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THE VALUE OF PRIVATE BANKS IN CORPORATE GOVERNANCE: EVIDENCE FROM THE ARMSTRONG INVESTIGATION

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Abstract

The paper studies the market reaction to the withdrawal of a prominent private bank - Kuhn Loeb - from the board of several firms. The event study shows that although Kuhn Loeb added significant value to the firms where it had a board seat, most of this value came from reduced industry competition. Moreover, it seems that weaker competition manifested itself in monopoly rather than monopsony power. This article analyzes the event's context - the Armstrong Investigation in 1905 - and the political currents that eventually prevented private banks from being activist shareholders in the United States.

JEL: G21, G24, G3, K21, L41, N21.

Keywords: Antitrust, Corporate Governance, Financial History.

The effective governance of publicly traded firms is an important and still unresolved problem of corporate finance. Alfred Chandler (1977) has documented how the current system of strong professional managers arose after the 1850s in response to new technologies such as the railroad, electricity, and the telegraph. These technological advances created vast and complex firms that could only be harnessed by professional managers. These managers rarely owned much of the firms that they controlled and whose ownership became quite dispersed early on, as documented by Berle and Means (1932). These authors realized that dispersed equity ownership in the face of professional managers meant that shareholders would have serious collective action problems, and that managers may take advantage of this to entrench themselves. The late 1990s and early 2000s witnessed dramatic corporate scandals in the United States and Europe. These scandals, together with strikingly similar events in the aftermath of the 1929 market crash, were no doubt exacerbated by the combination of powerful executives, pliant boards, and helpless equityholders[1].

Different countries developed governance systems to alleviate the problem of separation of ownership and control. Two paradigmatic governance systems are, first, the American, with liquid capital markets, arm's length relationships between banks and non-financial corporations, and a strong anti-trust history. After the 1980s, the U.S. also witnessed a movement to take some companies private.

[1]The problem of extreme asymmetry of information between managers and the overseers was well known in other areas. N.A. M. Rodgers (2004) comments about 4th Earl of Sandwich, who oversaw the Royal Navy in the XVIII Century: 'Sandwich, with his keen administrative sense, understood that the strength of the Navy's position was its monopoly of information' Rodgers (2006), p. 300.

A second system is most clearly exemplified by Germany, with less liquid capital markets coupled with strong bank and non-financial firm relationships[2]. These governance systems developed mechanisms to create liquid assets or strong oversight powers, but not both simultaneously for the same firm[3]. However, it is difficult to do justice in a few lines to these complex and highly sophisticated economies. Indeed, cross country comparisons are difficult because each country's unique geographic, cultural, legal, and economic environment makes it difficult to extract any reproducible features.

Another way to study the different governance systems is to analyze a country shifting from one paradigm to another. The United States between 1890 and 1940 provides a good test case. At the beginning of the twentieth century, the United States had features that resembled the German governance system, with some private banks taking equity positions and activist roles in non-financial corporations. This 'financial capitalism' was phased out by the U.S. Government, and by 1939 had become much as it stands today. Chandler (1980), Roe (1994), Bittlingmayer

[2]It is interesting to note that after World War II, the United States tried to dismember the big German banks, and eliminate their influence in German industry. As Moss (1997) puts it "The Americans worried in addition about substantial concentrations of financial power, concentrations that they regarded as economically inefficient and politically dangerous. As a result, they moved to restrict the German banks' control over proxy voting rights and to limit their representation on other firms' supervisory boards." (p. 255). The West Germans quickly reinstated banks to their former role in 1956, only one year after gaining full sovereignty

[3]A third system, typified by Japan, has liquid equity markets, less active corporate bond markets, and a close relationship between banks and corporate groups. The financial system in Great Britain shares some features with its American counterpart. Over the years the governance systems of all these countries have changed dramatically, and economic innovations such as private equity funds have further clouded the country differences. See Chandler (1990) for an extensive analysis on this subject. Tirole (2006) pp. 36-46 summarizes the most recent evidence on the cross country differences in governance.

(1996), and Cantillo (1998) argue that existing governance practices were dismantled partly because of anti-trust concerns, and partly because of populist pressures against large businesses. DeLong and Ramirez (1995) show that by 1939, the New Deal legislation had neutralized banker control over non financial corporations.

A key question regarding the American governance system is whether bank involvement in industrial corporations was good or not. Here we must distinguish between private and national banks. Private banks had equity and debt stakes in many firms they dealt with, while national banks could not own corporate shares[4]. Private banks, the most important being J.P. Morgan & Co. and Kuhn Loeb, played a triple role of investment bankers, commercial lenders, and active institutional investors. Private banks voted their and their clients' shares[5], and were thus an equity intermediary. One theoretical justification for this is found in Holmstrom and Tirole (1997), were firms can approach a 'generic' or a 'monitoring' investor for funds. A monitoring investor will always lend in coalition with generic investors and will have a stake in the firm that it monitors; this investor certifies the value of a firm and is involved in its operations[6].

Researchers have assessed the value of activist private banks in two ways. Bradford DeLong (1991) looked at the 1911-1912 market-to-book value of 82 corporations, of which 20 had a J.P. Morgan & Co. partner on its board. DeLong found that a Morgan board membership generated a premium ranging from 6 to 30

[4]U.S. Senate Hearings (1933), 61, 100-101, 390-391

[5]U.S. Senate Hearings (1933), 25-101; U.S. Congress (1913), 57-65, 77-80; Carosso (1987), 628.

[6]Shleifer and Vishny (1986) also develop a model where a large shareholder stake makes a value-adding takeover more likely.

percent. The highest estimates were obtained by simply comparing the average ratio of the Morgan represented firms against the others. The lowest estimate uses an earnings-to-book ratio as a control variable. This study answered some questions and raised new ones: did Morgan partners raise corporate value, or were they simply good at picking stocks? How did they raise value? Cantillo (1998) used an event study of J.P. Morgan's resignation from the board of several companies in 1914. He found that Morgan involvement raised corporate value by about 7 percent, but that a large part of this came by reducing competition. One problem with this study is that J.P. Morgan partners did not resign from all boards, and so one could interpret the results as a signalling story, i.e, that J.P. Morgan & Co.'s decision to resign simply revealed inside information. Moreover, since the Clayton legislation being discussed at the time explicitly forbade directors from sitting in competing companies, it is not surprising that there was some antitrust impact of the resignations, and that this may have been an isolated incident.

