



How Financial Institutions Affect Economic Change: Evidence from the Transportation Sector, 1900-1939

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In this paper I explore relationships between the investment behavior of private and public financial institutions and changes in the structure of the U.S. transportation sector from 1900 through the Great Depression—a period during which the hegemony of railroads was significantly eroded by the emergence of highway-based transport. I use primary source data to show changes in the amount and composition of capital (debt and equity) used to finance rail development from 1900 to 1939, and, concomitantly, the amount of debt and equity held by private financial institutions (banks and insurance companies) in their asset portfolios. These data show that rail corporations raised more capital through debt issuance than through equity and that private financial institutions heavily weighted their portfolios with rail loans. Combined with bank reports and records of receivership reorganizations, the evidence shows a direct relationship between the investment behavior of private financial institutions and the decline of rail transport, and an indirect relationship to the rapid rise from 1900 to 1939 of highway transport as a competitor to rail. I also discuss the rise of the federal government as a major financial intermediary, particularly during the 1930s, when the Reconstruction Finance Corporation (RFC) took over much of the rail debt of financial institutions and rail corporations. The investment behavior of the RFC also directly influenced the restructuring of the U.S. transport sector.

In the history of the U.S. economy the transportation sector has undergone two major structural transformations: first, during industrialization, steam railroads supplanted animal-powered transport on canals, rivers, and rural roads; and second, after the invention of the internal combustion engine, cars, trucks, buses, and airplanes displaced rail. Research for the present paper deals with the latter transformation and, more specifically, with the role that financial institutions played in influencing structural change within the transport sector.

The great burgeoning of American railroads in the late nineteenth century was financed largely by stock and bond issuances underwritten by

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private commercial, investment and savings banks, insurance companies, and institutional trusts. In financing railroad growth, these institutions created the first private capital markets, within which they purchased large quantities of rail securities for their own investment portfolios. They also became closely interlocked with rail corporate management. Through these relationships, they came to depend on the hegemony of rail within the transport sector to support their financial assets.

As highway-based transport expanded greatly during the first three decades of the twentieth century, financial institutions were faced with the choice of continuing to support rail securities or of divesting from them. Until the late 1920s, they stayed with railroads as both an investment priority and industrial ally. Then, during the Great Depression, they changed course. This change was influenced in significant measure by the development of the federal government as a major financial intermediary and by government policy towards private capital markets. In short, the Great Depression became the watershed period that set the stage for the second major transformation of the structure of the U.S. transportation sector.

Theoretical Perspectives

In the economic and financial history literature, one finds few theoretical or empirical studies examining relationships between the investment behavior of financial institutions and structural change within economic sectors. John Gurley's work on the generic elements of financial intermediation is seminal, since he is one of the first economists to add debt to the list of fundamental "economic input factors," such as labor and technology, that affect development. But Gurley does not venture propositions about relationships between debt and/or financial intermediation and structural economic change either within or between sectors.¹ The same is true of the more recent, groundbreaking research on the development of financial markets that examines ways in which processes such as reduction of transaction costs, providing information for investment choices, and diversifying risk for large-scale investments affect rates of economic growth, but does not look at effects on sectoral economic change.² Another body of work by economic historians is somewhat

¹ John Gurley and Edward Shaw, "Financial Aspects of Economic Development," *American Economic Review* 45 (Sept. 1955): 515-38.

² Ross Levine, "Financial Development and Economic Growth," *Journal of Economic Literature* 35 (June 1997): 688-726; Youssef Cassis and Peter Cottrell, "Financial History," *Financial History Review* 7 (April 2000): 5-22; Philip Arestis and Panicos Demetriades, "Financial Development and Economic Growth," *The Economic Journal* 107 (May 1997): 783-99.

relevant, because it addresses relations between finance and industrial capital, but does so only at higher national and international levels.³

The most directly relevant empirical studies and mid-level theorizing are found within the political economy literature. In this field, some scholars examine ways in which the investment policies of finance capital affect corporate economic choices: for example, how loan agreements affect corporate policy in particular economic subsectors such as nuclear energy.⁴ In the present paper, I build on the latter body of work, but at a broader sectoral level, examining how the investment behavior of financial institutions affected structural change within an entire economic sector, transportation, over an extended historical period.

Sources and Ownership of Capital for Rail

At the turn of the twentieth century, railroads dominated the U.S. transport sector. They had achieved their dominant position with the support of banks, insurance companies, and institutional trusts that provided needed development capital. Financial institutions both underwrote new capital offerings and purchased rail securities for their own portfolios. The two main types of capital instruments employed in this process were stocks and bonds. Each of these carried unique costs and benefits.

