

Is financial innovation market-driven or bank-driven? The case of private equity in the 1980s*

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Abstract:

Financial innovations, such as leveraged buyouts (LBOs), are often categorized as ‘market-based’ phenomena in order to distinguish them from more traditional ‘bank-based’ activities. This paper uses call report data to demonstrate the 1980s LBO boom was a bank-driven phenomenon and that the largest US banks relied on the senior loan debt issued in LBOs to provide the earnings that allowed them to absorb the losses from the LDC debt crisis. A banking theory framework explains why bank-driven lending can create economic distortions. One distortion due to this bank finance of buyouts is the increase in corporate income flowing to the financial sector. It remains to be seen whether the corporate debt levels associated with buyouts will turn out to be another distortion. We argue that bank-driven financial innovation is an important framework for studying additional instruments, such as collateralized loan obligations and private credit.

Keywords: leveraged buyout, financial innovation, too big to fail, banking theory

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Financial innovations, such as leveraged buyouts or collateralized loan obligations, are often categorized as ‘market-based’ phenomena in order to distinguish them from more traditional ‘bank-based’ activities. This essay will study the early history of the buyout industry in detail in order to demonstrate how this distinction can be very misleading. In particular, this essay will set forth the substantial evidence that the leveraged buyout boom of the 1980s was a bank-driven phenomenon, even as it had a profound effect on financial markets, fostering the growth of junk bonds and playing a role in the reduction over time of the importance of the stock market. Understanding the driving role that banks play in the process of financial innovation has important implications for the regulation of innovative financial products today.

The common understanding of the leveraged buyout boom and why it took place was shaped by contemporary finance theory in the 1980s. Jensen and Meckling in 1976 had questioned why corporate shareholders would entrust their savings to corporate managers who were agents that could choose to spend corporate funds in their own interests. They observed that a takeover that bought out all of the shareholders of a publicly traded corporation could serve to align the interests of the owners and the managers. In 1983 Jensen and Ruback studied the evidence on corporate takeovers and concluded that they did in fact result in financial gains to the initial owners of the corporation with no loss to the subsequent owners. Jarrell et al. (1988) confirmed this result: the market was working.

Jensen (1986) posited a mechanism by which value was being created: in an environment where the corporation had been taken private and the managers were general partners acting on behalf of limited partner equity investors, debt creation was a commitment device to limit the scope for losses due to agency problems. That is, by imposing debt on the corporation that was taken over (the target) and spending that debt on paying out the existing shareholders, management was committing to make substantial interest payments and thereby limiting its access to cash that could be redirected in the managers’ own interests.³ Jensen (1988) identified the issuance of high-yield bonds as a financial innovation that made the debt finance of these takeovers possible.

This literature overlooked two important factors: first, the buyout itself is founded on a conflict of interest as the beneficiaries of the debt that is being used to limit manager discretion are the new owners of the corporation, but they do not owe the debt since that obligation sits with the corporation that was purchased (the target); and, second, the majority of the debt that made leveraged buyouts possible was not market-based, but instead high-yield bank loans.

³ Lehn and Poulsen (1989) find empirical support for this result.

To clarify these points, an understanding of the term ‘leveraged buyout’ or LBO is essential.⁴ An LBO is the purchase of a firm that trades on the stock market, ‘taking it private,’ but without paying cash for the shares. Instead the buyer/owner puts up about 10% of the price and borrows the remaining 90%. The catch is that the buyer/owner does not owe the debt, instead the target/purchased corporation owes the debt. In short, the private equity fund making the purchase gets all the advantages of ownership and control of the company, but has no liability whatsoever on the debt that was used to purchase the company.

Because the debtor is the corporation and the corporation does not get the benefit of the funds as they are fully paid out at the time of the transaction, it is not at all clear that these transactions should be legal – and they were very, very controversial when they initially began to be used. The presentation of the growth of these transactions as a ‘market’ phenomenon is also somewhat puzzling. In the 1980s between 50 and 90% of the debt that financed an LBO was provided by bank loans that were secured by the assets of the target company. The remainder of the debt was made up of junk bonds and/or other unsecured or subordinate financing. Thus, the privilege of borrowing at the scale that was necessary for these transactions required relationship-building with both the money center banks and the underwriters of junk bonds.

Furthermore, at their origin in the 1980s these transactions typically focused on large firms, so even 10% of the purchase price was a vast amount that far exceeded the private means of even the wealthy. Thus, the purchasers – leveraged buyout firms like KKR – sought out limited partner investors to fund the equity portion of the deals.⁵ These funds then promised to have a lifespan of only seven to ten years and to give back the principal along with a healthy return at the end of the period. In short, far from eliminating the conflict between owner-principals and manager-agents, an LBO creates a new locus for the conflict in the fund that purchases the corporation.⁶

This paper uses call report data to demonstrate the significant role played by the largest US banks in the leveraged buyout boom of the 1980s and to explain why the large US bank chose to create the buyout boom. These banks were benefiting from extraordinary levels of foreign funding due both to ‘petrodollars’ and the US policy of too-big-to-fail, and built the syndicated loan market to facilitate the

⁴ While leveraged buyouts are just one of the mechanisms by which corporate structure is leveraged, the model of debt issuance provided by the leveraged buyouts of the 1980s has played an important role in the structuring of such transactions ever since.

⁵ Note that leverage buyout firms rebranded to private equity in the 1990s (Economist 2008; Kaplan & Stromberg 2009: 121).

⁶ This observation has been made by many others including Morris and Phalippou 2020: 308; Albertus & Denes 2023.

investment of these funds. Initially, the large US banks lent to low-income countries. However, when that lending went bad and the banks were treated to regulatory forbearance instead of being closed down, the large US banks needed another source of high-yield loans to rebuild their balance sheets: this was the leveraged buyout boom.

This finding that the LBO boom was bank-driven is important, because when bank lending is properly framed, it becomes clear that bank-driven lending can create economic distortions. We argue that the shift in the flow of US national income to the finance industry and the remarkable growth of US corporate debt can be considered two such distortions.

Section I discusses the theoretic framing used to discuss leveraged buyouts in the literature and proposes a reinterpretation of that framing. Section II presents the data on the role of banks in the leveraged buyout boom. Section III provides a history explaining why banks created the leveraged buyout boom in the 1980s. Section IV discusses how the bank-driven nature of the LBO boom created distortions in US national income and the market for corporate debt. Section V concludes.

I. Debt and agency problems

An LBO is based on a very large issue of debt that is owed by the target corporation. The principal beneficiary of the debt is not the corporation itself, but the fund that uses the LBO to pay off the initial shareholders and take control of the corporation. Even so, the fund just like any other shareholder has no liability on the debt. A secondary beneficiary, as we will see, is the senior lender, who gets substantial fees from arranging the deal and also holds debt that pays a high yield of 200 to 300 basis points over the prime rate, while at the same time being protected by the assets of the corporation as collateral, such that if the loan goes into default the lender will have effective control over the corporation. The typical LBO funding structure in the 1980s is depicted in Figure 1.

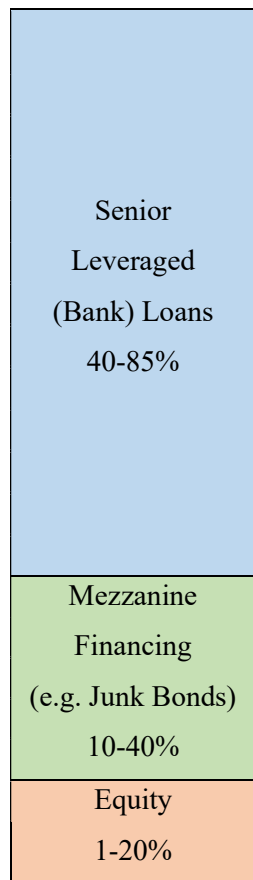


Figure 1: Typical LBO funding structure (Borio 1990b: 7)

To frame the problem with this structure, first, one needs to recognize that a corporation's value is comprised of its assets, relationships, and streams of payment. These streams of payments include inflows from customers and outflows to employees, suppliers, creditors, tax authorities, and shareholders. These comprise the stakeholders in the corporation (see Dodd 1932; Freeman 1984). The knowledge embedded in the corporation provides it with investment opportunities that are not available to entities that do not have the corporation's detailed knowledge of the specific industries and markets in which the corporation operates, and Chandler (1977)'s history established the crucial role of manager-employees in building corporate value from the mid-19th century on.

The second step in framing the problem with the LBO structure is to recognize that historically large corporations have relied on external finance in the form of bank loans and bond issues to provide both working capital and investable funds (see Chandler 1977). Thus, debt issuing capacity has traditionally played an important part in the corporation's ability to invest and to build value for shareholders.

This traditional approach to the corporation recognizes that the conduct of managers is variable, that they will not always build value, and may indeed extract or erode the value of the corporation. Under the traditional theory the disciplining factor that can help prevent mismanagement is the public stock market.⁷ Any investor in a public corporation who is dissatisfied with management can sell at any point in time – while the manager is committed to the firm, the shareholder is not. Indeed, if the shareholders exit *en masse*, the corporation's market value will collapse and the manager is likely to lose access to bank finance and with this loss of working capital the manager may well end up unemployed when the corporation enters bankruptcy.

In contrast to Chandler (1977)'s view of the corporation as the means by which manager-employees build value for shareholders, Jensen and Meckling (1976) reframe the corporation as a vehicle for *delivering* value to shareholders. Indeed, the corporation is reduced to a simple equation representing alternative options for managers, and no option for building wealth over time is modeled. Even though the stream of income that the corporation produces is entirely dependent on stakeholders and their continued participation in the corporate endeavor, by construct, the Jensen-Meckling framework treats the corporation's capacity to create value as independent of stakeholders. Thus, Jensen and Meckling effectively assume that the corporation exists only to the degree that it provides a stream of income for shareholders.

Jensen (1986) also reframes the value of cash flows to the corporation. While the traditional approach views borrowed cash flows as the means that make it possible for the corporation to invest and build value, Jensen (1986) focuses entirely on the conflicts of interest that managers may face and treats constraints on cash flows as benefiting corporate owners by limiting the decision space of managers. Indeed, because in this framework the corporation as an entity that can build value does not exist, the only question that is considered is how any current value in the corporation can be delivered to shareholders.

⁷ Jensen and Ruback (1983: 30-31) observe that in practice shareholders will have difficulty knowing when managers are acting in their own interests and as a result they will not know when to sell and will exert inadequate influence on self-interested managers. They treat the fact that LBOs were able to pay current shareholders more than the market price as evidence that the market price did not reflect 'underlying' value. The discussion in this paper indicates that the senior lenders' need for high yield revenues may have contributed to the high prices received by shareholders.

