J. Lat. Amer. Stud. **31**, 331–361 Printed in the United Kingdom

Banks and Entrepreneurs in Porfirian Mexico: Inside Exploitation or Sound Business Strategy?*

NOEL MAURER

Abstract. Banks in Porfirian Mexico widely engaged in the practice of making long-term loans to their own directors, a practice known as 'auto-prestamo'. This was neither pernicious nor fraudulent. Rather, Porfirian banks behaved as the financial arms of extended kinship and personal business groups. These groups used banks to raise impersonal capital for their diversified enterprises and give their partnerships a more permanent institutional base. Investors in these banks knew full well that they were investing in the businesses of a particular group and developed sophisticated techniques to monitor bank directors. However, because entry into banking was severely restricted under Porfirian law, the system concentrated economic power in a few hands and contributed to Mexico's oligopolistic industrial structure.

The prevalent view in the historical and social science literature has been that traditional institutions, particularly kinship-based or personalised business practices, have been a major impediment to Latin America's economic growth. Alternatively, however, some scholars have suggested that family ties and personal relationships can compensate for the difficulty of enforcing contracts, for insecurity of property rights, and for lack of organised markets that characterise pre-industrial societies such as Mexico in 1880.[1] Kinship groups and personal networks, however, were not enough on their own to organise and finance the complex economic enterprises – factories, railroads, mines, and plantations – that

Noel Maurer is Profesor Asociado del Departamento Académico de Economía, Instituto Tecnológico Autónomo de México.

* I would like to thank Stephen Haber, Gavin Wright, Avner Greif, Ted Beatty, Joachim Voth, and the anonymous referees of the *Journal of Latin American Studies* for their comments on earlier versions of this paper. Any and all errors are, of course, entirely my own.

[1] See especially the work of Nathaniel H. Leff, 'Industrial Organization and Entrepreneurship in the Developing Countries: The Economic Groups', *Economic Development and Cultural Change*, vol. 26, April 1978; 'Capital Markets and the Less Developed Countries: The Group Principle', in Ronald McKinnon (ed.), *Money and Finance in Economic Growth and Development: Essays in Honor of Edward S. Shaw* (New York, 1976), pp. 97–122, and 'Entrepreneurship and Economic Development: The Problem Revisited', *Journal of Economic Literature*, vol. 17, March 1979, pp. 46–64.

increasingly characterised the Mexican economy after 1880. Tackling these projects required long time-horizons and access to sources of capital beyond individual family networks. For that reason, kinship groups in Porfirian Mexico (1876–1911) moved to establish associated banks as soon as the law permitted.

Banks, if organised along the lines described by Alexander Gerschenkron, could have solved the problem of capital mobilisation.[2] But banks in Porfirian Mexico faced a serious problem: they could not evaluate the credit-worthiness of their borrowers. Scarcity of information, however, was by no means unique to Porfirian Mexico. Indeed, all banks everywhere face the problem of 'information asymmetry', meaning that borrowers have more knowledge about the riskiness of their loans than do lenders. But while all banks face this problem, the way they solve it is a product of a specific social, legal, and economic environment.

Kinship groups in Porfirian Mexico established banks in order to draw long-term and impersonal capital into their entrepreneurial activities. These new bankers reduced the costs of asymmetric information in the 1880s–1900s in exactly the same way that American bankers did in the 1830s–1860s: they lent other people's money to themselves. Banks adopted a strategy of making long-term loans to individuals and firms associated with their directors – 'insider lending' – in response to the scarcity of information that characterised the Porfiriato. Both contemporary and modern observers have decried this as an example of a pre-modern business mentality that held back Mexican development – or an outright fraud perpetuated on the Mexican people by the Porfirian financial elite. But it was in fact a rational solution to the information asymmetries inherent to the banking business congruent with the social customs and legal institutions of 19th-century Mexico.

The practice of '*auto-préstamo*' or 'insider lending' was widely recognised at the time, and became a focal point of attacks by critics of the Porfirian system. A contemporary observer accused the banks of the following: 'Loans...were primarily granted to their own shareholders, who were often the most important merchants, landowners, and industrialists...without much considering...the real chances of collecting the loan'. Antonio Manero, an important post-revolutionary figure in the Finance Secretariat, wrote, 'Scarcely after opening their doors, the banks'

[2] Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge, 1962). Banks as described by Gerschenkron raised impersonal capital for industrial finance and putatively established long-term relationships with their borrowing firms, promoting more efficient and stronger investment. Recent research, however, has questioned the benefits provided by these relationships in Germany. See Caroline Fohlin, 'Relationship Banking, Liquidity, and Investment in the German Industrialisation' (Mimeo, 1998).

capital would disappear into loans for their own functionaries'. Ernesto Lobato López, an economist writing in 1944, called insider lending 'an unscrupulous way to use individual bank deposits for the personal benefit of the banks' managerial cliques'.[3] One particularly incensed critic, writing after the Revolution, alleged that the practice completely negated any economic good the banks might have done: 'The concessions were exploited for the exclusive benefit of the concessionaires, since the credits were granted to board members and friends, leaving industry, commerce and agriculture in the same precarious position as before'.[4]

This article argues that these negative interpretations of Porfirian insider lending are incorrect. Banks served as 'engines of economic development', not merely *in spite* of insider lending, but actually *because* of it. They served as the means by which kinship networks channelled impersonal capital into their businesses, via soliciting deposits in their region of operation and selling bank equity in Mexico City and overseas. Lending your own money to yourself is pointless; lending other people's money to yourself can be profitable.

While profitable, insider lending was not fraudulent: investors in bank stock knew of its prevalence, and knew that they were really buying shares in the diversified business interests of the members of the board of directors, and they developed remarkably sophisticated mechanisms to monitor the directors' activity. In other words, Porfirian banks reduced transaction costs by transforming the problem of information asymmetry from one between directors and borrowers to one between shareholders and directors, thereby lowering monitoring costs. Porfirian banks' entire *raison-d'être* was to attract outside capital into their owners' business networks, and both parties to the transaction were aware of its nature.

This article also musters evidence that Mexican banks competed with one another whenever the law allowed. This was despite the presence of interlocking directorates, whose nature has been misinterpreted by the existing literature.[5] Shareholders appointed 'outside' directors from other banks to the boards of their own banks, in order to reassure them that the 'inside' directors were investing their money responsibly and wisely. This was a necessary mechanism in a market characterised by insider lending, since the shareholders and 'inside' directors of a bank did not necessarily share the same interests. Selling stock far and wide was, after all, the entire

[3] José Antonio Bátiz Vázquez and Enrique Canudos Sandoval, 'Aspectos Financieros y Monetarios (1880–1910)', in Ciro Cardoso (ed.), *México en el siglo XIX, 1821–1910: Historia económica y de la estructura social* (Mexico City, 1980), p. 433.

[4] *Boletín Financiero y Minero*, 21 April 1921.

[5] See Mark Wasserman, *Capitalists, Caciques, and Revolution: The Native Elite and Foreign Enterprise in Chihuahua, Mexico, 1854–1911* (Chapel Hill, 1984).

point of founding a bank, and bank stock was indeed held relatively widely. Thus interlocking directorates in Porfirian Mexico should not be equalled with cartelisation of the credit system.

These and other techniques for monitoring the activities of the directors were both sophisticated and successful. Despite the prevalence of insider lending the Porfirian banking system was remarkably stable. There was only a single bank failure resulting in losses to depositors over the entire period, and the Mexican public proved remarkably willing to entrust their deposits to, and hold the banknote issues of, the banks. This confidence in the system ran both ways, of course: Porfirian bank directors accepted deposits with little fear of bank runs or panics. In fact, Porfirian banks were highly leveraged, compared to their American equivalents of thirty years earlier.

In short, there was nothing pernicious about insider lending in and of itself. What was pernicious was that few individuals or groups could participate in it, because of legal restrictions that made founding a bank difficult and offered the existing banks a limited degree of protection from competition with each other.[6] This article, however, focuses on the individual banks and their lending policies, which were both rational in their intentions and economically positive in their effects.

Commercial banking practice in the Porfiriato

Banks in Porfirian Mexico extended credit in three ways: by discounting commercial paper, by opening 'credits in the current account' (rotating credit lines), and through loans guaranteed with real property or marketable securities.[7]

Discounting commercial paper in Porfirian Mexico worked as follows: a businessman would present a note, but rather than discounting it he would receive a loan for its face value, leaving the note on deposit at the bank. Often the presenter pre-paid the interest, and allowed the bank to collect the note rather than paying off the loan. On the surface, the transaction was different from that in the USA; in practice, it was

[6] On the effects of limited banking competition on Mexico's industrial structure, see Stephen Haber, 'Financial Markets and Industrial Development: A Comparative Study of Governmental Regulation, Financial Innovation, and Industrial Structure in Brazil and Mexico, 1840–1930', in Stephen Haber (ed.), *How Latin America Fell Behind* (Stanford, 1997), pp. 146–78. For a discussion of the effects of Porfirian banking regulation on the overall efficiency of the banking system, see Noel Maurer, 'The Banco Nacional and the Local Banks in Porfirian Mexico', presented at the Colegio de México and Centro de Investigación y Dociencias Económicas in January and February 1998. The article is currently in the review process at the *Revista de Historia Económica*.

