cited it is evident that the need to borrow was accompanied by, if not created by, the dividend "take" of Commonwealth and Southern. All this does not imply that the parent company was not entitled to the dividends it received in view of earnings or amount of investment; in fact, the amounts taken were quite nominal in percentage terms. But the point remains that the operating companies would not have needed to borrow money had their dividend policies, as determined by the parent Commonwealth and Southern Corporation, been more conservative.

The Commonwealth and Southern situation is no exception to the rule of procedure in the matter of advances; the woods are full of similar circumstances. In 1933 Eastern Texas Electric Company borrowed \$1,175,000 to meet some notes payable; the transaction would have been unnecessary had the \$2,000,000 of common dividend payments in 1930-32 been restrained. American Water Works and Electric Company took \$87,839 in common dividends from Acton Water Company in 1930 and loaned \$36,000 of it back in January, 1931; in 1933 this parent bought \$100,000 of 6 per cent notes of Ashtabula Water Company to restore a working capital position that had been depleted by dividend "takes" of \$138,000 in the three years 1931-33. Indirectly from North American Company the Union Electric Light and

Power Company borrowed a maximum of \$17,000,000 in 1932 while it was paying, in the years 1931, 1932, and 1933, approximately \$17,000,000 in common dividends to its creditor parent. Furthermore, there was no question in this situation of the borrower's credit; it was Aa, and even the 1932 banking crisis would not have destroyed the possibility of a bank loan. Similarly Niagara Hudson Power Corporation, through Mohawk Hudson Power Company, loaned \$12,000,000 to New York Power and Light Corporation to finance extensions such as the super-power transmission line to New York City; this during the years 1930 to 1934 while the borrower was paying \$12,000,000 in dividends to the lender.

The cases of financial assistance in time of need which were not, in a sense, self-generated seem rather few and far between. United Gas Improvement Company did make a series of advances totalling \$220,000 to the financially broken Arizona Power Company, but eventually gave it up as a bad job and precipitated receivership for the operating unit. Meanwhile, in 1932, this parent took \$226,000 common dividends from the Harrisburg Gas Company and loaned back \$90,000 of it. American Power and Light Company had made advances to Northwestern Electric Company which totalled \$2,515,000 on December 31, 1934. In July, 1935, this subsidiary instituted bankruptcy proceedings under Section 77b of the federal Bankruptcy Act, because it was unable to raise funds to meet a maturing bond issue.

It is apparent that most of the situations requiring and receiving parent company loans in recent years have been of the self-generated character; the needs could have been materially reduced, if not eliminated, by a modification of operating company dividend policies. Where these conditions have prevailed, the result has been a shift in parent company participation from that of a common stockholder's right to earnings into a creditor's right to interest. It is doubtful whether such a policy contains anything unfair or unsocial as long as the interest rates on advances are kept in line with current bank rates, but it is evident that the crying need for holding companies as sources of loans to subsidiaries may be exagger-

ated. Of course, it would be unfair to assume that independent and unaffiliated management of the operating companies mentioned above would have assured financial stability and self-sufficiency. Independent management by an independent board of directors might have given rise to even greater dividend distributions than were made under holding company control; in such a case the operating units would have been not only weak but also without a source of aid.

The conclusion to be drawn from these considerations is that holding company financial aid by means of loans is not so important or valuable as it might seem when measured by the volume of the advances. The typical holding company method of handling current finances, particularly of smaller companies, seems to work on the theory of substituting parent company reserves for individual company reserves; all very well and good, but not necessary. If each company were managed conservatively, as a unit, policy would dictate the creation of reserve strength in each unit. This might require somewhat greater reserves in total dollars than would the parent pool, but even so the strength and credit of the parent would be enhanced thereby. In so far as operating company credit is taxed by dividend "takes" of the holding company, the latter's paternalism in the matter of loans is entirely uncalled for. The ability to advance funds to needy operating companies may be important, but it is significant only when it contributes something that would be unavailable except for the holding company affiliation.

Actually the day of real need for financial assistance of the sort described has tended to disappear. At least it should have disappeared if the development of utility systems under holding company parental guidance has been sound. If the operating, managerial, and acquisitional activities of the parent organization have been efficiently carried forward, the inevitable result should be reflected in growing financial independence of operating groups. A striking bit of evidence of this evolutionary process is contained in the brief prepared by Engineers Public Service Company "setting forth benefits of the holding company to its operating subsidiaries and their cus-

tomers and to the investors in securities of its subsidiaries." The following is a quotation from the brief:

The Company has always considered that it was its duty, when possible, to support its subsidiaries when they were in need by furnishing funds to enable them to extend and improve their service and to make necessary additions to plant. Such loans have been exceedingly helpful, particularly to the smaller subsidiaries which at times have been unable to borrow sufficient amounts from the banks or to raise needed funds in the security markets. At no time has interest in excess of 6% per annum been charged on such loans. There are no "upstream" or "sidewise" loans or other improper financial support between the Company and its subsidiaries or between subsidiaries. The Company's "revolving" fund used for loans to subsidiaries at one time reached \$19,490,000, and at present it has loans to subsidiaries totaling \$9,830,000. In a number of cases, when it seemed desirable to increase the equity base of the subsidiary, the Company has accepted Common Stock in exchange for the loan, thus making additional investment in the equity of the subsidiary. A list of subsidiaries to which loans have been made, the maximum loan and the present loan to each, follows:

Company	Maximum Loan 1925-1934	Present Loan
Virginia Electric and Power Company	\$ 1,728,333	_____
Eastern Texas Electric Company (Delaware)	12,100,000	\$8,655,000
El Paso Electric Company (Delaware)	425,000	_____
Baton Rouge Electric Company	950,000	_____
Savannah Electric and Power Company	1,700,000	1,150,000
Ponce Electric Company	25,000	25,000
Puget Sound Power & Light Company	5,100,000	_____
Louisiana Steam Generating Corporation	6,135,000	_____
Total Present Loans	_____	\$9,830,000

It is evident that in February, 1935, the date of the brief quoted, the function of money lending was not so important as it had been in the ten years previous. The presumption is that time and further development will permit Engineers Public Service subsidiaries in their approach to maturity to outgrow the need for parental advances, just as the need for family advances to the adolescent and to the college student should

be dispensed with when he becomes self-supporting after graduation. From this point on, the personal analogy breaks down, for there is no economic justification for support of a public utility parent company in its age of senility. The family ties that affect the personal situation are not a similar justification for the so-called "upstream loans" which characterized such utility systems as the Insull organizations and others.

NEGOTIATION OF SECURITY SALES

The service performed by public utility holding companies in connection with financial negotiations is well characterized by the statement of Mr. J. F. Fogarty, President of the North American Company, made to the Committee on Interstate and Foreign Commerce of the House of Representatives in March, 1935:

The North American Company, from the time of acquisition of control of its subsidiaries, has conducted all of their bond financing for them. This has involved consideration of the most advantageous time for the sale of bonds, price negotiations with bankers, and working out with the bankers and counsel the mortgage and indenture provisions governing the various issues. The flexibility retained for the subsidiaries in their mortgage and indenture provisions while maintaining a high credit position for their bonds has been of great advantage to them, in addition to the savings in financing costs.⁴

In line with the stated policy of this company we find that negotiation of security sales for subsidiaries is a universal contribution of holding company organizations.

There is no question about the importance of negotiating proper and adequate capital contracts to minimize the costs and maximize the usefulness of public utility capital. There is, however, the debatable question of whether the holding company makes a significant and indispensable contribution to the desired end. Statistically it seems to be impossible to prove or refute the argument that parent company assistance in this regard comprises a valuable service. It may be pointed out,

⁴The savings mentioned refer to the fact that the North American Company makes only a very nominal charge on a less than cost basis for the services rendered to subsidiaries.

however, that in 1935 some pretty good low-cost financing was effected by independent operating utilities. The following issues are representative:

<i>Issuer</i>	<i>Amount</i>	<i>Issue</i>	<i>Effective Cost*</i>
Pacific Gas & Electric Co. _____	\$30,000,000	Mortgage bonds ²	3.88%
Consolidated Gas, Electric Light & Power Co. of Baltimore _____	10,440,000	" "	3.75 (yield)
Commonwealth Edison Co. _____	29,500,000	" "	3.98
Central Hudson Gas & Elec- tric Co. _____	1,000,000	" "	3.30
Cleveland Railway Co. _____	5,000,000	" "	5.13
Public Service Co. of Northern Illinois _____	16,000,000	" "	4.67
Northern Ohio Telephone Co. _____	1,600,000	" "	4.38
Camden and Rockland Water Co. _____	800,000	" "	4.52
Southern California Edison Co. _____	30,000,000	" "	4.00
Detroit Edison Co. _____	49,000,000	" "	3.91
Bedford & Saco Water Co. _____	1,100,000	" "	4.30
Edison Electric Illuminating Co. of Boston _____	33,000,000	" "	3.40

*Based on net proceeds to the company before expenses.

These costs are in face of the fact that the average cost of bond money raised during 1935 was about 3.96 per cent.⁵ Obviously it is unfair to compare some of the issues listed above with the average offerings of holding company constituents because the list contains some of the outstanding credit risks of the country. But enough of the smaller and lesser known companies were involved to prove that low costs are not absolutely dependent on holding company affiliation. Furthermore, the following 1935 mortgage bond offerings contain evidence of the fact that holding company affiliation is not a sure way to lowest costs:

<i>Issuer</i>	<i>Amount</i>	<i>Effective Cost</i>	<i>Holding Company Affiliation</i>
Missouri Telephone Co. _____	\$ 700,000	5.70%	Telephone Bond & Share Co.
Savannah Electric & Pwr. Co. _____	4,500,000	5.24	Engineers Public Serv- ice Co.

⁵ See Table 2.

Pasadena Water Co. _____	1,900,000	7.13	General Water, Gas & Electric Co.
Wisconsin Public Service Co. _____	7,900,000	6.18	Standard Gas & Electric Co.
Monroe Water Works Co. _____	\$70,000	5.13	American Water Works & Electric Co.

Of course, the real answer to the question of relative cost lies in the condition of the issuing company, and the main factor of influence on price is the risk involved. No one can definitely answer the question whether the above financing would have been more costly without holding company affiliation or whether the previously noted issues would have been less costly with the aid and advice of holding company management. The only positive conclusion is that cheap financing can be done by both large and small companies "without benefit of holding company" and that holding company control is no open sesame to cheap capital.*

More intangible and even less capable of measurement is the admittedly important service of giving advice regarding type of contract or indenture to be used in connection with a given piece of financing. In such matters the continuous experience of financial executives in holding company organizations ought to be of more value than that of the operating company executive who less often has occasion to consider the problems involved. But holding company executives are not the only ones with such experience who are able to advise and assist in planning security issues; in fact, such service is one which the investment banker is paid for, and he certainly is in a position to give advice and counsel that will be as good as, and more unbiased than, advice from the officials of a public utility holding company. There is no evidence that the investment banker charges any less for his services where

* In 1934 Columbia Gas & Electric Company went beyond mere assistance in negotiating the sale of subsidiary bonds. Offerings of \$6,000,000 each of Ohio Fuel Gas Company and United Fuel Gas Company were guaranteed as to interest and principal payment by the parent company. Similar action was taken by Western Union in guaranteeing an issue of Northwestern Telegraph Company. Practically, such examples represented subdivisions of holding company credit for that of the operating company.

holding company managers have participated in the preparation of indentures, nor has the writer ever been able to evoke an opinion from an investment banker to the effect that he preferred deals involving holding company sponsorship. It is true that centers of finance and banking like New York, Chicago, and San Francisco are more accessible to holding company officials with offices concentrated in those cities, but again, in view of the quality of the country's transportation service, the possibilities of direct contact with "country offices" is not precluded. In fact, the investment bankers who pride themselves on their thoroughness are never satisfied to confine negotiations to New York desks; they go to the properties of the issuing companies in spite of, if not because of, the facts and figures furnished by the holding company headquarters.

Everyone admits that certain of the large independent operating utilities, assisted by investment bankers, are quite as capable of arranging their own financing as are holding company officials of handling deals for their constituents. Further than that, it is difficult to prove deductively that holding companies are prime necessities to the successful financing of reasonably sound operating utilities of any size. In the matter of bargaining strength and shrewdness, there is again no positive evidence that holding company officials drive better bargains with bankers than could any utility executive of reasonable intelligence. Admitting the possibility that bankers might be tempted to "put one over" on an orphan utility in the matter of spread or some other feature that would ultimately prove unfavorable to the issuer, it is still to be remembered that investment bankers are supposed to be in business for the long-run as well as immediate profits of their trade. With present-day requirements as to publicity, it is doubtful whether any reputable investment banker would attempt to drive an unfair bargain with an independent utility issuer and to get away with more than he would take from a holding company constituent. These comments comprise the speculations of only one individual, but in view of the general circumstances and the few facts bearing on the subject one is tempted again to doubt the omnipotence and importance of

holding companies in dealing with the wolves of Wall and La Salle Streets. A further thought and a disturbing one comes to mind in contemplation of the widespread harm that would fall on numberless subsidiaries if, by chance, a large holding company should happen to have a germ of inefficiency in its financial management.

Again we are in a position to note that careful development of the units in a public utility holding company system will tend to create self-sufficiency in each operating company; this tendency will be carried to the point where parental apron strings will become less and less appropriate. It would seem to be almost a truism applied to all phases of holding company management, financial and otherwise, that sound policies efficiently administered will work the holding company form of public utility organization out of any justification it may have had in the earlier days of the industry's development.

HOLDING COMPANY INVESTMENTS IN SUBSIDIARIES

The very lifeblood of the public utility holding company flows from the veins of its operating subsidiaries, and parent company subsistence is entirely dependent on the interest and dividend returns from investments in subsidiaries. This dependence on investment return has become even more marked as law and public opinion have led to the abolition of the fee system whereby the holding company had what might have been called operating revenues to supplement its investment revenues. It is evident that a holding company can make net capital contributions to the utility industry in the form of additional investment only in so far as it can attract new capital from investors. Otherwise, any investments it may make in individual operating units amount only to transfusions between members of the family—money taken from the strong and given to the weak.

In the matter of supplying new capital to meet the financial needs of the utility industry during the years 1930-35, the holding company failed miserably. In one way Table 10 measures the meager contribution of holding companies to the financial needs of the period, for it shows the pitiful pro-

TABLE 10—PUBLIC UTILITY SECURITY OFFERINGS CLASSIFIED BY ISSUER, 1930-35

Issuer*	1930	1931	1932	1933	1934	1935
Parent companies:						
Amount offered	\$ 892,169,487	\$ 295,904,928	\$ 47,935,500	\$13,091,200	\$ 39,815,000	\$ 10,000,000
% of total	37.5	18.9	8.8	14.1	21.2	0.7
Sub-holding companies:						
Amount offered	445,255,000	97,710,060	21,547,320	3,647,778	—	—
% of total	18.7	6.3	4.0	3.9	—	—
Operating companies:						
Amount	1,044,356,665	1,169,476,073	475,948,875	75,992,500	147,706,000	1,284,421,747
% of total	43.8	74.8	87.2	82.0	78.8	99.3
Total	\$2,381,781,152	\$1,563,091,061	\$545,431,695	\$92,731,478	\$187,521,000	\$1,294,421,747

* "Parent companies" and "sub-holding companies" include only those issuing corporations the majority of whose assets are represented by investments in subsidiaries. Issuers with subsidiaries but with a predominance of investment in operating assets are classified as "operating companies."