In reducing the challenge of corporate governance to a problem of managing the potential conflicts that may exist between shareowners and managers, Jensen and his co-authors effectively dismiss without discussion the substantial evidence set forth by Chandler (1977) that manager-employees produced dramatic benefits for both the American economy and the shareholders in the corporations despite these conflicts. They also overlook the fact that limitations on free cash flow in fact hobble the core function of the corporate form, which is to invest with a view to building value over the long-term.

In other words, imposing debt on the target corporation in order to make a massive payment to existing shareholders has the effect of limiting not just the managers' options, but also the corporation's options – some forms of value building and perhaps even maintenance will no longer be within reach. In the traditional framework, this would be understood as costly, but it cannot be costly in a framework where the corporation as a separate entity from shareholders does not exist.

When evaluating LBOs it is not, however, particularly logical to use a framework that assumes away the separate existence of the corporation. The reason this is illogical is that is that the existence of the corporation as a separate entity is fundamental to an LBO: it is the corporation that bears the debt in an LBO. Every other participant in the deal has limited liability.

In an LBO the senior creditor contributes the largest portion of the purchase price of the target corporation and demands the corporation's most important assets serve as collateral for the loan. The senior creditor is paid high yields on this debt and also typically receives fees for putting the deal together. The junior creditors contribute a smaller portion of the purchase price and are paid high yields for the risk of their investment using high yield bonds or similar obligations.

The purchasing fund pays only a fraction of the value of the corporation in exchange for control over the corporation and its assets. Because the loans that are owed to the senior and junior creditors are the obligations of the corporation, the buyer itself gets this controlling position even though the buyer has neither the resources needed to purchase the corporation nor the creditworthiness to borrow the money to do so. Furthermore, the purchasing fund replicates the principal agent problem that Jensen (1986) claimed that the LBO was designed to solve: manager-employees are replaced by manager-owner-agents who have a duty to represent the interests of their principals or the limited partners in the fund. All of the conflicts of interest embedded in the corporate ownership structure remain (Morris and Phalippou 2020: 308; Albertus & Denes 2023) – but at the cost of imposing on a formerly successful corporation a level of debt that will permanently hobble its capacity for building value in the future.

Furthermore, because the limited partner-principals do not have the ability to exit their investments by selling on a public market, the buyout fund is structured to have an end date at which assets will be sold

and returns will be paid out. This date is usually seven to ten years after the formation of the fund.⁸ Thus, not only is the principal-agent conflict embedded in an LBO structure, but (i) the principal has less of an ability to monitor the behavior of the agent by using the public market price of the corporation as an indicator, and (ii) to offset this weakness a short-term investment horizon is imposed. In short, after an LBO, managers can no longer act in the long-term interests of the corporation (or the economy), but must work towards realizing value on a short-term horizon.⁹

In the LBO structure the senior creditor is effectively selling an option to the purchasing fund. In the event that the fund opts to have the corporation default on the debt, the senior creditor will effectively own the corporation.¹⁰ The junior creditor protects the senior creditor from experiencing losses in the event that the option is exercised, because the junior creditor will bear losses before the senior creditor does.¹¹

Overall, the effect of an LBO is to take a corporation that had been focused (perhaps imperfectly) on building long-term value for stakeholders and shareholders, and to turn it into a source of relatively short-horizon revenue for the finance industry. The imposition of a debt load on the corporation that is equal to 75% or more of the total current value of the corporation means all of the corporate stakeholders become part of a process of producing ongoing interest and dividend payments for the financial industry. Indeed, because of the high yields on the loans, these target corporations provide a much higher source of revenue for banks than they could possibly find elsewhere. The heavy burden of interest payments—deliberately—precludes the purchasing fund from having the resources to engage in significant investment in the future of the corporation, and thus the fund manages the corporation in order to draw value from it, not to build value in it.

In short, an LBO freezes the corporation's current value in place and delivers it as cash to the initial shareholders. The corporation then can no longer use its resources to build additional value over time, because the firm's borrowing capacity has been drawn down and the funds received have been distributed already. The corporation instead spends the rest of its existence in making payments to lenders and distributing value to the purchasing fund and any subsequent owners. In short, an LBO effectively sets off

⁸ While the general partner typically has some flexibility to extend the end date, this is very limited and unlikely to be for more than two years.

⁹ On the second point, see Christophers (2023).

¹⁰ In practice, in a bankruptcy scenario the senior creditor typically does not take control of the corporation, but instead dictates the terms of the reorganization plan or liquidation (see e.g. Ayotte & Morrison 2009; Lubben 2015).

¹¹ In the 1980s junk bond investors frequently comprised the junior creditors in these deals and at the end of the decade junk bond investors experienced losses— and there were prosecutions and convictions for the misselling of the bonds.

a prolonged liquidation in which the corporation's future prospects are absorbed in making payments to lenders and the shareholders.

Under these circumstances, it is not at all surprising that an LBO is experienced as a betrayal by stakeholders such as employees and customers (Applebaum and Batt 2014), as the prospect of a long-term value building relationship with the corporation has been eliminated in order to use the corporation as a mechanism for producing revenues for the financial industry.

A contemporary example

A contemporary example illustrates the problem. UK water companies were privatized in 1989 with the whole of their debt burden (£5 billion) written off by the government before the sale. Since that date their collective debt burden has grown to exceed £60 billion, and these private companies have not been engaging in the investments and maintenance required by law and as a result have been fouling waterways and the sea. The government is requiring them to address the dumping of sewage by spending £54 billion in capital investments over the next 25 years (Parker et al. 2023).

Thames Water is the company that serves London. It was purchased by Macquarie, a specialist in leveraged infrastructure investments, in 2007 at a price of £4.8 billion with borrowings of £2.8 billion. The terms of the acquisition explicitly required that the transaction not be structured as a leveraged buyout, and that £2 billion of the 'debt would be fully ring-fenced from Thames Water as the regulated entity' (Robinson 2017). Money is, however, fungible, and Macquarie was able to borrow against the value of the Thames Water assets in order to pay dividends that more than paid off the £2 billion in debt.

Over the period of Macquarie's ownership of Thames Water from 2007 to 2017, the company's debt rose from £3.4 billion to £10.8 billion, and Macquarie ultimately took out £2.7 billion in dividends and £2.2 billion in loans. Since 2017 Thames Water's debt has grown to £14.5 billion – and the holding company that owns the 'ring-fenced' water company owes an additional £1.35 billion, secured by the assets of the company (Plimmer and Fildes 2023). With interest rates rising, the company is likely to declare bankruptcy, long before the £1.5 billion committed as new equity by investors to address the infrastructure failures that have led to sewage spills is paid up. In short, Thames Water is a case where investors such as Macquarie have made high returns, at the expense of leaving urban Britain with grossly underinvested waterworks infrastructure. Someone will have to pay – and it is almost certain that the costs will fall either on ratepayers or taxpayers.

This example illustrates how the corporate form is not being used to raise funds for the purpose of providing valuable – and therefore profitable – services to the community, but instead to provide

investment returns to shareholders, with stakeholders such as customers treated as a stream of income from which as much value as possible should be extracted for investors. Similarly employee stakeholders are treated as cost centers who should be induced to work at the very limits of their capacity independent of the long-term effects on the employees. Instead of a win-win situation where surpluses are shared amongst stakeholders, these corporations seek to hold all other stakeholders to their reservation values.

Furthermore, these corporations also seek to extract as much value as possible from the government and society at large. Issuing secured debt ensures that when the corporation goes bankrupt it is the lenders, or the owners of the secured debt, who control the restructuring. Stakeholders such as employees, suppliers and customers with claims against the company are left holding the losses.

II. Banks and the leveraged buyout boom of the 1980s: the data

As was noted above, in the 1980s the senior 50 to 60% of an LBO transaction was typically made up of bank loans (Thomson 1989; see also Borio 1990b: 7). Such bank loans are now called leveraged loans since they are made to highly leveraged companies. The bank holding companies for the largest banks also invested in the equity and mezzanine debt in these transactions helping to ensure that deals could be closed (Borio 1990b: 18; Thackray 1986).¹²

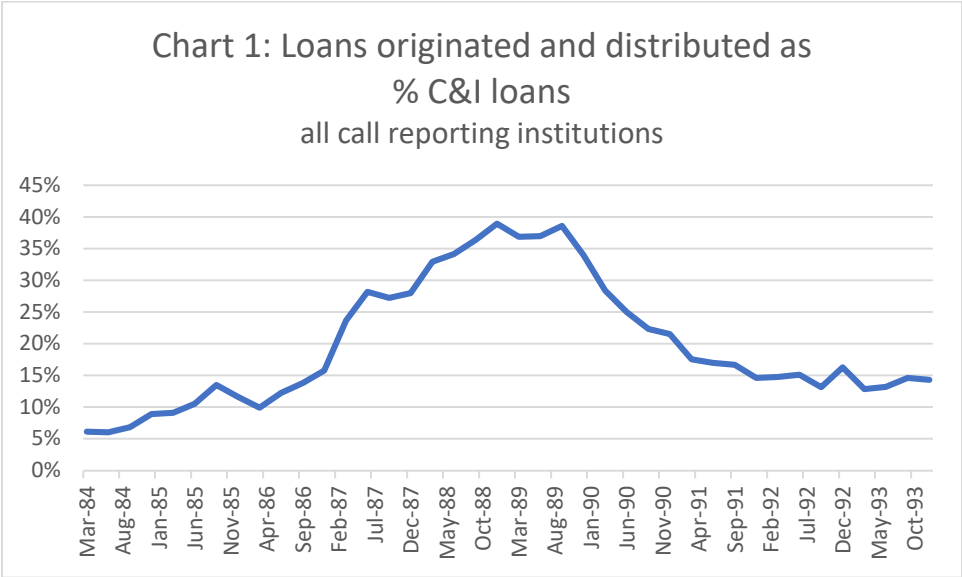
Contemporaries concluded that ‘the flow of LBOs is created by lenders. They don't just support the market; they make it happen’ (Thackray 1986). Indeed, the largest deals required the participation of the biggest banks that could take large portions of the loan to guarantee that they could be completed (Thackray 1986). In short, the too big to fail US banks were a core driving force behind the LBO wave (see also Seidman 1989: 4; Borio 1990b: 28; Osterberg 1993: 1).