[7] Walter Flavius McCaleb, *Present and Past Banking in Mexico* (New York, 1920), p. 139 and Charles Conant, *The Banking System of Mexico* (Washington, D.C., 1910), pp. 47–48.

identical. The banks recognised this, listing the notes held in trust as 'discounted documents' on their balance sheets, rather than 'collateralised loans'. Collateralised loans were backed by cash deposits or marketable securities unrelated to the underlying transaction.[8]

Under the guise of being short-term self-liquidating paper discounts financed quite long-term investments. A client would deposit a note for a simple, often fictitious, transaction, signed by two prominent business people willing to guarantee the debt. Legally, notes had to be signed by two 'reputable' parties, but they did not have to be participants in the transaction. The bank would then advance a set sum on the note. Rather than collect the note at the end of the period, or demand repayment from the borrower, the bank would simply reauthorise the credit for another six months and collect interest. By 1907 the practice was so common that the Banco Nacional de México (Banamex) saw fit to specify in loan contracts when credits would not be renewed after six months.[9]

In the USA, advances of this type were called 'accommodation loans'.[10] In Mexico, they were called 'atavistic' and 'incorrigible'.[11] It is hard to estimate which percentage of discounts financed real transactions and which were accommodation loans. One technique is to look for discounts denominated in round numbers, on the presumption that actual commercial transactions would be far more likely to be in odd amounts.[12] On that basis, only 18 per cent of Banamex discounts in 1898–1903 represented real transactions: the rest was probably accommodation paper. The percentage of odd-numbered paper rose slightly in 1903–7, but only to 21 per cent.[13]

Since reputation was everything in the business world of Porfirian Mexico, no businessman would risk his 'good name' on risky paper. Porfirian Mexico was not modern California: business failures created stigmas that were extremely difficult to remove. This was not irrational Mexican anti-entrepreneurialism. Rather, it was a rational response to the constraints under which businesspeople operated. Mexico lacked thorough disclosure laws. Even registered companies regularly flouted the requirement that they publish balance sheets. This meant that information was a scarce and very valuable commodity. In the absence of more intimate contacts, reputation was everything.

[8] Conant, *The Banking System of Mexico*, pp. 47–48.

[9] Ordinary session, *Actas de Consejo*, vol. 7, 21 May 1907, Archivo Histórico del Banco Nacional de México (hereafter AHBNM).

[10] Lamoreaux, *Insider Lending*, p. 2.

[11] *Boletín Financiero y Minero*, 30 March 1921.

[12] Lamoreaux, *Insider Lending*, p. 3.

[13] *Vales descontados en la cuenta corriente*, *del año de 1898 a año de 1903*, AHBNM, and *Vales descontados en la cuenta corriente*, *Libro A*, *No. 1*, *1903–1907*, AHBNM.

New England banks of the early 19th-Century had found a simple way around similar constraints: they lent to themselves. How better to overcome information asymmetries? When a bank's customer is also a director, there are no uncertainties: you know how good a credit risk you are. Bankers routinely funnelled most of their lending to 'themselves, their relatives, or others with personal ties to the board'.[14] Investors purchasing bank stock knew that they were buying stock in a network of businesses arrayed around that particular bank's directors. By forming a bank, a network of (often related) entrepreneurs gained access to outside sources of capital, first their partners, then investors in the Boston exchange, and later depositors. In this way, New England's entrepreneurs superseded the limits of family-based businesses, and banks solved information problems by essentially eliminating them.[15]

Banks in Porfirian Mexico faced information problems even more severe than those in early 19th-century New England. However, Mexico's banks did not initially confine themselves to insider lending. Rather, they turned to it after several unpleasant experiences with outside loans. These experiences were unpleasant precisely because the banks lacked the means adequately to judge the risks involved.

Banamex provides an excellent example. In 1884, the year of its creation, it opened a 200,000 peso renewable credit line at eight per cent to a textile factory in Querétaro, the Hercules mill, for investments in plant and machinery. As security, Banamex demanded that Hercules keep on hand Mx$250,000 of cloth 'at current market prices', the warehousing costs to be borne by the company. This raised Hercules' effective interest rate. A high estimate of the 'real' cost of the loan is 18 per cent, including the opportunity cost (calculated as eight per cent of Mx$250,000 over the value of the loan) of keeping a valuable resource sitting in a warehouse. Of course, the company would keep some cloth on hand anyway, so the actual interest rate was between eight per cent and 18 per cent. Nevertheless, the security requirement substantially added to the cost of the loan.[16]

The bank's directors should have wondered why the owner accepted their funds under such onerous terms, for they fell victim to 'adverse selection': at high interests rates, only the worst risks will borrow. Hercules fell so far behind on its debts that Banamex had to send over an 'interventor' to supervise its management. In 1887 it unloaded a portion of the debt onto a New York trading house for only 65 per cent of its face value. Unfortunately, Hercules continued to miss interest payments, and

[14] Lamoreaux, *Insider Lending*, p. 4. [15] Lamoreaux, *Insider Lending*, p. 4–5.
[16] Ordinary session, *Actas de Consejo*, vol. 1, 17 September 1884, AHBNM.

Banamex eventually took over the entire operation, integrating it into the Compañía Industrial Manufacturera (CIMSA), majority-owned by Banamex shareholders.[17]

Afterwards, Banamex began heavily involving itself in the day-to-day operations of its outside borrowers. Banamex lent a cashmere factory in Guanajuato Mx$78,975 on the condition that it accept one of its own correspondents as manager.[18] Unfortunately, the new manager discovered the factory to be in such bad condition that Banamex was eventually forced to take ownership of it in a consortium with other creditors. After investing an additional 50,000 pesos, the board discussed selling its share, but that would have meant accepting a huge loss in the factory's poor state.[19] Banamex eventually wrote-off Mx$7,737 of the debt and reduced the rate on the remainder to a below-market six per cent.[20]

Banamex repeatedly lacked the means adequately to judge the riskiness of outside loans. In 1886 Mariano Robles, the owner of a mine and metal refinery in Guanajuato, failed to make his monthly loan payment of Mx$10,600. Banamex sent an interventor, and discovered the market value of the inventory was only 60 per cent of what Robles had claimed. After 'knowledgeable people' reassured the bank that there was no reason that the refinery should not be able to turn a profit, the bank asked Robles to sell out to a colleague with whom several Banamex board members had personal dealings. He refused, not wanting 'to appear to be taking advantage of his partner's bad situation'. Banamex then turned to one of its shareholders, Ramón Alcázar. Alcázar also refused, although he agreed to buy 20,000 pesos of Robles's outstanding debt at a 20 per cent discount and purchase the mining part of the operation for only Mx$21,000. Lacking options, Banamex agreed.[21]

These experiences soured Banamex on outside loans. The rest of the credits authorised in 1886 went to insiders, governments, or businesses guaranteed by the federal government. CIMSA, owned by the bank and several of its shareholders, received a credit of Mx$500,000.[22] Juan Llamedo, a shareholder, borrowed Mx$160,000, despite ongoing credit problems.[23] Substantial credits went to businesses owned by Banamex

[17] Ordinary sessions, *Actas de Consejo*, vol. 2, 17 March 1885, and vol. 3, 21 June 1887, 23 October 1888, and 12 March 1889, AHBNM.
[18] Ordinary sessions, *Actas de Consejo*, vol. 1, 30 September 1884, AHBNM.
[19] Ordinary sessions, *Actas de Consejo*, vol. 2, 13 October 1885, AHBNM.
[20] Ordinary sessions, *Actas de Consejo*, vol. 3, 19 October 1886, AHBNM. Banamex may have been taken for a ride by De la Fuente, who recommended the loan, accepted the bank's commission as manager, and wound up with a 20 per cent interest in a factory in which Banamex had invested 57,737 pesos.
[21] Ordinary session, *Actas de Consejo*, vol. 2, 20 April 1886, AHBNM.
[22] Ordinary session, *Actas de Consejo*, vol. 3, 9 November 1886, AHBNM.
[23] Ordinary session, *Actas de Consejo*, vol. 3, 26 January 1886, AHBNM.

employees or shareholders.[24] Three substantial credits went to railroads and port companies whose debts were guaranteed by the federal government.[25] No large, long-term credits went to outsiders without a government guarantee until 1893; and in that case Banamex owned 130 shares of the borrower.[26] Banamex made no large outside loans until 1901.[27]

The 1901 loan demonstrated that Banamex was not alone in practicing insider lending. Half of the loan was a rediscount of paper presented by the Banco Oriental, based in Puebla, at a below-market interest rate of six per cent.[28] Several of Banamex's directors had doubts about the loan, fearing the Oriental might use it as an opportunity to unload its bad debts. However, Antonio Basagoiti, a prominent Banamex shareholder, assured his colleagues that 'the paper the Banco Oriental would send us would be primarily signed by firms involved in [the cotton textile] industry'.[29] The remainder – this time at the prevailing market rates – went directly to several prominent Puebla 'houses', which owned both the Oriental and the most important Puebla textile enterprises. Basagoiti explained to the board that the Oriental was the centrepiece of these families' industrial network in the state of Puebla, and that a loan to the Oriental was, in essence, an investment in Puebla textile manufacture.[30]

Banamex already participated in the textile industry to some extent. It lent heavily and long-term to CIMSA, and provided working capital to the Compañía Industrial de Atlixco cotton textile mill (CIASA) in Puebla. These were insider loans. Banamex owned part of CIMSA; the rest was held by Banamex shareholders. CIASA was connected to Banamex through two of its three board members and chief partners: Luis Barroso Arias, a prominent Banamex board member, and Agustín Garcín, who owned extensive interests in CIASA, CIMSA, and Banamex.[31]

[24] Ordinary session, *Actas de Consejo*, vol. 3, 31 August 1886, AHBNM.
[25] Extraordinary sessions, *Actas de Consejo*, vol. 3, 18 February 1886 and 15 October 1886, AHBNM, and ordinary session, *Actas de Consejo*, vol. 3, 2 March 1886, AHBNM.
[26] Ordinary session, *Actas de Consejo*, vol. 4, 13 December 1893, AHBNM.
[27] Ordinary session, *Actas de Consejo*, vol. 5, 26 November 1901 and 3 December 1901, AHBNM.
[28] According to the *Economista Mexicano*, the retail interest rate on secured loans in Mexico City was seven per cent in November 1901. Rates edged upwards to 7.5 per cent in December. The Banco Oriental later established branches in Tlaxcala, Guerrero, Oaxaca, and Chiapas, and merged with the Banco de Oaxaca and Banco de Chiapas in 1908.
[29] Ordinary session, *Actas de Consejo*, vol. 5, 26 November 1901, AHBNM.
[30] Ordinary session, *Actas de Consejo*, vol. 5, 3 December 1901, AHBNM.
[31] Leticia Gamboa Ojeda, *Los empresarios de ayer: el grupo dominante en la industria textil de Puebla, 1906–1929* (Puebla, 1985), p. 10. CIASA also possessed direct ties with the Banco Central and its subsidiary, the Compañía Bancaria para Obras y Bienes Raices, through the third partner Fernando Pimentel y Fagoaga.