The events surrounding the Armstrong Investigation give us a rare insight into the role of private banks as activist investors. In 1905, The New York Senate and Assembly began an investigation of life insurance companies that took on a life of its own. The Armstrong Investigation became the first public criticism of private banks and made it more difficult for them to become involved in the affairs of non-financial corporations. As a result of these hearings, one of the most prominent private banks - Kuhn Loeb - resigned from the board of all non-bank corporations. This event complements the efforts of De Long (1991) and Cantillo (1998), since it looks at a different private bank, and thus settles the question of whether the

value of financial capitalism was merely a J.P. Morgan effect or not, and whether it truly derived from reduced competition. Kuhn Loeb's wholesale resignation also allows us to rule out a signalling explanation of Cantillo's (1998) results. Finally, the event allows us to explore whether market power was primarily exercised on clients or on suppliers.

The paper's layout is as follows: Section 1 explains how and why some private banks took an active part in the governance of industrial firms. Section 2 discusses the immediate historical background surrounding the Armstrong Investigation. Section 3 presents the event study, and the paper concludes with Section 4.

1 Reorganizations and Private Bank Control

At the end of the Civil War, the United States witnessed the rise of large, professionally managed firms, beginning with railroads, and followed by industrial giants such as AT&T, General Electric, International Harvester, and U.S. Steel. Before 1890 most railroads and industrial firms were closely held by families or by small groups of investors. Within two decades, American governance was transformed by massive reorganizations and mergers, which allowed banks to control many railroads and industrial firms[7]. The most important reorganizers were J.P. Morgan & Co. and Kuhn Loeb, who as private banks were not subject to close government regulation. These corporate reorganizers were called on to

[7]See Daggett (1908) for an analysis of the Railroad Mergers, and Lamoreaux (1985) for industrial mergers

rescue companies in financial distress or to implement gigantic mergers. Private banks played a triple role as investment bankers, commercial lenders, and activist institutional investors[8].

Reorganizations arising from financial distress were common during the 1890s, when one third of the U.S. railroad trackage fell into bankruptcy. The first bankrupt railroads were reorganized by J.P. Morgan & Co., and others later by Kuhn Loeb [9]. Reorganizers would first determine the optimal leverage that a firm could support. The next step was to reduce debt to that optimal level, often by impelling creditors to exchange bonds for common stock, and by forcing old stockholders to inject fresh capital. To finance these security exchanges, private banks issued equity well in excess of the firm's replacement cost; this was known as 'watering' the stock. Finally, private banks used voting trusts to keep absolute control after the reorganization[10]. Even though private banks had taken an active role in mergers and reorganizations since 1865, and even though voting trusts had existed since the 1870s, it was not until the economic collapse in 1893 that these two elements became truly prominent. Voting trusts allowed private banks to scatter the company's equity while keeping effective control over managers, in effect creating liquidity and strong governance. Moody (1919b) describes how and why J.P. Morgan created the first voting trust:

> The control of the properties lay in the voting power of the stock;

[8]U.S. Senate Hearings (1933), 25-101; U.S. Congress (1913), 57-65, 77-80; Carosso (1987), 628.

[9]For a detailed description of railroad reorganizations, see Carosso (1987), 363-390; Moody (1918), 29-34.

[10]Carosso (1970), 40-41.

> and, if voting power could not be controlled, little could be accomplished against opposition. His [J.P. Morgan's] attempt to reconstruct the Baltimore and Ohio in 1887 was defeated entirely because the controlling interests checkmated him by voting his representative out. He devised a plan whereby he himself would control the voting power. Before undertaking a reorganization or finding the new capital, he provided for a 'voting trust,' a device which, for a number of years, placed in the hands of a few trustees selected by himself the entire voting power of the stock. This scheme was followed in the reorganization of the Southern Railway [in 1893-1894] and was adopted on all later instances. [11]

Voting trusts were also used when no merging party was able to buy the shares from the other firm, or when one of the parties was unwilling to sell their shares to a former business rival[12]. Carosso (1987) explains how private banks exercised control after the voting trusts expired:

> When the trust expired, usually five years after the reorganization had been completed or when the company started paying the required dividend on its preferred shares, a partner in the banking firm that had led the refinancing or one of its trusted business associates were appointed to the corporation's board, and sometimes to its finance committee as well. Such assignments were intended [...] to promote sound management practices and satisfy the company's security holders, many of whom considered their interests better protected if the firm that had managed the refinancing and sponsored the issues was represented on the corporation's board[13]

[11]Moody, 1919b, p. 30. Private banks need not have a large direct position to have a degree of control: for instance the Armstrong investigation revealed that the Railroad Securities Company (a voting trust for the Illinois Central) had 12.83% of the available stock (Report of the Joint Committee (1906) pp. 1099 and where the outstanding number of shares as of February 1901 was 600,000, from the New York Times).

[12]Chernow (1990), 32.

[13]Carosso (1987), 368. For more on the mechanics of bank control, see U.S. Senate Hearings (1933), 54-57; Carosso (1987), 363-369, and Redlich (1951), 378

Voting trusts were intended to keep 'undesirable' people out of the board, and to avoid detrimental policies[14]. They also provided a way to scatter company's stock without impairing shareholder control over managers.

Private banks would normally have a direct equity and debt position of the firm under their control[15]. It is important to note that even though private bankers could take an equity position in a firm, national banks could not. For this reason, it is likely that private bankers were more active directors than commercial bankers. Although banker-directors gave managers wide latitude, they intervened forcefully in a few areas, such as dividend and investment policies. Private banks were interested in retaining a reputation as financial watchdogs; thus private bankers were fairly conservative directors[16].

2 The Armstrong Investigation

The involvement of private banks in corporate boards quickly created a political backlash:

> Americans traditionally harbored hostility toward monopoly, privilege and concentrated wealth. In all parts of the country small bankers and businessmen shared the farmers' antipathy against the great economic changes that had occurred in the nation since the close of the Civil War. They particularly feared and distrusted the giant corporate and financial institutions that had been organized by eastern businessmen and financiers [...] The close business and personal ties that

[14] Redlich (1951), 378.
[15] U.S. Senate Hearings (1933), 61, 100-101, 390-391
[16] U.S. Senate Hearings (1933), 3-5, 33, 54-56, 61, 390-395; Carosso (1970), 33

> existed among the members of the leading investment houses, the executives of the companies they served, and the officers of the principal financial institutions caused increasing concern to trust-conscious Americans. The fact that a relatively few banking firms had sponsored most of the country's largest corporations emphasized still further the dominance of a few men over the economy. Most businessmen and financiers were well aware of the existence of these communities of interest. Not until 1904, however, did the public generally learn of the informal and subtle nature of these financial alliances, the extent of their influence, and the profits that were made in promoting and organizing mergers and consolidations[17].