The speed with which LBO lending developed was remarkable. Before 1980 ‘nobody knew what an LBO was. I mean nobody at the big investment banks – not just the cocktail party crowd’ according to a partner in Forstmann Little, a firm that pioneered the strategy (Thackray 1986). By 1986 LBO deals accounted for more than \$30 billion every year and in 1989 \$50 billion (Borio 1990b: 9). Mergers and acquisitions more generally grew just as quickly – and while many M&A transactions do not result in an increase in corporate leverage, the LBO model meant that high yield senior debt became more common even in transactions that were not classified as LBOs. In each of 1986, 1988 and 1989, more than \$200 billion in M&A transactions took place (Borio 1990b: 9).

¹² By 1989 the BHCs held \$9 billion in equity and mezzanine debt, which amounts to approximately 5% of the total issue of LBO equity and mezzanine debt issued up to this point in time.

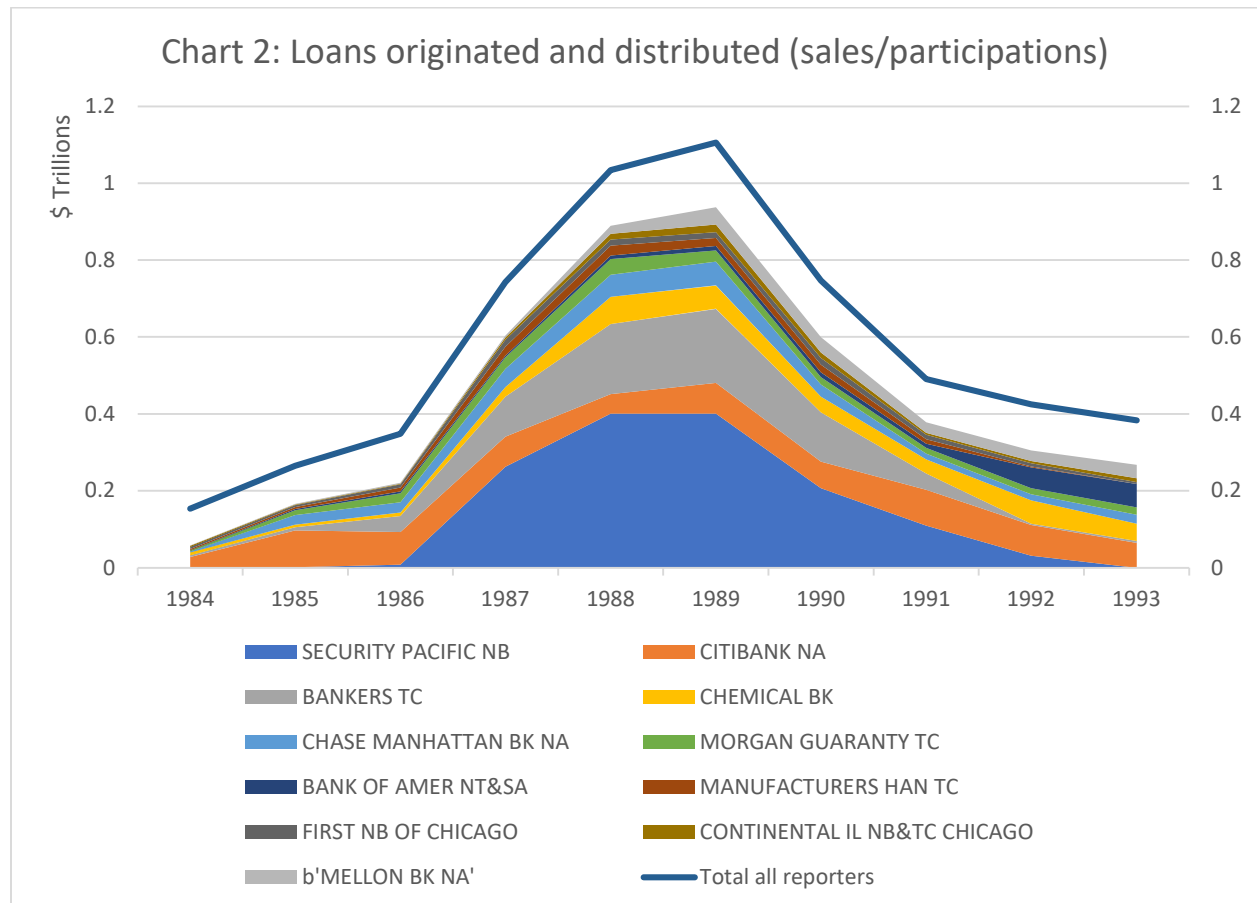
By 1986 there were already complaints that the ‘overhang of LBO-hungry money has revolutionized the [LBO] business’ with the effect that LBO vehicles were being used for an ever broader range of industries. In 1988, the Chairman of the FDIC reported that 10% of the ‘big banks’ new business loans are for buyouts’ (Knight 1988). This situation of vast financing flows chasing deals was driving such aggressive pricing that it was clear that it would be difficult for the underlying cash flows to support the debt (Thackray 1986).

To substantiate this narrative the US call reports have data from 1984 through 1993 on ‘Loans originated by the reporting bank that have been sold or participated to others during the calendar quarter ending with the report date.’ LBO loans were so large that the senior creditors would form a syndicate to originate the loan, and then would sell participations in the loan to others. Chart 1 displays the quarterly data on loans sold/participated for all call reporting institutions as a percent of commercial and industrial loans held at the end of the quarter. It is remarkable that the number of loans reported as sold/participated in a single quarter rises in 1989 to almost 40% of all commercial and industrial loans held on the balance sheets of all the banks in the banking system. The subsequent decline is more easily explained, as many of these loans went into default generating lawsuits and some bank failures.



When one drills down into the call report data, the numbers of loans sold/participated are startling. Chart 2 sums across the quarterly data to generate annual figures for the number of loans sold/participated. In 1988 and 1989 the sum across all reporters exceeds \$1 trillion – at a time when total assets in the banking system were \$4 trillion. It is almost certain that this figure must represent some double-counting where two or more banks were originators of a syndicated loan and both report the loan as sold/participated.

To get a better understanding of this phenomenon Chart 2 also depicts the figures reported by the 11 largest banks in 1984 – which are the banks that reported the highest number of loans sold/participated across the decade.¹³ While the largest banks accounted for just 38% of loans sold/participated in 1984, by 1985 they accounted for more than 60%. This rose to 86% in 1988 and dropped back down to 70% in 1993.

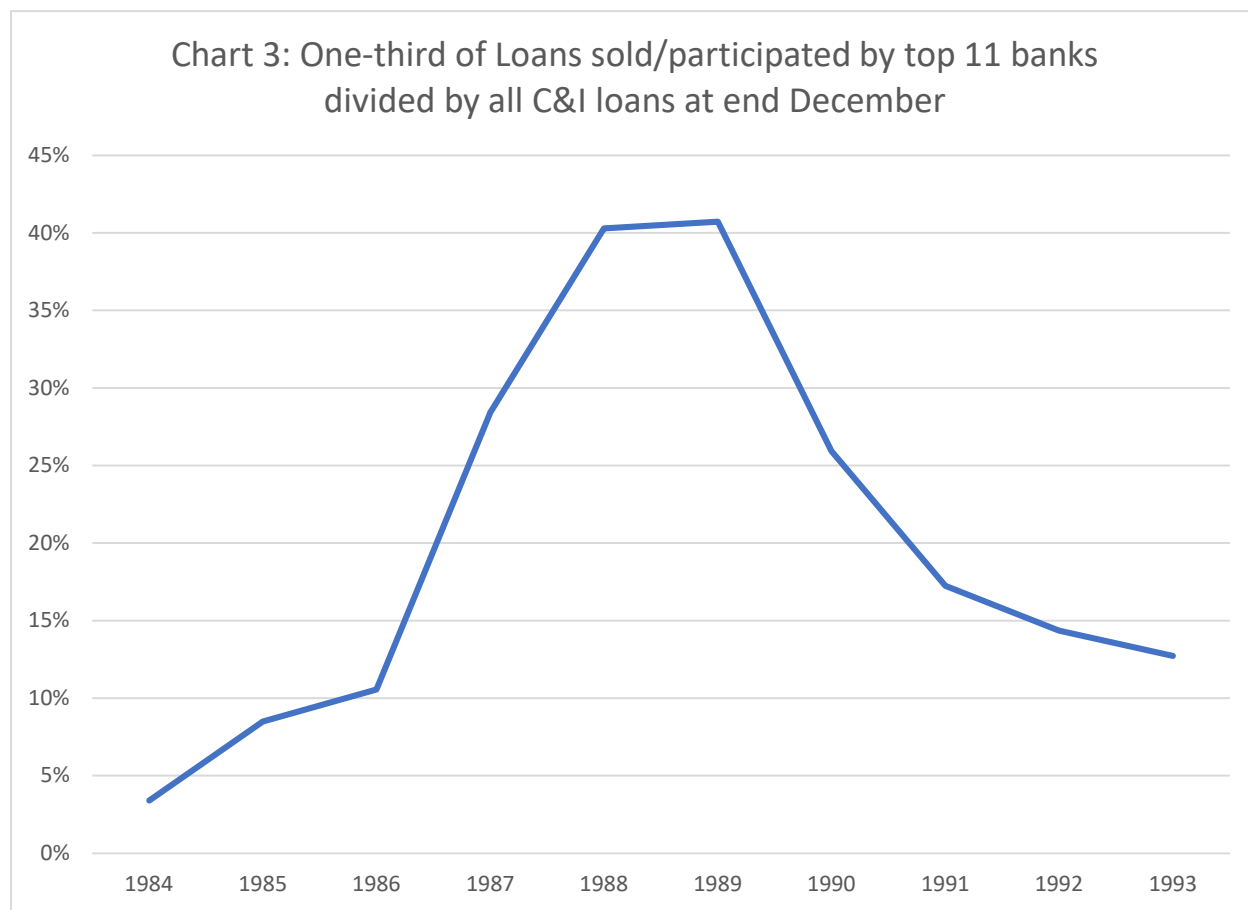


To address the double counting problem, we make the conservative assumption of triple reporting across the 11 largest banks and divide the loans that they reported as sold/participated by three. Based on this adjustment in 1988 and 1989 the 11 largest banks accounted for \$300 billion in loans sold/participated and in 1987 and 1990 for \$200 billion.

From this we can draw three conclusions: First, over a period of just four years from 1984 to 1988 a stunning shift in the lending behavior of the largest US banks took place. Second, the footprint of the largest banks in US commercial and industrial lending changed dramatically over the course of the 1980s.