Outside of the firms connected to Banamex, the Oriental dominated the Puebla textile industry. Its board members make up a list of the most important names in Puebla textiles: Hidalga, Villar, Sánchez Gavito, Díaz Rubín, and Conde.[32] These families also invested in telephone companies, bakeries, cement plants, mines, and electricity distribution.[33]

This is not to make any grandiose claims about the existence of a small group of conspiring capitalists during the Porfiriato. Banamex's loan to the Oriental was a reasonable investment in a diversified industrial group, even though it competed with some of its other interests. From the point of view of the Puebla textile magnates, the Banamex loan was a sign of the success of their strategy of using the Oriental to attract capital from outside the group.[34]

Essentially, the Oriental gave the inter-family partnerships of Puebla 'a life independent of their constituent economic units'.[35] The Oriental allowed them to tap Mexico City capital markets. By selling stock in the bank and not the manufacturing enterprises, the directors could bring in outside capital while retaining control of their operations. The bank also allowed them to leverage their resources though the issuance of banknotes, or paper money guaranteed by the bank's reserves of specie, and let them tap local *hacendados* by soliciting deposits.

Banks also allowed collaborations between family-based groups to outlast the individual partnerships. Before banks, all accounts had to be settled and creditors paid off when partnerships dissolved. This imposed serious costs: if the partners were not sufficiently liquid, an otherwise successful enterprise could collapse. Similarly, if the partnership had invested heavily in tangible but illiquid assets, an unforeseen event affecting one member, like a death or bankruptcy, could force fire sales and heavy losses. Ownership in a bank smoothed these breakups and reformations by providing credit to partners when needed, allowing notes to substitute for real assets.[36]

[32] List of board members from *Boletín Financiero y Minero*, 3 March 1903. The names of prominent Poblano capitalists is from Gamboa, *Los empresarios de ayer*.

[33] Gamboa, *Los empresarios de ayer*, pp. 204–11.

[34] Only the Oriental received the low interest rate; when Banamex made a similar loan to the bank's owners directly, it charged market rates. There were two reasons for this. First, the bank was more liquid than the enterprises it financed, and second, the bank had to publish balance sheets on a monthly basis and submit to federal oversight. According to unpublished work by Leticia Gamboa Ojeda, discussed with the author, the Banco Oriental charged its inside debtors a six per cent interest rate identical to rate charged to it by Banamex. This indicates that the Oriental, as a corporate entity, gained little or nothing from the rediscount: the benefits went to the inside firms that received and invested the capital.

[35] The quote is from Lamoreaux, *Insider Lending*, pp. 26–27.

[36] See Lamoreaux, *Insider Lending*, pp. 26–27, for a discussion of how this worked in nineteenth-century New England.

Quijano y Rivero y Compañía, formed in 1900 to establish the La Esperanza cotton textile factory, demonstrates these advantages. The Compañía was, in fact, a partnership of partnerships: the 'socios' were the original José Antonio Quijano and Manuel Rivero Collada partnership of Puebla, the Mowatt y Grandison Hijos partnership of Oaxaca, and Francisco M. Conde. They invested Mx$153,000 in the venture. Within six years, that investment had leveraged Mx$429,731 pesos in net borrowing, which financed the purchase of assets valued at Mx$508,741.[37]

Nevertheless, the business was not successful, and in 1906 the partnership dissolved after four years of losses. Ownership of the La Esperanza factory passed to Quijano and Rivero, who now owed the other two partners Mx$52,674. Rather than sell off ten per cent of the firm's assets to pay off their partners, they financed their takeover through paper discounted at the Oriental – of which Rivero was president. They then re-equipped the factory, and it achieved profitability by 1910.[38] Had they lacked recourse to the Oriental, it is likely that the factory would have been broken up upon the partnership's dissolution in 1906. Actually, it would probably never have been founded, since the partners would have been unlikely to invest 153,000 pesos in a textile venture – let alone 582,731 – without the assurance that they could easily get out.

Other family networks operated similarly. The Banco Mercantil de Veracruz (BMV), served as the financial arm of the Zaldo family. At its founding, the Zaldos directly controlled 81.2 per cent of BMV stock.[39] The intention, however, was to use the bank to bring outside capital into the family's mercantile, industrial, and agricultural enterprises. To that end, the Zaldos used their connections with Antonio Basagoiti, who owned stock in the Banco Hispano–Americano of Madrid.[40] The Hispano–Americano arranged to list BMV shares on the Madrid exchange.[41] By 1906, when BMV received federal permission to issue 10,000 new shares on the Mexico City Bolsa, the Zaldos' interest in the bank had fallen to 30.5 per cent.[42] Presumably, their share fell even further

[37] Note that much of this financing came from Banamex, as well as the Banco Oriental. By this time the textile magnates had acquired enough credibility to attract loans directly from outside institutions, and not just through the Oriental. Ordinary session, *Actas de Consejo*, vol. 5, 3 December 1901, AHBNM and Leticia Gamboa Ojeda and Rosalina Estrada, *Empresas y empresarios textiles de Puebla: análisis de dos casos* (Puebla, 1986), pp. 25–27.

[38] Gamboa and Estrada, *Empresas y empresarios textiles de Puebla*, pp. 25–27.

[39] *Libro de Actas del Banco Mercantil de Veracruz* vol. 0, 26 October 1897, Archivo General de la Nación (hereafter AGN).

[40] *R. G. Dunn Libro de Crédito 1900–05*, no. 167, 8 January 1902, AHBNM.

[41] *Libro de Actas del Banco Mercantil de Veracruz*, vol. 1, 27 September 1901, AGN.

[42] *Libro de Actas del Banco Mercantil de Veracruz*, vol. 2, 8 May 1906, 16 June 1906, and 11 July 1906, AGN.

after that. Essentially, the Zaldos paid-in the capital needed to obtain the bank charter. They then lent the money to themselves. Subsequently, they sold their shares to third parties at a markup. Between 1898 and 1906, BMV enabled the Zaldos to attract between Mx$571,896 and Mx$1,875,900 into their family enterprises.[43] In this way, the Zaldos attracted capital from outside their network, outside Veracruz, and as far away as Spain.[44]

Among their other interests, the Zaldos financed La Tabacelera Mexicana, Mexico's second largest cigarette manufacturer. The Tabacelera was a partnership formed in 1899 by the Zaldos, Antonio Basagoiti, and the firms of Solana Barreneche y Compañía and Martínez y Compañía.[45] The Tabacelera controlled approximately twelve per cent of Mexico's cigarette market.[46] BMV financed the Zaldos' equity state, and loaned an additional 200 to 300 thousand pesos to the company by 1904, secured by the partners' personal signatures, thereby allowing the partners to tap the Mexico City capital market without risking their control of the enterprise.[47] The Tabacalera did not go public until 1907.

Family groups in northern Mexico followed similar strategies. The Banco de Nuevo León (BNL) began operations in 1892. Evaristo Madero owned 43 per cent of the initial shares. His son-in-law, Viviano Villarreal, served as BNL's president until 1911, while its first manager was his brother-in-law. Its second manager was his son, Ernesto.[48] BNL was the

[43] These figures were calculated in the following way. The Zaldos sold off 10,140 BMV shares between 1898 and 1906. They initially paid in Mx$50 for each share, which had a par value of Mx$100. By 1900 the shares were fully paid-in, and trading for Mx$130 on the Mexico City bolsa. The highest price BMV stock ever commanded was Mx$185 in September 1905. The low estimate assumes that 12.8 per cent of the BMV's initial loans went to the Zaldo family, as indicated by an accounting of the entries for the bank's first two years of operation (1898–99) in the *Libro de Archivo del Banco Mercantil de Veracruz*, catalog number 1.7.5, AGN, and that the family then sold the shares for Mx$100 each. A minimum estimate for outside capital inflows to the group, therefore, is 0.128*Mx$50*10,140 + Mx$50*10,140 = Mx$571,896. The maximum estimate assumes that *all* the initial loans went to the Zaldos (through partnership with the nominal borrowers), and that they sold their stock for Mx$185, or 10,140*Mx$185 = Mx$1,875,900.

These estimates represent only the equity capital channelled to the Zaldo family through BMV. They do not represent seigniorage gains (the benefits accruing to the Zaldo family group from the ability to issue currency) or later resources channelled to the group from deposits in the bank.

[44] *R. G. Dunn Libro de Crédito 1900–05*, no. 258, 30 January 1904, AHBNM.

[45] The Martínez family was involved in the BMV and borrowed heavily. See the *Libro de cuentas corrientes préstamos*, 5 March 1906–3 April 1909, gal. 2, AGN.

[46] Stephen Haber, *Industry and Underdevelopment: The Industrialization of Mexico, 1890–1940* (Stanford, 1989), p. 100.

[47] *R. G. Dunn Libro de Crédito 1900–5*, no. 258, 30 January 1904, AHBNM.