To trace the origins of the Armstrong Investigation, we must go back to the early 1890s, when liberal banking laws created financial trust companies. Trust companies could invest in more speculative assets than National banks or insurance companies, and for this reason were studiously avoided by individual depositors. Several officers and directors of life insurance companies saw an opportunity: they began depositing insurance funds in trust companies, as well as taking out personal 'loans' from the life insurance firms to personally invest in financial trusts. By the end of the decade, private banks came into the picture, taking board seats in the most prominent life insurance and Trust companies[18]. For instance, Kuhn Loeb sat on the board of the Equitable Life Insurance Company, while a J.P. Morgan & Co. partner, George Perkins, was also an executive in the New York Life Insurance Company. Moody (1919b) believed that the relationship between bankers and insurance companies was fraught with conflicts of interest:

> During that remarkable period from 1898 to 1904, [...] the assets of

[17] Carosso (1970), 110-112
[18] Moody (119b), p. 119-128

> the insurance companies were handled with steadily increasing recklessness [...] Not only were insurance companies of great strength 'alloted' abnormally large amounts of syndicate underwritings [...] but their subsidiary trust companies were also loaded in the same way[19].

The immediate event that triggered the Armstrong Investigation was the power struggle between James W. Alexander and James H. Hyde for the control of the Equitable Insurance Company, a nominally mutualized corporation. This struggle created a public uproar, which was further stoked by the belief that private banks had manipulated the Equitable and other insurance companies for their own personal gains. In July 1905, the New York Governor announced a legislative investigation of the matter. The hearings, which began on September 6, 1905 and concluded on February 26, 1906, were held in New York City. John Moody comments:

> A sensational insurance investigation which began in 1905 lasted for several months. Under the direction of Charles E. Hughes, it disclosed to the public the entire inside history of life insurance finance during the previous decade, with all its high finance, reckless manipulation of funds, waste, extravagance, and graft. The result of this investigation was that new and far more stringent laws were enacted looking to the safeguarding of the assets of policyholders and the proper investment of insurance funds[20].

Among other things, the investigation soon evolved into a sharp critique of banks as activist investors in non-bank corporations. The hearings disclosed situations where banks had enormous conflicts of interest, since they were both board members and bankers of their subjects. The hearings also showed how casually banks

[19]Moody (1919b), pp. 129-130
[20]Moody (1919b), p. 132

decided critical issues affecting life insurance companies. These contemporary comments by Thomas W. Lawson, a stock broker turned 'muckracker', give a sense of the animus against private bankers and insurance directors:

> Life Insurance as it has been conducted in the past and as it is being conducted at present by these three companies, I regard as the most damnable imposition ever practiced upon the people of any nation. Under the pretense that is necessary to enable life-insurance companies to carry out their contracts, two million policy holders are annually tricked into contributing from their savings sums which not only insure the performance of these contracts but enable the officers and trustees - mere servants of the policyholders - to maintain the most gigantic stock-gambling machine the world has ever known. Through its operation the companies themselves not only make and lose millions at single throws of the dice, but the bands of schemers whose services it is pretended are essential for the transaction of the life-insurance business filch for themselves huge individual fortunes. Piled on these excessive charges are additional amounts which enable these tricksters to maintain palaces, hotels, bars, and every conceivable kind of business, to pay for armies of lackeys and employees and private servants of officers and trustees, and for debauches and banquets which vie with any given by the kings and queens of the most extravagant and profligate nations on earth; in addition, enough more to accumulate huge and unnecessary funds - which are juggled with for the enrichment of individuals. Such wicked exactions and shameful extravagances constitute an imposition of the most wanton and criminal character, and those responsible should be be sent to State prison for life, as too vicious and dangerous to be allowed freedom among an honest people.
>
> I would say further that the trickery and frauds that have been practiced by the New York Life and the Mutual companies are fully as bad as, if not worse than, those of the Equitable, now publicly confessed.[21]

[21] Lawson (1906), p. 549

Although no wrongdoings by private banks were uncovered, people were afraid of potential mischief they could wreak:

> What disturbed Hughes [the Hearings' Counsel] and a growing number of people who read the reports was the almost limitless authority individuals like Perkins [a J.P. Morgan partner] exercised over the investment policies of the great life companies. What was there to prevent these men from using their positions to guarantee their firms a sure, steady market for the securities they issued? [22]

Jacob Schiff, the senior partner of Kuhn Loeb, testified before the New York Senate on September 29, 1905. Schiff convincingly demonstrated that Life Insurance Companies were not subservient to private banks. In the first place, he did not belong to the executive committee of the Equitable, which decided what securities to invest in. From 1900 to 1905, the Equitable Life Insurance Company had bought $197 million in securities, out of which only $33 million were floated by Kuhn Loeb. In that period, Kuhn Loeb had sold $1.36 billion in securities. The Mutual Life Insurance - a firm where Kuhn Loeb had no board seat - had meanwhile bought $42 million, and the New York Life Insurance $31 million, so it was not the case that Kuhn Loeb had become part of the Equitable Life's board to exploit it[23].

Moreover, Schiff expressed serious doubts about the value to private banks of taking equity stakes and being on the board of non-financial corporations:

> The system of directorship in great corporations of the city of New York is such that a director has practically no power; he is consid-

[22] Carosso (1970), 122
[23] New York State (1906), p. 1364

> ered, in many instances, and I may say in most instances, as a negligible quantity by the executive officers of the society; he is asked for advice when it suits the executive officers, and if under the prevailing system an executive officer wishes to do wrong or wishes to conceal anything from his directors or commit irregularities such as have been disclosed here, the director is entirely powerless, he can only be used in an advisory capacity and can only judge of such things as are submitted to him[24].

In the testimony, Schiff strongly hinted that Kuhn Loeb's practice of sitting on boards would no longer continue:

> You might say to the directors, you made a mistake to become directors of the Equitable, and we did. We all learn by experience and I don't think I will go in the same system again, or be subjected to the consequences of the same system[25].

In fact, four days after the hearings concluded, on February 26, 1906, Kuhn Loeb announced its withdrawal from the boards of all non bank corporations.

On April 1906 the New York legislature forbade insurance companies from underwriting securities, from buying corporate stock or collateral bonds. Given the importance of New York State, these regulations affected one of the largest sources of capital at the time. By 1907, nineteen other states had created similar legislation[26]. It also fuelled indignation against banker-managers, inspired Brandeis (1914) to attack bankers, and triggered a process of legal restrictions such as the Clayton Act in 1914. The process against private banks paused from 1915 to

[24] Jacob Schiff in New York State (1906), Testimony taken ... pp. 1299
[25] Schiff, New York State (1906), pp. 1312-1313
[26] Carosso (1970) p. 125

1929 because of the banks´ admirable role during the First World War. Nevertheless, the 1929 crash and the Great Depression unleashed the New Deal legislation that ended any meaningful private bank control over non financial corporations.