Table 1 shows that there was a larger amount of rail stock than bonds issued and outstanding as of 1900 (\$5.8 billion in stock; \$4.9 billion in bonds). However, by 1914 at the beginning of World War I, outstanding bonded debt had increased by over 100 percent, to \$10.1 billion, while equity capital had increased by less than 50 percent, to \$8.7 billion. Greater reliance on bonds than stock to provide rail capital continued after World War I and up until the Great Depression. Table 1 shows that the par value of outstanding stock increased only 8.8 percent between 1920 and 1929, from \$9.1 billion to \$9.9 billion, whereas bonded debt rose almost \$2 billion, or 18.1 percent. On the eve of the Great Depression, the ratio of bonds to stock for railroads was 1.22.

The growth trends in rail stock and bonds are consistent with broader trends in the development of private financial intermediation in the United States. Table 2 shows that, during the first three decades of the twentieth century, the major classes of U.S. private financial institutions

³ Peter Hall, *Governing the Economy* (New York, 1986); Fred Block, "Political Choice and the Multiple 'Logics' of Capital," in *Structures of Capital: The Social Organization of the Economy*, ed. Sharon and Daniel Zukin (New York, 1990), 295-301; J. Rogers Hollingsworth and Robert Boyer, *Contemporary Capitalism: The Embeddedness of Institutions* (New York, 1997).

⁴Zukin and DiMaggio, eds., *Structures of Capital*; Beth Mintz and Michael Schwartz, "Capital Flows and the Processes of Financial Hegemony," in *ibid.*, 205-16; Linda Stearns, "Capital Market Effects on External Control of Corporations," in *ibid.*, 175-91.

TABLE 1
Composition of Capital Raised by Railroads, 1900-1939

Year	Par Outstanding, Rail Bonds, All Types of Bonds (in millions)	%	Total Stock Outstanding (Common + Preferred)	%	Total, Stocks and Bonds	Total %
1900	4,932.20	45.74	5,850	54.26	10,782.20	100.00
1901	5,209.90	47.29	5,806	52.71	11,015.90	100.00
1902	5,837.00	49.21	6,024	50.79	11,861.00	100.00
1903	6,275.80	50.48	6,156	49.52	12,431.80	100.00
1904	6,527.70	50.73	6,340	49.27	12,867.70	100.00
1905	6,976.90	51.56	6,554	48.44	13,530.90	100.00
1906	7,439.60	52.23	6,804	47.77	14,243.60	100.00
1907	7,825.00	51.54	7,357	48.46	15,182.00	100.00
1908	8,221.70	52.72	7,374	47.28	15,595.70	100.00
1909	8,676.10	53.03	7,686	46.97	16,362.10	100.00
1910	9,055.20	52.74	8,113	47.26	17,168.20	100.00
1911	9,189.40	52.03	8,471	47.97	17,660.40	100.00
1912	9,507.40	52.44	8,623	47.56	18,130.40	100.00
1913	9,802.30	53.23	8,611	46.77	18,413.30	100.00
1914	10,054.10	53.67	8,680	46.33	18,734.10	100.00
1915	10,258.40	53.28	8,995	46.72	19,253.40	100.00
1916	10,384.70	53.41	9,059	46.59	19,443.70	100.00
1917	10,381.10	52.74	9,302	47.26	19,683.10	100.00
1918	10,388.70	53.43	9,055	46.57	19,443.70	100.00
1919	10,349.30	53.24	9,091	46.76	19,440.30	100.00
1920	10,333.50	53.14	9,113	46.86	19,446.50	100.00
1921	10,474.40	53.58	9,076	46.42	19,550.40	100.00
1922	10,572.80	53.63	9,141	46.37	19,713.80	100.00
1923	10,841.70	53.96	9,250	46.04	20,091.70	100.00
1924	11,114.30	53.98	9,474	46.02	20,588.30	100.00
1925	11,785.30	55.27	9,539	44.73	21,324.30	100.00
1926	11,812.90	55.47	9,485	44.53	21,297.90	100.00
1927	11,950.10	55.29	9,663	44.71	21,613.10	100.00
1928	12,216.30	55.38	9,843	44.62	22,059.30	100.00
1929	12,224.50	55.21	9,918	44.79	22,142.50	100.00
1930	12,348.80	55.05	10,083	44.95	22,431.80	100.00
1931	12,767.80	55.88	10,080	44.12	22,847.80	100.00
1932	12,812.00	55.88	10,114	44.12	22,926.00	100.00
1933	12,600.00	55.51	10,099	44.49	22,699.00	100.00
1934	12,430.20	55.32	10,038	44.68	22,468.20	100.00
1935	12,408.30	55.32	10,023	44.68	22,431.30	100.00
1936	12,211.70	54.91	10,029	45.09	22,240.70	100.00
1937	12,261.20	54.80	10,114	45.20	22,375.20	100.00
1938	12,168.50	54.67	10,089	45.33	22,257.50	100.00
1939	11,978.00	54.31	10,075	45.69	22,053.00	100.00

Sources: W. B. Hickman, *Corporation Bond Quality and Investor Experience* (Princeton, N.J., 1958); Interstate Commerce Commission, Bureau of Transport Economics and Statistics, *Statistics of Railways in the United States* (Washington, D.C., 1942).