¹³ We include 11 banks because Mellon is the eleventh largest bank, and as the chart indicates played a role in this lending. On the other hand, the 12th largest bank, Wells Fargo, was not involved.

As Chart 3 shows the conservative one-third measure of large bank loan sales/participations accounted for as much as 40% of all commercial and industrial loans on the balance sheets of US banks at the peak.¹⁴ Third, the shift in the structure of US bank lending persisted into the future. Chart 3 shows that even after the rush of loan sales/participations declined, the conservative estimate of this segment of the 11 largest banks' lending still amounted in each year to almost 13% of all commercial and industrial loans in the banking system.



While this transformation in the lending behavior of the largest banks was not limited to financing LBOs,¹⁵ observers of the phenomenon identify mergers and acquisitions as a key driver of this lending, and also as a factor that explains the increase in the margins earned by the banks on lending at this time (see e.g. Allen 1990: 73).

¹⁴ Of course, not all of these loans were sold to US banks (see Allen 1990).

¹⁵ Security Pacific National Bank, in particular, which reported the highest total quantity of loans participated/sold from 1984-93, was selling off a very wide variety of loans and by 1990 was a troubled bank that would ultimately be purchased by Bank of America. Some information on Security Pacific NB's loans is available in lawsuits such as *Banco Espanol de Credito v Security Pacific*, 973 F.2d 51 (2d Cir. 1992).

Of course, the large banks did not just sell and participate these loans – they also held them on balance sheet. Seidman (1988: 4) reports that the 10 banks most involved in LBOs held \$20.2 billion in LBO loans on their balance sheet on 30 September 1988. While Seidman does not identify the 10 banks in question, by summing across the C&I loans at the 10 largest banks in Chart 2,¹⁶ we find that the 10 banks had \$156.8 billion in C&I loans on balance sheet on 30 September, and thus that about 13% of their C&I loans were LBO loans. Of course, some banks held more LBO loans on balance sheet than others: in 1988 almost 25% of Bankers Trust’s C&I loans were LBO loans.¹⁷ Consistent with what we have found above, Seidman (1988: 4) reports that the big banks typically held only 10% or less of a transaction and would sell participations in the remainder. While Seidman (1988: 4), the FDIC Chairman at the time, was attentive to the risks of LBO loans, he also makes it clear that the market is very advantageous for the big banks, because it provides them with yields that are typically about 200 basis points above the yield on conventional commercial lending (Borio 1990b: 22). This high yield is in addition to the fees earned from origination and sales of the loans. Initially regulators appear to have largely approved of LBO lending because of the high earnings it provided to banks together with confidence that the risks to the banks could be managed (see e.g. Thomson 1989: 4; Seidman 1989: 4).

Banks such as Security Pacific were however in trouble by 1990, and Osterberg (1993: 1) observes that ‘the aftermath of the wave of leveraged buyouts in the 1980s brought a realization that banks had played a key role in financing such transactions.’ This led regulators to require detailed reporting on highly leveraged transactions from 1991. The regulators, however, withdrew the requirement for such reporting after only six quarters, finding that the regulated entities had already improved their practices and that the reporting ‘may be having an undue effect on pricing and availability of credit to certain highly-leveraged borrowers’ (Fed Board 1992). Currently, the data that was reported in 1991 and 1992 is not in the call reports that are available publicly. Overall, the bank regulators were apparently willing to support the growth of this bank lending activity, because it was so profitable for the big banks.

III. Bank lending in the post-Bretton Woods era

To understand why the largest US banks drove the growth of LBOs, one must recall the complexity of the economic environment in the early 1980s. To set the stage we start a decade earlier in the 1970s.

¹⁶ That is, we exclude Mellon as the smallest bank from this calculation.

¹⁷ LA Times (1988) reports that Bankers Trust had a \$2.7 billion LBO portfolio. On 31 December 1988, Bankers Trust reported \$10.95 billion in C&I loans.

On August 15, 1971 President Nixon suspended all convertibility of the US dollar into gold, setting the stage for the 1973 shift to an international system based on floating exchange rates. At this time, it was far from sure that the dollar could retain its international role, and efforts were made to denominate Eurocurrency lending in a unit linked to a bundle of European currencies (Rothschilds 1971; Bank of England 1974). Indeed, in 1978 the UK Prime Minister consulted with the Bank of England Governor and other experts about the possibility of promoting an alternative to the dollar in denominating international debts and was disappointed – and not entirely convinced – by the finding that, given the current market share of less than 5% for ‘units of account’ such as the SDR, this possibility was deemed impractical (Bank of England 1978). In fact, from 1971 through 1973 Eurobonds were increasingly denominated in currencies other than the dollar, which saw its share fall from 49% to 37% (Bank of England 1974). The Deutschemark and the Swiss franc were the principal competitors.

In short, the early-1970s were years when it was possible that international financial markets would transition away from reliance on the dollar. Both Germany and Switzerland sought, however, to limit Eurocurrency issues in the Deutschemark or franc respectively by adjusting controls on the market (Allen 1971, BoE 1973), whereas the US authorities were actively supportive of the use of the US dollar in international markets.

In this environment, the treatment of a US bank that was both poorly managed and active in international debt markets, Franklin National Bank, is instructive. Franklin National was a New York bank that began to grow quickly in the 1960s, and opened a London branch in 1972. Participation in the international Eurodollar markets that were centered in London was attractive, because this avoided domestic US regulation and thus offered the opportunity for lower cost funding and lending activities. By 1973 Franklin National was the 20th largest bank in the US. It had also for several years been a ‘problem bank’ meaning that its regulator had concerns about its capital and lending practices (Spero 1980: 49-50). Despite this the US regulator asked the Bank of England to give the London branch full recognition in November 1972.¹⁸ Franklin National promptly set off to improve its weak earnings performance by speculating on foreign exchange markets. Within a year, representatives from Morgan Guaranty Trust, a prominent US bank, were meeting with the president of the New York Federal Reserve Bank to express concerns about Franklin’s activities and report that Morgan and other banks in London were refusing to enter into certain transactions with the bank (Spero 1980: 66). By May 1974 Franklin had lost access to Eurodollar funding entirely.

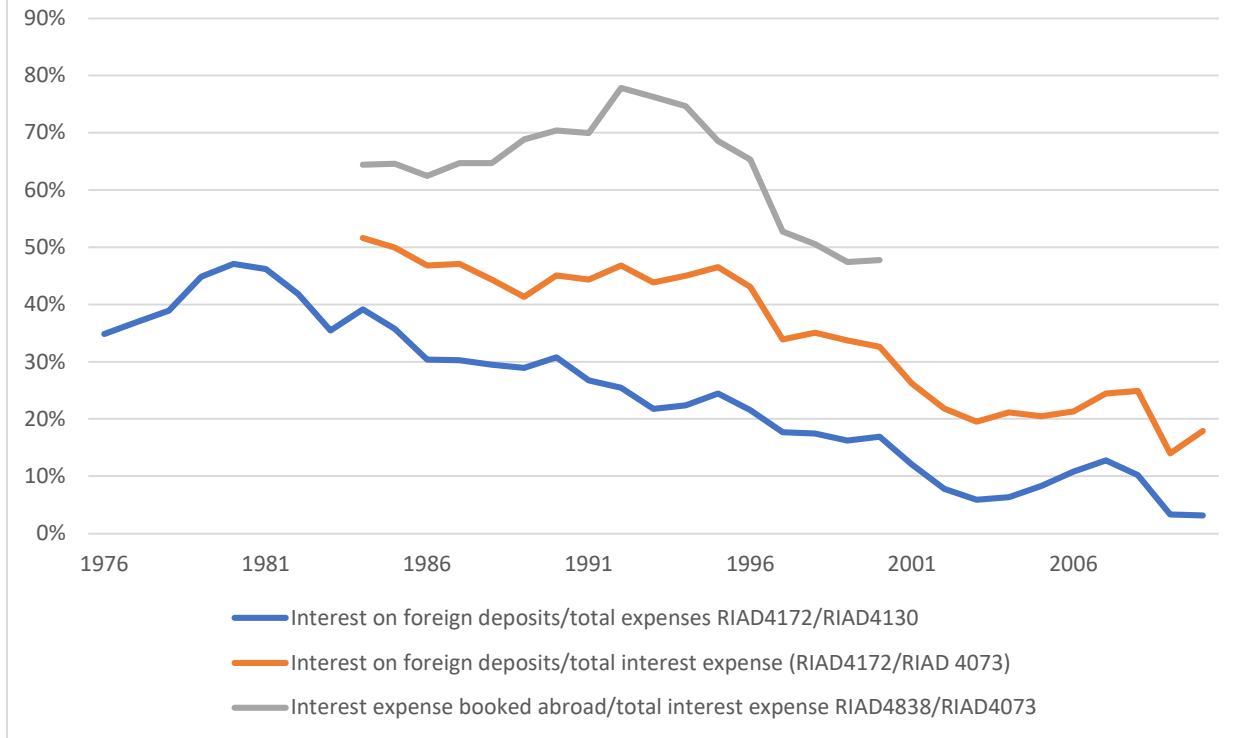
¹⁸ It was standard practice for the Bank of England to seek approval from domestic regulators before authorizing a London branch.

The Federal Reserve deemed that a failure would jeopardize financial stability ‘with further serious repercussions for domestic and international financial markets in general’, and as no merger partner could be found to take on Franklin’s losses, began to fund Franklin National through the discount window (Spero 1980: 122-25). Within two months the Federal Reserve was lending Franklin \$1.2 billion, more than a quarter of Franklin’s balance sheet (Spero 1980: 127). This lending continued – and grew by almost 50% – until October when a buyer was found for a selection of ‘good’ assets. The Fed had to buy Franklin’s foreign exchange book and operate it in runoff, indemnified by the FDIC which took the remainder of the assets into receivership.

To summarize, in 1974 the resources of the Federal Reserve and the US government were used to ensure that a demonstrably bad bank (whose officers would later be convicted of fraud) did not impose costs on international financial market participants. This contrasts sharply with the June 1974 failure of Bankhaus I.D. Herstatt, a German bank that was also engaged in currency speculation on international markets. Not only did the German government refuse to support the bank, but its closure while markets were open was so disruptive, we still speak of ‘Herstatt risk.’

In short, from 1974 the US authorities made it clear that they stood ready to protect the Eurodollar market from US bank failures. After this a Fed governor would describe US banking as a ‘no failure industry,’ and the Fed chairman acknowledged the extraordinary role played by the Fed and asked how to protect ‘the free enterprise system’ in the US (Coldwell 1976; Burns 1974). The predominance of the dollar in Eurocurrency markets was not a ‘market’ phenomenon, but US government policy.