3 An event study of Kuhn Loeb's withdrawal

On February 26, 1906, Kuhn, Loeb & Co. announced that its partners would resign from the boards of all the non-bank corporations where they held a seat. Table 1 shows the status of the market traded firms that were affected by this announcement[27]. The reactions to the resignation ranged from muted to alarmed. The Wall Street Journal, for example, commented:

> It is not anticipated, in railroad circles, that the resignation of members of the firm of Kuhn, Loeb & Co. from the directorates of the Pennsylvania and Harriman lines will affect the policies or financing of these companies [...] the tendency will probably run toward the elimination of relationships that might even raise the question of "dual capacity"[28]

On the other hand, the Commercial and Financial Chronicle was more worried:

> The action of the leading house of Kuhn, Loeb & Co. in deciding that its partners withdraw from all railroad directorates in which they now hold seat, is no surprise after the experiences of the past year, and yet it is most regrettable. If we assume this course followed by

[27] Table 1 shows that there were 14 actively traded firms that were directly affected by their announcement. Kuhn Loeb had a directorship in the Baltimore and Ohio railroad, which was part of the Pennsylvania Railroad "community of interest". I include the other railroads in that "community of interest" to account for any possible cross shareholdings they may have had.

[28] Wall Street Journal, February 27, 1906

> all our more prominent banking houses - a disposition not improbable - the movement would prove highly prejudicial to best management by our carriers. Moreover, security-holders would be deprived of the advantage of the most capable men we have for positions of that kind. There are no other sources for procuring suitable individuals to fill the places thus vacated. The experiences which have probably led to this action, and in fact are forcing it, are developments growing out of the investigations of corporations, preeminently insurance corporations, which have been a highly prominent feature among the events of recent months.[29]

The two quotes suggest that it was expected that other private banks would follow Kuhn Loeb's actions. To use this knowledge, I also identified in Table 1 the actively traded companies that had a Morgan director. To investigate whether Kuhn Loeb added value by reducing competition among railroads, I identified the competitors of Kuhn Loeb firms[30]. Note that some of Kuhn Loeb's competitors were also controlled by Morgan, and that a few Morgan controlled firms (General Electric, U.S. Steel, and Western Union) were not competitors of Kuhn Loeb controlled firms.

If the value generated by a private banker director was by softening competition, we would also expect that the clients and suppliers of the affected firms would benefit. For this event I identified railroad clients as those companies that

[29]Commercial and Financial Chronicle, March 3, 1906, p. 476.

[30]The methodology for selecting competitors is as follows: For railroads, the competitors are taken to be those in the same region as defined by the ICC. See Haney (1924) for more on this issue. At the time, the Baltimore and Ohio was controlled by the Pennsylvania, as Moody (1919a, p. 115) shows. The exclusion of the Pennsylvania RR from the portfolio yields very similar results quantitatively and qualitatively. The Baltimore and Ohio also controlled the Reading Railroad as Moody (1919, p117) points out. The Railroad Securities Company was a voting trust for the Illinois Central (Armstrong Investigation p. 1101). Finally, the Wisconsin Central RR. was part of the Northern Pacific (see Chandler 1977, p. 168).

used railroad transport heavily. I also identified as suppliers those companies that sold railroad equipment and the like. I identified steel companies, who were both important clients and suppliers to railroads. I did not include steel companies in the time series event study, since a priori it is difficult to decide whether they are mainly a client or a supplier for railroads. This will be found out in the cross sectional analysis of Kuhn Loeb's announcement.

The announcement can be studied using the event study methodology[31]. Briefly, if the logarithm of the stock returns is multivariate normal, the following equation holds:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \epsilon_{it} \quad \epsilon_{it} \sim N(0, \sigma_i^2) \tag{1}$$

where r_{it} is the (log) return of a stock or a portfolio of stocks, r_{mt} is the market return, and ϵ_{it} is an error term. Equation (1) also holds under the Capital Asset Pricing Model, with the additional condition that $\alpha_i \equiv (1 - \beta_i) r_f$. The essence of an event study is to assess if there are any abnormal returns associated with an event, i.e., returns beyond those predicted by equation (1).

The first step in an event study is to select a benchmark period to estimate the parameters α_i and β_i; for this, I used the monthly returns of 70 actively traded corporations in the New York and Curb Stock Exchanges between February 1900 and January 1905 (60 observations per firm).[32] The market return is defined as an

[31] For a detailed analysis of the event study methodology, consult Campbell, Lo, and MacKinlay (1997), Chapter 4.

[32] The stock returns consider dividends. I defined as actively traded those common stocks which traded at least 10,000 shares and $1,000,000 during 1903, 1904, and 1905. In addition, I required

equally weighted portfolio of these 70 actively traded firms[33].

In summary, for the event study, I created the following equally weighted portfolios:

1. KL: the portfolio of 14 firms with a Kuhn Loeb board member.
2. JPM: the portfolio of 13 firms with a J.P. Morgan & Co. board member[34].
3. CKL: the portfolio of 15 firms that competed with firms in the KL portfolio and had no private banker on its board.
4. Client: the portfolio of 8 railroad client firms.
5. Supplier: the portfolio of 3 railroad supplier companies.

The *abnormal returns* are defined as the forecast errors for the period surrounding the announcement:

that average bid-ask spreads be lower than three percent for a sample of dates: Feb. 21, 1903; May 30, 1903; Sept. 11, 1903; April 7, 1904; July 27, 1904; Nov. 16, 1904; Feb. 8, 1905; May 10, 1905, and Aug. 30, 1905. I used preferred stocks if the firm did not have actively traded common stock, and the preferred security satisfied the above requirements (there are two such cases). I used the closing price at the end of the month, but if no closing price existed, I used the average of the closing bid and ask quotes for the day. The sources for the prices were the Wall Street Journal, The New York Times, and the Commercial and Financial Chronicle. The New York Times is the source for the volumes, dividend dates, and dividend rates.