[48] Mario Cerutti, *Burguesía, capitales e industria en el norte de México: Monterrey y su ámbito regional*, (Monterrey, 1992), pp. 221–22.

fulcrum used by the Maderos to leverage their holdings of two Coahuila cotton plantations and a textile mill into a vast and diversified business network.[49]

First, the bank allowed Evaristo Madero to pool his family's resources with two other kinship groups: Francisco Armendaiz and Adolfo Zambrano sat on the BNL board of directors.[50] The Zambranos ran mercantile operations in Nuevo León and Coahuila, in association with Reinaldo Bernadi.[51] Francisco Armendaiz was a trader, and his son controlled almost 90,000 hectares of arable land in Durango.[52]

Secondly, BNL allowed them to tap the Mexico City exchange. When BNL began operations in 1892, only half its capital was paid-in: that is to say, the Maderos, Armendaizes, and Zambranos had only invested Mx$300,000 in the bank. When they sold shares on the stock exchange they could then 'call in' up to 50 pesos per share from the new owners. The actual capital inflow to the three family networks would be greater, of course, depending on how many of the BNL's loans and discounts went to family-owned enterprises, and on how far above par the shares sold for.[53] Just as with the Zaldos and the BMV, the families running BNL used the bank to bring in capital from outside. By 1901, the share of BNL owned by the Maderos had fallen to 7.1 per cent. The market value of those shares was Mx$36,000 *less* than their personal indebtedness to the bank, not including the direct borrowings of their companies.[54]

Thirdly, BNL enabled its owners to benefit from seigniorage. Its charter permitted it to issue banknotes that freely circulated within the states of Tamaulipas, Nuevo León, and Coahuila.[55] That meant that for every peso invested or deposited in BNL, it could make three pesos worth of loans.[56] Since federal law denied merchant money-lenders operating in Nuevo León the right to issue such notes, this charter gave BNL's owners the exclusive ability to benefit from seignoirage.

The business empire the BNL's founders proceeded to build was impressive for both its depth and breadth. By 1905, Adolfo Zambrano owned stock in, or sat on the boards of, 32 different companies. Some 23

[49] Cerutti, *Burguesía, capitales e industria*, pp. 100–1.
[50] *Economista Mexicano*, 15 October 1892.
[51] Cerutti, *Burguesía, capitales e industria*, pp. 99–100. Berardi also served on the BNL's board, *Economista Mexicano*, 15 October 1892.
[52] Cerutti, *Burguesía, capitales e industria*, p. 162.
[53] By December 1901, BNL shares traded for Mx$147.50, Mx$47.50 above par.
[54] *R. G. Dunn Libro de Crédito 1900–05*, nos. 39–40, 31 December 1901 and 25 June 1903, AHBNM.
[55] After the 1900 establishment of the Banco Central, these notes circulated nationally.
[56] The only reason it had to stop there was its charter. Without that, the only limit on BNL's note issues would be the willingness of *regiomontanos* to believe that these fancily-engraved pieces of paper were really money. Banamex and the BNL were the only two banks able to issue notes up to three times their specie reserves: other banks were limited to twice.

of these were in mining, but they also included a book printer, a steelmaker, a glass bottle factory, and several textile mills.[57] Madero family members sat on the boards of 30 mining companies, two ore refineries, Fundidora Monterrey, a public bathhouse, and a theatre.[58] In addition, the Zambranos and Maderos sat on the boards of a brickmaker, a mechanised flour mill, a cardboard factory, a soap manufacturer, and a sugar refinery.[59] In short, they built a huge industrial empire arrayed around BNL. Very few of these companies ever went public. Rather, control was tightly kept within the group, and financing came from BNL loans to the companies or their directors.

Many scholars, limiting their investigations to an examination of bank shareholder lists, have misinterpreted the nature of industrial financing and inter-family cooperation during the Porfiriato.[60] Industrial companies were quite tightly held. Initial financing came from personal loans to bank directors, usually in the form of notes discounted by the bank, which were used to pay-in part of the firm's listed capital. Bank stock, however, was held relatively widely. In fact, selling stock far and wide, was the entire point of founding a bank. In order to satisfy the 'outside' shareholders in the group's bank, 'inside' companies distributed token amounts of shares to members of other family groups, and nominated outsiders to the boards of inside companies. The purpose was to reassure the bank's outside shareholders that their money would be used responsibly.[61] Eventually successful companies with good reputations, would seek outside finance, either by listing on the stock market (like Tabacalera Mexicana) or by applying for loans at other banks. Outside board members offered a necessary 'good housekeeping seal of approval'. This did not represent collusive behaviour.

The Compañía Industrial e Parras, S.A. (CIPSA), a textile mill in Coahuila, provides an example. Evaristo Madero, his sons, and his son-in-law owned all but a few small shares, which they distributed 'with the aim of completing the Board of Directors' in order to provide credibility. Outsiders sat on the board, but owned only a minuscule stake. The paid-in capital was financed by discounted two-signature notes signed by the principals. CIPSA then bought a controlling (38 per cent) interest in the Compañía Industrial del Norte textile plant, financed by borrowing, as a precursor to borrowing funds from Banamex's Monterrey office at better rates than BNL could offer.[62]

When Porfirian banks made long-term loans to companies, they

[57] Cerutti, *Burguesía, capitales e industria*, p. 227.
[58] Cerutti, *Burguesía, capitales e industria*, pp. 229–31 and p. 235.
[59] Cerutti, *Burguesía, capitales e industria*, pp. 233–35.
[60] See in particular Haber, *Industry and Underdevelopment*.
[61] *R. G. Dunn Libro de Crédito 1900–05*, no. 79, 24 January 1904, AHBNM.
[62] *R. G. Dunn Libro de Crédito 1900–05*, no. 79, 24 January 1904, AHBNM.

preferred to lend to their directors as individuals, who then used the funds to finance their particular businesses. When they lent directly to companies, they demanded personal guarantees from the managers. Again, the reason was informational: the banks did not trust lending to anonymously owned companies. 'It cannot be forgotten', wrote a prominent banker, 'that the patrimony of a corporation is exclusively real, and that neither the partners nor the administrators… have any personal responsibility'.[63] For example, in 1894 Banamex lent Mx$500,000 to a cotton-growing enterprise in Coahuila. The bank mortgaged the company's lands, but it also required its directors to assume personal responsibility for the loan.[64]

Another example two years later was Banamex's half-million peso loan to Gabriel Mancera, a board member. Mancera used the money to finance improvements and extensions for the Ferrocarril Hidalgo y Noroeste, and the loans were backed by mortgages on the company's property. However, these loans were made to Mancera personally, although they could have been made to the railroad. After all, they were backed by railroad property. But from Banamex's point of view the Hidalgo y Noroeste was nothing more than a group of unknown individuals, while Gabriel Mancera was a trusted associate.[65] In another example, Banamex lent CIASA Mx$300,000 in 1905 on the personal guarantee of its board members, also Banamex insiders.[66]

Banamex's ledgers are filled with loans made to limited-liability companies on the basis of their Banamex-connected directors' personal guarantees. When the bank began making loans to outside companies, it offered a variety of terms, depending on how much responsibility the borrower's managers were willing to assume. In 1905, when the Oriental requested a Mx$400,000 credit line from Banamex, Banamex agreed, in principle. But it offered the following terms: eight per cent with liquid collateral, 8.5 per cent with the personal guarantees of the Oriental's board, and nine per cent with just the bank's corporate signature. The personal reputations of the directors were worth a full 0.5 per cent.[67]

The Oriental loan of 1905 also illustrates another reason why banks rarely lent directly to corporations without personal guarantees: corporations lacked liquid collateral. Banks freely financed companies' working capital. That involved self-liquidating paper backed by tangible

[63] *Economista Mexicano*, 12 January 1901. Interestingly enough, the author went on to denounce insider lending. That part of his argument was not as influential.

[64] Ordinary session, *Actas de Consejo*, vol. 4, 15 October 1894, AHBNM. Saturnino Sauto, Juan Llamedo, and Fermín Zubiaur were all Banamex insiders.

[65] Ordinary session, *Actas de Consejo*, vol. 5, 25 November 1896, AHBNM.

[66] Ordinary session, *Actas de Consejo*, vol. 6, 10 March 1905, AHBNM.

[67] Ordinary session, *Actas de Consejo*, vol. 6, 28 November 1905, AHBNM.

and salable goods. Long-term loans were different: they could only be secured by risky and illiquid mortgages of company property. But even if the proceeds financed real investment, a personal loan to a shareholder in a company could be guaranteed by liquid shares in the firm. When companies received funds directly for long-term investment, it was because they could pledge shares in themselves or other reputable corporations as collateral. For example, the Peñoles mine borrowed Mx$400,000 in 1904, based on 267 shares of itself, valued at Mx$1500 per share.[68] In essence, this method of lending reduced the transaction costs involved in repossessing a corporate borrower's property.

Lending remained remarkably personalised throughout the Porfiriato. Few companies had enough of a reputation to borrow substantial sums directly. This has led several studies of Porfirian industry to underestimate the involvement of banks and debt finance in industrial start-ups. For example, the Banco de Londres y México (BLM) lent directly to the partnership of Lambert y Compañía, which included BLM board members, which then invested Mx$200,000 in the Compañía Eléctrica e Irrigadora de Hidalgo. The Eléctrica, however, rarely possessed direct debt balances of more than Mx$30,000, on assets with a book value over two million pesos.[69]

The short payback times demanded by the banks on their corporate loans have contributed to this misunderstanding, since most studies, particularly Haber's seminal work, used data from the companies' later years. The Compañía Industrial de San Ildefonso, S.A., (CISISA) provides an example. Ernest Pugibet founded this woollen-textile company in 1896, in partnership with León Signoret.[70] CISISA was financed by 600,000 in dollar-denominated debt issued by BLM,[71] on whose board of directors Signoret served.[72] Half this debt came due in 1902, and the company decided not to pay dividends for several years until it had paid off the rest.[73] By 1906 its outstanding debt had been reduced to Mx$60,386, a bare 2.4 per cent of its assets, but much of the initial capital came from loans.[74] Since it is probable that Signoret and company borrowed from BLM much of the capital they personally invested in the enterprise, CISISA's real reliance on borrowed funds for its origin was even greater.

[68] Ordinary session, *Actas de Consejo*, vol. 6, 31 May 1904, AHBNM.
[69] *R. G. Dunn Libro de Crédito 1900–05*, nos. 98 and 99, 21 June 1901 and 5 November 1902, AHBNM.
[70] *Haber*, *Industry and Underdevelopment*, pp. 74–75, and p. 95.
[71] *R. G. Dunn Libro de Crédito 1900–05*, no. 215, 26 March 1904, AHBNM.
[72] Haber, *Industry and Underdevelopment*, p. 74.
[73] *R. G. Dunn Libro de Crédito 1900–05*, no. 215, 26 March 1904, AHBNM.
[74] Balance sheet published in *Boletín Financiero y Minero*.