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portion of holding company to total financing, although it does not indicate the amount of financing that was *not* done and which might have solved many a financial problem if the parent organizations had possessed the ability to effect security sales during depression years. In reality these figures emphasize the dependence on operating financing to the almost complete exclusion of parent offerings in the years 1933 to 1935.

A number of factors probably contributed to the inability of holding companies to combat the currents of depression any more effectively than did other business organizations. First, the securities of holding companies are inherently more risky than any other security because of the leverage provided by fixed charges on outstanding subsidiary issues. Such financial instruments are not popular in periods of declining earnings. Secondly, the public utility holding companies began to suffer from a "reputation" very soon after 1930. The Insull, American Commonwealths Power, and Tri-Utilities crack-ups contributed to the general distrust and fear of holding company investments. And, thirdly, the embodiment of the public distrust, fear, and hatred in politico-governmental activity led to investigations, laws, and pronouncements which effectively precluded the workings of normal economic reactions. Of course, these latter influences became more pronounced with the advent of the "New Deal," and first the threat and then the fact of the Holding Company Act of 1935 materially hindered any consideration of financing by interstate holding companies. Even without the second and third factors mentioned above, it is doubtful whether there would have been the possibility of any considerable holding company financing during the period. By its very nature the public utility holding company is an instrument that lends itself successfully to the attraction of capital only during periods of prosperity and expansion. The financial leverage creates a risk that must be balanced by a chance of more than normal profit possibilities, which, in turn, can exist only in a favorable earning environment.

Again we must face the future with consideration of the fact that the pioneering risks and profit potentialities in the utility industry are about worn out. When, as, and if the utilities are relieved of their present economic and political burdens they will return to a development which of necessity will be more stable and, we hope, more substantial. Under such conditions, holding company securities would not seem to have the same speculative appeal that existed in the twenties. Not only will it take some time to develop earning capacities in an amount sufficient to dehydrate previous capitalization excesses, but advancements beyond that point in terms of earnings and justified capital commitments will take place more slowly than in the industry's earlier years. If the holding companies continue in control of the utility situation and guide the industry's future development along sound lines, investment in holding company securities will tend to have the same attractions as do the equity securities in any established industry or as would direct investment in the equities of any well-established operating unit in the utility industry. The differential advantage in capital attraction which has in the past accrued to the holding company will tend to vanish with stabilization.

It is perhaps unfortunate that one experiment in utility financing technique died a-borning with the crash of 1929 and the subsequent embarrassments of the Associated Gas and Electric Company. This company was avowedly attempting to accomplish a complete substitution of parent company securities for those of operating companies and thus effect the elimination of financial charges between operating company income and parent company obligations.⁷ Theoretically the scheme looks good—a holding company financial structure without the effects of leverage and risk that are caused by operating company bonds and preferred stocks, holding company stocks and debentures representing the only capital contracts to be used in raising funds. Certainly, if any set-up would enable

⁷ A description of the development and policies of Associated Gas and Electric Company is contained in *Michigan Business Studies*, Vol. V, No. 1, "Financial Policies of Public Utility Holding Companies."

parent companies to sell securities and raise capital, such would be the one. However, Associated Gas and Electric Company, subsequent to 1930, had to revert to subsidiary issues to meet capital needs and reversed the trend of its financial policy. In this particular situation the change of policy was probably due to inherent weaknesses in the financial practices of the Associated Gas and Electric rather than to faults in the theory of financing which had been sponsored by the company. Although the weakness of this one experiment deprives us of material for inductive reasoning, one suspects that the hue and cry for security during the depression years would have caused even a strong company to revert to operating company mortgage bonds as the media for necessary financing.

Since all holding companies were deprived of the possibility of securing new money from the market to meet the expansion and maturity needs of operating companies and of the parent companies themselves, they turned to transfusion methods to render financial assistance in especially needy cases. Legal and practical difficulties of transferring sufficient funds from operating subsidiaries to parent companies led to default and receivership for such of the weaker holding companies as Middle West Utilities Company, Midland Company, American Commonwealths Power Company, Tri-Utilities Company, and Standard Gas and Electric Company. These companies, among others, found the burdens of parent company financial structure too great to be supported by a normal investment return from subsidiaries. The Associated Gas and Electric organization did succeed in preserving its corporate existence partly by virtue of its ability to sell good operating company securities that had been reserved under its former system.⁸

In other situations where the holding company set-up was not endangered by heavy maturities or excessive parent company interest payments, the structures held together throughout the depression and many parent organizations were

⁸ "Investments in subsidiaries" declined from \$684,487,460 on December 31, 1932, to \$519,496,540 on December 31, 1934, but it is impossible to trace the exact causes of the decline.

able to facilitate the solution of subsidiary financial problems. Again turning to the Commonwealth and Southern Corporation, we find a record of the following subsidiary company bond purchases by the parent company:⁹

1930—\$20,000,000 First and Refunding 5% Bonds of Georgia Power Co.

1931— \$5,000,000 First and Refunding 5% Bonds of Georgia Power Co.

1933—\$ 9,376,000 First and Consolidated Mortgage 5% Bonds of Central Illinois Light Co.

1934—\$ 2,741,000 First Lien and Refunding Mortgage 5% Bonds of South Carolina Power Co.

In the case of Georgia Power Company the purchase was of bonds which could have been sold, if at all in the 1930 and 1931 markets, only at very high cost. They were secondary liens, their interest was being earned only 1.33 times, and the market prices for then outstanding issues ranged as low as 54. In 1933 Commonwealth and Southern bought the 5s at 90 from Central Illinois Light Company to facilitate a corporate simplification program. This was at a time when there was almost literally no market for 5 per cent issues.¹⁰ The purchase from South Carolina in 1934 was another instance of aid to a company whose 5s were selling between 51 and 77 on the market.

In addition, the Commonwealth and Southern Corporation made a few miscellaneous preferred stock purchases and also thickened the equities of certain subsidiaries by common stock purchases as follows:¹¹

1930—\$6,000,000 for 400,000 shares of Alabama Power Co.
\$15,000,000 for 600,000 shares of Ohio Edison Co.

⁹ Reported in the "Outline of History and Developments," a brief prepared and published by the Commonwealth and Southern Corporation.

¹⁰ In 1935 these bonds were marketed as 4¼s at \$97.60 by Commonwealth and Southern Corporation; the interest obligations of Central Illinois Light Company were reduced accordingly from 5 per cent to 4¼ per cent, and the \$7.60 price differential was paid to the operating company.

¹¹ Reported in the "Outline of History and Development" of the Commonwealth and Southern Corporation.

1931—\$522,500 for 20,900 shares of Pennsylvania Power Co.
 1932—\$250,000 for 2,500 shares of Central Illinois Light Co.
 \$500,000 for 20,000 shares of Pennsylvania Power Co.
 \$150,000 for 2,000 shares of Ohio Edison Co.
 \$1,875,000 for 125,000 shares of Central Illinois Light Co.

Other equity increases were accomplished by capitalization of advances, as when in 1932 the parent company took common stock for \$1,875,068 due it from Mississippi Power Company and \$2,778,620 due from South Carolina Power Company. In 1934 the \$300,000 advance to Gulf Power Company was similarly capitalized. The real significance of these transactions, which without a doubt did effect material assistance to the operating companies involved, lies in the fact that during the years 1930 to 1935 Commonwealth and Southern Corporation did practically no public financing and attracted only a nominal amount of new investment capital to the organization.¹² Its ability not only to make the advances mentioned in the previous section but also to furnish \$24,297,500 of new equity money to subsidiaries and to buy subsidiary company bonds in the amount of \$36,847,000 depended almost entirely on the fact that during the years 1930-34 the parent company collected investment revenues as follows:

	<i>Dividends on Subsidiary Stocks</i>	<i>Interest on Subsidiary Bonds</i>
1930	\$28,035,998	\$ 3,336,756
1931	21,723,858	3,121,296
1932	12,446,201	2,416,403
1933	9,038,971	2,118,831
1934	7,130,177	2,561,742
	\$78,375,205	\$13,555,028
Total dividends and interest	\$91,930,233	

Evidently it was money out of one pocket and into another as far as the Commonwealth and Southern system was concerned. Payment of about \$12,000,000 per year in interest and preferred dividends on parent company capitalization

¹² In 1930 Commonwealth and Southern offered 99,068 shares of \$6 cumulative preferred stock through Bonbright and Company at 100¼.

more than absorbed what was left after advances and new investments were made from the parent exchequer; working capital suffering accordingly.¹³

This detailed analysis of Commonwealth and Southern procedure is sufficient to explain how other companies were able to accomplish similar results without external financing. United Gas Improvement Company was able to offer equity aid to three subsidiaries in 1931: \$235,000 for common stock of Chester County Light and Power Company, \$732,250 for Consumers Gas Company, and \$1,200,000 for St. Louis County Water Company. These investments were facilitated by the fact that United Gas Improvement Company collected some \$24,000,000 in dividends that year.¹⁴ It is interesting to note, however, that United Gas Improvement did not come to the rescue of Arizona Power Company when that subsidiary defaulted in 1933; evidently holding companies use some discrimination and do not support all and sundry offspring.

In addition to these situations which represent the apparent willingness of holding companies to invest profits of strong companies in the development of smaller and weaker ones, we find in the North American situation what amounts practically to capitalization of subsidiary earnings. This is exemplified by North American Company's purchases of 20,000 common shares of North American Edison Company for \$13,000,000 in 1932 whereas cash dividends for 1931 and 1932 paid by the Edison subsidiary to the parent North American amounted to \$12,700,000; not much more than a bookkeeping transaction representing capitalization of earnings. In 1930 Public Service Corporation of New Jersey took common cash dividends amounting to \$35,000,000 from its subsidiary Public Service Electric and Gas Company while in the same year it purchased \$11,500,000 of Electric and Gas common stock and also \$31,365,630 of common stock of Public Service Coordinated Transport. The profits of the Electric and Gas subsidiary were used not only for the electric and

¹³ High \$23,328,921 in 1932; low \$15,930,110 in 1933.

¹⁴ United Gas Improvement Company also sold \$24,500,000 of preferred stock during the year 1931.

gas business but also, by the subsidy to Public Service Coordinated Transport, to support the weaker transportation business.

These comments have not been designed to justify or condemn the policies of any one public utility organization; they are merely samples indicating the extent to which holding companies in general can render significant financial aid to subsidiary companies. It may seem unfair to form a judgment based on the facts in depression years, but, on the other hand, such is the crucial test, because in good times few of the modern operating companies would have difficulties raising capital in the market. Why? Because the holding companies, as they themselves say, have developed operating units which are today large and compact, with simplified financial structures and with every ability to be self-sufficient.¹⁵ In this respect, again the tendency has been for the better holding companies to work themselves out of a job. Since the main justification for financial assistance lies in the weakness of the recipient of aid, it would follow that the only way to continue the justification would be to encourage and foster weakness in the operating subsidiaries. Therefore, as time goes on, there will be less and less excuse for holding companies as financial aids to subsidiaries. True, there remain at present a large number of weak companies that could profit from sound parental advice and assistance, but if the present trend continues, dependence on holding companies will diminish with the development and stabilization of the utility industry. As this goal is approached, holding companies will be left with just one financial function; namely, to support uneconomic and essentially unprofitable situations. This they would be foolish to do under a profit motive and we would not be justified in expecting continuance of such support except in so far as we agree to a system of socialization wherein the strong utilities in profitable operation are expected to support profitless transporta-

¹⁵ Such new acquisitions as holding companies did make during the years 1930-35 were mostly to the end of "intensive" rather than "extensive" development; i.e., new properties were added to further the physical integration of contiguous operating units.

tion systems or other ventures that have outlived their dollar usefulness.¹⁶

In spite of, or perhaps because of, the recent and current malignant attacks on the holding companies for their financial machinations, one is tempted to speculate as to what would now be the status of the utility industry had it developed without the benefit of holding company financial participation. Unfortunately economic and business phenomena do not lend themselves to experimentation nor permit a re-enactment of events and developments under controlled conditions, so no one can ever know the answer to such a question. However, we have been brought up to accept the fact, painful though it may be, that waste and financial losses are inevitable costs of pioneering and progress. It may be admitted that utilities "progressed" in the twenties under holding company domination, and in a very real sense the development was in the pioneering stage. Without attempting to justify the financial malpractices of the utility operators, it is suggested that there may be no more reason to become wrought up to the point of destruction about their case than about similar conditions which have characterized "progress" in almost every line of industry.

Although such arguments might be offered by public utility holding companies in defense against present attempts to disembody their organizations, they do not in any respect satisfy our desire to see the future financial developments of the industry take a logical course. We might be content to "let the dead past bury its dead" if we had some assurance that from now on holding companies would confine their financial activities to those more limited possibilities afforded by new conditions and justified, not by orations, but by facts.

¹⁶ Public Service Corporation of New Jersey seems to furnish a current example of the workings of this theory. The rates and earnings of the gas and electric business are sufficiently high to permit operation of the transport business with much less than normal profits—in fact, no profits on the equity investments of the parent company. See further discussion, p. 129.

CHAPTER 5

HOLDING COMPANY DIVERSIFICATION

Consideration of the effects of diversification on the financial status of public utility holding company systems is here included in an attempt to qualify, support, and criticize the claims of utility interests and the popular conceptions which prevail regarding geographical and industrial diversification. There has been a great deal of talk about this subject, much of it of the exaggerated sort usually engendered by political considerations. This has been particularly true since definite consideration of the Holding Company Act of 1935 was begun, because that law proposes to abolish or at least forcefully discourage diversification in favor of integration.¹ Sample statements by utility executives will serve to present the industry's attitudes and to indicate the general course of its arguments and the conclusions reached.

In its brief setting forth the benefits of the holding company to subsidiaries and their investors and customers, the Engineers Public Service Company includes the following comment:

The wisdom of the old adage "Don't put all your eggs into one basket" is well recognized by the investor and he has been willing to purchase securities representing a diversified interest in sound operating properties located in areas widely separated geographically, on a lower rate of return than he would require in the case of a single property lacking such diversity. To those who have followed the development of the Engineers Company through the years the benefit of diversity in its effect on the consolidated earnings has been clearly visible. Business conditions in specific areas have, from time to time, been depressed and the earnings therefrom have lagged while other areas with better conditions have carried the load.

¹ The Act requires that, immediately after January 1, 1938, public utility holding companies shall dispose of subsidiary interests in excess of those which may be included in "a single integrated public utility system" (Sec. 11, b, 1). Administrative modifications are provided for, however, in paragraphs A, B, and C of the same subsection.