[33]I did not use the value weighted index because the two largest firms, the Pennsylvania and Northern Pacific Railroads, which account for 20 and 6 percent of the index, are affected by the announcement. I also calculate Northern Pacific's stock returns from January 1902 onwards, to avoid the period of struggle between J.P. Morgan and Kuhn Loeb for the control of the company in 1901. At the time of our study, both banks had some control over Northern Pacific, and the Supreme's Court 1903 Northern Securities case precisely limited the scope of this type of horizontal mergers. Since the event had a massive impact on the stock market (it affected 52 out of 70 actively traded firms) I also constructed a benchmark return with all those companies unaffected by the announcement, and obtained essentially the same results

[34]Note that at the time the Northern Pacific was controlled by both Kuhn Loeb and by J.P. Morgan & Co., but I assign it exclusively to the Kuhn Loeb portfolio- I do a cross section estimate below to disentangle any concurrent status of a given company. The results do not change.

$$AR_{is} = r_{is} - [\widehat{\alpha}_i + \widehat{\beta}_i r_{ms}]$$

where $\widehat{\alpha}_i$ and $\widehat{\beta}_i$ are extracted from the benchmark period for each portfolio of affected firms. The cumulative abnormal return (CAR) is the sum of the abnormal returns during the period of interest, i.e.,

$$CAR_{id} = \sum_{s=k+1}^{k+d} AR_{is} \tag{2}$$

To select an appropriate event window, I use monthly returns that begin on September 27, 1905 before Jacob Schiff's testimony, and conclude on February 28, 1906, after Kuhn Loeb made its announcement. I also calculate the abnormal returns until April 30, 1906 to see if any of these effects were temporary or not.

Table 3 shows the cumulative abnormal returns. It can be seen that the impact of the news had been digested by December 31, 1905. This suggests that there was either rampant insider trading or that investors clearly and rightly interpreted Jacob Schiff's testimony on September 29, 1905 as a farewell to Kuhn Loeb's governance of non-bank corporations.

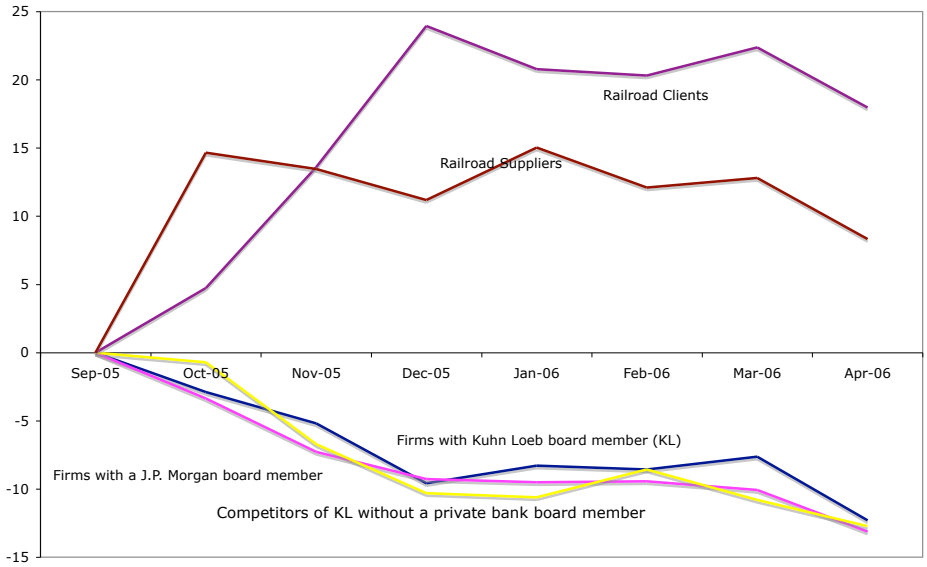
The portfolios of firms with a Kuhn Loeb partner on its board fell significantly. The KL firms dropped anywhere from 9.57% to 12.31%, depending on the cutoff date. These estimates are somewhat higher than those obtained by Cantillo (1998) and DeLong (1991), and refute those critics who argued that bank control reduced

corporate value by captured firms to sell overpriced bank services or securities. Given that Kuhn Loeb resigned from all boards, we can also rule out the signalling hypothesis of Cantillo (1998), where the fall in price resulted from the negative information of the firm being abandoned, and positive information of the firms being retained.

Firms with a J.P. Morgan & Co. board member also fell significantly, anywhere from 9.28% and 13.12%, depending on the cutoff date. One cannot reject the hypothesis that the Kuhn Loeb and J.P. Morgan portfolios dropped equally. It is unclear whether this fall was because some of the Morgan represented firms were Kuhn Loeb competitors, or because of the loss of bank control. A portfolio of industrial firms with a Morgan director that did not compete directly with the KL portfolio fell by 7.19%. However, this sub-sample did not yield a statistically significant result. We will return to this issue when we consider the cross sectional results.

Railroad clients stocks benefited greatly, with a CAR_i between 17.95% and 23.95%, depending on the cutoff date. This a dramatic effect is coherent with evidence from MacAvoy (1965), who found that prices in a 'price war' season where on average 24.12% lower than the previous comparable 'cooperative' season, with the mildest drop being 8.24% and the most severe breakdown leading to a 42.87% price drop. Porter (1983) studied the sub-sample from 1880 to 1886, and fitting his results into a structural model, found that a price war translated into a 40% drop in prices. These movements would warrant a rise by railroad clients as seen in this event study. The portfolio of KL competitors without a private

Figure 1: $CARs$ for affected firm portfolios



bank board member also fell significantly, anywhere from 10.31% and 12.72%, depending on the cutoff date. This is roughly the same fall as banker controlled stocks. These results suggest that most, if not all, of the value of banker-directors came from reducing competition. The market may have thought that implicit or explicit cartels would be more difficult to sustain without banker board members. This will be examined in more depth in the following sub-section.

Railroad suppliers had a positive but statistically insignificant reaction, with a CAR_i between 8.32% and 11.19%, depending on the cutoff date. This result suggests that the exercise of market power was not so much in purchasing but in pricing.

3.1 Private Banks and Railroad Competition: 1874-1906

From the outset Private bankers had doubts about the value of competition[35], as the following quote from George Perkins, a Morgan partner, indicates:

> The old idea that we were raised under, that competition is the life of trade, is exploded. Competition is no longer the life of trade, it is cooperation[36]

Morgan believed that price competition is fatal to the subsistence of industry. In creating U.S. Steel in 1901, International Harvester and the International Mercantile Marine (IMM) in 1902[37], J.P. Morgan & Co. made the explicit point of creating firms with well over half of the market share of their segments.

In the following letter, President Theodore Roosevelt reflects on the lobbying by private bankers to tone down his antitrust policy around the time of the Northern Securities Case:

> I am very fond of George Perkins. He is one of the men whom I most respect. But, to be perfectly frank, he did not appear to advantage in the talk he had with me on the evening in question. This is no reflection on him. He was occupying exactly the same attitude that Bob Bacon occupies on this question, and of Bob Bacon I am even fonder. Both of them are men of the highest character, who are genuine forces for good as well as men of strength and weight. But on this particular occasion they were arguing like attorneys for a bad case, and at the

[35]Pujo Hearings (1912), 1019. Morgan's declarations on competition are reprinted in the Wall Street Journal, December 20, 1912. Chandler (1977), 317-319

[36]Carosso (1970), 138. By the way, private banks were not alone in distrusting competition. For instance, the American Economic Association was very ambivalent at the time that the Sherman Act was passed (See Letwin (1965), pp. 72-73

[37]On the monopolizing nature of the IMM, see Chernow (1990), 100-101, and Carosso (1987), 482-483.