TABLE 2
 Asset Allocation, All Major Financial Institutions, 1900-1952
 (in millions)

Type	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans*	1,224	8.70	3,406	10.80	7,402	10.28	6,461	5.61	4,078	4.59	3,367	2.90
Non- Farm Households Mortgages*	2,531	18.00	5,379	17.05	9,769	13.57	22,088	19.18	17,409	19.59	16,961	14.63
Unincorporated Business*	2,470	17.57	4,421	14.01	7,997	11.11	10,467	9.09	4,977	5.60	4,658	4.02
Corporate Short- and Long- Term Loans	2,026	14.41	5,083	16.11	11,386	15.81	15,875	13.79	8,865	9.97	8,994	7.70
Corporate Assets- Bonds	2,378	16.91	6,343	20.11	11,068	15.37	19,567	16.99	16,583	18.66	20,540	17.72
Corporate Assets- Stocks	929	6.61	3,089	9.79	7,366	10.23	17,895	15.54	11,439	12.87	16,860	14.54
Federal, State, and Local Gov't Securities	1,697	12.07	2,855	9.05	12,472	17.32	14,371	12.48	21,133	23.78	40,398	34.85
Unclassified, Miscellaneous and Foreign Loans	807	5.74	973	3.08	4,535	6.30	8,413	7.31	4,398	4.95	4,151	3.58
Totals	14,062	100.00	31,549	100.00	71,995	100.00	115,137	100.00	88,882	100.00	115,929	100.00

* Short-and long-term assets combined

Source: R. Goldsmith, *Financial Intermediaries in the American Economy since 1900* (Princeton, N. J., 1958):

Operating Commercial Banks Data- Table A- 3

Mutual Savings Banks Data- Table A- 5

Insurance Companies Data- Table A- 8, A- 9, A- 12, A- 13

Trust Funds Data- Table A- 16

Investment Companies Data- Table A- 21

increased their assets tremendously, from \$14.1 billion in 1900 to over \$115 billion in 1929. Throughout this period, these institutions consistently held between 15 and 20 percent of their portfolios in corporate bonds, with smaller percentages in stock. A significant percentage of these assets were rail stocks and bonds. Table 3 shows the quantity and percentage of rail stock and bonds held in the portfolios of each major class of financial institution. As of 1900, 7.2 percent of commercial bank assets were in rail bonds and stock, 18.5 percent in savings banks, and 34.8 percent in insurance companies. As they had since the birth of rail in the United States, private financial institutions established and held large positions in rail securities, mostly bonds.⁵

Heavier reliance on bonded debt than on stock issuances to raise capital created high fixed interest payments for railroads during the life of those bonds and recurring principal payments as bonds matured. Because bond contracts at issuance determine the timing of interest and principal payments, railroad corporations could not adjust those payments to match fluctuations in operating income that occurred in direct relation to broader economic trends. Thus, management was burdened with debt service payments over which they had little control.

Capital raised from stock issuances, on the other hand, bore no such fixed financial burdens. When the economy and, concomitantly, operating income faltered, management could cut stock dividend payments.

Why did railroad management rely so heavily on raising capital through bonded debt? Why did financial institutions encourage this behavior by investing heavily in those securities? The behavior of insurance companies and savings banks was partly determined by government regulation, which prohibited large equity holdings within their financial reserves.⁶ However, equally important were the corporate policies of both rail corporations and their financial sponsors, which favored bonds over stock for two reasons: first, bonds usually held a lien on corporate real estate or rolling stock (engines and cars) that were considered to be very secure collateral;⁷ second, financial institutions reaped large fees by repackaging and reselling bonds when rail companies were reorganized during receivership proceedings, as frequently happened

⁵ Regrettably, the data set from which these numbers derive does not provide a uniform, detailed breakdown of stock compared to bond holdings by financial institutions. However, complementary data indicates that most of the rail assets held by financial institutions was bonded debt and only relatively little was in stock. See Raymond Goldsmith, *Financial Intermediaries in the American Economy since 1900* (New York, 1958); and Alfred L. Bernheim and Margaret Grant Schneider, eds., *The Security Markets: Findings and Recommendations of a Special Staff of the Twentieth Century Fund* (New York, 1935).

⁶ Bernheim and Schneider, eds., *The Security Markets*, 149.