Chart 4: Foreign interest expense as percent of total expense and total interest expense
Ten largest banks (December data)



To help understand these policy decisions Chart 4 presents the foreign interest expense of the 10 largest US banks (which accounted for about 25% of the total assets of all call reporters).¹⁹ The series that is available from 1976 is the interest expense paid on foreign deposits as a fraction of total expense. By 1976 foreign interest expense was already 35% of total expenses. By 1980 this figure had risen to almost 50%. This model was particular to the largest US banks. In 1976 the top ten banks accounted for 78% of the interest paid on foreign deposits by all call reporters. While this ratio declined fairly steadily to 69% in 1989, it rose afterwards and has remained higher ever since.

To interpret this data, it is important to recall that domestic demand deposits in the US were not interest-bearing in this period. Demand deposits were also, however, a declining fraction of the US deposit base. FDIC data indicates that interest-bearing deposits in the aggregate commercial banking system increased from 50% of deposits in 1976 to 71% in 1980, rising to 82% by 1990.²⁰ Overall, the interest expense data

¹⁹ Note that the call reports do not provide a separate category for foreign deposits in this period.

²⁰ Data downloaded from <https://banks.data.fdic.gov/explore/historical> in 2019.

makes it clear that foreign funding was a very important component of large bank funding in the 1970s and early 1980s.

The series that are available from 1984 on support this conclusion. The interest expense paid on foreign deposits held steady at about 45% of total interest expense until the mid-1990s, while the interest expense booked abroad rose in this period to exceed 75% of total interest expense.

Why were the largest US banks drawing so much of their funding from overseas? Part of the explanation is that the banks were not subject to US bank regulation on their foreign funding and so it was less costly. Also important, the first oil price shock took place in 1973 and create large dollar balances held abroad by the OPEC member countries. The role played by oil prices is made clear by the sharp rise in interest paid on foreign deposits from 39% of expenses in 1978 to 45% of expenses in 1979, when the second oil price shock took place (see Chart 4).

This heavy reliance on foreign funding was almost certainly both a cause of the US policy of protecting international markets from losses due to a US bank failure, and also a consequence of this policy: it gave US banks an advantage in raising funds on these markets. Overall, US policy in this era created a feedback loop that promoted large bank reliance on foreign funding.

The 1980s saw additional bank bailouts. Indeed, the ‘too-big-to-fail’ policy that was a concern for bank regulators after 1974, became publicly acknowledged in 1984. In 1980, the Fed repeated its 1974 behavior, extending and rolling over large loans to a failing bank, First Pennsylvania, until such time as the FDIC was convinced to bail it out (Sprague 1986: Ch 5). 1984 saw the most famous example of a ‘too big to fail’ bank, Continental Illinois, which was taken into FDIC ownership, but allowed to continue operating until it was finally sold. This was the culmination of a decade in which the Fed had made it clear that if a bank was active in the Eurodollar market, it would not be allowed to impose losses on creditors.

Overall, US policy in this period both provided very strong support for the dollar in Eurocurrency markets and fostered the growth within the US of a two-tier banking system comprised on the one hand of those banks that were active in international markets, and thus could not be allowed to fail, and on the other hand those that were smaller and domestically-focused – and subject to be put into FDIC receivership when no merger was possible. The more important issue, however, is what the banks deemed too big to fail would do with the vast funding flows that were created by US policy.

Investing ‘petrodollar’ inflows

In the 1970s and 1980s the too big to fail US banks accepted a large inflow of funding that was not associated with US commercial activity. In order to pay the interest due on that funding, they had to invest in earning assets. To make use of the sizable funding inflows, the banks formed syndicates that made large loans – in the tens of millions of dollars – and diversified their lending by taking an allocation of only a portion of the loan, and also by selling off participations in the loan after it had been made.²¹ US banks took a dominant position in international syndicated lending in the early 1970s (Bond 1985: 16).

Who were the borrowers who could qualify for such large loans? In the 1970s the borrowers were typically sovereign debtors or businesses and projects that were guaranteed by sovereigns.²² When the less developed country debt crisis revealed the dangers of lending into the high yield segment of the sovereign market, leveraged buyout funds and other purchasers of large corporations filled the gap, as we have seen above.

Foreign lending

Even before the first oil price shock of 1973, concerns were being raised in London about the growth of Eurocurrency lending to developing countries, which was estimated to have quadrupled from 1971 to 1973 (Wright 1973; BoE 1973b). This growth was driven by a combination of less onerous lending criteria than traditional bilateral lending, administrative simplicity, and abundant liquidity on Eurocurrency markets as more and more banks joined and became lenders on the market. The fact that these were term loans of five to ten years with floating, and not the traditional fixed, rates was immediately flagged as a potential concern (IFC 1973: 4-5).

Concerns about the rapid growth of eurocurrency loans to developing countries culminated in a December 1973 consultation with private-bankers (BoE 1973b). The bankers predicted that this lending was likely to grow due to the anticipated inflow into Eurocurrency markets of funds from oil exporting countries. Lending did grow through the first quarter of 1974, but the growth was temporarily disrupted by the failure of the Herstatt bank, resulting in increased rates and shorter loan-terms along with a drop in total lending back down to the 1973 level for 18 months.²³ In 1976 however the market resumed its rapid growth, doubling in size from 1977 to 1978. The growth in lending to low-income countries was driven

²¹ This technique had originally been developed for corporate lending in the US in the 1950s after the IRS approved an accelerated alternative to straight-line depreciation for assets (Bond 1985: 15).

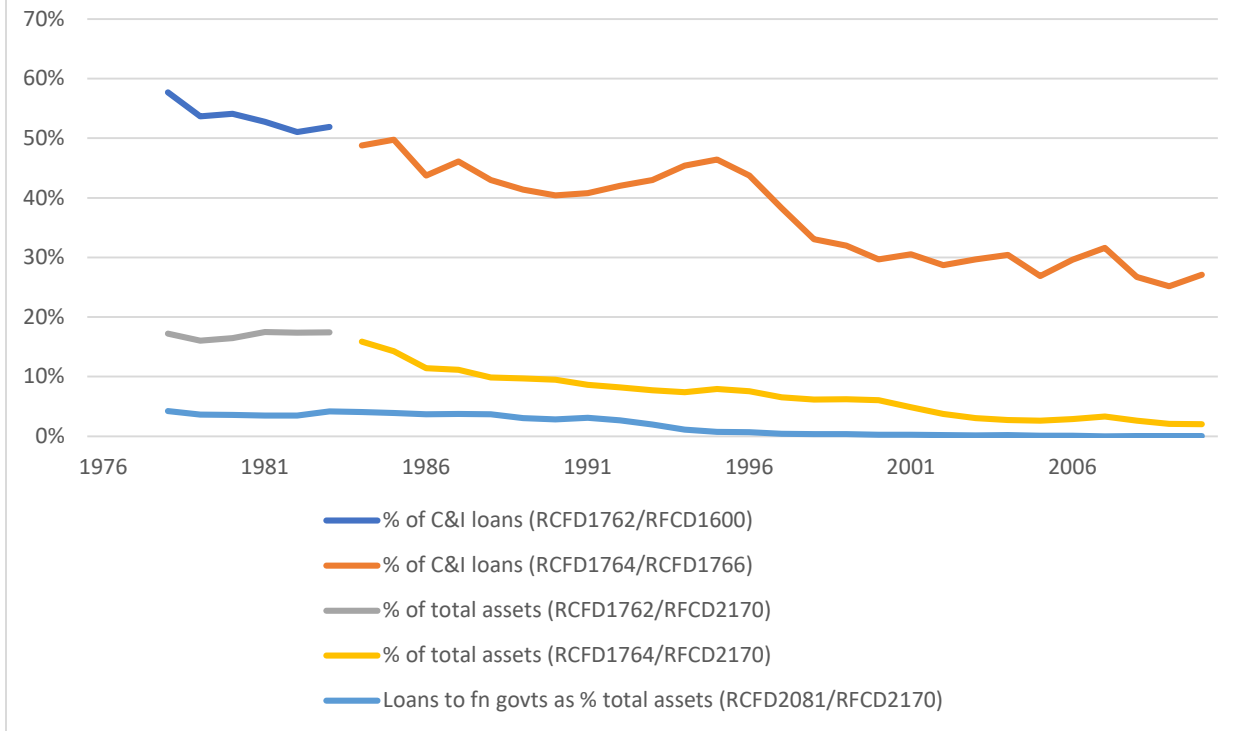
²² ‘Only governments can give assurances on interest and loan repayments because it is they who control the foreign exchange reserves of their countries.’ Indeed, loans to finance business projects would be evaluated with less strict criteria in the presence of a government guarantee (BoE 1973b).

²³ After the Herstatt failure smaller banks were shut out of London interbank market entirely for 4-6 weeks. Slow recovery to normal meant that spreads on Eurocurrency markets continued to rise through mid-1975. Banks became cautious and were very careful not to over-extend themselves through 1975 (Bond 1985: 20).

not just by the liquidity pouring into the market, but also by the fact that many countries were running short of dollars and could access dollar liquidity through the Eurocurrency market (Bond 1985: 21). By the end of 1978 spreads for low-income country borrowing had fallen back below 1%. While the growth of the market stagnated for the next few years, the absolute amount of lending continued to be high at about \$80 billion per annum.

Concerns about bank lending to low-income countries was so high that Japan in October 1979 effectively blocked its banks from participating in these loans. Bond (1985), a Bank of England economist, reported that, since the interest of small banks in participating in the international market was also drying up, in the early 80s it was frequently the largest banks that were taking up all of a loan. In the US, from 1979 bank regulators were strengthening capital requirements and using supervisory authority to draw attention to loans to highly indebted countries. These efforts had however little effect on the growth of aggregate bank lending (FDIC 1997: 89, 203; Wallich 1981: 13). Even though the share of foreign sovereign loans held by the smaller US bank increased dramatically from 1979 through 1982 (see Chart 6), by the end of 1981 the exposure of the largest US banks to developing country debt comprised more than 10% of their assets and 2.6 times their capital (FDIC 1997: 196, 199; Boughton 2001: 283-86). Overall, despite their efforts US bank regulators demonstrated that they had less ability to constrain bank lending than regulators in other countries.