> bottom of their hearts each would know this if he were not personally interested; and especially, if he were not the representative of a man so strong and dominant a character as Pierpont Morgan. In plain English, what Perkins wanted me to do was to go back on my messages [...] I intend to be most conservative, but in the interests of the big corporations themselves and above all in the interest of the country I intend to pursue, cautiously but steadily, the course to which I have been publicly committed again and again, and which I am certain is the right course. I may add that I happen to know that President McKinley was uneasy about this so-called trust question and was reflecting in his mind what he should do in the matter. Perkins wanted me to do nothing at all, and say nothing except platitudes.[38]

Let us trace briefly the evolution of railroad cartels. MacAvoy (1965), studied the Trunk-Line Cartels from 1871 to 1899. He divided his observations into winter and summer terms, to account for the additional lake competition that opened with mild weather. Of the 57 terms he studied, MacAvoy found that 24 corresponded to a 'price war'[39]. Since there are seven price wars during the period, the average duration of a price was was about 21 months. Porter (1983) and Ellison (1994) studied weekly prices from 1880 to 1886. They found that during 'cooperative' periods, railroad rates were close to their monopoly prices, and that during price wars the values dropped, either to a Cournot or to a Bertrand equilibrium, depending on the econometric model used. MacAvoy found that the Interstate Commerce Commission (ICC) in 1887 made collusion more sustainable, and that Court decisions beginning in 1893 that weakened the ICC's power again destabilized cartels

[38] Roosevelt letters III, 159f, quoted in Letwin (1965), p. 204

[39] Whether these price wars were an equilibrium or an off-equilibrium responses is studied by Porter (1984) and Ellison (1994).

significantly. The cartels did not work very well because they could not engage maverick or weakened railroads, and because of changes in demand.

When private banks began reorganizing railroads in the 1880s, they were mostly concerned about guaranteeing the stability of the securities they sold. This made banks want to control railroad competition. An early example of this was published in the Financial Chronicle on March 27, 1886:

> Anthracite Coal Combination: Representatives of the various coal companies met at the house of Mr. J. Pierpont Morgan this week, and informally decided to limit coal production and maintain prices.[40]

This resulted because Morgan convinced the presidents and traffic managers of the Philadelphia & Reading, the Delaware, the Lackawanna & Western, the Lehigh Valley, and the Delaware and Hudson railroads to "manage" the anthracite coal traffic.

In 1889, the Eastern Trunk line and the Southern Railway and Steamship associations developed as cartels that tried to enforce the rates and allocate traffic, but

> When the Southwestern Association failed to do the same, Morgan brought the presidents or general mangers of leading western roads and representatives of leading banks to a series of meetings in New York. At these meetings the Western Association was formed, this association agreed to follow the lead of other associations. At the same time Morgan emphasized his determination to discipline competitive construction as well as competitive ratemaking.[41]

[40] Commercial and Financial Chronicle, 3/27/1886, quoted in Baughman et al. (1995), p. 13
[41] Chandler (1977), p. 171

Chandler (1977) believed that banks gave up on their attempts to cartelize after the Sherman Act became the law in 1890. However, it was not until 1897 (in United States v. Trans-Missouri Freight Ass'n) that the Supreme Court settled the illegality of railroad cartels. Moreover, Posner and Easterbrook (1981) argue that railroads continued to fix prices after 1898.[42]

By 1900, banks looked for other ways to reduce railroad competition. One solution was to create "communities of interest" where the large railroads took a non-controlling minority stake in smaller railroads. As Moody (1919a) points out:

> These and other purchases, and the consequent voice acquired in the management, established comparative harmony among Eastern railroads for a long time; they stabilized rates and enabled formerly competing roads to parcel out territory equitably among the different interest"[43]

The effect of cross shareholding as a way to enhance 'coordinated effects' is well understood by antitrust authorities.[44] The end of the "community of interest" idea came because of strong public disapproval, as noted by Moody (1919a):

> The American public [...] believed that the "community of interest" plan was merely a scheme to defeat the Interstate Commerce Act and the Sherman Act and to maintain secretly all the old railroad abuses.[45]

[42]Posner and Easterbrook (1981), p. 100

[43]Moody (1919a, p. 44)

[44]ICN (2006) Merger Guidelines, p. 48: 'if a firm has equity participation in a competitor, the scope for collusion may be enhanced. Links between competitors can make it easier to coordinate pricing and marketing policies, or to exchange information on these matters. Also, incentives to compete might be reduced in such cases given that the financial performance of the firm is affected by the profits of the competitor in which the firm has participation.'

[45]Moody (1919a), p. 116

So eventually even these communities of interest were dissolved. In general, the idea that private banks took control to reduce competition was widespread. Moreover, this reduced competition worked not only among railroads. For example, Douglass C. North (1954) states:

> Following the railroad reorganizations the investment banker turned to the consolidation of other fields of transport and industry in order that competition might be eliminated from these fields as well and the security-holder guaranteed a safe return on his investment.[46]

Table 2 shows that the market believed that competition among railroads would intensify once Kuhn Loeb departed. These results are in line with Cantillo (1998) in suggesting that private banks created some shareholder value by reducing competition.

Why would collusion unravel with the bank's departure? Stigler (1964) mentions that two factors that help collusion are effective enforcement and a small number of symmetric sellers. A third factor facilitating collusion is extensive multimarket contact[47]. We have seen that private banks had threatened deviant railroads by limiting capital fund-raising. The communities of interest engineered by private banks also increased concentration and reduced asymmetry by embracing straggling small railroads into the wider alliances. Finally, since private banks had railroads in every region, multimarket contact widened and became prevalent.

[46]North (1954), p. 213. Moody (1919b), pp. 110-111 for example mentions the failed attempt to cut the competition among transatlantic companies.

[47]This is embedded in competition authorities best practices (See ICN (2006), p. 49). Empirical studies using Bernheim and Whinston's (1990) framework have found that greater multimarket contact raises prices in the airline industry (Evans and Kessides 1994), the hotel industry (Fernandez and Marín 1998), and in the mobile phone industry (Parker and Roller 1997).