⁷ Daniel Schiffman, "Shattered Rails, Ruined Credit" (Ph.D. diss., Columbia University, 2000), 7-9.

throughout the nineteenth and early twentieth centuries. In addition, rail management and their finance capital allies avoided raising capital through sale of stock because that would have given greater corporate control to equity shareholders, diminishing their own power.⁸ In short, both financial institutions and rail corporate management had vested interests in using bonded debt more than stock issuances as a capital resource.

Changes in the Composition of Financial Institutions' Assets

In the first three decades of the twentieth century, the structure of the U.S. transportation sector was changing due to the rapid growth of highway transport. Yet, throughout this period, financial institutions increased the absolute amount of their rail assets, though those decreased relative to other assets within their portfolios.

Table 3 shows that, between 1900 and 1929, insurance companies increased their holdings of rail securities from \$667 million to almost \$4 billion, which was 18 percent of their investment assets in 1929 (though down from almost 35 percent in 1900); savings banks increased their holdings from \$420 million to \$1.4 billion in 1929, or 14.5 percent of assets in rail bonds and stock (down from 18.5 percent in 1900); commercial banks went from \$520 million (7.2 percent of assets in 1900) to \$1.191 billion (2.2 percent) in 1929; and investment companies held 17 percent of assets in rail securities in 1929 (data not available for 1900). In sum, although rail assets declined in relative size from 1900 to 1929, their absolute levels increased such that, on the eve of the Great Depression, they remained a significant part of the investment portfolios of major financial institutions. These institutions had rebalanced their portfolios to some extent during the period, adding assets in areas such as public utilities and residential mortgages (see Table 3) as the total size of their portfolios grew, but they did not divest themselves of rail securities.

Documentary evidence on investment priorities reinforces the portfolio data. Major reports issued by corporate professional associations indicate clearly that finance capital had no intention of abandoning railroads in the period before and even early into the Great Depression. For example, a report sponsored by commercial, savings, and investment banks, life insurance companies, and large institutional endowments defends rail as a necessary mode of transportation and defends the choice by financial institutions to emphasize rail bonds over stock as an investment asset.⁹ Similarly, a report by the American Bankers Association in the late 1920s avers that the “potential capacity of the motor truck as a competitor of the railroad freight car . . . [is] not relatively great” and that, although “auto is

⁸ Dolores Greenberg, *Financiers and Railroads, 1869-1889* (Newark, Del., 1980), 216-17.

⁹ Harold G. Moulton et al., *The American Transportation Problem* (Washington, D.C., 1933).

a major part of the U.S. economy,” “it hardly seems probable that the degree of increase in motor vehicles in the next five years will be as great as the increase during the past five years.”¹⁰ These statements by finance capitalists express little concern about the emerging challenges posed for railroads by highway-based transport.

The Great Depression: Financial and Economic Watershed

The onset of the Great Depression in 1929 caused major financial problems for both railroads and their financial backers. As earnings declined, many railroads were unable to meet interest charges and payments on maturing debt.¹¹ Deflation in the value of that debt also contributed to instability in the broader U.S. credit markets. Therefore, both railroads and financial institutions turned to the federal government for relief.

To deal with the credit crisis, President Herbert Hoover signed legislation in 1932 creating the Reconstruction Finance Corporation (RFC). The RFC soon accrued the powers of a major public financial intermediary. First, Congress appropriated \$4 billion and provided that the RFC could use this money in a revolving loan fund. Thus, as loans were repaid, new debt could be issued without recourse to additional Congressional appropriations. Soon thereafter, newly elected President Franklin D. Roosevelt signed the Emergency Banking Act on March 9, 1933, and subsequent amendments on June 10, 1933, which gave the RFC additional authority to buy stock in banks and insurance companies. By the end of 1935 the RFC had accrued powers to lend to individuals and institutions; to buy stock and take ownership positions in private financial institutions and corporations; to issue bonds using company assets as collateral; and to provide funds to other government agencies such as the Public Works Administration, which, in turn, could lend to public and private organizations.¹² Thus, the RFC's powers of financial intermediation became a major resource for state intervention in the capital markets throughout the Great Depression.

¹⁰ American Bankers Association, *Automotive Transportation and Railroads* (New York, 1927), quotations at pp. 12, 6, and 27.

¹¹ Moulton, *The American Transportation Problem*, 61-63.

¹² James Olson, *Saving Capitalism: The Reconstruction Finance Corporation and the New Deal, 1933-40* (Princeton, N.J., 1988), 42-45.