Even during the major depression of the last four years the "worst period" in each of the several areas served has not coincided with that in the other areas and this has tended to lessen the effect of the individual jolts.

Mr. S. R. Inch, President of Electric Bond and Share Company, expressed himself as follows before the Committee on Interstate and Foreign Commerce of the House of Representatives in March, 1935:

. . . diversity apparently is to be made illegal by the bill now before you although it is the principle upon which most kinds of successful business is based. Consider for example the insurance companies and the importance to business generally of developing a wide and diversified market.

Similarly, Mr. F. S. Burroughs, President of Associated Gas and Electric Company, testified before the same committee in April in the following terms:

No one testifying before this Committee has pointed out a single necessary evil resulting from the common ownership of several regional groups of utility properties and I say to you, without fear of contradiction from any competent person, that there is a definite advantage to investors who provide the equity in the utility business to having geographical diversification in the source of their income. The very nature of the utility business is such that the ratio of fixed capital to annual revenue is higher than in any other line of business. In other words, the annual turnover is very small. Under these circumstances the only reason that it is possible to raise the capital necessary to provide the facilities at relatively lower rates of return to the investors than would be possible in other lines of business, is because of the relative stability of the income and the relative uniformity of the income year by year. Anything that contributes to making the income more uniform and more stable tends to decrease the cost of the capital. It must be perfectly obvious to anyone that business conditions are not uniform throughout the country at any time. Even during the past five years when a business depression has been affecting the entire world you will find that the published maps showing relative business conditions in various parts of the United States show as wide a variation in conditions in different sections as do the weather maps published by the Department of Agriculture. It, therefore, follows that when several regional groups of utility properties are com-

bined under a common ownership, the earnings for the equity are far less affected by local variations in general business conditions than is the case with any company whose operations are confined to a single region of the country.

Capital may be attracted for investment in the senior mortgage bonds of utility companies on almost the same annual interest basis whether the company is located in one section of the country or the other, but about one-half of the total capital necessary to provide utility service must be raised through the marketing of junior securities. Inasmuch as the junior securities are the ones that are primarily affected by fluctuations in the utilities' earnings, it naturally follows that anything that can be done to diversify the risk to the investor in junior securities will tend to reduce the rate of return which will attract investors to the purchase of such securities.

Therefore, if the grouping of regional enterprises under the ownership of a holding company serves no other useful purpose, it must inevitably serve as a measure of protection to the investors who provide the junior or equity money for the utility business, and must, therefore, inevitably result in reducing the average cost of the total capital necessary to provide utility service.

In a memorandum prepared by the North American Company and dated March 26, 1935, the following statement is included:

The ownership of four separate, but individually integrated geographical systems provides a diversity of earnings and a greater stability of income for the owner of the securities of the North American Company and its intermediate holding companies than would be possible if these thousands of investors owned directly the common stocks of the separate utility subsidiaries.

These quotations are sufficient to indicate the general nature of the advantages claimed for diversification. They are characterized by the universal assumption that geographical diversification carries with it diversification of risk which strengthens holding companies, and that that strength is, in turn, transmitted not only to subsidiary companies but also to all investors in the utility system.

As far as is known, this study represents the first attempt to analyze statistically the effects of diversification on the stability of holding company earnings and thus on the financial

strength of utilities combined in a holding company system.³ While the technical description of the statistical methods used is relegated to Appendix I, a word is necessary about the general procedure involved before the analysis is presented.

The study is not a statistical one in the sense that large aggregates representing a considerable coverage of the utility industry are used to demonstrate the thesis. Rather, a number of series have been used as samples of different set-ups and situations, these series being chosen with a conscious effort to show how they react to economic phenomena under their respectively different conditions. The temporal characteristics of the series imposed limitations on the data; it was impossible to secure comparable figures for all constituents of any holding company system for the entire period covered in the study, 1919-34. In all cases the constituent company series and their combinations were extended back to 1919 regardless of date of parent company formation or date of acquisition of subsidiaries by the respective holding companies. Therefore, in no case should the series presented be considered an actual picture of the performance of the holding company group under discussion. It was only because certain holding company groups tended best to represent different combinations of conditions that are more or less typical that the particular subjects were chosen for analysis. It is to be emphasized, and it will be reiterated to avoid misinterpretation, that the policies of no company or companies are being criticized herein; such interpretation would be most unfair because this cross-section analysis does not cover all of the elements in any one company's circumstances.

Deductive reasoning based upon and exemplified by the statistics will constitute the method of procedure. The general conclusions to be developed, with appropriate modifications along the way, are that diversification adds little of financial significance to the typical public utility holding company situation, and that present-day holding companies have but

³ Many companies have prepared and presented statistical studies of load diversification and of the effects of diversification on production and sales, but these analyses have not been carried through to their financial conclusion.

limited grounds for self-justification in the diversification of their holdings.

CYCLE ANALYSIS

The first step in the analysis involves the consideration of diversification as it relates to the cyclical fluctuations of utility earnings. In view of the claims that have been made, we should expect diversification among the constituent companies of a holding company system to accomplish, by cancellation of decreases and increases, a definitive degree of stability in the combined revenue and profit performances. But the visual answer contained in Charts 2 to 6 (page 108a) is "No," particularly with respect to the reactions of revenues and earnings to the phenomena of the general business cycle, whose influence is similar in all cases and therefore permits little modification in the combined system performance as compared with that of the individual companies.³

The outstanding general characteristics of revenues and profits⁴ are their simultaneous increases and decreases; this is true of all of the operating units whose earnings are plotted on the charts. Occasionally there is a lead or a lag of a year or so, but such reactions comprise only temporary modifications or exceptions to the universal movement which tended to carry revenues and profits above the growth line in the early 1920's, to push them to peaks in 1929 or 1930, and then to force a unanimous decline in the early thirties. These facts are to be considered in light of the degree of geographical diversification represented by the utility companies whose earning figures are depicted; they were operating in seventy-two communities in twenty-six states.⁵ Evidently geograph-

³ Revenues and profits (after taxes and depreciation) are plotted to logarithmic scale. The scales were removed to emphasize the relationships between changes in direction of movement and to avoid giving any weight to the dollar amounts involved. Details of method are contained in Appendix I, part 1.

⁴ The revenue and profit figures exclude non-operating returns. The data used throughout this chapter were compiled from Poor's and Moody's *Public Utilities Manuals*, occasionally supplemented for detail by the annual reports of the respective companies.

⁵ Appendix II describes the industrial and geographical characteristics of the several holding company systems.

ical diversification is no defense against the rigors of a depression like that of the thirties. Neither does it lend material assistance in terms of earning capacity in times of general prosperity, because under such conditions all utilities seem to prosper alike; after hesitations in 1920, 1921, and 1922, they all picked up speed and performed with almost equal excellence.

To the writer it seems that the expressed belief in the ability of combination to provide a stabilizing influence to the earnings of a group of utilities is quite inapropos as regards cyclical influences. Faith in anything like the principles of insurance to minimize such risks as are inherent in cyclical swings is quite illogical and misplaced. The usually accepted principles of risk bearing by insurance companies are based on the assumption or the actuarially proven fact that loss and disaster are caused by factors which will not be simultaneously effective on all fronts. Fires will burn themselves out in a confined locality or they will be brought under control by modern fire-fighting forces. Hurricanes will not sweep an area as large as the United States. Even epidemics causing illness and death are controllable and limited in their effects. Such known conditions enable insurance underwriters effectively to spread their risks by geographical diversification, because fire, wind, sickness, and death are constantly recurring phenomena which do not concentrate temporally. On the other hand, business conditions, which determine the abilities of utility companies to operate at a profit, lack the qualities of controllability and isolation and possess inherently the characteristic of almost simultaneous action and reaction. The reactions may vary in degree, perhaps, but nevertheless similar changes in the same direction are the rule rather than the exception. From the standpoint of the financial stability of utilities the important fact is that the simultaneous movements are universal and in the same direction; such earnings conditions preclude the possibility that one operating company can keep another or help to support a holding company system during any major business change.

It is true that local business indexes frequently record improvements in one place at the same time that they report

a business decline elsewhere, but those changes are usually relative to the reporting period just preceding and thus measure only short-time movements. The accumulative effect of a series of changes over longer periods is amply demonstrated by the similar performance of the gross revenue lines in Charts 2 to 6, because utility revenues are inevitably derived from the business activity in areas served. In the present economic organization of our country nothing different could be expected; interdependence of industries and localities has been amply demonstrated in every cyclical change in recent years. Back in "horse and buggy days" it might have been possible for one locality to enjoy continued prosperity and high prices while others struggled on in the slough of depression, but this possibility has been materially reduced by modern conditions. Industrial development, with its tendency to localization and specialization, has combined with modern transportation facilities to create an inescapable interdependence, and it is exceedingly unusual if not impossible for one industry or one locality to prosper or decline except with the rest of the nation, the rest of the continent, or even with the rest of the world. True, one group may prosper more or suffer less than another as business improves or declines, but sooner or later the correlation is inevitable.

The public utility industry cannot expect to be an exception to the general rule, and as the utilities become more and more dependent on industrial and commercial load, they can expect their earnings to move ever more closely in accord with general business conditions regardless of geographical location. Therefore, it seems hopeless to expect that geographical diversification can now or at any future time be depended upon to assure a degree of stability beyond that achieved by business in general.

The operating results of the utility systems recorded in Charts 2 to 6 serve to prove the ineffectiveness of geographical diversification in general; they also provide the means of some possible modifications and qualifications of the general conclusion. It is noticeable that the "combined system" results for some of the holding company systems show to a somewhat

greater extent than the others the "smoothing" effect of combining operating units into a system. These "combined system" results are really weighted averages of the earning performance of the respective constituent companies, hence they necessarily run between the extremes of the constituents. In the case of the artificially combined Cleveland and Edison companies⁶ the parallelism of all revenue and profit lines contained in Chart 6 is most striking, as it is also in most of the performances in the Commonwealth and Southern group. On the other hand, the earnings of the ten companies comprising the American Power and Light grouping are most irregular, and their combination effects a degree of regularity in the combined system results. The American Gas and Electric and the Engineers Public Service groups lie between the extremes in this regard.

A reasonable explanation of the differences in the degree to which combination failed to effect elimination of cyclical influences seems to lie in the different characteristics of the operating companies combined in the several groups. The Edison and Cleveland companies, although representing the widest possible geographical diversification, are all very large operating companies serving correspondingly large metropolitan areas with electricity.⁷ Southern California Edison Company's one bad year, reflected in earnings but not in revenues, resulted from its dependence on hydro-generation and the fact of a very low water year in 1924. With that exception we find that, despite location, the companies all prospered and suffered together. The fact that each company served a large metropolitan area apparently gave each the complete benefit of any available diversification in load, smoothed out the performance lines, and rendered ineffectual the attempt to secure any further benefits by artificial combination.

The companies included in the Commonwealth and Southern group were also relatively large, and, while not

⁶ No corporate relationship of any kind exists between these four companies; they are combined for comparative purposes only.

⁷ Some steam, gas, and miscellaneous revenues are represented in nominal amounts.

servicing large cities like Boston, Chicago, Detroit, Cleveland, or Los Angeles, yet they did serve large areas in Michigan, Georgia, and Alabama and sizable communities in Indiana and Illinois.* Similarly, therefore, it follows that whatever the opportunities for the benefits of diversification may have been, they were realized within the limits of each separate company and little further influence was effected by the combination.

Turning to American Power and Light Company (Chart 3), we find it a combination of a large number of small operating companies, none with revenues in excess of \$10,000,000 per year, each doing business in a relatively small community or area, and one, Portland Gas and Coke Company, doing exclusively a gas business. It is evident that the earnings of the small companies in this group, taken individually, were subject to fewer diverse influences and were more dependent on purely local circumstances which at times resisted outside influences or reacted to them with exceptional violence. One could doubtless trace the Montana Power Company's fluctuations in revenue directly to the mining industry, those of Kansas Gas and Electric Company to the prosperity of wheat growers, and those of Northwestern Electric Company to the lumber industry. In the combination of these diverse companies there appear some benefits of diversification, although they are not sufficient to eliminate the effects of the cycle which finally dominated all other influences.

Similarly, in the American Gas and Electric Company and the Engineers Public Service Company combinations (Charts 2 and 5), some smaller companies were more "jumpy" than the large ones, but none successfully resisted the general movements and changes in business conditions. Some companies may have been less successful than others in times of general prosperity, but it never followed that those companies were enjoying material improvement in periods of depression, and therefore they contributed nothing to the end of stabilization. The differences between large companies and small, local and

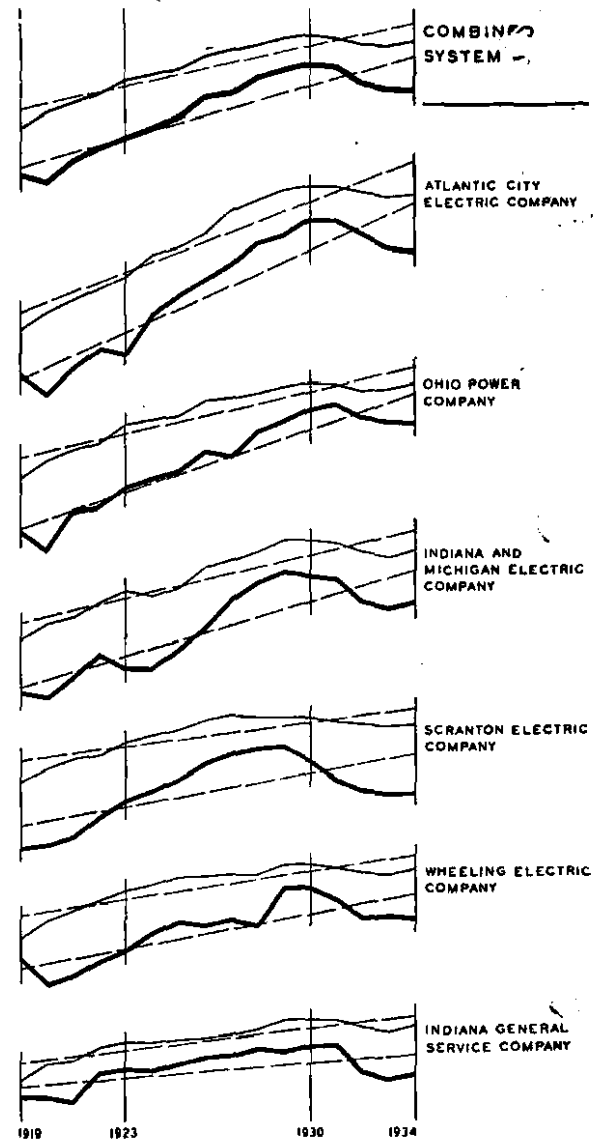
* Considerable amounts of revenues were derived from the gas business of Consumers Power Company, Central Illinois Light Company, and Southern Indiana Gas and Electric Company as well as from the sale of electric power.

widespread, would seem to indicate only that there is less excuse for combining large metropolitan companies, or units like those included in the Commonwealth and Southern group, than there is for common ownership of groups like those of American Power and Light Company; and there is little or no justification even for the latter in terms of diversification benefits as defenses against cyclical changes in utility earnings.