Another example of the rapid payback demanded on start-up loans is the Compañía Mexicana de Cal Hidraulica, Cemento, y Materiales de Construcción. Three partners with ties to Banamex, Ignacio de la Torre y Mier, Faustino Martínez, and Gónzalo de la Murga organised the company in 1898. Hugo Scherer, a Banamex director and owner of a private banking company, invested the following year. The partners set the company's capital at Mx$500,000. They only paid-in Mx$50,000 during the first year, but the company spent more than Mx$200,000 buying limestone fields and cement ovens, the difference coming from short-term loans. Within four years, by 1902, all the capital was paid-in, and the loans on the company's books were retired.[75]

This section has argued that the personal nature of bank lending was a reasonable response to information asymmetry, and not a sign of an overly personalistic business culture. In fact banks, outside credit agencies, and the government, tried ways to overcome these uncertainties and place lending on a more 'scientific' basis. This represented a serious attempt to capture the returns from an ability to judge the risks posed by outside borrowers.

Attempts to overcome information uncertainties: Government guarantees

Government subsidies or guarantees are one way to overcome information asymmetries. The Porfirian federal authorities used these tools to promote projects that they considered necessary for national security and economic growth, but feared would not be sufficiently funded by the private sector on its own. The railroads provide an example of how government policies were used to overcome information asymmetries and promote investments that might otherwise not have occurred.

The Porfirian government prioritised the creation of a national transport network. Poor transportation impaired Mexico's economic prosperity and threatened its political unity. When Porfirio Díaz came to power, only half of the federally-maintained roads were even suitable for beasts of burden. The entire country, without good waterways, had only 400 miles of railway, of which a sixth used mules rather than steam engines to pull the trains.[76]

Unfortunately, market forces were unlikely to muster the necessary capital by themselves. The problem was that the information asymmetries involved in railroad construction were so large that no private investor

[75] *R. G. Dunn Libro de Crédito 1900–05*, no. 23, 17 July 1899 and 30 October 1902, AHBNM.

[76] John Coatsworth, *Growth Against Development: The Economic Impact of Railroads in Porfirian Mexico* (DeKalb, Illinois, 1981), p. 35.

would invest in them without federal subsidies or guarantees. Railroads involved a huge amount of sunk capital, required long time-horizons, and demanded detailed knowledge of the local terrain, economy, and prospects for future growth. They also required a great deal of specialised engineering and management skills, and in addition, depended upon continued political stability and favourable economic policies: two issues about which the Porfirian government possessed far more information than private investors.

The federal government was in no position to finance railway construction directly. It could barely meet its operating expenses. So it needed to turn to the banking system. The banks, however, would not invest in railway ventures without federal guarantees. In December 1884, Banamex loaned 800,000 pesos to the Compañía Constructora Nacional Mexicana (CCNM) at twelve per cent. The bank then marketed 500,000 pesos of government-backed 'subsidy certificates', which the CCNM used to pay off its debt. Banamex collected a 3.5 per cent commission.[77] The effective interest rate – 14.2 per cent – was high, but without federal guarantees the loan would not have been made at all.

In the event, the CCNM credits – upped by five million more pesos in 1885, backed by Mx$8,461,000 in subsidy certificates – proved problematic, and became the subject of long, drawn out negotiations between the CCNM, the government, and Banamex.[78] Banamex ran into similar problems in Campeche, in 1886, when the bank became involved in a dispute over subsidy payments to José Ferrer, who owed Mx$96,000 on a small feeder line.[79] In the Porfiriato's early years, a federal guarantee may have reduced information asymmetry, but certainly did not eliminate it.

These uncertainties caused Banamex to charge a premium on government-backed loans. In 1888, it lent the Ferrocarril Interoceánico 520,000 pesos, secured by federal guarantees worth 167 per cent of the loan's face value. Banamex charged ten per cent, two full percentage points above the discount rates on two-signature paper in the Mexico City money market.[80]

[77] Ordinary session, *Actas de Consejo*, 30 December 1885, vol. 2, AHBNM. It should be noted here that foreign investors received similar subsidies. Foreign firms faced the same asymmetric information problems as domestic investors, although their technical resources may have been greater.

[78] Ordinary session, *Actas de Consejo*, vol. 2, 17 March 1885, and extraordinary sessions, *Actas de Consejo*, vol. 2, 16 October 1885 and 22 January 1886, AHBNM. The government was slow in paying its certificates.

[79] Ordinary session, *Actas de Consejo*, vol. 2, 2 March 1886, AHBNM.

[80] Ordinary session, *Actas de Consejo*, vol. 3, 17 January 1888, AHBNM. The guarantee for the loan actually consisted of tariff certificates given to the railroad by the federal government, and endorsed over to Banamex at 60 per cent of their face value. Market interest rates come from the *Economista Mexicano*. According to *Economista Mexicano*,

Table 1. *Average inflation-adjusted rates-of-return on real assets for selected Porfirian railways*

National trunk lines	Rate-of-return	Indicated period
Mexican Northern Railroad	−0.3%	1906–1908
Interoceanic Railway	−1.7%	1899–1911
National Railroad Company of Mexico	−1.7%	1902–1908
Mexican Central Railway	−2.2%	1899–1908
Local railroads and feeder lines		
Ferrocarril Central de Potosí	16.5%	1907–1911
Matehuala Railway	8.7%	1907–1908
Ferrocarriles de Toluca a Tenango y San Juan	0.6%	1909–1911
Ferrocarriles de Monte Alto a Tlalnepantla	−2.7%	1908–1909

Source: Noel Maurer, 'Rents in Early Industrializing Economies: The Case of Porfirian Mexico, 1899–1911', unpubl. B.A. thesis, Stanford University, 1992.

As time passed, confidence in federal guarantees grew. By 1897 the premium placed on federally-guaranteed railroad loans had halved to one per cent.[81] A few years later, the risk premium on these loans disappeared. Nevertheless, Banamex still refused to make loans to the transportation sector without the guarantees. In 1886 it rejected a private request for Eduardo Thiers for an 800,000 peso loan to finance port improvements in Veracruz, but accepted a proposal from the government to finance the same project for Mx$500,000 at ten per cent when backed by a federal guarantee.[82] Four years later, in 1892, President Porfirio Díaz himself requested an unsubsidised loan of 750,000 pesos for the Compañía Ferrocarrilera de Monterrey y el Golfo Mexicano. Banamex rejected the request.[83]

the discount on unsecured paper was eight per cent in February 1888, dropping to 7.25 per cent in August. Rates did not rise until early 1890. Banamex actually charged only six per cent on credit lines and fixed-term operations until December 1889. Ordinary session, *Actas de Consejo*, vol. 3, 3 December 1889, AHBNM.

81 This is not quite accurate. In 1897, discounts in Mexico City went for 6.5 per cent. Banamex, on the other hand, charged the Ferrocarril Cuernavaca-El Pacífico seven per cent for a three year loan, and charged the Nacional Mexicano eight per cent for a two-year loan. The half-point markup on the first deal is probably due to the loan's term: interest rates in 1897 were extraordinarily low. Banamex had already invested 900,000 pesos in the railroad, also with a government guarantee. The small markup was probably not a risk premium attributable to uncertainty over the federal governments ability to make do on its promises. On the other hand, the additional point charged the Nacional Mexicano was clearly a risk premium. The loan was intended to finance the construction of a brand new line between Pátzcuaro and Uruapan in Michoacán. Had the bank believed the federal guarantee to be ironclad, this should not have made a difference. Ordinary sessions, Ordinary session, *Actas de Consejo*, vol. 5, 23 March 1897 and 20 April 1897, AHBNM.

82 Extraordinary session, *Actas de Consejo*, vol. 2, 15 October 1886, AHBNM.

83 Ordinary session, *Actas de Consejo*, vol. 4, 12 January 1892, AHBNM.

Banamex made unsubsidised loans to only three transportation projects. A series of railroad credits went to Gabriel Mancera, on behalf of the Ferrocarril Hidalgo y Noroeste.[84] The Maryland Trust Company of Baltimore guaranteed a 1903 credit the bank granted the F. C. Veracruz-El Pacífico.[85] The Ferrocarriles del Distrito, a streetcar company, received an unsubsidised credit in 1906.[86] These three loans made up less than 13 per cent of all Banamex advances to railroad and port improvement companies. Two of the companies had inside connections to Banamex, while a reputable US bank guaranteed the third.[87]

Banamex's reluctance to lend to the railroad sector without federal guarantees or inside connections is understandable. Railroad lines in the 1880s were built ahead of demand, in a speculative frenzy provoked by the indiscriminate issuance of federal subsidies. Later on it became evident that the major trunk lines were albatrosses. Table 1 reproduces the average annual rate-of-return on real assets for the listed period, adjusted for inflation using the Colegio de México's Porfirian price index. The trunk lines consistently lost money, and could barely repay their existing heavy debt loads: lending even more money to them would have been folly.

Returns on the smaller feeder lines varied wildly. Banamex realised that this meant that loans to them would suffer from adverse selection, meaning that the riskiest and least-profitable lines would be the most likely to borrow. Since Banamex had few ways to judge a railroad's credit-worthiness, it made few loans to the small lines. Without federal guarantees it would have made still fewer.

Attempts to overcome information uncertainties: Credit agencies and reports

Banks realised that methods of judging the risks posed by outside borrowers held high potential returns for those able to develop them. They attempted to place lending decisions on a more 'scientific' basis. The solutions they hit upon, or imported from the United States, did not work perfectly, and did not replace insider lending. But they were tried. Both borrowers and lenders possessed incentives to develop techniques for evaluating impersonal credit risks. Such techniques would allow borrowers without inside connections to gain access to long-term credit

[84] Mancera was a Banamex board member, and these were inside loans. Ordinary session, *Actas de Consejo*, vols. 5 and 6, 24 November 1896, 8 August 1901, 9 October 1901, and 15 February 1905, AHBNM.

[85] Ordinary session, *Actas de Consejo*, vol. 6, 14 July 1903, AHBNM.