TABLE 3
 Asset Allocations by Type of Major Financial Institutions, 1900-1952
 (in millions)

Commercial Banks	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans	622	8.63	2,119	12.87	4,543	11.77	3,395	6.32	1,530	4.83	1,704	4.16
Non-Farm Mortgages	1,048	14.54	2,331	14.15	4,436	11.49	10,905	20.30	5,243	16.56	5,773	14.09
Unincorporated Businesses	2,039	28.29	3,768	22.88	7,084	18.35	8,770	16.33	3,472	10.97	3,435	8.38
Corporate Short- and Long-Term Loans	1,601	22.21	4,362	26.49	10,113	26.20	12,898	24.01	6,001	18.95	6,326	15.44
Railroad Bonds and Stocks	520	7.22	929	5.64	1,269	3.29	1,191	2.22	1,052	3.32	946	2.31
Public Utility Bonds	110	1.53	537	3.26	912	2.36	1,382	2.57	1,040	3.28	790	1.93
Other Bonds and Stocks	148	2.05	842	5.11	1,655	4.29	3,246	6.04	1,870	5.91	1,745	4.26
Federal, State, and Local Gov't Securities	697	9.67	1,298	7.88	5,716	14.81	6,713	12.50	10,195	32.20	19,723	48.14
Unclassified, Misc., and Foreign Loans	422	5.86	282	1.71	2,872	7.44	5,218	9.71	1,259	3.98	527	1.29
Total	7,207	100.00	16,468	100.00	38,600	100.00	53,718	100.00	31,662	100.00	40,969	100.00

B.

Mutual Savings Banks	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans	38	1.67	75	1.98	51	0.81	93	0.98	94	0.96	29	0.28
Non-Farm Mortgages	694	30.59	1,362	35.87	2,311	36.61	4,360	46.03	4,401	44.74	3,893	37.77
Unincorporated Businesses	169	7.45	259	6.82	359	5.69	517	5.46	420	4.27	327	3.17
Corporate Short- and Long-Term Loans	151	6.65	275	7.24	459	7.27	816	8.61	754	7.67	676	6.56
Railroad Bonds and Stocks	420	18.51	771	20.31	934	14.79	1,375	14.52	1,435	14.59	792	7.68
Public Utility Bonds	20	0.88	111	2.92	173	2.74	525	5.54	661	6.72	517	5.02
Other Bonds and Stocks	47	2.07	125	3.29	181	2.87	195	2.06	158	1.61	197	1.91
Federal, State, and Local Gov't Securities	682	30.06	799	21.04	1,787	28.31	1,441	15.21	1,743	17.72	3,722	36.11
Unclassified, Misc., and Foreign Loans	48	2.12	20	0.53	58	0.92	150	1.58	170	1.73	153	1.48
Total	2,269	100.00	3,797	100.00	6,313	100.00	9,472	100.00	9,836	100.00	10,306	100.00

C.

Insurance Companies	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans	154	8.04	642	12.39	1,728	15.91	2,343	10.70	1,974	8.54	1,194	3.81
Non-Farm Mortgages	269	14.05	1,046	20.19	1,909	17.57	5,053	23.08	6,282	27.18	5,707	18.21
Unincorporated Businesses	112	5.85	234	4.52	344	3.17	960	4.39	895	3.87	736	2.35
Corporate Short- and Long-Term Loans	154	8.04	276	5.33	512	4.71	1,748	7.99	1,725	7.46	1,630	5.20
Railroad Bonds and Stocks	667	34.83	1,745	33.67	2,414	22.22	3,929	17.95	3,614	15.64	3,372	10.76
Public Utility Bonds	45	2.35	243	4.69	428	3.94	1,910	8.73	2,184	9.45	4,324	13.80
Other Bonds and Stocks	129	6.74	267	5.15	467	4.30	1,963	8.97	1,786	7.73	3,424	10.93
Federal, State, and Local Gov't Securities	168	8.77	408	7.87	2,267	20.87	2,289	10.46	2,934	12.69	9,229	29.45
Unclassified, Misc., and Foreign Loans	217	11.33	321	6.19	795	7.32	1,695	7.74	1,719	7.44	1,721	5.49
Total	1,915	100.00	5,182	100.00	10,864	100.00	21,890	100.00	23,113	100.00	31,337	100.00

D.

Personal Trust Funds	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans	410	15.36	570	9.36	1,080	6.70	630	2.28	480	2.09	440	1.38
Non-Farm Mortgages	520	19.48	640	10.51	1,110	6.89	1,750	6.34	1,460	6.35	1,500	4.71
Unincorporated Businesses	150	5.62	160	2.63	210	1.30	220	0.80	190	0.83	160	0.50
Corporate Short- and Long-Term Loans	120	4.49	170	2.79	300	1.86	400	1.45	370	1.61	350	1.10
Railroad Bonds and Stocks	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Public Utility Bonds	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other Bonds and Stocks	1,200	44.94	3,850	63.22	9,900	61.45	19,350	70.11	13,000	56.52	19,950	62.64
Federal, State, and Local Gov't Securities	150	5.62	350	5.75	2,700	16.76	3,900	14.13	6,250	27.17	7,700	24.18
Unclassified, Misc., and Foreign Loans	120	4.49	350	5.75	810	5.03	1,350	4.89	1,250	5.43	1,750	5.49
Totals	2,670	100.00	6,090	100.00	16,110	100.00	27,600	100.00	23,000	100.00	31,850	100.00

E.