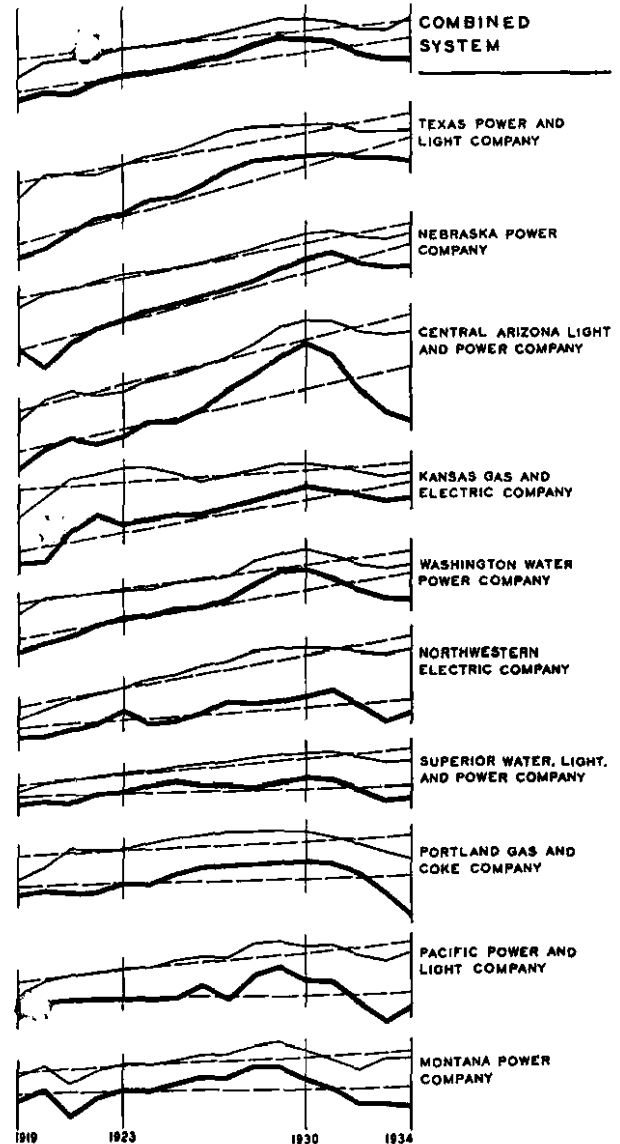
The phenomena just described were in terms of operating profits, which, as a matter of fact, seldom constitute the earnings available for the support of holding company systems. The real financial significance of fluctuations is further affected by the existence of fixed interest charges in the typical operating utility set-up and also by the fact that many, if not most, operating companies are obligated to meet semi-fixed dividend payments on publicly held preferred stocks before parent organizations can collect dividends on their common stock investments. The effect of such circumstances of financial structure is to amplify by leverage the changes in amounts available to holding company equities; obviously, the practice of trading on the equity cannot produce any effects of cancellation or bring any benefits of diversification. Accurate data on common stock earnings in comparable form would, if plotted, produce results similar to but an exaggeration of those shown in Charts 2 to 6. Under the influence of fixed financial charges, a given change in operating profits, either up or down, would produce a change in equity earnings in the same direction but of greater amplitude. Therefore, the credit standing of holding companies and, in the long run, their ability to attract capital are exaggeratedly dependent on the simultaneous swings of operating company profits. It is impossible to reason that benefits of diversification can be derived from a combination of a series of operating company equities all of whose values are speculative, all of whose earning potentialities are subject to the same business influences, and all of whose values react in the same direction at the same time.

CHARTS 2-6—EFFECTS OF COMBINATION ON THE REVENUES AND PROFITS OF OPERATING UTILITIES, 1919-34

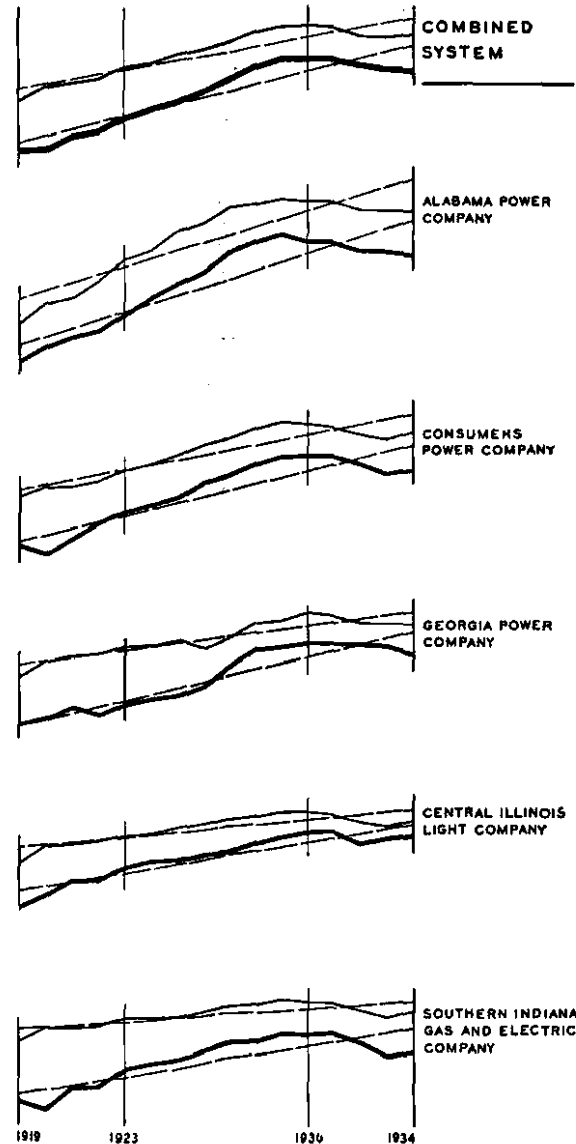
2.-AMERICAN GAS AND ELECTRIC COMPANY SYSTEM



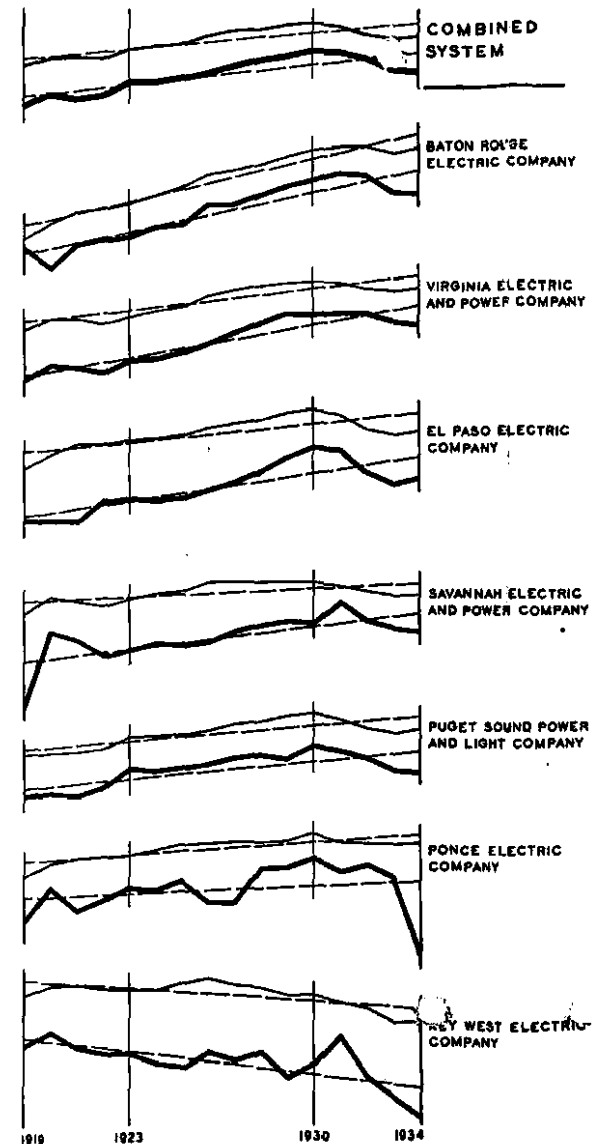
3.-AMERICAN POWER AND LIGHT COMPANY SYSTEM



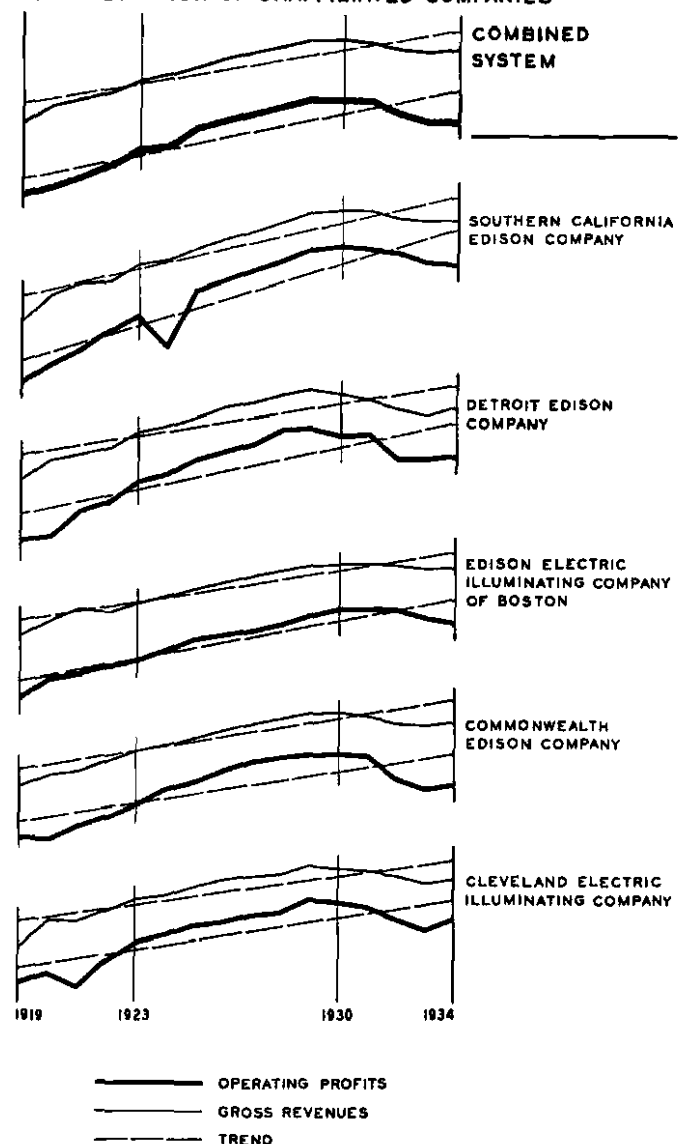
4.-COMMONWEALTH AND SOUTHERN CORPORATION SYSTEM



5.-ENGINEERS PUBLIC SERVICE COMPANY SYSTEM



6.-COMBINATION OF UNAFFILIATED COMPANIES



RESIDUAL FLUCTUATIONS

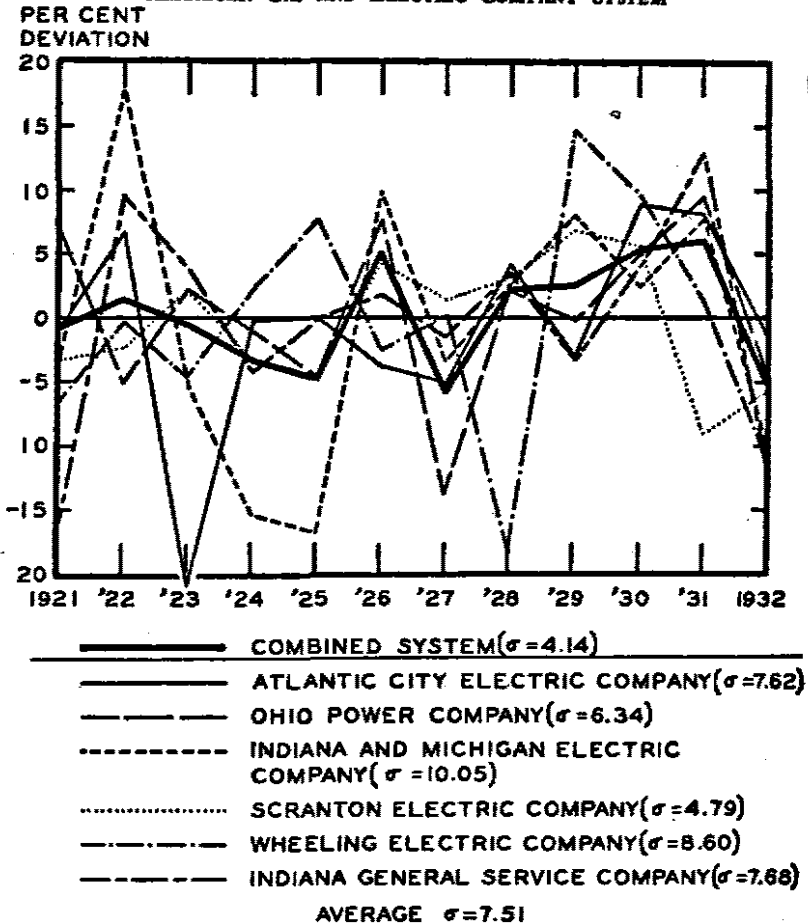
We have already hinted that the earning records of some utilities seem to be more jumpy than those of others. This fact is especially apparent in the year-to-year changes which are shown in Charts 7 to 10. Although it is evident that these changes ultimately fell under the universal influence of the dominating cyclical changes, it seems worthwhile to carry the analysis of the residual fluctuations a bit further in an attempt to measure their characteristics and significance. Therefore, further statistical methods were brought to bear which served to isolate and emphasize the year-to-year changes during the period of years 1921-32. For this purpose, a five-year moving average was computed to eliminate the influences of the cycle and of growth and to accentuate the residual and accidental factors which influenced utility earnings during the period under observation.⁹ The expression of each year's earnings as a percentage deviation from the five-year moving average gives a measure of temporary fluctuations caused by factors other than growth and cyclical changes. The results for the four holding company systems are contained in Charts 7 to 10. Representing as they do the effects of residual influences on earnings, the plotted lines may be said to have moved up and down in accordance with temporary earning situations.

It is perfectly evident that there is a good deal of year-to-year variation in utility earnings as reported. Not only are the fluctuations obvious but in most cases the fluctuations of constituent companies tend to be in opposite directions at a given time. As a result of these observed facts we find that ups and downs tended to cancel each other and that year-to-year variations in combined system earnings were materially reduced by the cancellation process.¹⁰ The relative stability created by the combination of a number of fluctuating earning performances shows the effects of cancellation resulting from simultaneous opposite movements of earnings.

⁹ Details of method described in Appendix I, part 2.