[86] Ordinary session, *Actas de Consejo*, vol. 6, 2 January 1906, AHBNM.

[87] Banamex lent a total of 11.6 million pesos to railroad and port improvement companies between its founding and 1910, calculated from the minutes of the bank directors.

and to reduce the amount of collateral they had to provide. Even borrowers with inside access would benefit, by gaining the ability to borrow from multiple credit institutions and to raise more capital than they otherwise might.

Lenders' incentives were equally obvious. A greater ability to discriminate among borrowers would reduce the risks they faced and enable them to expand their lending into new and potentially lucrative markets, both geographically, socially (in the sense of lending to new entrepreneurs), and economically. Increases in the competitive pressures in the banking market only raised the banks' incentives to develop means of evaluating outside credit risks. In the 1900s several institutions sprang up in response to these incentives, most notably independent and bank-affiliated credit evaluation agencies. For better or for worse, however, these new institutions had only limited effect in the 1905–11 period, before the outbreak of the Mexican Revolution cut short the development of the banking system. The asymmetric information problem was too big to be solved quickly.

Growing competition pushed the banks to extend more credit at the same time that borrowers began increasingly to look outside the limits of insider lending. In 1905 a Banamex board member claimed that 'other banks loan quantities far above those granted by Banamex', so Banamex reduced the collateral demanded on outside loans from 15 per cent of the loan's value to 125 per cent.[88] This move caused the proportion of Banamex collateralised loans (loans guaranteed by cash deposits or securities) going to outsiders to jump from less than 50 per cent in 1903 to 78 per cent by 1908–11.[89] The percentage of Banamex discounts going to outsiders rose less dramatically, from 51 per cent in 1898–1903 to 54 per cent in 1903–7.[90] For this growth to continue, however, the banks had to develop new and better ways of evaluating their customers.

Borrowers increasingly resorted to R. G. Dunn & Company, an American credit agency which entered the Mexican market in 1904, or to local newspapers to advertise the financial state of their businesses to gain access to outside loans, even if they already had access to inside credit. Federico Sisniega, manager of Banamex's Chihuahua branch and owner of the La Paz clothing factory in Chihuahua City, provides an example. We do not know how much he paid for the factory, but in 1904 he opened his books, revealing La Paz's net worth to be Mx$770,000, and that Banamex's branch had loaned La Paz Mx$150,000 since Sisniega's

[88] Ordinary session, *Actas de Consejo*, vol. 6, 29 August 1905, AHBNM.
[89] *Préstamos sobre prendas*, *Libro B*, *No. 3*, *1908–11*, AHBNM.
[90] *Vales descontados en la cuenta corriente*, *del año de 1898 a año de 1903*, AHBNM and *Vales descontados en la cuenta corriente*, *Libro A*, *No. 1*, *1903–1907*, AHBNM.

purchase. Despite this access to Banamex credit, Sisniega opened his records in order to gain access to other sources of capital.[91]

Of course, for lenders the utility of these mechanisms was limited. The financial press did nothing to certify the financial information provided them. R. G. Dunn did, at times, send agents to verify data, but their techniques were rudimentary at best. Given the potential borrowers' obvious incentives to exaggerate, the impact of these innovations was fairly limited.

Banamex eventually established its own internal arrangements to assess potential borrowers. When Banamex opened an agency in the growing agricultural district of Zamora, Michoacán, in 1905, it prepared a 'Libro de informes' which listed all the potential clients in the area and attempted to assess their credit risk.[92] Zamoran agriculture was dedicated primarily to wheat and corn production for the domestic market. The district also contained a substantial number of sugar plantations, flour mills, cigarette factories, and hydroelectric generation and transmission facilities.[93] Banamex came up with a list of 315 potential clients, of whom 210 proportional financial information concerning their assets and liabilities. The bank did its best to value their assets, be they agricultural lands, factories, mercantile enterprises, or debts owed them, and determine their liabilities. It also noted their business reputations, and then divided them into four categories: good credit risks, acceptable risks, acceptable with qualifications, and unacceptable.

Only 6.3 per cent were rated good. Save for a single doctor in the town of Cotija, all then were involved in agriculture, although a few had secondary interests in trade or manufacturing, primarily flour mills. 73.3 per cent fell in the acceptable category. A further 7.0 per cent were rated acceptable with qualifications, usually because they had taken on a great deal of debt. People who had married into wealth also fell into the qualified category.[94]

A relatively small 12.4 per cent were deemed unacceptable, although it must be borne in mind that the list was already biased in favour of those

[91] *R. G. Dunn Libro de Crédito 1900–5*, no. 334, 5 February 1904, AHBNM. Sisniega married into the Creel family, probably in an attempt to gain access to their resources in Chihuahua. Interfamily business connections were often sealed by marriage in Porfirian Mexico. See Wasserman, *Capitalists, Caciques, and Revolution: The Native Elite and Foreign Enterprise in Chihuahua, Mexico, 1854–1911*, p. 30. Credit reports often noted the reputation, or solvency, of the potential borrower's spouse, often insisting that the husband or wife co-sign any loan agreement. See the *R. G. Dunn Libro de Crédito 1900–5*, AHBNM.

[92] Ordinary session, *Actas de Consejo*, vol. 6, 4 April 1905, AHBNM.

[93] Gladys Lizama, 'Los capitales zamoranos a principios del siglo XX', *Historia Mexicana*, vol. 39, no. 4 (1990), p. 1033 and p. 1037.

[94] Lizama, 'Los capitales zamoranos', in *Historia Mexicana*, p. 1052.

the bank thought would be good risks. Those deemed unacceptable included *hacendados* with a net worth of zero (or less), anyone who had failed to pay a debt, or had been forced to sign over collateral, or to sell real property, and those with a bad reputation.[95]

By the end of the Porfiriato most credit was still either distributed on the basis of personal connections or guaranteed by real short-term transactions. Porfirian banks and bankers tried to change this, and to reap the rewards that would accrue from the ability accurately to judge outside credit risks. Nevertheless, their moves in this direction were halting and incomplete, and the necessary innovations remained in their infancy. The banks may have been trying to move away from insider lending, but without deep and impersonal capital markets, easy entry into banking, and effective reporting requirements, the process was slow.

Insider lending and competition

Porfirian bank charters were hard to procure.[96] After 1892 prospective applicants had to convince a very busy and highly conservative José I. Limantour to grant one. After 1897, federal law limited banks of issue to one per state. This imposed a high hurdle for potential entrants.

Nuevo León provides a brief glimpse into what might have happened in the absence of these limits. A clause in the General Banking Act of 1897 allowed for the establishment of a second bank of issue in the state. In 1899 the Banco Mercantil de Monterrey (BMM) took advantage of this loophole. Of an initial capitalisation of 2.5 million pesos, the Hernández and Mendirichaga families owned 28.3 per cent. Enrique Creel of Chihuahua held the second largest share, 11.4 per cent. The third largest share, 8.6 per cent, belonged to the Madero family.[97]

The large stake held by the Maderos in the new bank has been taken as evidence of a lack of banking competition in Nuevo León. Since the Madero family held a significant share in BMM, runs the logic, it is unlikely that it competed with their pet bank, BNL. Therefore, banking was monopolistic and uncompetitive.[98]

This characterisation is incorrect. Porfirian law had an insalubrious effect, because it limited entry, but interlocking directorates were not the problem. When banks coexisted in the same area of operation, competition was fierce. For example, BMM introduced the payment of interest on

[95] Lizama, 'Los capitales zamoranos', in *Historia Mexicana*, p. 1053.
[96] See Maurer, *Finance and Oligarchy: Banks, Politics, and Economic Growth, 1876–1928* (unpublished dissertation, Stanford University, 1997), chapters 2 and 3, for a discussion of the politics behind Porfirian banking regulation.
[97] Calculated from data in Cerruti, *Burguesía, capitales e industria*, pp. 240–41.
[98] Cerutti, *Burguesía, capitales e industria*, p. 241.

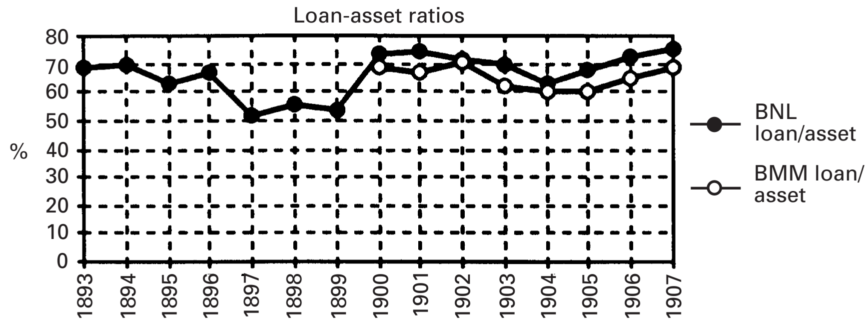

Fig. 1. *Loan-asset ratios for BNL and BMM, 1893–1907. Source: Bank balances submitted to Hacienda and published in* Economista Mexicano.

sight deposits when it opened in 1899. BNL reluctantly followed, and by 1903 competitive pressures forced Banamex and BLM to begin paying deposit interest.[99] Had BMM been nothing more than an extension of BNL, it is unlikely that its managers would have introduced deposit-interest and cut into the profits of both institutions. In addition, several bank ratios for BNL changed abruptly in 1900, BMM's first full year of operation. BNL's loan-asset ratio jumped from 54 per cent to 73 per cent (Fig. 1). The loan-asset ratio is the ratio of a bank's loans and credits to its total assets. It indicates how much of its resources a particular bank chooses to lend out.

The rise can be interpreted as showing that BNL became less monopolistic and more efficient after BMM's entry. The logic is as follows. Leaving silver coins or the notes of other banks sitting around in a vault is not (*ceteris paribus*) the best use of a bank's resources; the more it can convert into productive, earning assets, the more money it will make. But banks enjoying some degree of monopoly power will have lower loan-asset ratios than competitive banks, because monopolists reduce the quantity of their output in order to drive up the price. Since loans and discounts are a banks 'output', a monopolistic bank would lend out less of the resources available to it than a more competitive one, translating into a lower loan-asset ratio.[100]

While not conclusive, it is telling to note the large and sustained jump in BNL's loan-asset ratio after BMM's entry in 1899, following a slow fall during its years as Nuevo León's sole bank of issue. BNL freed up more

[99] *Economista Mexicano*, 1 March 1902, 8 August 1903 and 19 September 1903.