Investment Companies	1900		1912		1922		1929		1933		1939	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Agricultural Loans	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Non-Farm Mortgages	NA	NA	NA	NA	3	3.33	20	0.84	23	2.00	88	6.00
Unincorporated Businesses	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Corporate Short- and Long-Term Loans	NA	NA	NA	NA	2	2.22	13	0.55	15	1.30	12	0.82
Railroad Bonds and Stocks	NA	NA	NA	NA	15	16.67	405	16.99	137	11.90	170	11.59
Public Utility Bonds	NA	NA	NA	NA	2	2.22	20	0.84	32	2.78	47	3.20
Other Bonds and Stocks	NA	NA	NA	NA	66	73.33	1,898	79.61	933	81.06	1,126	76.76
Federal, State, and Local Gov't Securities	NA	NA	NA	NA	2	2.22	28	1.17	11	0.96	24	1.64
Unclassified, Misc., and Foreign Loans	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Totals	NA	NA	NA	NA	90	100.00	2,384	100.00	1,151	100.00	1,467	100.00
Grand Totals	14,061		31,537		71,977		115,064		88,762		115,929	

Source: Robert Goldsmith, *Financial Intermediaries in the American Economy since 1900* (Princeton, N.J., 1958), Tables A-3, A-5, A-8, A-9.

The RFC's Influence as a Public Financial Intermediary

Archival records show that the RFC loaned over \$200 million to railroads in the first year of its existence.¹³ Between 1933 and 1940, it loaned an additional \$704 million, for total lending to railroads of close to one billion dollars before World War II. Table 4 displays the amounts and major purposes of RFC loans to railroads, 1932-1939. It shows that, from 1932 to 1934, between 66 and 85 percent of the RFC's total rail loan activity consisted of direct loans to railroads. These were comparable to short-term commercial bank loans, because they provided funds allowing railroads to pay interest charges and principal on maturing securities that would otherwise have gone into default. Subsequently, in 1935, Congress granted the RFC additional power to purchase company stock and bonds directly, so the RFC shifted its priorities to refinancing rail bonds at generally lower interest rates than their existing face values in order to lower railroad fixed charges. Table 4 shows that between 63 and 86 percent of RFC loans in 1935 and 1936 were for these refunding transactions, with somewhat smaller amounts and percentages in subsequent years. Finally, from 1936 to 1939, between 32.5 and 89.6 percent of RFC loans were for "retirement of bonds"—that is, redemptions before maturity. These were also largely refinancing transactions. With temporarily improved economic conditions, rail operating income increased significantly in 1936 and early 1937, and again in 1939, thereby allowing railroads to trade in more costly debt for RFC bonds bearing lower interest rates.¹⁴

In short, through direct loans, refinancing, and retirement of existing bonded debt, RFC relieved private financial institutions of their holdings of often-deflated assets by taking them on as a public responsibility. Table 3 summarizes the results of these interventions for the portfolios of financial institutions. Between 1929 and 1939, the major classes of financial institutions significantly reduced both the absolute amount and relative size of rail assets in their portfolios. Savings banks reduced their rail assets by almost half, from 14.52 percent to 7.68 percent. Insurance companies reduced their rail holdings from almost 18 percent to a little less than 11 percent. Investment company rail assets went from 16.99 to 11.59 percent. Commercial banks show a very small increase in percentage holdings of rail assets, from 2.2 to 2.3 percent, but the absolute level of assets decreased from \$1.191 billion to \$946 million.

During the same period, finance capital dramatically increased its investment in federal, state, and local government bonds, which provided the least risk during the Depression years. Table 3 shows that, between

¹³ "Reconstruction Finance Corporation, Quarterly Reports, 1932-1940," RG 239, National Archives.

¹⁴ Interstate Commerce Commission, *Annual Reports, 1932-1939* (Washington, D.C.).