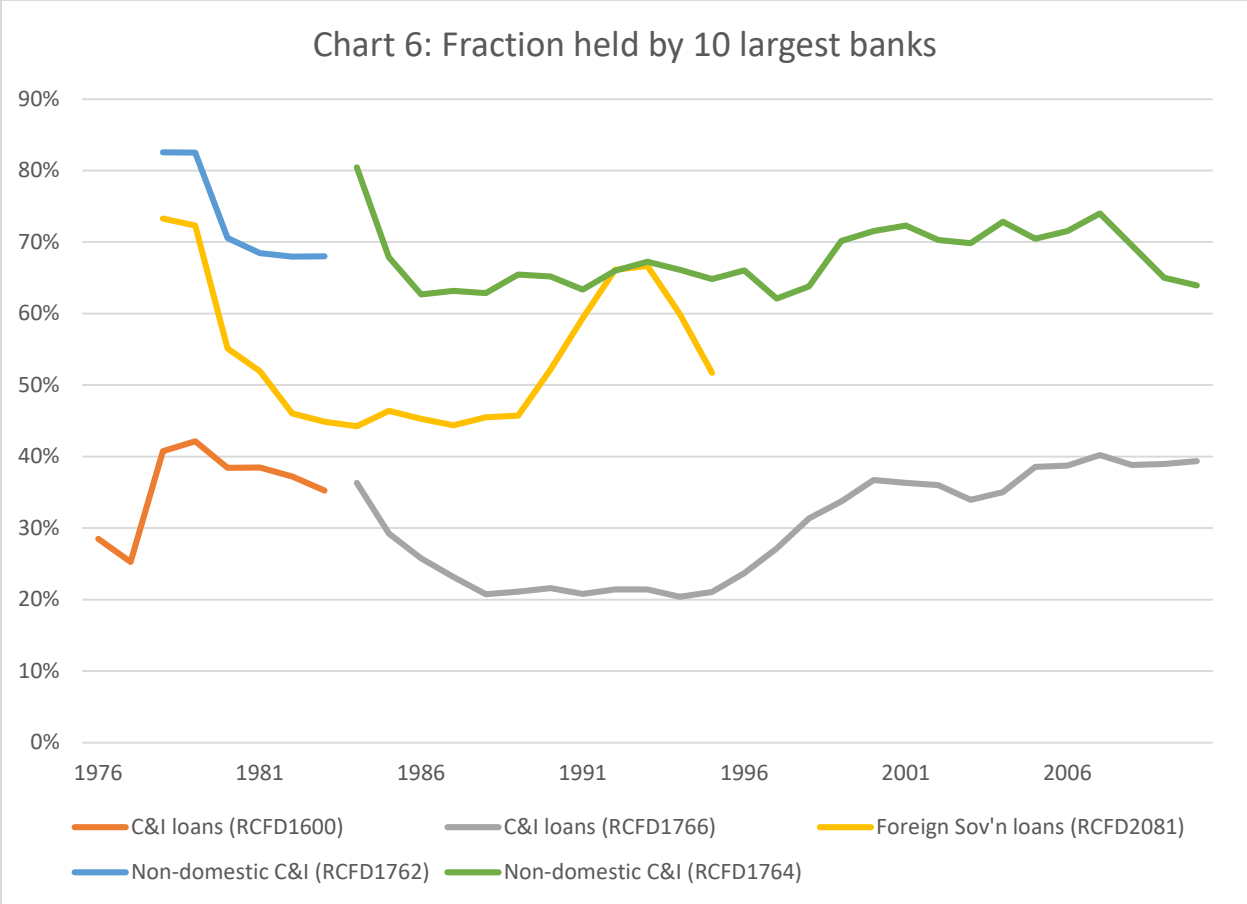
Chart 5: C&I loans to non-US addresses
and foreign sovereign loans
10 largest banks



Call report data shows that by 1978 almost 60% of the commercial and industrial lending by the 10 largest US banks was to non-US addresses, and these 10 banks accounted for 83% of the C&I lending to non-US addresses of all call reporters.²⁴ This foreign commercial lending comprised 17% of the 10 banks' total assets, whereas lending to foreign sovereigns was over 4% of total assets (see Chart 5). The lending of these 10 banks to foreign sovereigns was 73% of the lending of all call reporters to foreign sovereigns (see Chart 6).

Even though the foreign loans held on balance sheet by the 10 largest banks increased from 1979 to 1982, their share of foreign lending by US banks dropped dramatically from 83% to 68% for C&I lending and from 73% to 46% for sovereign lending (see Chart 6). Over these three years the 10 largest banks' non-domestic C&I loans increased by 32% to \$108 billion and their sovereign lending by 17% to \$21.5 billion. Lending by all call reporters to non-domestic C&I borrowers increased over these three years by 60% to \$159 billion and to foreign sovereigns by 83% to \$46.6 billion.

²⁴ In 1978 the C&I lending to non-US addresses of all reporters was \$92 billion of which \$76 billion was on the balance sheets of the top 10 banks.



Note that the apparent explanation for the increase in fraction of C&I lending by the 10 largest banks from 1977 to 1978 is that the banks only started to report non-domestic C&I lending in 1978.

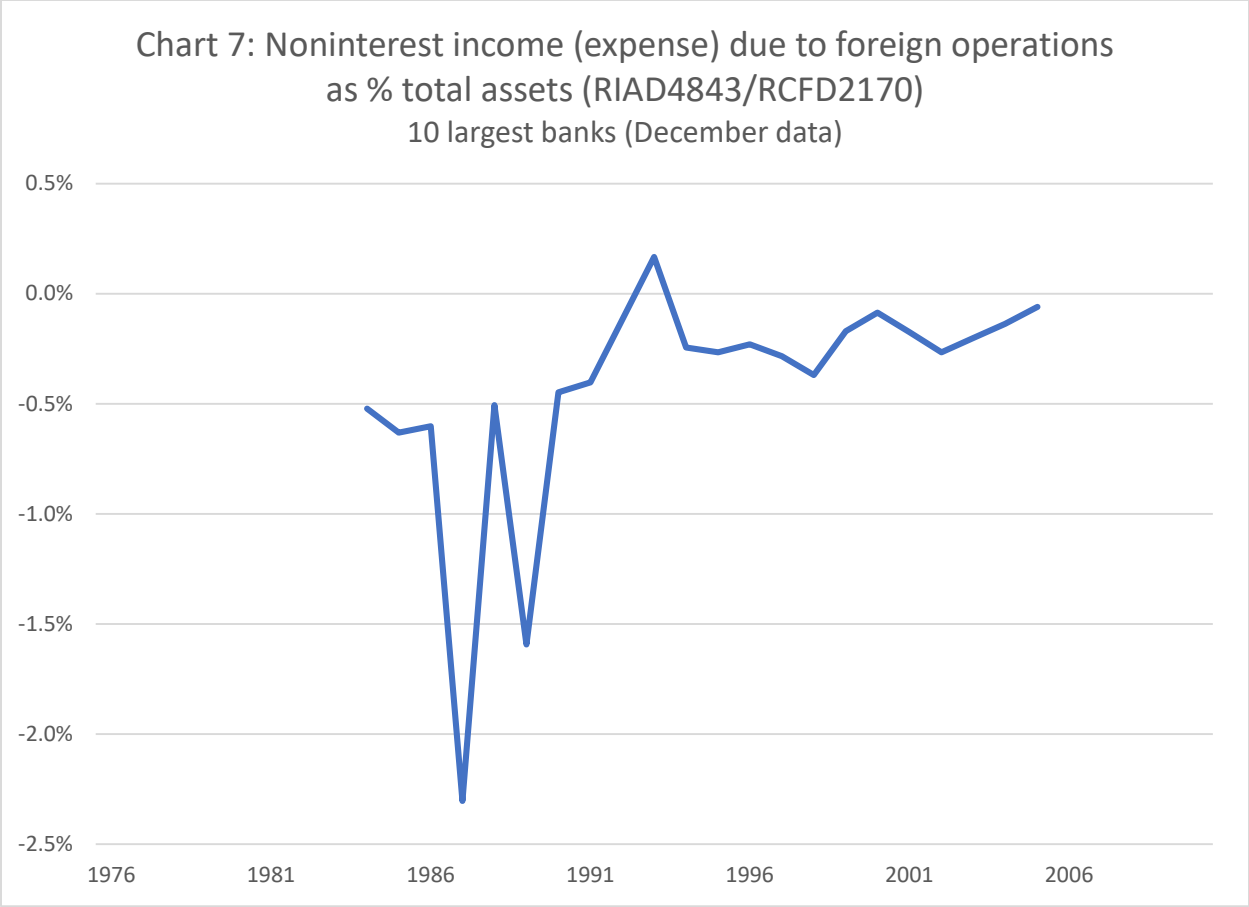
Given this data, differences in the regulation of banks in England and the US are of interest. An exchange within the Bank of England lays out a range of views about the market in London. A member of the Overseas Office distinguishes between “responsible members of the London market” who will avoid tempting a borrower into over-extending and “some of the banks seeking to gain an entry into this market (this means Japanese and newly-arrived US institutions) [who] are too willing to lend, at excessively low margins, and with inadequate examination of the borrower’s prospects.” (Edgley 1973). A colleague concurs: “the City is largely self-policing” because it is populated by banks that “are dependent on the esteem in which they are held by others for business” and the “constant survey, and assessment, of other banks’ actions, ... seems to work, for Euro-currency credit losses in recent years have not been of London’s making.” He continues: “I do think it rather stupid of people to suggest that London bankers are really so gullible as to allow themselves to become the dustbin for a mass of lending which the odds suggest will not be repaid.” And concludes: “No doubt authorities abroad are as concerned about the

position of their country's banks and look at their overall business, which would include any London branch” (Galpin 1973). In short, UK regulators were confident that the incentives faced by UK banks would ensure that they did not engage in lending which would not be repaid.

Contemporary US regulators had no such confidence about US bank lending to low-income countries. Fed Chairmen Arthur Burns and Paul Volcker both correctly predicted that US banks would “extend credit more generously than is prudent” with significant implications for the vulnerability of the international credit structure, implicitly acknowledging that the incentive structure faced by US banks was broken (Burns 1977; Volcker 1980: 21, 27, 31-32). Volcker makes the key point that this debt served to maintain strong export markets for the US and other developed countries in difficult economic circumstances – and this fact can explain the support of other government officials for the continued growth of LDC lending (Kapstein 1994: 85, quoting Deputy Secretary of State Elinor Constable).