¹⁰ The extent of cancellation may be noted by comparing constituent company variations expressed in percentages with the percentage variations of the respective combined systems as noted on the chart.

CHART 7—DEVIATIONS OF OPERATING PROFITS FROM FIVE-YEAR
MOVING AVERAGES, 1921-32
AMERICAN GAS AND ELECTRIC COMPANY SYSTEM



Such are the results obtained from a comparison of the earnings reports of the operating companies involved. The real significance of these results is difficult to determine because of the fact that little faith can be placed in the year-by-year profit figures of operating utilities.¹¹ Universal lack

¹¹ The operating profit figures used throughout this study are representative of profits after such deductions for depreciation as were traceable to the operating expense category.

of faith in the annual profit figures is predicated on two facts: the relative ease of maintenance deferment from one accounting period to another, and the generally accepted accounting practice of the industry with respect to depreciation. There is no intention to question maintenance policies in this connection. It is merely stated as a known fact that utilities can and do spend more money for maintenance when they have it than when they don't; such may be the best policy in some instances, but the effect is that any one year's reported earnings show artificial results. Similarly, without entering the age-old discussion of depreciation accounting methods, it is a fact that the so-called "retirement reserve" method of accounting for depreciation is basically and admittedly one which takes no cognizance of the amount of such expense that should be charged to any one accounting period in a cost accounting sense. According to the requirements of the Uniform Classification of Accounts for Gas and Electric Utilities, which was in vogue during the years under observation, there was no conscious effort to allocate retirement expenses period by period in any logical way.¹² It is only to be expected, therefore, that many miscellaneous year-to-year changes in reported profits would result even though the long-run adequacy of retirement provisions of any particular utility might not be questioned. Two or three examples show the possibilities:

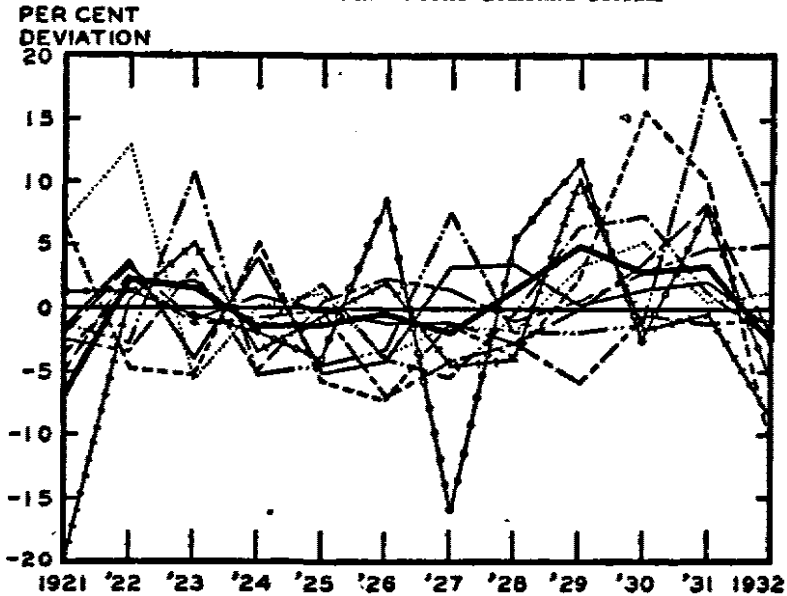
1. Georgia Power Company in 1929 reduced retirement expense from the previous year's \$1,203,843 to \$991,964. This action probably accounted, in part, for the corresponding profit increase from \$10,628,508 to \$11,079,796. (See Chart 9.)

2. Scranton Electric Company in 1930 jumped its retirement expense from the \$354,156 of 1929 to \$703,986, thus causing profits to decrease from \$3,881,115 to \$3,376,645, in spite of a slight increase in revenues. (See Chart 7.)

3. Indiana and Michigan Electric Company reduced its

¹² Instructional note in these old classifications stated: "It is the intent of the classification that a reserve shall be provided, either through retirement expense or by appropriations from surplus, or both, sufficient to cover all retirement losses that may reasonably be expected."

CHART 8—DEVIATIONS OF OPERATING PROFITS FROM FIVE-YEAR
MOVING AVERAGES, 1921-32
AMERICAN POWER AND LIGHT COMPANY SYSTEM



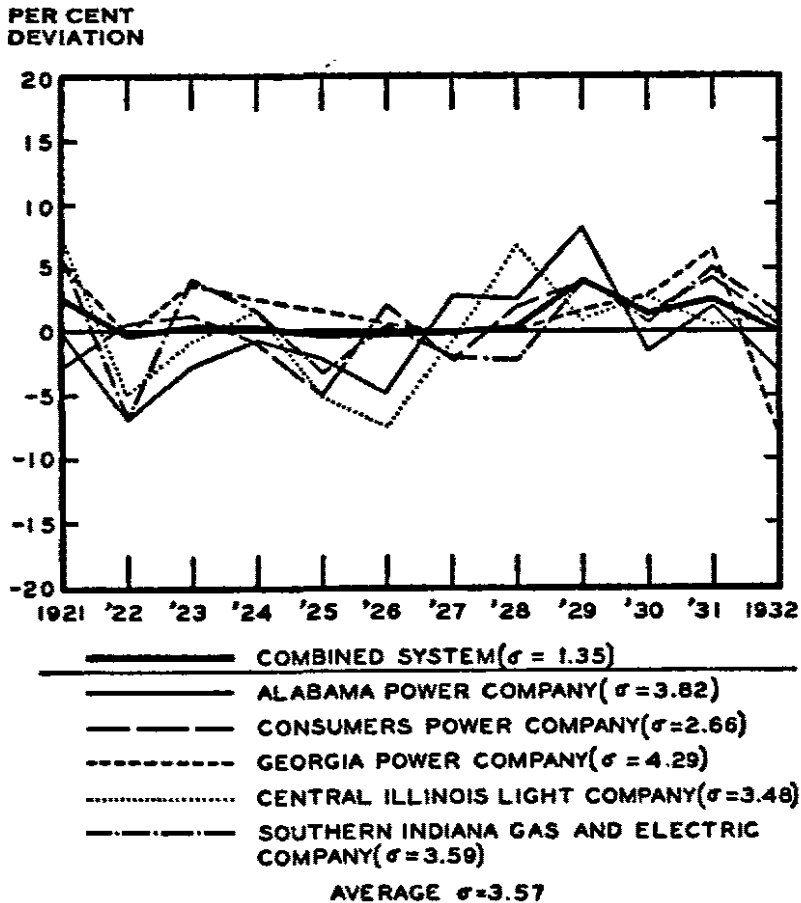
- COMBINED SYSTEM ($\sigma = 3.07$)
- TEXAS POWER AND LIGHT COMPANY ($\sigma = 3.20$)
- NEBRASKA POWER COMPANY ($\sigma = 2.96$)
- CENTRAL ARIZONA LIGHT AND POWER COMPANY ($\sigma = 7.51$)
- KANSAS GAS AND ELECTRIC COMPANY ($\sigma = 4.75$)
- WASHINGTON WATER POWER COMPANY ($\sigma = 3.83$)
- NORTHWESTERN ELECTRIC COMPANY ($\sigma = 6.93$)
- SUPERIOR WATER, LIGHT, AND POWER COMPANY ($\sigma = 2.61$)
- PORTLAND GAS AND COKE COMPANY ($\sigma = 3.03$)
- PACIFIC POWER AND LIGHT COMPANY ($\sigma = 7.13$)
- MONTANA POWER COMPANY ($\sigma = 7.22$)

AVERAGE $\sigma = 4.92$

profits in 1923 from 1922's \$993,088 to \$823,937 by increasing retirement expense from \$200,000 to \$420,010 in face of a \$500,000 revenue increase. (See Chart 7.)

With such influences predominant throughout utility accounting, the validity of any conclusions drawn from a statement of one year's profits is most questionable.

CHART 9—DEVIATIONS OF OPERATING PROFITS FROM FIVE-YEAR MOVING AVERAGES, 1921-32
COMMONWEALTH AND SOUTHERN CORPORATION SYSTEM

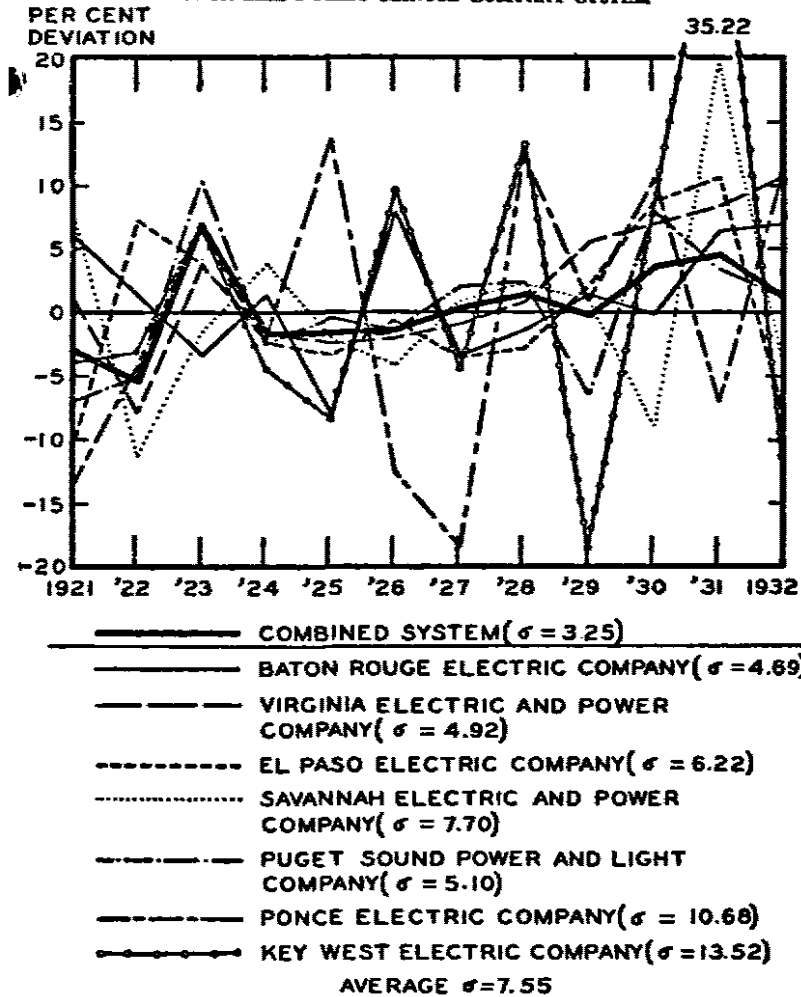


However, assuming that accounting methods and maintenance policies do not account for all of the residual influences reflected in Charts 7 to 10, there may be some significance in the averaging influence of combination. It is conceivable that an operating utility, embarrassed by an off year in earnings, might have that embarrassment enhanced by a maturity or other capital need occurring at the same time. It might follow, therefore, that a holding company little affected by the temporary depression of one constituent might alleviate the embarrassment by an advance or a security purchase that could soon be liquidated with the passing of the emergency situation.

To test the possibilities in this connection a number of detailed observations were made to measure the financial significance of some of the more pronounced yearly "vibrations" in earnings. It was assumed that a fairly accurate measure of a corporation's ability to withstand financial hardship could be expressed in the often-used investment test; namely, "times interest earned." This relationship is generally accepted as a test of credit strength and thus could be adopted as a measure of an operating utility's ability to remain financially self-sufficient in face of earning declines.

Within the American Gas and Electric Company system (Chart 7) we find that the earnings of the following operating units fluctuated most widely: Atlantic City Electric Company, Indiana and Michigan Electric Company, and Wheeling Electric Company. However, the financial significance of this fact was almost nil. Table 11 sets forth the operating profits of these three constituents of the American Gas and Electric Company, expressed as percentages of their moving averages, together with the respective relationships between operating profits and interest charges. In the case of the Atlantic City unit it is evident that after the early twenties, when the "times interest earned" ratio was improved by reduction of interest rather than by increases in earnings, this company maintained a satisfactory financial reputation in terms of interest coverage even in face of the rather violent changes in earnings. A similar story may be read from the record of the Wheeling

CHART 10 DEVIATIONS OF OPERATING FROM FIVE-YEAR
MOVING AVERAGES, 1921-32
ENGINEERS PUBLIC SERVICE COMPANY SYSTEM



Electric Company; both of these companies were apparently so financed that they maintained an adequate margin of safety over interest charges and thus could not have been very much worried or dependent on parent company aid in case of earning lapses. By the same token, there were but two years in

TABLE 11—RELATION OF EARNINGS DEVIATIONS TO "TIMES INTEREST EARNED"—
AMERICAN GAS AND ELECTRIC COMPANY SYSTEM, 1921-32

Year	Atlantic City Electric Company			Indiana and Michigan Electric Co.			Wheeling Electric Company		
	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*
1921	\$ 186	— 0.93%	1.87	\$ 322	— 2.93%	2.23	\$102	— 6.26%	1.94
1922	250	+ 6.75	1.82	313	+17.81	3.17	116	— 0.29	2.08
1923	198	—21.06	2.17	312	— 5.58	2.64	121	— 4.48	2.28
1924	298	— 0.19	2.48	313	—15.31	2.60	122	+ 2.36	2.87
1925	326	+ 0.01	3.08	635	—16.68	1.78	121	+ 7.77	3.38
1926	381	— 3.72	3.30	941	+ 9.86	2.07	152	— 2.58	2.53
1927	647	— 4.93	2.47	956	— 3.43	2.31	162	+ 0.35	2.56
1928	868	+ 4.38	2.53	1,026	+ 2.74	2.63	173	—18.18	2.22
1929	971	— 2.93	2.53	1,262	+ 8.04	2.57	212	+14.72	2.97
1930	1,450	+ 8.89	2.12	1,302	+ 2.50	2.35	163	+ 9.67	3.88
1931	1,347	+ 8.07	2.26	1,345	+ 7.70	2.15	162	+ 1.38	3.27
1932	1,138	— 0.91	2.20	1,383	— 9.85	1.50	164	—10.73	2.47

* Computed without giving effect to non-operating income.