4 Cross-sectional evidence of Kuhn's withdrawal

Kuhn Loeb's announcement can also be studied cross-sectionally to study the event more closely. The announcement was massive, affecting at least 50 firms firms in complex ways. To disentangle these effects it is better to use a multivariate regression. The methodology is as follows: suppose that the cumulative abnormal returns are a function of different firm attributes, so that

$$CAR_i = \gamma' X_i + \upsilon_i \quad \upsilon_i \sim N(0, \sigma_i^2) \quad i = 1, 2, ..., 70 \tag{3}$$

where CAR_i is the firm's cumulative abnormal return from September 26, 1905 to December 31, 1906[48], or through to April 30, 1906. X_i represents a vector of dummies that captures corporate attributes. The attributes are whether a firm had a departing Kuhn Loeb board member (KL), a firm had a J.P. Morgan & Co. board member. I also coded whether a firm was a competitor of the Kuhn Loeb firms, and whether they were clients or suppliers of KL firms. Note that a firm can be both Morgan controlled and a competitor of Kuhn Loeb. Additionally, both banks had a position of influence on the Northern Pacific railroad through the Northern Securities trust. Steel Companies were coded as both clients and suppliers.

To disentangle any sector specific shocks, I used a dummy for U.S. railroads, The Hepburn Act was enacted on June 29, 1906, and gave more enforcement power to the Interstate Commerce Commission to set railroad rates, and this may

[48]I used this three month window because the results in the the event study show that the information was absorbed by December 31, 1905.

have affected the U.S. railroads[49].

A Park-Glejser test indicates that errors in equation (3) are heteroskedastic, and that their variance is proportional to the variance estimated for the market model in equation (1)[50]. Thus $\overline{\sigma}_i = \delta\sigma_i$ where σ_i and $\overline{\sigma}_i$ are defined in equations (1) and (3) respectively; this allows for a weighted least squares regression.

Table 4 presents the results. The first three columns regress the $CARs$ from September 26,1905 to April 30th 1906. The last three columns show the regressions for the shorter event window going from September 26,1905 to December 31st 1905. Comparing these two subsets, we can see that all significant coefficients retain their sign and point estimates. There are two regressors - whether the firm was a U.S. railroad or a railroad supplier - that are statistically insignificant and change sign in the two sub-periods. An F test that both variables are insignificant yields a value of 0.37 for the April 30, 1906 window, and 0.13 for the December 31, 1905 window. These results suggest that the proposed Hepburn Act did not have any strong or predictable expected effects, and are in line with MacAvoy's (1965) findings that increased regulation made collusion more likely. The results also suggest that the extra shareholder value generated by a banker-directors did not come at the expense of railroad suppliers, a result that is coherent with our times series results. The third and sixth columns in Table 4 show the results of a weighted least squares regressions, which are broadly similar to their OLS counterparts.

[49]We are lucky to have two Canadian and a Mexican railroad that were affected by the announcement but not directly subject to the regulatory shock.

[50]see Pindyck & Rubinfeld (1981),150-152.

The value of banker directors: firms with a departing Kuhn Loeb board member had a uniform fall, ranging from 9.61% to 17.16%, depending on the time and regression method used. These results are higher than Cantillo's (1998) - who estimated that a banker director in 1914 added value from 6.76% to 7.96%; these results are in turn higher than DeLong and Ramirez's (1995) study of bank directorships in 1939. The decline of banker directors value added on firms could be ascribed to: 1) more stringent corporate governance legislation that restricted private banking involvement, 2) more effective antitrust legislation that blunted banks' devices to reduce competition, 3) more complex company structures that sharpened the asymmetric information problems faced by outside directors. Researchers have highlighted the first explanation as the most powerful cause, although it would be interesting to weigh the relative importance of the other two explanations.

The source of value of a banker directors: the above-mentioned results suggest that a firm with a departing banker director would fall in price. How much of this comes from worse governance and how much from heightened competition? This can be inferred by looking at firms with a Morgan director[51] who were also competitors of firms with a Kuhn Loeb director. In all regressions, the J.P. Morgan variable is negative but insignificant at conventional statistical thresholds, while the competitor variable is always negative and statistically significant. Even supposing that the private bank variable was significant, the estimates in the first

[51] Who were expected to lose these banker-directors as per the commentaries in the Wall Street Journal and the Commercial and Financial Chronicle

column tell us that a railroad with a J.P. Morgan director would fall by 19.13%, 5.76% because of the lost banker director (30 percent of the value added), and 14.52% (70 percent of the fall) because of higher expected competition. These results harmonize Jacob Schiff's testimony with Cantillo's (1998) results. Schiff argued that banker directors did not enhance a firm's corporate governance - especially if its executives resisted them - while Cantillo (1998) shows that private banks added value by weakening industry competition.

To further confirm the hypothesis that banker directors softened competition, Table 4 tells us that railroad clients benefited greatly from Kuhn Loeb's announcement. The rise in CARs ranged from 12.80% to 18.43%, and is consistent with the large drops in railroad rates whenever cartels broke down, as first documented by MacAvoy in 1965.

5 Conclusion

The era of financial capitalism in the United States can teach us a number of lessons. Perhaps most useful is the invention by J.P. Morgan & Co. of the voting trust as a control device. This allowed private banks to have an important say in a company's affairs and to create a liquid market for its securities. It would be interesting to consider if this or a similar device may be used nowadays to have effective governance and to sustain liquid equity markets.

The second finding from this paper is that private banks used their power in unexpected ways. It seems from the 1905 testimony in the Armstrong Investigation

that private banks seldom intervened in corporate affairs, or that if a "crooked" executive wanted to, he could easily fool outside directors, even experienced private bankers. This is in line with Chandler's (1977) belief that a total separation of ownership in control is the only feasible outcome in a market with dispersed equityholders. The value of private bank directors came not so much from better governance but from reduced competition. Private banks softened competition by becoming watchful agents of symmetric alliances, by encouraging firms to have cross shareholdings, and by greatly extending multi-market contacts. Furthermore, private banks struck at the root of unstable cartels by threatening to block new securities issues in sectors with excess capacity. From the pre-Sherman studies, notably MacAvoy's (1965), we know that this was no small effect, since prices fell by about 25 percent with cartel breakdowns. However, private bankers' methods to enhance shareholder value were socially unsound, and their current role was an insufficient argument for financial capitalism. Republican or Democratic legislators and Presidents at the time sensed this, and so, slowly buy surely, enacted laws that prevented private banks from controlling corporations.

This study has tried to show why it made sense to phase out financial capitalism even though it had undeniable benefits to some shareholders. It would be interesting to see if the good side of corporate governance innovations from a century ago can be used nowadays, without the bad side effects that undoubtedly existed at the time.