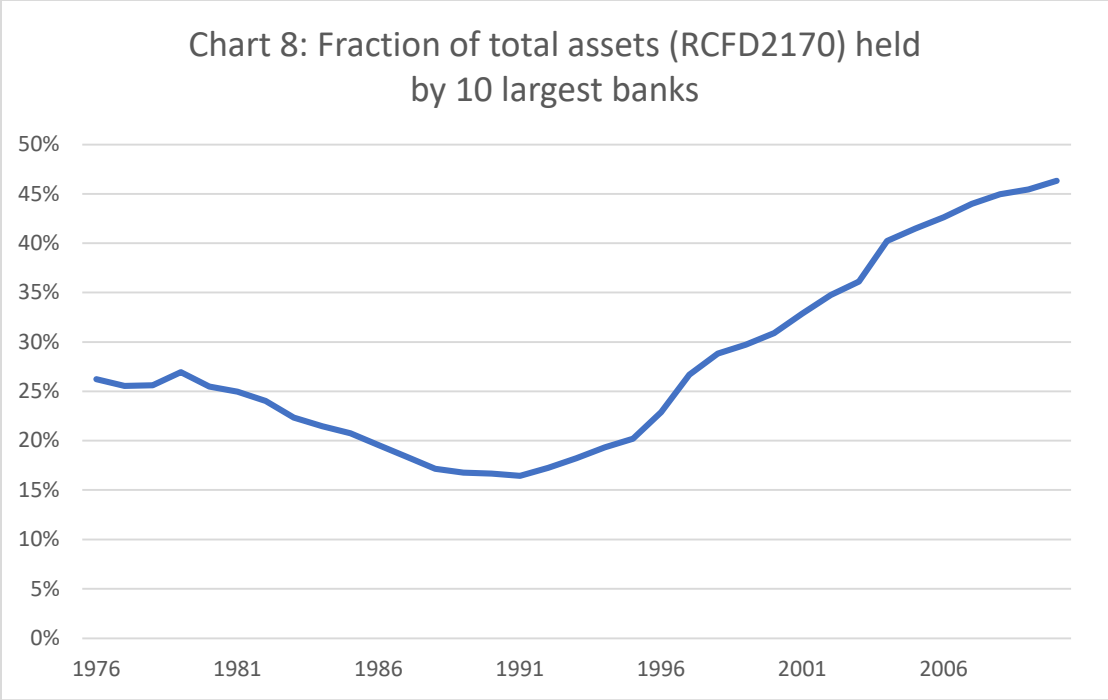
Mid-1982 was the turning point in syndicated lending to low-income countries, which were faced with prolonged high interest rates raising the debt service on their Eurocurrency debt together with a slowdown in global growth that reduced their ability to raise export-driven income to service the debt (Bond 1985; Boughton 2001: 283). After the Mexican suspension of payments, this lending dried up.

At least seven of the 10 largest banks in the US would have failed if they had been forced to recognize losses on lending to low-income countries promptly (FDIC 1997: 207). Instead they were protected from failure by a combination of regulatory forbearance and concerted efforts by US government officials in tandem with the IMF and the biggest banks to induce Latin American borrowers to avoid outright default by extending the debt. This episode has been well documented elsewhere and will not be discussed further here (see e.g. Kapstein 1994; FDIC 1997; Boughton 2001; Torre 2021).



(Note this chart can be expanded to include all quarterly data rather than just fourth quarter data.)

To understand how very troubled the largest US banks were at this time, Chart 7 shows the write-offs due to foreign lending that these 10 banks had to take in the last quarter of each year as a percent of assets. From the start of the series in 1984 through 1992, the largest banks were recording significant losses. Chart 8 makes clear how these losses affected the largest banks. In 1979 their assets accounted for 27% of call reporter assets. By 1991 they only accounted for 16.5% of call reporter assets. From 1982 to 1991 the total assets of the 10 largest banks grew by only 16% due to all the losses they had to absorb. By contrast the banking system as a whole grew by 69%.



To summarize, just prior to the LBO boom, most of the 10 largest US banks were insolvent, but they continued to receive significant funding on international markets – in reliance on the too big to fail backstop from US authorities (see Chart 4).²⁵ After the big US banks were protected from realizing their losses on lending to low-income countries, they still had abundant funds to allocate and a well-developed syndicated loan market to help them do so. Furthermore, the syndicated loan market was ‘one of the few sources of high-profit lending’ for the large banks due to fee income: the managing bank(s) in a syndicate would earn a fee of 1% of the transaction and would earn another 0.75% on the part of the loan that each bank took up (Thackray 1986; see also Bond 1985: 55-56). This of course was in addition to the interest paid on the loan. In short, what the banks needed was borrowers for their syndicated loans that could help them earn their way out of the deep hole they were in and that regulators would not object to.

It is therefore not at all surprising that a new syndicated lending market, the leveraged loan market, exploded in the US in 1983 (Knafo and Dutta 2016; see also Thackray 1986),²⁶ accompanied by a great deal of critical commentary (Shad 1984; Thackray 1986).²⁷ Indeed, the close connection between the

²⁵ Note that the Eurocurrency market remained unregulated. US regulators had sought in 1979 to impose reserve requirements on Eurocurrency deposits, but were unsuccessful in coordinating with foreign regulators to do so (Hawley 1984: 152-59).

²⁶ Allen (1990: 72) identifies 1986 as the year in which the international segment of this bank lending began to grow.

²⁷ In 1984 Karen Horn made the following comment at an FOMC meeting: ‘Another Fourth District story about banks ... around the country that I found very interesting was in connection with this recent takeover bid by

collapse of LDC lending and the growth of the leveraged loans that finance LBOs was clear to contemporary financial market participants (Thakray 1986; see also Altunbas et al. 2006).²⁸ Thus, the data presented in Section II is explained by the largest banks' need to develop a relatively safe, but high-yield asset to help them earn their way out of their difficulties.²⁹ This also explains why regulators saw this form of lending as benign – it was helping the banks out of their difficulties and efforts to close this form of lending down were likely to result in more bank failures. When call reporting on highly leveraged transactions affected the market for them in 1992 the regulators stopped the reporting after only six quarters (see Section II).

While the evidence is strong that it was syndicated loans from the banks that explain the fact that the LBO market exploded in 1983, it is important to observe that both the junk bond market (which provided subordinated finance) and the limited partnership investment fund (or more specifically the LBO fund which provided equity for the transaction) had to be developed before the buyout boom could take place. The development of the junk bond market has been studied in great detail by others (e.g. Knafo & Dutta 2016; Knafo & Dutta 2019; Lazonick & O'Sullivan).

The growth of leveraged buyout funds was made possible by reform of the regulations governing investment funds. The Security and Exchange Commission's Regulation D was a response to the mandate given the SEC in the Small Business Investment Act of 1980 changing its focus from being strictly limited to investor protection to include the goal of facilitating small business capital formation too. This law also created the concept of the "accredited investor," explicitly including pension funds in the definition along with other institutional investors. The SEC promulgated Regulation D in March 1982, removing strict limitations on what could be considered a "private offering" and therefore exempt from the formal securities registration process that was required before marketing an investment to the public. Prior to 1980 the exemptions were very narrow, limited by either the number of investors (35) or the amount raised (\$100,000).

the fellow who controls that, needed--I don't remember the exact number--in excess of a billion dollars to make the bid. And for reasons of confidentiality, he didn't want to have a bank form a syndicate to get the loan for him. So, he did what he was advised couldn't be done. He went to thirty-two banks and asked them for lines of credit for a takeover for an acquisition and he wouldn't tell them the acquisition target, and out of the thirty-two very large banks he approached only one refused to give him a line of credit because they wanted to know the name of who was being taken over. Then, on a Friday afternoon, within several hours he pulled down all the lines and made the offer. It is, I think, an indication of how business is being done these days.' (Horn 1984: 9).

²⁸ This market had the added advantage that banks could also earn fees on hedges for the LBO's floating rate debt (Thakray 1986).

²⁹ Shleifer and Vishny (1990) emphasize how 'the easy availability funds' made the takeover wave of the 1980s possible – but don't explain how this is possible given that throughout the 1980s interest rates remained remarkably high after the Volcker shock of the early 80s and indeed the bank prime rate only fell below 7.5% at the very end of 1991.

Regulation D was organized around the concept of the “accredited investor,” stating explicitly that those who fell within this definition did not require the investor protections created by the Securities Act of 1933, and expanding the definition to include wealthy individuals. Reg D created Rule 506, a new exemption for issues that did not involve “general solicitation” or in other words advertising to the general public.³⁰ The Rule 506 exemption was for issues in an unlimited amount to an unlimited number of accredited investors and up to 35 additional, sophisticated investors.

Within 4 years, newspapers were reporting ‘The appetites of US investors ... seem insatiable. There is probably around \$5 billion committed at present to equity partnerships’ (Thackray 1986). By 1989 these funds could raise \$14 billion in commitments in a single year (Fenn et al. 1995: 12). Only after the SEC’s Rule 506 was promulgated was it possible for leveraged buyout funds to raise this kind of money.³¹

While all three forms of financing, equity (provided by leveraged buyout funds), mezzanine (often provided by junk bonds), and senior debt (provided by syndicated bank loans), played an important role in LBOs, as Figure 1 shows, bank loans provided most of the financing for LBOs: it was only possible for leveraged buyout transactions to be so large because the banks were seeking to lend vast sums.

As was predicted in 1986, by the end of the 1980s the leveraged buyout market was in trouble. In 1989 the junk bond market crashed (and both Drexel and Michael Milken had been charged with market manipulation). These losses – on top of the losses from lending to low income countries – and additional losses in real estate left two banks in precarious condition. Citibank and Bank of America were under-capitalized and had to be protected by regulatory forbearance granting them time to rebuild their balance sheets and recover their losses (Fromson and Knight 1993; Wilmarth 2002: 305; Wilmarth 2014: 76-77). (The Federal Reserves’ low interest rates of the early 1990s also helped.)

At this time Citibank was described as having a culture that ‘hunger[s] for revenue rather than profit’ (Lee 1992). In short, the behavior that had been normalized amongst the more aggressive US too-big-to-fail banks was precisely the ‘gullible’ behavior that a Bank of England official had found it would be ‘stupid’ to imagine in English banks. Another way of describing this behavior is that too-big-to-fail banks, because they knew the government would act to bail them out, were making non-economic loans and losing money on a regular basis due to moral hazard. Even in the earliest days of the leveraged loan

³⁰ Note that the JOBS Act of 2012 relaxed the general solicitation requirement.