TABLE 12—RELATION OF EARNINGS DEVIATIONS TO "TIMES INTEREST EARNED"—AMERICAN POWER AND LIGHT COMPANY SYSTEM, 1921-32

Year	Central Arizona Light and Power Co.			Northwestern Electric Company		
	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*
1921	\$ 97	+ 6.54%	2.79	\$397	- 1.15%	1.86†
1922	112	- 4.83	2.31	386	- 2.08	2.09†
1923	94	- 5.32	2.99	403	+10.80	2.40†
1924	106	+ 5.21	3.11	472	- 5.29	1.77
1925	93	- 5.75	3.84	474	- 4.60	1.82
1926	130	- 7.30	3.22	528	- 3.29	1.81
1927	162	- 1.13	3.46	566	+ 7.69	2.06
1928	164	- 3.68	4.23	588	- 1.91	1.91
1929	182	+ 2.39	4.95	620	- 1.87	1.89
1930	324	+15.62	3.39	784	+ 1.36	1.61
1931	376	+ 9.92	2.49	825	+18.20	1.65
1932	380	-10.33	1.52	850	+ 6.65	1.30

Year	Pacific Power and Light Company			Montana Power Company		
	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*
1921	\$ 671	+ 1.33%	1.73	\$1,748	-20.37%	1.84
1922	668	+ 1.57	1.78	1,769	- 0.55	2.34
1923	689	- 0.62	1.69	1,742	+ 7.52	2.70
1924	732	- 1.97	1.59	1,795	- 4.06	2.57
1925	785	- 4.12	1.51	1,828	- 0.81	2.77
1926	804	+ 8.62	1.76	1,826	+ 3.60	3.06
1927	770	-15.83	1.55	2,168	- 2.48	2.60
1928	1,159	+ 5.68	1.45	2,459	+ 1.81	2.67
1929	1,269	+11.75	1.50	2,388	+ 9.80	2.92
1930	924	- 2.65	1.73	2,409	- 1.82	2.34
1931	1,107	+ 7.74	1.40	2,465	- 0.05	1.98
1932	1,341	- 5.04	0.85	2,226	- 8.10	1.75

* Computed without giving effect to non-operating income.

† Depreciation not taken.

which the Indiana and Michigan Electric Company showed interest earned less than two times, and one of those years, 1925, reflected not only an earning decrease but a 100 per cent increase in interest.

The American Power and Light Company system has been mentioned as one showing the greatest possibilities of benefits from system cancellations of good and bad years. From this system the four units with greatest earning fluctuations were chosen for analysis (Chart 8.) Table 12 provides a picture of their profit fluctuations and the effect on financial position. The Central Arizona Light and Power Company's position remained satisfactory until 1932, in which year earnings were, as a matter of fact, under the cumulative pressure of cyclical depression rather than any temporary lapse. The Northwestern Electric Company and the Pacific Power and Light Company suffered alike, not from the effects of the evident year-to-year fluctuations, but from inherently weak equity position. They were always in need of aid, and this need was occasioned not by earnings fluctuations but by a general and continuous lack of earnings sufficient to establish a strong financial position. The fluctuations in these cases could not make the situation much worse than it already was.

The Commonwealth and Southern picture (Chart 9) is interesting when compared with the American Gas and Electric and the American Power and Light situations. There is less evidence of cancellation in the Commonwealth and Southern system combination. The fluctuations from normal are not so violent, nor are they so opposite in movement as to produce the same degree of smoothness in the system as a whole. The reason for the differences may lie either in more uniform accounting procedures used by the Commonwealth and Southern units or, more likely, in the fact previously referred to that the constituents of the Commonwealth and Southern system are individually larger and serve more diversified areas than do the units of the other two holding companies. Evidently the local conditions which constitute the predominant influence on the earnings of small scattered operating companies like those in the American Power and

Light and the American Gas and Electric systems are self-eliminating for such Commonwealth and Southern units as Consumers Power Company, Georgia Power Company, and Alabama Power Company, all of which serve large areas. The effects of such year-to-year fluctuations as did occur in the earnings of the Commonwealth and Southern units were nominal. This may be noted in Table 13 where the records of the three most unstable subsidiaries are set forth.¹³ The Alabama company showed a steady increase in interest coverage during the earlier years in spite of yearly earnings that deviated unfavorably from the average. After 1930 the decline in coverage was due largely to increased fixed charges rather than to changes in earnings. Georgia Power Company likewise went through the years 1921-32 with few significant changes in credit status as measured by interest coverage. The weakened position in both 1926 and 1931 was caused chiefly by an increase in interest. The "times interest earned" ratio for Southern Indiana Gas and Electric Company improved steadily in spite of the extent and variety of deviations in yearly earnings.

Approximately the same evidence appears from analysis of the records of Engineers Public Service Company units (Table 14). Savannah Electric and Power Company was weak in spite of and not because of earnings fluctuations. El Paso Electric Company was reasonably strong; and its financial strength was sufficient to absorb the shock of any temporary earning declines. The Key West Electric Company, on the other hand, experienced decided ups and downs in credit status, as measured by interest coverage, and appears to be an exception to the generalizations established above. It should be noted that this operating company is an "exception" in many respects; it serves fewer than 2,500 electric customers (2,291 on December 31, 1933) and operates in a completely isolated community. The company has a relatively small funded debt,¹⁴ and consequently a small change in earnings

¹³ The data in Chart 9 indicate the degrees of fluctuation.

¹⁴ As of December 31, 1932, the funded debt was \$512,000 as compared with an equity of \$951,000.

TABLE 13—RELATION OF EARNINGS DEVIATIONS TO "TIMES INTEREST EARNED"—
COMMONWEALTH AND SOUTHERN CORPORATION SYSTEM, 1921-32

Year	Alabama Power Company			Georgia Power Company			Southern Indiana Gas & Electric Co.		
	Interest Charges (in thousands)	Deviations of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*
1921	†	-0.32%	.....	\$1,847	+7.27%	2.54	\$377	+5.52%	1.52
1922	\$1,362	-6.78	1.91	1,889	-4.93	2.31	379	-6.76	1.55
1923	1,823	-2.74	1.81	1,973	-0.88	2.44	433	+4.15	1.74
1924	1,990	-0.70	2.10	2,173	+1.61	2.45	439	+1.56	1.86
1925	2,385	-2.11	2.13	2,380	-5.08	2.30	402	-3.27	2.12
1926	3,097	-4.86	1.97	3,530	-7.57	1.78	396	+0.45	2.45
1927	3,118	+2.89	2.58	3,336	-1.13	2.48	347	-2.09	3.11
1928	3,125	+2.46	2.97	4,505	+6.81	2.36	313	-2.30	3.54
1929	3,730	+8.20	2.79	4,073	+0.69	2.72	316	+4.02	3.94
1930	4,030	-1.49	2.31	4,485	+2.85	2.63	359	+0.69	3.44
1931	4,585	+1.95	1.97	5,405	+0.42	2.15	332	+5.06	3.76
1932	4,760	-2.98	1.69	5,743	+1.14	2.00	324	+1.59	3.42

*Computed without giving effect to non-operating income.

† Indeterminate.

TABLE 14—RELATION OF EARNINGS DEVIATIONS TO "TIMES INTEREST EARNED"—
ENGINEERS PUBLIC SERVICE COMPANY SYSTEM, 1921-32

Year	Savannah Electric and Power Company			El Paso Electric Company			Key West Electric Company		
	Interest Charges (in thousands)	Deviations of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*	Interest Charges (in thousands)	Deviation of Earnings from Moving Average	Times Interest Earned*
1921	\$306	+ 7.00%	1.99†	\$158	-10.33%	2.84	\$23	- 4.19%	3.31
1922	284	-11.41	1.69	209	+ 7.13	2.88	31	- 3.31	2.27
1923	330	- 1.61	1.59	205	+ 3.76	3.07	31	+ 4.15	2.26
1924	374	+ 3.70	1.53	234	- 2.47	2.61	30	- 4.68	2.01
1925	370	- 2.29	1.51	200	- 3.65	3.16	30	- 8.43	1.91
1926	362	- 4.25	1.60	165	- 0.72	4.29	31	+ 9.48	2.29
1927	443	+ 0.81	1.51	182	- 3.75	4.29	30	- 4.65	2.09
1928	451	+ 2.26	1.63	219	- 3.09	4.21	29	+13.19	2.46
1929	442	+ 0.75	1.75	328	+ 2.01	3.46	29	-18.47	1.71
1930	432	- 9.02	1.73	447	+ 8.70	2.94	28	- 7.81	2.13
1931	421	+19.67	2.43†	446	+10.59	2.85	28	+35.22	3.19†
1932	410	- 4.25	1.88	445	- 7.61	2.03	27	-11.33	1.82

* Computed without giving effect to non-operating income.

† No depreciation taken.

creates a more than normal change in the "times interest earned" ratio. Further, the coverage changes were not in exact correspondence with the year-to-year earning changes. It is evident that the company's accounting policies and its steady decline in earnings (see Chart 14) were more influential in affecting its credit status than any of the temporary conditions.

These analyses of the most serious situations, as measured in terms of earning fluctuations, fail to reveal any benefits from the cancellation effects of holding company combinations. The weakness or strength of an operating company is not materially affected by, or related to, its year-to-year earning fluctuations, and therefore the benefits of combination are of little or no financial significance.

It seems reasonable to conclude that the possibilities of material benefit resulting from the offsetting effects of year-to-year earning fluctuations must have been confined to exceptionally few situations. Further, it is reasonable to assume that only on occasion of the unfortunate coincidence of a poor earning year with a weak financial position would an operating utility need parent company aid. And in such a coincidence, the temporary lapse of earnings would not be the real source of the distress; rather the real source would be the lack of adequate reserve strength in the subsidiary financial structure. It is rather apparent that any operating utility reasonably financed and operated with average efficiency would be able to live through such lean periods as might accompany temporary deviation from average earning capacity. The investment market is, or should be, quite cognizant of the insignificance of a one-year utility earning record. No credit standing could be intelligently interpreted on the basis of such scanty information, be it good or bad, without further consideration of maintenance and retirement policies.

From this discussion of stabilization possibilities, with respect to both cyclical and residual influences, it is plain that the interpretation points to the ineffectiveness of holding company combination in accomplishing any significant results. This does not mean that holding companies have not rendered

material aid to subsidiaries on occasion nor that they have made no contribution to past development and to the solution of depression problems in the industry. It simply means that such contributions cannot have been due to any benefits derived from diversification. Loans and advances have been made; debt and equity securities have been purchased. The sources of holding company funds to finance such aids have been the interest and dividend returns on investments in the subsidiaries themselves and, in earlier years, new funds raised by sale of holding company securities to the public. Revenue sources were not stable because their reliability was largely that of subsidiary equity earnings. The market source has proven equally unstable, because the ability to sell holding company securities has, in general, coincided with the ability of subsidiaries to make money. During the years 1932-34, the only holding companies that were in a position to aid their subsidiaries were those which had adequate cash reserves to meet subsidiary needs, or, as was equally common, had strong subsidiaries with reserves that could be transported through the parent organization to needy constituents.¹⁸ It is difficult to take seriously the suggestion that holding companies were essential instruments in capital raising during the years 1927 to 1930 because almost any operating company, weak or strong, could have sold securities in that market. Any contribution made by parent companies under such conditions was one of guidance rather than of essential capital raising; theirs were the decisions as to where the capital should be invested.

Going back to the earlier twenties, prior to the "new era of prosperity," we find conditions incomparable to those now existent; those were formative years in public utility system development, and the financial contributions, both good and bad, which holding companies made during that period have been sufficiently discussed and admitted. The important fact to reiterate is that the 1930's have not afforded, and subsequent decades do not promise to afford, the opportunities for many more such contributions, for the industry has for the

¹⁸ Those not so endowed either leaned on their subsidiaries or, failing that support, went into receivership and bankruptcy.

most part matured and developed to a point where further system building will be intensive rather than extensive. Unless there is some reason to believe that there will be a radical change in utility earnings characteristics in future years, there are no grounds for any assumption of a rebirth of holding company importance, either as an essential instrument for capital raising or as a significant stabilizer of utility investments in face of depressions and miscellaneous misfortunes. In its present typical form, the holding company has served its main financial purpose; as the necessity for parent company financial domination continues to decline, participation in financial activities beyond those usually undertaken by equity stockholders will become more difficult to justify.

GROWTH TRENDS

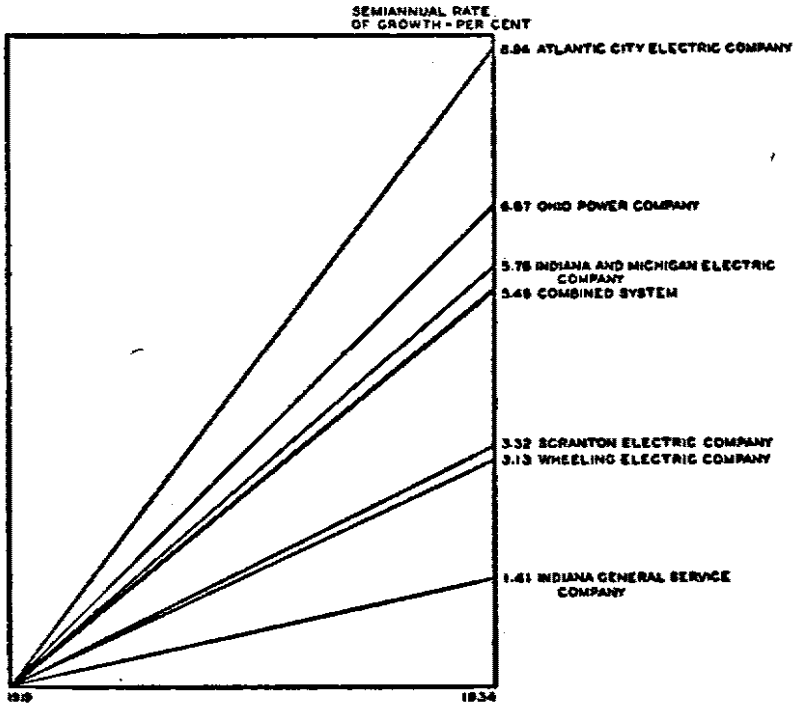
In all of the holding company systems there are reflections of the essential implications of the "averaging" concept; namely, that some items are above and some below the average, or that some performances are better and some worse than the average. This is particularly true with respect to the growth factors affecting the trend of utility profits. (See Charts 11 to 14.¹⁶) It is perfectly evident that, historically, the development of every holding company system has been retarded by inclusion of poorer operating units and, putting it the other way, growth has been more favorable than it would have been without the inclusion of better companies. Presumably the ideal in each case would have been achieved by the inclusion of only the best performers, but this implies a degree of perfection in management and forecasting that is humanly impossible to achieve.