TABLE 4
Amounts and Purposes of Authorized RFC Loans to Railroads,
Jan. 22, 1932- Oct. 31, 1939

Type ^a	Jan. 22, 1932- Oct. 31, 1932	%	Nov. 1, 1932- Oct. 31, 1933	%	Nov. 1, 1933- Oct. 31, 1934	%	Nov. 1, 1934- Oct. 31, 1935	%
Interest Cost	73,930,788	21.32	34,945,258	39.01	8,310,385	10.02	9,382,800	18.26
Maturing Securities	116,676,054	33.64	34,462,805	38.47	62,351,575	75.16	6,757,000	13.15
Purchase of Securities	NA	NA	NA	NA	NA	NA	32,161,050	62.59
Payments	14,080,492	4.06	3,060,689	3.42	2,500,000	3.01	822,000	1.60
Additions and Betterments	53,964,007	15.56	2,674,000	2.99	3,286,254	3.96	205,748	0.40
Bank Loans	39,803,100	11.48	NA	NA	NA	NA	NA	NA
Taxes	20,467,204	5.90	5,937,811	6.63	5,823,891	7.02	1,918,000	3.73
Retirement of Bonds ^b	NA	NA	NA	NA	NA	NA	NA	NA
Other	27,907,534	8.05	8,495,781	9.48	686,467	0.83	134,200	0.26
Totals	346,829,179	100.00	89,576,344	100.00	82,958,572	100.00	51,380,798	100.00

Type ^a	Nov. 1, 1935- Oct. 31, 1936	%	Nov. 1, 1936- Oct. 31, 1937	%	Nov. 1, 1937- Oct. 31, 1938	%	Nov. 1-1938- Oct. 31, 1939	%
Interest Cost	NA	NA	NA	NA	10,732,930	23.28	5,624,000	13.19
Maturing Securities	5,000,000	3.87	791,861	3.94	4,425,500	9.60	4,128,000	9.68
Purchase of Securities	111,445,400	86.30	900,000	4.48	400,000	0.87	8,000,000	18.77
Payments	NA	NA	310,639	1.55	NA	NA	NA	NA
Additions and Betterments	150,000	0.12	27,000	0.13	15,411,000	33.43	3,442,529	8.08
Bank Loans	NA	NA	NA	NA	NA	NA	NA	NA
Taxes	NA	NA	NA	NA	NA	NA	3,035,000	7.12
Retirement of Bonds ^b	12,405,667	9.61	18,007,500	89.59	14,992,000	32.52	17,392,471	40.80
Other	140,000	0.11	61,805	0.31	142,070	0.31	1,002,000	2.35
Totals	129,141,067	100.00	20,098,805	100.00	46,103,500	100.00	42,624,000	100.00

Source: Interstate Commerce Commission, *Annual Reports* (Washington, D. C., 1932-1939).

^a Composition of Each Row:

Interest Cost: Bond Interest, Equipment Trust Interest, Short- Term Obligations (Interest), Debenture Interest, Interest on Leased Line Stock Certificates

Maturing Securities: Debenture Maturities, Equipment Trust Maturities

Purchases: Purchase of Carriers' Loans (some stock), Purchase of Stock of Subsidiary Company, Purchase of Lessor Properties

Payments: Payment of Short-term loans (Notes), Mortgage Sinking Fund Payments, Equipment Repairs, Audited Vouchers for Materials, Supplies, etc.

Other: Rentals, Preferential Claims, Judgments, Miscellaneous

^b The Retirement of Bonds indicates that a particular bond issue was redeemed before its maturity date for bonds which give its issuer the right to retire the bond before its maturity. It is a debt obligation or the cancellation of securities that have been redeemed before the maturity date of the security.

1929 and 1939, government securities rose from 12.5 to 48.1 percent of commercial bank portfolios, from 15.2 to 36.1 percent of savings bank assets, from 10.46 to 29.45 percent for insurance companies, and from 14.1 to 24.18 percent for personal trusts.

Thus, just as the RFC was socializing rail securities, finance capital was moving its investments into government bonds. Not since the Civil War had the federal government, acting as a public financial intermediary, so massively influenced private capital markets. In the 1930s, however, the actions of the government were different than in the nineteenth century, when Treasury bonds were marketed to finance federal budget deficits. In the 1930s, the RFC was directly strengthening the balance sheets of banks, trusts, institutional endowments, and insurance and investment companies by taking over assets that those institutions were anxious to shed.

One common interpretation of these policies is that the federal government was helping financial institutions shore up their balance sheets so they would have the assets to extend new loans to companies and businesses needing external capital, thereby attenuating the Depression credit crunch.¹⁵ This interpretation, however, fails to account for the countervailing evidence, shown in Table 3, that finance capital redistributed its lending out of rail and other corporate investments mostly into secure notes of the U.S. Treasury and state and local governments, not into new business investment. Nor does it take account of documentary evidence that financial institutions lobbied extensively for the RFC to take over devalued rail debt, even though a strong argument can be made that these holdings were not so large as to seriously threaten their fundamental financial viability.¹⁶ Writing in the late 1930s, Cassius M. Clay, chief counsel for the RFC, suggested that the commonly held notion that the position of institutional holders of railroad securities was endangered by the Depression was overemphasized—first, because, “due to several intermediate rises in bond prices since 1932, opportunities have been afforded for [bond]holders to weed out their more risky bonds with a minimum of loss,” and second, because “the [financial] position of . . . insurance companies and savings banks . . . is generally sound.”¹⁷ Therefore, a more plausible interpretation of the relations between the RFC and private financial institutions in the 1930s is that state credit was used to relieve banks, insurance companies, and large institutional investors of deflated rail assets, even though those deflated assets arguably did not threaten the fundamental financial viability of private institutions. In common parlance, the state bailed out private capital.