[100] An alternative interpretation holds that monopolistic banks would engage in credit-rationing rather than raising interest rates, and limit their lending to the best risks. This behaviour would also be expected to produce a lower loan-asset ratio at any given interest rate, since the bank would be rejecting applicants that banks in more competitive situations would probably take a risk on.

resources for investment after BMM's arrival. This is not what would be expected if BMM had been nothing more than an extension of the same economic oligarchy that controlled BNL. The Maderos probably hoped to control the access to capital in Nuevo León: few capitalists have ever particularly welcomed competition. But their 8.6 per cent stake in BMM was not enough to contain the competitive pressures unleashed by the arrival of the new bank.

Essentially, BMM's creation allowed for two developments. First, a new group of rising capitalists, in this case the Hernández and allied Mendirichaga families, gained access to the resources of the Mexico City capital market to finance their activities. Secondly, existing merchants and agriculturalists and other users of short-term capital now found an additional credit institution capable of satisfying their needs. The presence of Antonio V. Hernández (a Madero family member) as BMM's manager served as a 'seal of approval' that BMM would not lend indiscriminately to insiders regardless of the worthiness of their projects. His presence did not indicate a banking cartel that controlled access to capital.

In fact, competition grew further, as Banamex and BLM expanded their activities and Limantour allowed banks of issue from neighbouring states to enter the Nuevo León market. For example, in 1905 the Compañía Metalúrgica de Torreón borrowed Mx$800,000 from Banamex, in addition to its debts to BNL. This was a long-term investment: the credit was still outstanding in 1908.[101] In 1906 three Madero-controlled textile companies borrowed 300,000 pesos from Banamex's branch in Monterrey, on their directors' personal guarantees. Banamex deliberately undercut BNL's rates, offering nine per cent.[102]

Why did BNL not offer cheaper capital to an 'inside' company than its competitor? The answer is that it could not do that and still satisfy the bank's outside shareholders. One of the reasons the Zambranos and Maderos founded BNL was to attract outside capital into their business empire. These outside investors in the bank demanded a steady return, or else they would lose faith. BNL consistently paid dividends of fifteen pesos per share, year-after-year, and with no relation to the bank's actual profits, in an effort to keep these outsiders happy, and to signal that it was

[101] Ordinary session, *Actas de Consejo*, vol. 7, 31 March 1908, AHBNM.

[102] Ordinary session, *Actas de Consejo*, vol. 6, 30 October 1906, AHBNM. The rate-of-return on earning assets (RoEA) for the BNL in 1906 was ten per cent, derived from the balance sheets published in the financial press. The RoEA provides an underestimate of the retail interest rate charged by the bank, since it does not include bad debts. On average banks usually charge a higher interest rate than the profits they earn, since they know that a certain percentage of debts will never be repaid or some debtors will fall behind on their interest payments. Neither Banamex nor the BMV offered inside companies lower rates, and it is unlikely that BNL departed from this practice.

using their money wisely.[103] Had BNL made subsidised loans to inside companies, then it would have excited the ire of its outside shareholders.

Other evidence exists that the entry of new banks into existing markets increased competition. The establishment of the Banco de Durango in 1892 broke Banamex's local monopoly. The new bank immediately undercut Banamex, making the state government a loan for one percentage point less than Banamex offered.[104] In more general terms, an OLS regression model using data on all the banks for the 1901–11 period found a statistically significant relationship between banks' loan-asset ratios and the number of competitors operating within their region. A doubling of the number of banks within a concession territory led to a three percentage point rise in the banks' loan-asset ratios.[105]

This is not to argue that the limits to competition established by the Porfiriato had no effect. In fact, the above argument bolsters the opposite conclusion: a more liberal bank policy would have allowed more entrepreneurs access to outside capital, promoted more competition in other fields, and facilitated more and faster economic growth. Because the number of banks was limited, only a limited number of entrepreneurs could avail themselves of their benefits. The Porfiriato's restrictive policies showed in the companies that never grew to their potential because they were denied access to capital. These companies were denied capital not because they posed potential competition for the existing *burguesía*, but because they were unknown and too risky to be lent capital by bankers with no personal connections to them. Since bank start-ups were limited, the system locked out these new entrepreneurs.

[103] *Boletín Financiero y Minero*, various issues. 1905 was the only exception, when the bank paid 'only' fourteen pesos.

[104] The rate offered was nine per cent, versus ten per cent for Banamex. Information about various randomly selected loan contracts in the state can be found in María Guadalupe Rodríguez López, 'La banca Porfiriana en Durango', in María Guadalupe Rodríguez *et al.*, *Durango (1840–1915): Banca, transportes, tierra e industria* (Monterrey, 1995), p. 20. It could be argued that the lower rate on the Banco de Durango's loan to the state was a function of its shorter term: Banamex's loan was for 180 days, while the Banco de Durango's was for only 75. Later loans by the two banks in Durango, however, exhibited no discernible term structure for short-term loans. Banamex, for example, offered the state government otherwise similar loans at nine per cent in 1894 for terms of six months and one year, respectively.

[105] For the derivation of the model and the exact variables used in the regression calculation, see Maurer, 'The Banco Nacional and the Local Banks,' p. 25. The dependent variable used was the liquidity ratio, or inverse of the loan-asset ratio, and the coefficient for the market structure variable (the natural log of the number of banks operating in the state) was -0.03, with a t-statistic of -5.25. The overall adjusted R^2 for the entire regression was 0.61.

Dangers of Porfirian banking practices

The preceding sections have painted a generally rosy picture of Porfirian banking. The individual strategies followed by Porfirian banks did not hinder Mexico's industrialisation. Banks lent long-term capital to new industries. They also provided essential working capital for miners, manufacturers, and agriculturalists, and facilitated the formation of long-term partnerships. They channelled capital from around the nation and overseas. In addition, bankers reinvested the profits from their banking activities in manufacturing ventures.[106] There is no evidence that Porfirian banks individually (as opposed to the overall structure of the banking system) retarded Mexico's industrialisation or development.[107]

Shareholders in Porfirian banks enjoyed few alternative outlets for their investments, considering the limited and illiquid nature of the Mexico City securities market. This led them to develop mechanisms to monitor their investments in the banks, which indirectly made the banks more secure for depositors. Some of these have already been discussed, such as appointing outsiders to the board of directors and insisting upon regular dividend payments. In addition to such indirect monitoring mechanisms, Porfirian shareholder assemblies were well-attended, in contrast to the New England banks Naomi Lamoreaux examined. Between 1900 and 1910 only one Mexican shareholder meeting failed to achieve a quorum, while in 1830s New England, 'the meetings of the stockholders have been found, on inquiry, to have been very thinly attended.'[108] In Mexico, shareholders actively monitored the activities of the bank directors, in order to protect their interests, while New England investors adopted a much more passive role.

Increasing leverage put the shareholders' wealth increasingly at risk – for any given level of losses, shareholders will lose more of their investment the more leveraged the bank – which gave them the incentive to further increase their monitoring, which made banks safer for depositors, and so on. This explains the biggest difference between Porfirian banks and their New England counterparts: their capital structure. Porfirian banks depended more on deposits. For example, in Massachusetts in 1835, 55.9 per cent of the resources available to the banking system derived from capital or retained earnings.[109] In Porfirian Mexico, the figure hovered around 30–35 per cent.

[106] See Haber, *Industry and Underdevelopment*, and Gamboa, *Los empresarios de ayer*.
[107] On this last issue, see Maurer, 'The Banco Nacional and the Local Banks'.
[108] Naomi Lamoreaux, 'Banks, Kinship, and Economic Development: The New England Case', *Journal of Economic History*, vol. 46, no. 3 (1986), p. 656.
[109] Lamoreaux, 'Banks, Kinship, and Economic Development: The New England Case', *Journal of Economic History*, p. 654.

To an extent, Fig. 2 exaggerates the differences between the New England banks and those of Mexico. This is because New England banks broke out interbank deposits from their other deposits. Nevertheless, Porfirian banks depended on deposits more heavily than their New England counterparts. This is a testament to the efficacy of the monitoring mechanisms developed to deal with the asymmetric information problem between bank shareholders and bank directors.

A priori, the relatively high dependence of Porfirian banks on deposits and banknote issues for their resources meant that the risk of failure was shared among many broad groups, rather than being concentrated among the shareholders, and therefore posed a greater risk to the stability of the Porfirian economy. The historical record of the Porfiriato, however, belies this. The Crisis of 1907–08, prompted by the international financial panic that originated in the United States, caused five Mexican banks to shut down or reorganise. There is, however, no evidence, that insider lending caused any of these failures or near-failures. In addition, the banking system weathered the failures relatively well.

The Oriental purchased two failed banks, in Oaxaca and Chiapas. Depositors suffered no losses, and neither bank suspended convertibility. The Oriental, as discussed previously, was one of the most prominent and egregious practitioners of insider lending. If insider lending had been in-and-of-itself deleterious for bank solvency, then the Oriental should not have been in a position to save its two unhealthy compatriots.

Some contemporaries blamed the failure of the Banco de Campeche on the abuse of its credit facilities by its directors.[110] The state of Campeche, however, was located on the Yucatán peninsula, and its economy was almost entirely dependent upon sisal cultivation. When the price of the fibre slumped in 1908, so did the local economy, and the solvency of the Campeche's directors-cum-borrowers soon followed. Two other banks in Yucatán failed (and merged after substantial write-offs) for the same reason.[111]

The Banco de Jalisco was in trouble before the crisis hit in late 1907, due to insider lending. But shareholders were well-aware of the bank's difficulties, and called a special assembly in October 1906 with the aim of cleaning the books of accumulated bad debts.[112] In March of 1908, unhappy with the management, and displeased with the discovery of 'severe irregularities' in the bank's books, the shareholders replaced the entire board save Vice-president Eugenio Cuzin.[113] This pre-emptive action by the shareholders was successful: the Banco de Jalisco did not

[110] *El País*, 9 March 1911. [111] *Boletín Financiero y Minero*, 2 January 1908.
[112] *Boletín Financiero y Minero*, 25 April 1907.
[113] *Boletín Financiero y Minero*, 20 March 1908.