The success and profitableness of utility operation is inevitably linked with the development of the communities served by the operating units. This factor was mentioned before as having a bearing on the cyclical fluctuations of utility earnings, and in connection with long-run development and growth it

¹⁶ The growth curves for these companies were taken from Charts 2 to 5 and plotted again on logarithmic scale starting from common points of origin for each system to emphasize by isolation the different earning trends.

plays a much more significant part. The asset characteristics of the industry prevent any considerable mobility of investment; once a commitment is made it is fixed until the day of its abandonment. Besides being affected by growth influences created by movements of population and industry, the utilities are subject

CHART 11—VARYING TRENDS IN OPERATING UTILITY EARNINGS, 1919-34—
AMERICAN GAS AND ELECTRIC COMPANY SYSTEM

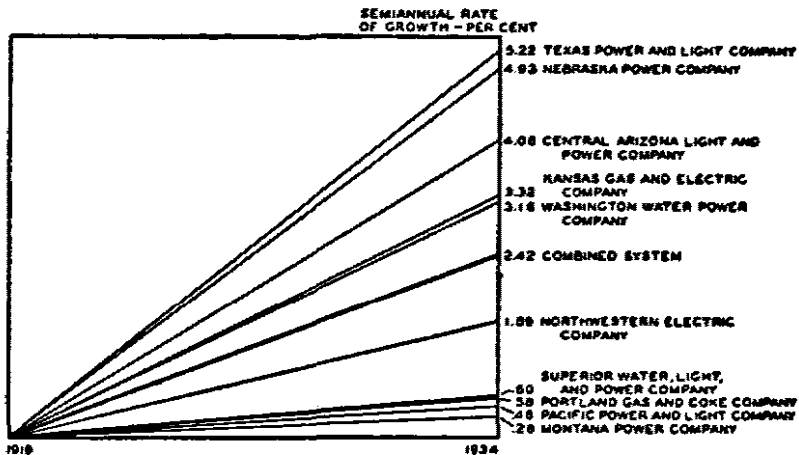


to long-time trends resulting from technological changes which are also relatively unpredictable. To date, the street and interurban railways furnish the best example of a decline which has materially affected the earnings and investment values of utilities. The gas business comprises another sector of the industry which may be facing long-run difficulties as further new uses for electricity are developed. All of these

elements, both geographical and technological, find reflection in the records of growth, and there is every reason to believe that such influences will continue to affect the fortunes of utilities.

It is in face of these unpredictable growth factors that the diversification accomplished by public utility holding com-

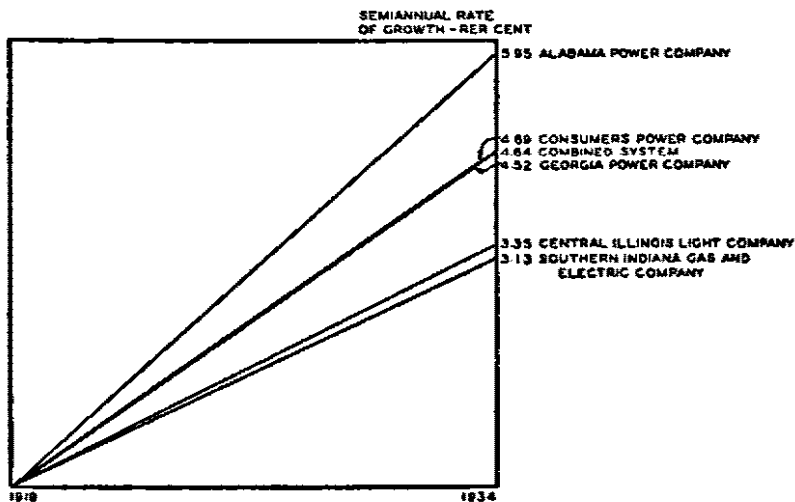
CHART 12—VARYING TRENDS IN OPERATING UTILITY EARNINGS, 1919-34—
AMERICAN POWER AND LIGHT COMPANY SYSTEM



panies would seem to hold forth the greatest possibilities of material contribution. These opportunities are of significance in two respects; first, to the investor and, second, to the communities covered by utility services. Except in very obvious cases, investors have found and will continue to find it impossible to predict the long-run future value of capital committed to any localized situation such as is represented by any operating utility. It is not to be implied that holding companies can exercise any superhuman intelligence in this matter either; the facts show just the opposite. But it is true that a holding company's investments are in several localities and, in many instances, in a number of the different service branches of the industry, and this fact gives assurance that the values

of its aggregate investments as measured in long-run earning potentialities will not be as completely subject to the vicissitudes of change as if they were concentrated in one area. It is not impossible, but it would be quite improbable, that individual investors could achieve a similar protection. Equity investors in such companies as Key West Electric Company (Engineers Public Service Company), Arizona Power Company (United Gas Improvement Company), Northwestern Electric Company (American Power and Light Company), or in the transportation units of almost any system would have suffered complete loss of their investments in the span of years 1919 to

CHART 13—VARYING TRENDS IN OPERATING UTILITY EARNINGS, 1919-34—
COMMONWEALTH AND SOUTHERN CORPORATION SYSTEM

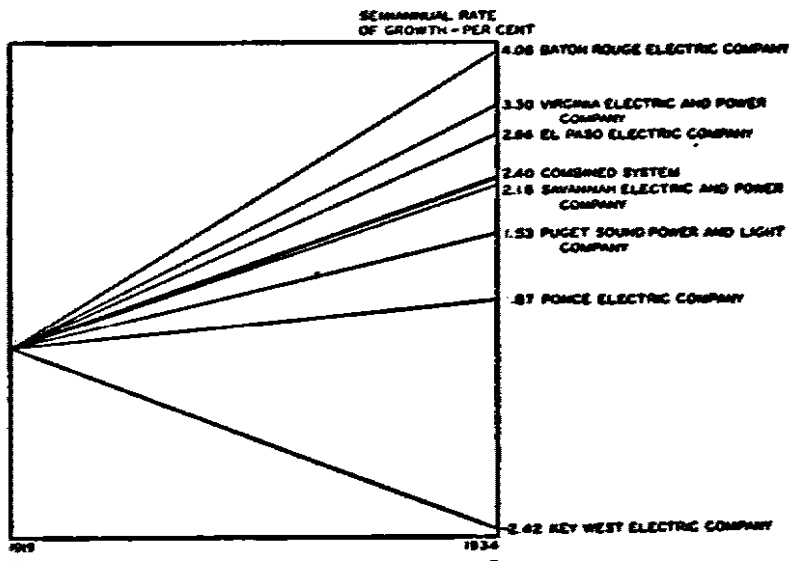


1935. However, as investors in the several holding companies, their losses would have been balanced by the gains of growth affecting other operating units in the respective systems.

Application of hindsight enables us to conclude that each of the holding companies would have been stronger without those units whose earnings have developed at less than the average rate and thus retarded the growth of the combina-

tion. However, the impossibility of prediction would, in most cases, prevent our attributing this retardation of growth to faulty management. In the same sense there could be little credit to management for its acquisition of properties that happened to develop more prosperously. Even over a period of time as short as sixteen years, it is evident that diversifica-

CHART 14—VARYING TRENDS IN OPERATING UTILITY EARNINGS, 1919-34—
ENGINEERS PUBLIC SERVICE COMPANY SYSTEM



tion may serve to protect investors against the inadequacies of human judgment. Only the holding company that happened to be abnormally unlucky or that was cursed with most incompetent management could fail to achieve some such benefits from diversification of holdings. There is every reason to believe that in the future, over similar or longer periods, communities and individual branches of the utility industry will continue to shift in relative importance as contributors to utility profits. How they will move we do not know; but perhaps a certain "average" stability in the long-run value of utility investment may be achieved for investors through the medium

of holding companies operating as investment trusts and furnishing equity funds to scattered operating groups.

Looked at from the standpoint of the utility consumers, this averaging influence achieved by holding companies contains a surprising degree of socialization, of redistribution of capital and income. Surprising is the word, because socialization is not an act of which the holding companies expect to be accused by a critic of their procedures. As was mentioned previously, those holding companies that were able to make material increases in their subsidiary equity investments during the years 1932-34 were necessarily diverting income from strong units to strengthen weak ones.¹⁷ If such policies can be maintained by a holding company without "averaging" the financial strength of the system at too low a level, the benefits of such socialization may be applauded. It is obvious, however, that there will be a limit to such support of weak units unless funds from some outside source become available to finance the subsidy.

The possibilities of continually subsidizing weak units in a holding company system raise nice questions of managerial and public policy. One interesting example lies in the New Jersey situation, where we find the Public Service Corporation of New Jersey existing as a holding company and controlling gas, electric, and transportation companies.¹⁸ The city and interurban transport business conducted by the Public Service Coordinated Transport subsidiary was not a growing business in the profit sense even though the volume of business was quite sustained. (See Chart 15.) In detail, it may be noted that even in 1929, this company's peak year in number of passengers, the New Jersey transport business showed an operating income of only \$6,680,000¹⁹ on an investment measured by total book assets

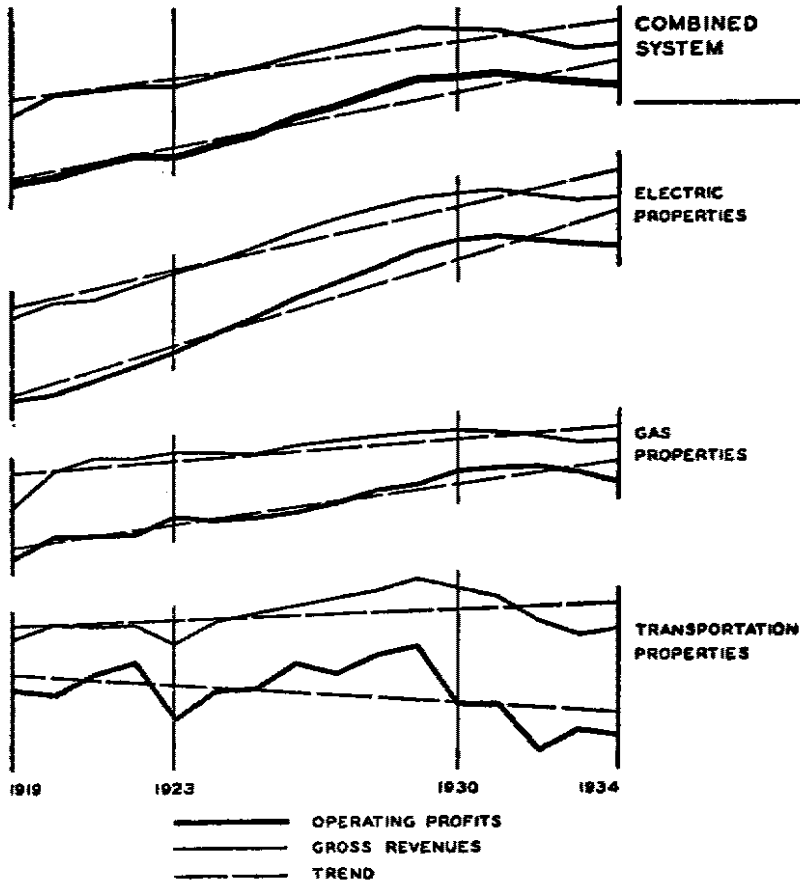
¹⁷ See Chap. 4, pp. 94-97, for examples.

¹⁸ This situation involves not geographical diversification but industrial diversification within the same area, and it is interesting to note that the simultaneous effects of cyclical influences are as evident here as in the cases of geographical diversification previously discussed.

¹⁹ The Public Service Interstate Transportation Company unit showed an operating loss of \$150,000 even in 1929.

of \$138,000,000; a rate of return approximating 5 per cent. In the meantime the Public Service Corporation of New Jersey showed, as a result of its combined gas, electric, and trans-

CHART 15—EFFECTS OF INDUSTRIAL DIVERSIFICATION IN THE SYSTEM OF PUBLIC SERVICE CORPORATION OF NEW JERSEY



port business, operating earnings of \$41,831,000 on a combined book investment of about \$612,000,000; a rate of return approximating 7 per cent. Obviously, if the average was a 7 per cent return in spite of only a 5 per cent return on more

than one-fifth of the investment represented by transportation, the gas and electric investments must have earned in excess of 7 per cent. This difference in earning power became more exaggerated in the depression thirties, while the Public Service Corporation of New Jersey continued to support the transport business by buying equity securities without hope of return.²⁰ In this situation there would seem to have been a definite policy of rate-making and income administration designed to make gas and electric users pay for transportation services. How far such a policy may be justified is a matter for managerial determination. How far it may be permitted or required of multi-service units operating in a single regulatory jurisdiction may also be affected by regulatory policy. Such policy has, in general, been guided by the rule that each branch of service must be self-supporting.²¹ Although a holding company is here involved in obvious subsidizing of an unprofitable subsidiary, it is probable that the localized conditions dominate the company's policy.

In the holding company system of the Engineers Public Service Company we find an example of decline and decadence involving an isolated and unconnected operating unit. The Key West Electric Company, whose earning record is depicted in Chart 5, earned an average of 3 per cent on book value of assets during the years 1929 to 1934 inclusive, and in 1934 the rate had fallen to less than 1.8 per cent. There is no evidence of parental financial aid in this instance, the Key West company just moggling along, earning and paying its interest and maintaining its current position. There has been no need for expansion in the declining community of Key West, so, with no debt maturity until 1956, the operating unit has remained self-sustaining in its decline. Should the company develop a financial need to cover extensive replacements or for other purposes, it would be interesting to see whether Engineers Public Service Company would come to its aid or abandon the unit

²⁰ Interest charges of Coordinated Transport caused deficits in every year from 1930 to 1934 inclusive.

²¹ H. C. Spurr, *Guiding Principles of Public Service Regulation* (Washington: Public Utilities Reports, Inc., 1926), Vol. III, pp. 221-230.

to the fates. Obviously the past earning record and future potentialities would not justify independent financing, and any aid extended by the parent company would savor of a charitable contribution. The inclusion of this unit in the Engineers holding company system obviously has tended to reduce the "average" which measures the system's financial strength, but whether subsidizing would be countenanced as a matter of policy is another question.

There is, as a matter of fact, plenty of evidence to the effect that economic rather than social principles are used to guide holding company policies in matters of this sort. In 1933, the United Gas Improvement Company abandoned the profitless Arizona Power Company to the tender mercies of its creditors with the implication that the situation justified no further investment.²² In July, 1935, the Northwestern Electric Company was permitted to go bankrupt under 77b, the parent American Power and Light Company declining to finance a bond maturity. As early as 1924 the Commonwealth Power Railway and Light Company (one of the predecessor units of Commonwealth and Southern Corporation) saw fit to perform what might be called a "transportectomy," and in the operation the Michigan street and interurban railway holdings of the Commonwealth company were transferred to the Electric Railway Securities Company, whose stock was, in turn, distributed pro rata to Commonwealth stockholders. Cut off completely from the parent organization, the transportation companies were permitted to waste away without infecting the credit of the gas and electric holdings of the group. These examples may reflect sound policy and recognition of the inevitable, and they may mean little to the holding company investor because of the presence of stronger companies in the groups, but they do show that there are limits to the extent to which parent companies are willing to support units that are economically unprofitable.

²² A letter of October 12, 1933, addressed to bondholders by the readjustment committee said that in view of declining revenues, heavy taxes, and large amounts of bonds outstanding, the parent company would not make additional advances. The parent organization did, however, participate in and attempt to facilitate the processes of reorganization, taking stock for its credit claims.

We have considered three possible ways in which a public utility holding company might conceivably use its diversification characteristics to the financial benefit of the group as a whole: as a defense against the rigors of depression, as a source of strength to alleviate temporary embarrassments of constituent companies, and as an antidote for the weaknesses of human judgment in choosing long-run investment possibilities. Upon analysis, these possibilities seem to boil down to a generally acceptable conclusion that "You can't make a silk purse out of a sow's ear." A public utility holding company is a corporation whose assets are primarily the equities of its subsidiary companies. The only situation in which such a combination can offer financial benefits to the subsidiaries is that which arises when the combination itself includes some inherently unsound and financially weak operating units. Operating companies which have been developed physically to the economic size for efficient management and which are conservatively financed can ride out a depression or meet a financial crisis alone just as effectively as if corporately related to a dozen other utilities scattered throughout the nation.