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Table 1: Firms affected by Kuhn Loeb announcement on February 26, 1906

Firms with Kuhn	**Firms with Morgan**	**Competitors with no**
Loeb director (KL)	**director (JPM)**	**private bank (CKL)**
1) Baltimore & Ohio RR.	Clev., Cinc., Chic. &	Delaware Hudson RR.,
- Pennsylvania RR.	St. Louis RR, Erie RR,	Toledo St. L. W. RR.
- Reading RR.	New York Central RR	Wabash RR.
- Chesapeake & Ohio RR.	New York NH & H RR,	
- Norfolk & Western RR.	NY, Ontario + W, RR.	
- Chicago Terminal	Canada Southern RR,	
2) Chicago & Alton RR.		
3) Denver & Rio Grande RR.		Colorado Southern RR.
4) Northern Securities	Chicago Gt. West,	Canadian Pacific RR. Missouri
- Northern Pacific RR.	Chicago, Milwaukee	Kansas Texas RR., Missouri
- Wisconsin Central RR.	& St. Paul RR.	Pacific RR., Texas Pacific RR.
		Chicago & Northwestern RR.,
		Minneapolis, St. Paul & Sault
		Ste. Marie RR.,
5) Pacific Mail Steamship		
6) Southern Pacific RR.		Mexican C. RR.
7) Railroad Securities Co.	Southern Railway	Kansas City Southern RR.,
- Illinois Central RR.		Louisville & Nashville RR.,
		Kansas City Ft. Scott &
8) Union Pacific	Atchison, Topeka	Memphis RR.
	& Santa Fe RR.	Rock Island RR.
	Non-competitors with Morgan Director	
	General Electric	
	U.S. Steel	
	Western Union	

Table 2: Clients and Suppliers affected by Kuhn Loeb announcement

Railroad Clients	**Railroad Suppliers**	**Steel Companies**
American Can	American Car & Foundry	Colorado Fuel & Iron
American Cotton Oil	American Locomotive	Republic Steel & Iron
American Sugar Refining	Pressed Steel Car	Sloss Sheffield Steel
Corn Products		Tennessee Coal & Iron
Distillers Securities		U.S. Steel
National Biscuit (Nabisco)		
National Lead		
Virginia Carolina Chemicals		

Sources: For clients, Chandler (1976), p. 327, 328, 336, 328, 355. For suppliers, Chandler (1977), p. 359. Notice that National Lead produced Chemical compounds rather than Basic Lead Products

Table 3: Cumulative Abnormal Returns for affected Portfolios

Portfolio:	**KL**	**JPM**	**CKL**	**Clients**	**Suppliers**
9/27/1905	**coefficient**	**coefficient**	**coefficient**	**coefficient**	**coefficient**
To:	**(t-stat)**	**(t-stat)**	**(t-stat)**	**(t-stat)**	**(t-stat)**
10/31/1905	-2.9053	-3.3731	-0.7236	4.7215	14.6485
	(1.6605)	(2.3170)	(0.3639)	(1.4280)	(2.3438)
11/30/1905	-5.1891	-7.2820	-6.7263	13.6037	13.4613
	(2.0809)	(3.5095)	(2.3733)	(2.8867)	(1.5112)
12/31/1905	-9.5778	-9.2792	-10.3055	23.9472	11.1851
	(3.1028)	(3.6127)	(2.9375)	(4.1052)	(1.0144)
1/31/1906	-8.2969	-9.5129	-10.6117	20.7717	15.0220
	(2.3072)	(3.1793)	(2.5965)	(3.0566)	(1.1695)
2/28/1906	-8.5805	-9.4282	-8.5775	20.3120	12.1035
	(2.1261)	(2.8075)	(1.8700)	(2.6632)	(0.8396)
3/31/1906	-7.6404	-10.0638	-10.8110	22.3688	12.7997
	(1.7143)	(2.7137)	(2.1343)	(2.6559)	(0.8040)
4/30/1906	-12.3094	-13.1166	-12.7190	17.9532	8.3223
	(2.5386)	(3.2510)	(2.3080)	(1.9593)	(0.4805)

KL: Portfolio of firms with Kuhn Loeb director **JPM:** Portfolio of firms with J.P. Morgan & Co. Director **CKL:** Competitors of KL, excludes firms in JPM. **Clients:** Portfolio of railroad users **Suppliers:** Portfolio of railroad suppliers. The market return is computed using an equally weighted return of all actively traded firms (70 firms). The standard error formula comes from Cantillo (1998)

Table 4: The Cross-Sectional Impact of Kuhn Loeb Retirement on Firms' Cumulative Abnormal Return CAR_i

Start Date	**9/26/1905**	**9/26/1905**	**9/26/1905**	**9/26/1905**	**9/26/1905**	**9/26/1905**
End Date	**4/30/1906**	**4/30/1906**	**4/30/1906**	**12/31/1905**	**12/31/1905**	**12/31/1905**
Procedure	OLS	OLS	WLS	OLS	OLS	WLS
No. Observations	**70**	**70**	**70**	**70**	**70**	**70**
R^2	**0.4083**	**0.4014**	**0.3413**	**0.3953**	**0.3928**	**0.3421**
Adjusted R^2	**0.3519**	**0.3645**	**0.3007**	**0.3378**	**0.3554**	**0.3016**
Variable	**coefficient (t-stat)**	**coefficient (t-stat)**	**coefficient (t-stat)**	**coefficient (t-stat)**	**coefficient (t-stat)**	**coefficient (t-stat)**
Constant	1.8494	2.8384	-1.4689	8.3153	7.8323	3.5064
	(0.3309)	(0.5531)	(0.3879)	(1.4846)	(1.5181)	(0.9601)
Kuhn Loeb dir. KL	-14.5192	-14.9153	-9.6113	-15.8825	-17.1607	-11.6685
	(-1.9808)	(-2.6415)	(-2.2577)	(-2.1895)	(-3.1610)	(-2.9669)
J.P. Morgan director	-5.7625	-5.5595	-2.2955	-4.6452	-4.8069	-2.9072
	(-1.6785)	(-1.6556)	(-0.7514)	(-1.3663)	(-1.4032)	(-1.0822)
Competitor of KL	-13.3747	-13.8213	-9.3691	-15.2666	-16.5390	-11.3313
	(-1.9922)	(-2.5976)	(-2.3526)	(-2.3123)	(-2.9714)	(-2.9643)
Railroad Client	17.1036	18.4333	17.9693	13.4653	12.8045	13.9732
	(2.0948)	(2.3117)	(2.4305)	(1.8294)	(1.7785)	(2.3920)
Railroad Suppliers	6.0692			-3.0061		
	(0.8467)			(-0.4672)		
U.S. Railroads	0.7086			-2.0683		
	(0.1612)			(-0.4854)		

All t-statistics use heteroskedastic consistent standard errors.