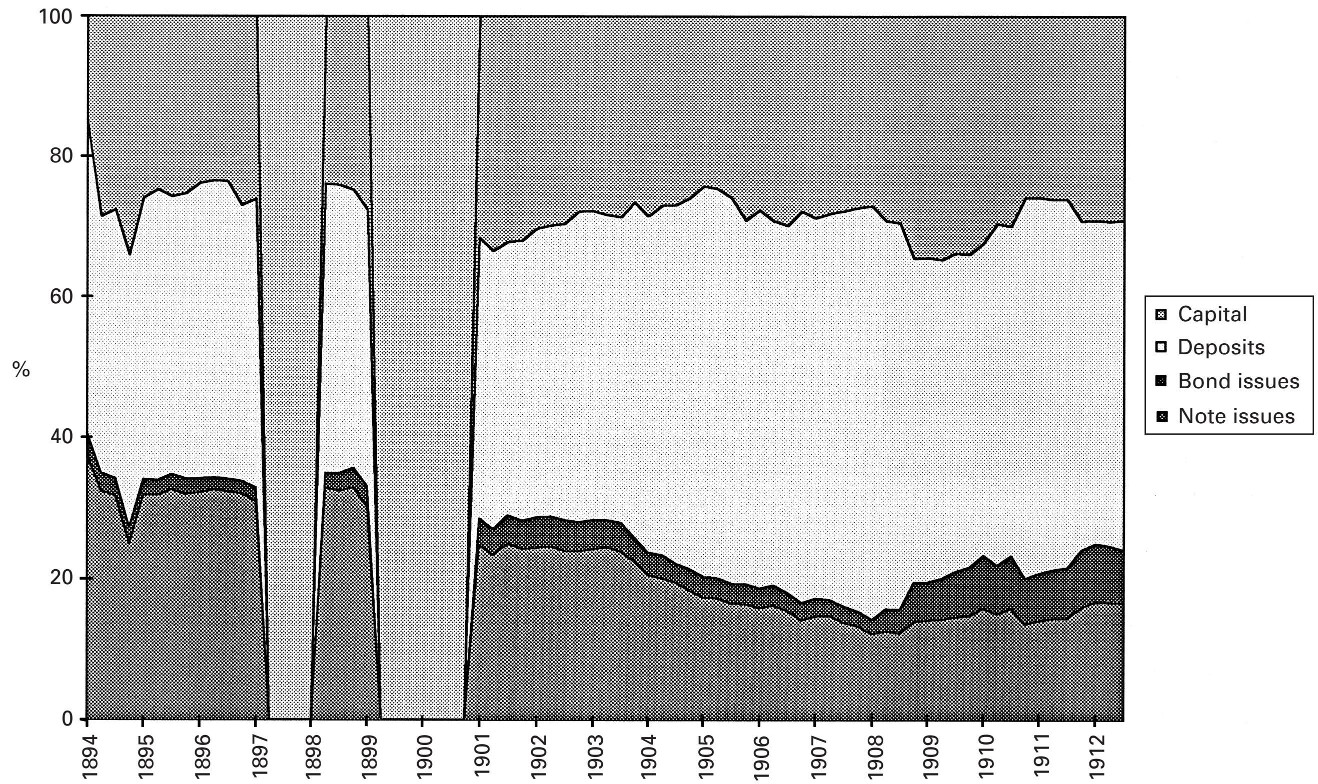

Fig. 2. *Liability structure of Porfirian Banks. Source: Balances submitted to the Secretaría de Hacienda and published in* El Economista Mexicano *and* El Boletín Financiero y Minero.

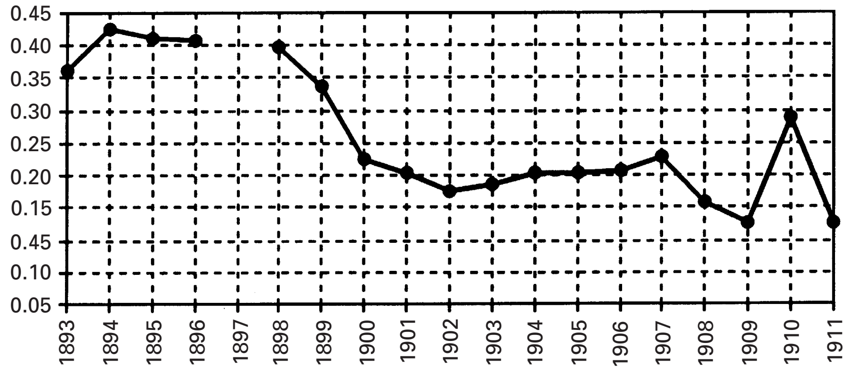

Fig. 3. *Herfindhal index for Mexican banking. Source:* Economista Mexicano *issues*.

fail. In fact, the Banco de Jalisco bought and rescued the Banco de Aguascalientes from failure at the end of 1908.[114]

In fact, considering that Banamex systematically denuded the banking system of liquidity during 1908, the banks weathered the crisis of 1908 rather well.[115] As the case of the Banco de Jalisco demonstrates, investors in banking stocks were aware of the prevalence of insider lending, and developed sophisticated methods of monitoring their interests, which generally succeeded in preventing failures even during a serious financial crisis.

The biggest flaw in the Porfirian banking system was not in the degree of leverage, nor in the monitoring of the directors, nor in insider lending itself. Rather, the biggest flaw in the banking system was its closed nature. In New England, new banks continually entered to 'serve those victimised by the favoritism of existing institutions'.[116] In Mexico, such entry was highly restricted. Families that lacked adequate resources of their own were stifled by a lack of credit.

Figure 3 graphs the Herfindahl index, an index of concentration, for the Mexican banking market during the late Porfiriato. The Herfindahl index is defined as the sum of the squares of the market shares of the various firms in the market. In this case, market share was defined as the percentage of the total assets of the banking system pertaining to any particular bank. The advantage of the Herfindahl index as opposed to other measures of concentration is that it allows concentration to be compared in markets with substantially different structures. Conceptually, a market with a Herfindahl index of 0.5 is just as concentrated as a market

114 *Boletín Financiero y Minero*, 24 December 1908.

115 See Maurer, 'The Banco Nacional and the Local Banks', for a detailed discussion of Banamex's role in the crisis of 1907–8.

116 Lamoreaux, 'Banks, Kinship, and Economic Development', *Journal of Economic History*, p. 663.

containing two equally-sized firms, and a market with an index of 0.33 just as concentrated as one made up of three equally-sized firms, and so on, regardless of the actual number of firms in the market.

The banking market was highly concentrated, and as Fig. 3 shows, remained highly concentrated after 1902. This flaw, more than any other, gave the Mexican economy its uniquely concentrated industrial structure, which survived the Revolution and persisted for the next eighty years.[117] In other words, too much insider lending was not the problem: the problem was that there was not enough insider lending.

Conclusion

There is no one prototypical bank. Rather, banks are bounded by the culture and social system in which they are embedded. The 'rules of the game' governing their actions are shaped by the politics, social structure, and historical legacy of their particular time and place. Banks may everywhere and at all times face certain problems, and exist to carry out certain functions, but they do not inevitably emerge out of economic theory.

Mexican banks operated much like their counterparts in early 19th-century New England. They lent to their own directors or their close associates in order to solve the information asymmetries inherent to the banking business. They did this in a way congruent with the social customs and legal institutions of the 19th-century Mexico. Impersonal information was scarce, and kinship ties highly valued. Given this, Porfirian banks arrived at the same solution developed in other times and places where the culture placed a similar importance on family ties, and impersonal information was hard to obtain. Like their New England counterparts, Porfirian banks served as conduits for attracting impersonal capital into their family-based business networks from across the region (via deposits), the nation (via equity sold on the Mexico City exchange), and overseas (via equity sold elsewhere). In addition, banks enabled entrepreneurs to develop the long time horizons needed to tackle the industrial, agricultural, transport, and mining ventures required for growth.

Far from being pernicious or fraudulent, insider lending allowed banks to overcome the scarcity of good financial information about outside credit risks that characterised the Porfiriato. It was no secret that banks in

[117] See Haber, 'Financial Markets and Industrial Development: A Comparative Study of Governmental Regulation, Financial Innovation, and Industrial Structure in Brazil and Mexico, 1840–1930', in Stephen Haber (ed.), *How Latin America Fell Behind*, pp. 146–78.

Porfirian Mexico engaged in widespread insider lending. Investors in banking stock during the Porfiriato knew that they were actually investing in the network of businesses and enterprises associated with the bank's directors, and developed techniques to monitor their interests and prevent abuses. The uncompetitive nature of the Porfirian banking system may have limited the ability of new entrepreneurs to gather the resources they needed to grow, and prevented the Porfirian economy from achieving the kind of industrial vitality found in countries with more decentralised capital markets, but the banks' use of insider lending did not in-and-of-itself retard Mexico's economic growth or industrialisation. Insalubrious effects emerged from the interaction of high concentration, barriers to entry, and insider lending, but not from insider lending in itself.

Porfirian Mexico did not allow free entry into banking. Rather, entry was highly restricted. Even more, Mexican policies favoured those families and individuals connected with Banamex and the Banco de Londres y México. The system choked off opportunity and limited the nation's long-term potential. To paraphrase Naomi Lamoreaux, Mexico enjoyed the benefits of the group form of enterprise (the ability to mobilise impersonal capital, the partial solution of the problem of asymmetric information, and the lengthening of entrepreneurial time horizons), but it was unable to avoid the primary drawback – the concentration of economic power.