The possibilities of financial aid and monetary support come not so much from geographical or industrial diversification as from the fact that holding company fiscal policies permit the reserves of strong companies to be used to balance the needs of weak ones. The reserves exist only in so far as strong units are included in the combination, and no diversification can itself create the reserves. The obvious necessity for financial strength has been amply demonstrated by the failure of many public utility holding companies—holding companies with diversification to spare but without a sufficient number of strong constituents to support financial monstrosities in the parent corporate relationships and at the same time supply aid to the multitude of diversified but needy subsidiaries.²⁸

²⁸ In 1933, just before receivership, American Commonwealths Power Corporation controlled companies furnishing manufactured and natural gas, electricity, water, and miscellaneous utility services to 522 communities in 26 states and 3 provinces in Canada.

As investment trusts, public utility holding companies probably afford most of the advantages ordinarily attributed to that form of investment tool. They offer to the investor the possibility of becoming a small investment participant in a large number of utility companies, thus minimizing the risk of loss which may be expected to result from decadence of communities and obsolescence of branches of the industry. Public utility holding companies fail to meet completely the ideal of the investment trust in that they confine their investments to the utility industry and thus miss the opportunity to profit from further averaging influences of other types of business enterprise. Holding forth the possibilities of some degree of socialization in support of socially desirable but uneconomic services, the holding company has been found to be guided more by the economic considerations. We have no reason to expect otherwise, because holding companies have no incentive to make investments in subsidiaries regardless of their earning potentialities.

Two things must be emphasized in the interpretation and application of these conclusions: they are confined solely to the financial implications of diversification, and they are not designed to criticize the set-up of any particular holding company group. As conclusions, they may serve to suggest rather definite limitations that ought to be considered when diversification is mentioned as a justification for the existence of holding companies in the public utility field. In the final analysis, the ability of holding companies to render financial aid to subsidiaries will be determined, not by physical characteristics or locations, but by the quality of the holding company management—a factor which lends itself to no known methods of statistical analysis. Generalizations about the quality of holding company management are as impractically ideal as Abraham Lincoln's historic statement to the effect that "all men are created equal"; they may be created equal but it is not human for them to remain so very long. It is equally impossible for all holding companies to reach a common level of performance, be it high or low, and the contribution of each should be measured individually without the bias of generalization.

APPENDIX I

DESCRIPTION OF THE STATISTICAL METHODS USED IN CHAPTER 5

This presentation describes in detail the statistical methods and reasoning used in Chapter 5 to reach conclusions concerning the effects of geographical diversification on the revenues and profits of holding company systems. Three types of variation in utility profits are considered: (1) cyclical changes, (2) residual fluctuations, and (3) secular growth and decline.

I. CYCLICAL CHANGES

Variations in gross revenues and profits arising from the influences of the business cycle were measured by the deviations of the actual reported figures from the computed lines of trend¹ as shown on Charts 2 to 6. These deviations are a combination of both cyclical and residual variations, but inasmuch as the cyclical element predominates, no effort was made to eliminate the residual influences in the supplementary mathematical tests described below.

The ultimate test of the stabilizing effects of holding company combination of operating units upon the combined system revenues and profits was confined to the visual interpretation of Charts 2 to 6, although previous mathematical tests were applied to a sufficient number of series to assure the adequacy of reliance upon visual interpretation. These mathematical tests added little or nothing to the visual evidence contained in the charts, and were therefore not included in the study. The case of the American Gas and Electric Company system is here included to demonstrate the adequacy of dependence on visual interpretation.

The profit figures of American Gas and Electric Company units for the period 1919 to 1934 were compared with their respective trend values, and the deviations from the trend lines were expressed in percentage form. From these deviations, the standard deviation of each operating company's profits was

¹ See Part 3 of this appendix.

determined.² These standard deviations were then averaged, and the average was compared with the similarly determined standard deviation of the combined system earnings. This comparison measures roughly the extent to which deviations cancelled each other in the process of combination, and thus provides a measure of the stabilization so effected.

Strictly speaking, the percentage deviations should have been weighted with some suitable weights, such as the trend values of the various companies' profits for the year in question, because a deviation of a constituent company's earnings is only as important in influencing the combined earnings as the weight of the constituent company's earnings in dollars. This weighting could have been accomplished only by unjustifiably laborious calculation. The test for cyclical stability was not designed as a refined one in the sense that residual variations were eliminated first, but rather it was designed to provide only an indication of the *direction* of earning movements during swings of the business cycle. Furthermore, no operating company in any of the systems under analysis was so overwhelmingly large as to distort the results greatly even though weighted elements were not employed.

The table on page 137 shows the application of the above method and theory to the American Gas and Electric Company situation. Here it is seen that the average of the company deviations, taken together, is about the same as the standard deviation for the combined system. This fact indicates that, during a business cycle, the *direction* of earnings above or below trend is about the same for the "combined system" and its constituents; all of which is perfectly evident from a glance at Chart 2.

It might be argued that there is evidence of the stabilizing influence of combination in the fact that the standard

² The formulas used for measuring cyclical changes (unadjusted for residual variations) are as follows:

$$\text{Percentage Deviation from Trend} = \frac{\text{Actual}}{\text{Trend}} (100) - 100$$

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum x^2}{N} - \left(\frac{\sum x}{N}\right)^2}$$

where x is the percentage deviation, and N the number of years (16).

Operating Company	Standard Deviation from Trend %
Atlantic City Electric Company	32.34
Indiana General Service Company	19.71
Indiana and Michigan Electric Company	34.45
Ohio Power Company	20.21
Scranton Electric Company	37.73
Wheeling Electric Company	23.47
Average (Arithmetic mean)	27.99
Combined system	24.19

deviation of "combined system" earnings was 24.19 whereas the standard deviations of the constituents ranged from 19.71 to 37.73. But reasoning based on this premise overlooks the obvious fact that holding company system performance is a weighted average and, as such, is bound to lie between the respective performances of the constituents. True cyclical stability of any consequence would exist only where the standard deviation of the combined system was materially less than that of the average of all units in the system; in other words, earnings moving in different directions should largely cancel out when combined, leaving nothing but the trend in the holding company earnings. Such was not the situation in any of the cases to which the tests were applied in the process of this study.

2. RESIDUAL FLUCTUATIONS

When the deviations from trend were plotted, the earnings of the several companies in each system showed simultaneous cyclical movements. However, these movements were interrupted by irregularities due to many causes, some of which are outlined in the study proper. It was decided to isolate these variations to determine the extent to which combination might effect their cancellation, with resulting stability to combined system profits.

The isolation of the residual variations involved the construction of a five-year weighted moving average to be used as a base from which to measure the deviations representing the residual variations. For each operating company, the five-year moving average was computed from the actual dollar

earnings, weighted by the coefficients obtained from the expansion of the binomial $(a + b)^4$, which coefficients are 1, 4, 6, 4, 1. To illustrate, the five-year average for a company for 1921 was computed as follows:

1919 earnings	weighted	1 time	= x_1
1920	"	4 times	= x_2
1921	"	6 times	= x_3
1922	"	4 times	= x_4
1923	"	1 time	= x_5

$$\text{Average for 1921} = \frac{x_1 + x_2 + x_3 + x_4 + x_5}{16}$$

For 1922, the 1919 earnings were dropped off, and the 1924 earnings added, and the 1920 earnings were given a weight of 1, the 1921 earnings a weight of 4, etc.

The binomial-weight average, as compared with an un-weighted moving average, has the advantage of allowing for trend and also for the business cycle. The cyclical allowance is illustrated by the fact that, if the 1929 earnings had not been heavily weighted, the earnings for 1930 and 1931 entering into the average would have had undue weight in the typical or average earnings figure for 1929; hence the 1929 average would not have represented the cyclical value of 1929 earnings, and deviations figured from this computed base would not have had the cycle eliminated from them.

The residual variations were measured by taking percentage deviations from the moving average. Charts 7 to 10 show these deviations in graphic form. The standard deviation for each series was computed by the use of the formula given above, and the degree of cancellation of residual variations moving in opposite directions is indicated by comparison of the average of the standard deviations for the companies in each system with the standard deviation of the holding company system itself. These standard deviations are shown in Charts 7 to 10. Here it is seen that the variability of the combined system is reduced by cancellation of residual variations in the component series. The financial significance of this cancelling influence was tested by a comparison of the

deviations from moving average with the "times-fixed-charges-earned" ratios, presented in the main part of the study.

3. SECULAR TREND

The secular trend (either growth or decline over a long period) is a statistical summary or an average. It represents, in the form of a line or a curve, what would be the behavior of a series of earnings over a period of years if there were no variations due to the business cycle or to fortuitous causes. Stated differently, the trend is the resultant of forces which persist for a considerable period in spite of the operation of cyclical or chance causes in the meantime.

In the series of revenues and profits used in this study, the compound-interest curve was chosen to represent the trend, this appearing to give the best description of the true long-time growth for the period 1919 to 1934 as a whole. Since Charts 2 to 6 are ratio or logarithmic charts, the compound-interest curves there appear as straight lines. Actual fitting was done mathematically by the method of least squares, the type equation being:

$$y = ab^x$$

It should be stated that the compound-interest curve as used in this study describes the secular trend of dollar earnings from 1919 to 1934 only, and is in no sense to be interpreted as being suitable for extrapolation into the future for purposes of estimating capital needs or for other purposes. The compound-interest curve is much too optimistic for these purposes; further, while price changes due either to company concessions or to public authority may not be as important to a utility as to an industrial company because of the relative stability of prices for periods of time, nevertheless allowance for them should be made either through the use of volume statistics (i.e., kilowatt-hours) or through the use of price index numbers. In short, the determination of future growth or decline for a utility or for any other industry involves more than the mere application of a mathematical law to series of earnings for a sixteen-year period, and much common-sense reasoning inexpressible in mathematical terms is necessary.

APPENDIX II

CHARACTERIZATION BY SIZE, INDUSTRY, AND LOCATION OF HOLDING COMPANY SYSTEMS ANALYZED IN CHAPTER 5

In the following characterizations of the subsidiary companies included in the several holding company systems, the "Industry" and "Location" descriptions are representative of conditions in 1934. The "Size" column evidences the range of gross revenues during the period 1919 to 1934.

AMERICAN GAS AND ELECTRIC COMPANY SYSTEM

Subsidiary	Size (range of gross revenue, in millions of dollars)	Industry				Location
		Electric (% of gross)	Gas (% of gross)	Trans- porta- tion (% of gross)	Other* (% of gross)	
Atlantic City Electric Company	1- 8	99	—	—	—	New Jersey (Atlantic City)
Indiana General Ser- vice Company	1- 4	95	—	—	5	Indiana (Marion, Muncie)
Indiana and Michigan Electric Company	1- 8	100	—	—	—	Indiana (South Bend, Elkhart)
Ohio Power Company	10-20	99	—	—	1	Ohio (Lima, Canton, Portamouth, Steuben- ville, Ironton)
Scranton Electric Company	1- 8	93	—	—	7	Pennsylvania (Scranton)
Wheeling Electric Company	1- 3	100	—	—	—	West Virginia (Wheeling)

* "Other" includes steam heating.

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AMERICAN POWER AND LIGHT COMPANY SYSTEM

Subsidiary	Size (range of gross rev- enue, in millions of dollars)	Industry				Location
		Electric (% of gross)	Gas (% of gross)	Trans- porta- tion (% of gross)	Other* (% of gross)	
Central Arizona Light and Power Company	1- 4	82	18	—	—	Arizona (Phoenix)
Kansas Gas and Elec- tric Company	1- 6	100	—	—	—	Kansas (Wichita, Pittsburg)
Montana Power Com- pany	5-10	84	13	†	3	Montana (Butte, Helena, Great Falls, Billings)
Nebraska Power Com- pany	1- 7	100	—	—	—	Iowa (Council Bluffs); Nebraska (Omaha)
Northwestern Electric Company	1- 4	99	—	—	1	Oregon (Portland); Washington (Vancouver)
Pacific Power and Light Company	1- 5	98	—	—	2	Washington (Walla Walla, Astoria)
Portland Gas and Coke Company	1- 5	—	100	—	—	Oregon (Portland); Washington (Vancouver)
Superior Water, Light and Power Company	0.6- 1	38	30	—	32	Wisconsin (Superior)
Texas Power and Light Company	1-10	100	—	—	—	Texas (Waco)
Washington Water Power Company	1-10	85	—	10	5	Washington (Spokane)

* "Other" includes water and steam.

† 1932 last year for transportation; amount negligible.

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COMMONWEALTH AND SOUTHERN CORPORATION SYSTEM

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Subsidiary	Size (range of gross revenue, in millions of dollars)	Industry				Location
		Electric (% of gross)	Gas (% of gross)	Trans- porta- tion (% of gross)	Other* (% of gross)	
Alabama Power Com- pany	10-20	98	†	1	1	Alabama (Anniston, Birmingham, Gadsen, Mobile, Montgomery)
Central Illinois Light Company	1-10	66	25	....	9	Illinois (DeKalb, Pekin, Peoria, Springfield, Sycamore)
Consumers Power Company	10-30	76	23	....	1	Michigan (Battle Creek, Bay City, Flint, Grand Rapids, Jackson, Kalamazoo, Lan- sing)
Georgia Power Com- pany	10-30	79	1	17	3	Georgia (Atlanta, Augusta, Columbus, Macon, Rome)
Southern Indiana Gas and Electric Company	1- 4	66	18	12	4	Indiana (Evansville, Mount Vernon)

* Includes heating, water, and ice revenue.

† Gas properties sold during 1929, when gas revenue amounted to 1 per cent of gross.

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ENGINEERS PUBLIC SERVICE COMPANY SYSTEM

MICHIGAN BUSINESS STUDIES

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Subsidiary	Size (range of gross revenue, in millions of dollars)	Industry				Location
		Electric (% of gross)	Gas (% of gross)	Trans- porta- tion (% of gross)	Other (% of gross)	
Baton Rouge Electric Company	0.1- 1	64	25	9	2	Louisiana (Baton Rouge)
El Paso Electric Company	1- 4	78	—	19	3*	Texas (El Paso, Van Horn); New Mexico (Hillsboro, Las Cruces)
Key West Electric Company	0.3- 0.1	100	—	—	—	Florida (Key West)
Ponce Electric Company	0.1- 0.4	100	—	—	—	Porto Rico
Puget Sound Power and Light Company	10-20	83	1	11	5†	Washington (Olympia, Seattle)
Savannah Electric and Power Company	1- 3	82	—	18	—	Georgia (Savannah)
Virginia Electric and Power Company	10-20	67	6	26	1	Virginia (Norfolk, Richmond, Suffolk); North Carolina (Columbia, Plymouth)

* Revenue from bridge over Rio Grande.

† Steam heat.

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