¹⁵ Olson, *Saving Capitalism*.

¹⁶ Moulton et al., eds., *The American Transportation Problem*.

¹⁷ Cassius M. Clay, *What Shall We Do About the Railroads?* (Washington, D.C., 1939), 59-60.

The Changing Structure of the Transport Sector

With regard to emerging changes in the U.S. transport sector, the interpretation suggested here is that the federal government, using both its credit and its regulatory powers, established the preconditions in the 1930s for the transformation of that sector from dominance by railroads to dominance by highway-based vehicles. On the credit side, the government accomplished this through its financial intermediary, the RFC, which took ownership of corporate rail assets, thereby facilitating the withdrawal of private capital from the weakened rail sector. In so doing, the federal government became the railroads' primary creditor, replacing private banks, insurance companies, and investment trusts. The government could readily afford this takeover of private assets: first, because the RFC had large financial resources; second, because the government guaranteed the bonds it refinanced, which gave those bonds special credibility in the capital markets; and, third, because the RFC did not operate under any of the reserve requirements imposed on private financial institutions, giving it great flexibility in building its portfolio of public assets. In short, in the 1930s, using its hugely powerful and unfettered financial resources, the federal government entered the private capital markets, easing the credit crunch in those markets and, in the process, established the framework for significant restructuring of the U.S. transportation sector.

Financial changes alone, however, were not sufficient to transform the structure of U.S. transport. Political and regulatory changes were also influential. Economic and business historians have well documented this aspect of transport history; here we need only provide a synopsis.¹⁸ Since the late nineteenth century, railroad companies had over-built and developed competing lines in many regions of the country. Duplication of lines persisted into the twentieth century, because freight rates and passenger fares were regulated and held artificially high by the Interstate Commerce Commission. In the face of growing competition from highway-based traffic, the future viability of rail transport required rationalization of the entire national railroad system, eliminating overlapping rail lines and forcing financial reorganization on weakened companies. For decades, railroads had failed to respond to this challenge through voluntary consolidations. Thus, the federal government was left to force change, if change was going to occur.

Understanding this situation, when the Depression caused a financial crisis in the rail sector, the Roosevelt administration supported passage of the Emergency Railroad Transportation Act on June 16, 1933, creating the Office of Transportation, which was empowered to investigate and recommend changes to the U.S. transportation system. Roosevelt's

¹⁸ See Albro Martin, *Railroads Triumphant: The Growth, Rejection, and Rebirth of a Vital American Force* (New York, 1992); Thomas Cochran, *Railroad Leaders, 1845-1890: The Business Mind in Action* (New York, 1965).

appointee as head of this new office, Joseph Eastman, urged consolidation and financial reorganization of the railroads to make them competitive with highway-based transportation.¹⁹ However, the Coordinator's Office was never empowered by Roosevelt to use the RFC's financial leverage as chief creditor to the railroads to force such restructuring, and little of substance was accomplished. In 1936, without opposition from the Roosevelt administration, Congress did not reauthorize and continue the functioning of the Office of Transportation Coordinator. By not taking up the Transportation Coordinator's recommendations, the federal government thereby allowed highway transportation to expand unimpeded and to move toward replacing rail as the primary means of moving passengers and freight in the United States.

The RFC used its immense powers of financial intermediation to relieve both railroads and private financial institutions of a significant proportion of their debt in the 1930s. Equally important, however, is what the RFC could have done with its financial powers, but opted not to do. It did not use its control of credit to force restructuring of freight and passenger rail services. It did not force railroads to consolidate, reorganize, and rationalize services. The Roosevelt administration tacitly approved this non-intervention by failing to use its regulatory and political powers to re-shape U.S. transportation. Instead, both Roosevelt and the RFC allowed railroads to continue corporate policies that, for the most part, failed to face the new realities of competition from highway transport. Railroads became increasingly unable to compete effectively with emerging highway (and air-based) modes. Thus, the stage was set for an era dominated by the new modes of transportation that would commence not long after the end of the Great Depression and World War II.

¹⁹ Olson, *Saving Capitalism*, 118.