³¹ Note that there were additional legal changes of the late 1970s and early 1980s that were necessary to make it possible for pension funds to invest in limited partnership investment funds (Fenn et al. 1995: 10-11). The role of consulting companies such as McKinsey and Bain in the LBO boom also merits study – Bain Capital was after all spun off of the Bain consulting company in 1984 and would regularly hire its parent company to advise its portfolio companies. McKinsey advised banks on strategy in the 1980s (Hayes 1983), LBO firms were prominent McKinsey clients (Acharya et al. 2013), and McKinsey produced glowing reports on LBOs (e.g. Butler 2001).

market, government subsidies of too big to fail banks played an important role in their growth, in the LBOs that they financed, and in the remarkable returns earned by leveraged buyout funds.

Rebutting the standard narrative

The academic literature describing the sudden onset of the buyout boom and shifting portfolios of the largest banks typically describes the banks as responding to a difficult competitive environment, and remarkably, rarely mentions the fact that the losses created by the overhang of bad loans to low-income countries were what made the 1980s environment challenging for the largest banks. Instead, deregulation is treated as having exposed banks to new ‘market-based’ competitors (e.g. CBO 1994; Borio 1990a: 37). On the lending side, the list of bank alternatives typically includes sources of borrowing for corporations such as commercial paper, junk bonds, and international banks. On the funding side, money market funds are the most important competitors.

These consequences of deregulation provide a good description of what made the late 20th century environment inhospitable for smaller banks: they had to compete for funding with interest-paying competitors like money market funds and were unable to keep any large corporate clients as borrowers, because they now had access to a wide variety of funding options. It is, however, an extremely poor description of the effects of deregulation on the environment faced by large banks.

First of all, deregulation is what allowed the large banks to be active on Eurodollar markets, giving them a cheaper source of funds than the small banks. After the 1974 bailout of Franklin National the biggest banks had an additional ‘too-big-to-fail’ boost from the US regulators to their ability to raise funds on international markets. The largest banks had government-supported credit ratings (see e.g. Moodys 2010) allowing them to borrow easily on commercial paper markets, in addition to earning fees from providing standby facilities to corporate commercial paper issuers. Thus, it is hard to understand how the deregulation of the 1960s, ‘70s and ‘80s can be considered a source of more difficult funding for the largest US banks.

Arguments that deregulation forced banks to adapt to a world where borrowers could rely on junk bonds or foreign banks similarly fail to make the crucial distinction between the challenges faced by smaller banks and the significant advantages that deregulation provided to the too-big-to-fail banks. As was discussed above the leveraged lending of the too-big-to-fail banks helped supercharge the junk bond market, because junk bonds provided a layer of subordination to make the bank loans senior and safer. Thus, the junk bond and leveraged loan markets grew symbiotically. Furthermore, while it is true that international banks expanded more deeply into US markets at this time, they did not penetrate US market more deeply than the too-big-to-fail US banks penetrated foreign markets. And when it came to

syndicated lending, both to low income countries and to buyout firms, there is no question that the US banks were the leaders of both phenomena.

Finally, although the largest banks did face challenges through the 1980s and were growing much more slowly than the smaller banks, this can be accounted for almost entirely by the writeoffs that the banks had to take over the course of this decade on their international loans. In short, their troubles in the 1980s were of their own making. We can conclude that the too-big-to-fail banks grew the leveraged lending market, not because competitive pressures forced them too, but because they needed a source of high-interest loans and fees in order to offset the writeoffs that they were having to take on their bad loans to low-income countries.

IV. Does it matter if LBOs were a bank-driven phenomenon?

We have shown that the wave of LBOs that took place in the 1980s was a bank-driven and not a market-driven phenomenon. To understand why this matters, we first explain ‘banking theory,’ a 19th century approach to banking that views bank lending as having the capacity to generate massive distortions in the economy including asset price booms and busts, and that shaped the development of central banking (Sissoko 2016; Sissoko 2022; Sissoko forthcoming). Then we discuss the distortions that are created by the bank finance of private equity.

A framework explaining why bank lending controls are essential to avoid economic distortions

Banks in the modern period developed to address a specific type of financing need: it is inefficient for a firm to be financially constrained such that the only reason its production is limited is insufficient funds to purchase the inputs that are needed to complete profitable sales a few months in the future (Smith 1776: II,ii).³² Historically banks addressed this problem in a very cost-effective manner by monetizing short-term credit in the form of bills of exchange (Smith 1776: II,ii; Sissoko 2016; Sissoko 2022).³³ Notably, this development of banking took place in an environment where the usury rate was capped at 5% per annum.

The availability of inexpensive bank-based short-term credit, however, very quickly raised the issue that when bank finance is too readily available, such that a business can continuously borrow funds to maintain its operations, the business is protected from going bankrupt, even if its business model is in fact deficient and sales are not profitable (Smith 1776: II,ii).³⁴ Thus, the key question for nascent central

³² “The commerce of Scotland, which at present is not very great ...” and following paragraphs.

³³ The system of banking based on deposits that fund loans evolved from this system of bank-supported bills, and indeed the check is legally even now just a bill drawn on a bank (Sissoko 2022).

³⁴ “The operations of this bank seem to have produced effects quite opposite ...” ff

bankers was the question of credit control: how to ensure that banks provide adequate credit for the economy to grow without providing so much credit that ultimately an excess of business failures would destabilize the economy (Monnet 2018).³⁵ One important principle was that banks should avoid investing in business equity, and should focus on making carefully monitored short to medium-term loans. Part of the monitoring process was to ensure that the borrower had the means to pay back the debt and that the roll-over of funding that paid back both the interest and principal of maturing debt was not serving to hide a *de facto* equity investment by the bank in the business. Another important principle was that in order to avoid asset price bubbles bank lending that was collateralized by long-term assets had to have its growth strictly limited by criteria other than the price of the underlying assets (Sissoko 2016).³⁶

Since that time, the problem of constraining the growth of bank lending to prevent asset price bubbles and financial instability has been an ongoing theme of financial regulation (Sissoko 2017; Schumpeter 1939; US Senate 1933. See also Bindseil 2019; Monnet 2018; Ugolini 2017). Some of the principles underlying bank-driven financial instability have been rediscovered by modern scholars: Adrian and Shin (2010) and Brunnermeier and Pedersen (2009) show that, when bank lending is based on collateral, feedback loops and asset price bubbles can arise,³⁷ and Sissoko (2021) models the role of banks in the payments system and concludes that financial stability requires policymakers to regulate competition in the banking sector.

The growth of leveraged loans can be viewed from this perspective, treating banks and their credit origination practices as a key determinant of both economic growth and financial instability. From this viewpoint, the growth of leveraged loans, both in the early years and in the following decades, raises immediate concerns that bank credit may be facilitating the on-going operation of corporations without strong fundamentals or that it may be having an adverse effect on asset prices.

This approach contrasts with much of the academic literature, which anthropomorphizes ‘markets,’ treating them as crucial decision-making entities: Instead of considering bank demand for risk, the literature discusses ‘market appetite for risk’ (e.g. Musatov & Watts 2014. See also Holmstrom and Kaplan 2001). Banks are then framed as responding to competition and to market forces when originating leveraged loans (e.g. CBO 1994; Borio 1990a: 37).

When banks (or more precisely bankers) are framed as making active decisions about what loans to make, and when there is a substantial risk that if they make bad decisions and fund the wrong kinds of activities they will cause financial instability and/or asset price bubbles, then the growth of a new market, such as

³⁵ The real bills doctrine was an early means of exercising such control (see Sissoko 2016; Sissoko 2022).

³⁶ Sissoko (forthcoming) relates banking theory to network effects models (see e.g. Ferrell & Klempner 2007) and to circuit theory (see e.g. Graziani 2003).

³⁷ This was the phenomenon that the real bills doctrine sought to address (see Sissoko 2016; Smith 1776: II, ii).

the leveraged loan market, needs to be evaluated with some care. There is now no presumption that ‘market’ phenomena will be efficiency-enhancing, and bank loans are now viewed as a proximate cause of economic distortions.

Since banks have access to cheap funding that is subsidized by the public’s need for a medium of exchange, and too-big-to-fail banks have even cheaper and more abundant access to funding (Santos 2014, Gudmundsson 2016), when these banks decide to direct their vast resources into the finance of buyouts, then buyouts will take place. As central bankers have understood for centuries, while bank-driven credit flows provide essential support for economic activity, they can also create serious distortions in the economy because economic sectors will grow where credit is made available. In the case of buyouts, once people in finance, and people close enough to finance to be able to figure out how to get into it (e.g. Alexander 2018 on Vincent Naimoli), learned what types of deals the banks were interested in financing, there was no lack of ‘competition’ for leveraged loans. Buyout firms, and indeed different types of buyouts, proliferated precisely because the financing was there to make them happen.

In short, banking theory supports the view that the leveraged buyout boom was a bank-driven phenomenon – even while acknowledging that it could not have happened without certain antecedents such as the evolution of financial structuring activities (Knafo and Dutta 2019), the growth of junk bonds (Lazonick & O’Sullivan 1997), or the change in US law permitting pension funds to invest in buyout funds and hedge funds (Fenn et al. 1995: 10-11). Notably, this view is supported by contemporaries who also took the view that buyouts were a lender-driven phenomenon (Thackray 1986).

Private equity and economic distortions

Are there any economic distortions that may have developed due to the decision of the largest US banks to use the syndicated loan structure to finance buyouts? First, this distortion contributes to the increase in the flow of US national income to the financial sector, and, second, there are currently concerns that the large segment of the US corporate sector that is owned by private equity is so heavily indebted that significant defaults will be the ultimate outcome of this lending bubble.

The billionaire factory

The bank-driven growth of buyouts imposes heavy debt loads on the buyout targets in order to repurpose the corporation away from building long-term value and towards making payments to creditors (including the banks) and to shareholders (see section I above).

Historically the corporate form was created in order to make it easier to raise the very large sums of money needed for largescale business endeavors. It has funded essential infrastructure such as railroads

and trans-oceanic cables, as well large-scale manufacturing firms of every variety. By the mid-20th century corporations were integral to every part of American life.

The buyout takes the extraordinary publicly-subsidized capacity of corporations to raise large sums of money and directs the benefits of that capacity to senior creditors and a small group of insiders: this is the billionaire factory (Phalippou 2020; see also Shleifer and Summers 1988; Osterberg 1989). Thus, an important effect of the bank-driven flow of credit into leveraged loans is that a select group of financiers was enabled by the banks to arbitrage the corporate form and to use it to raise vast sums of money for the benefit of that select group of financiers, as well as the bankers. The fact that buyouts are designed to divert the benefits of the corporate structure to the banks and a small group of insiders, the private equity firms that are the general partners in the buyout funds, can surely explain at least in part why, since the 1980s, an increasing share of gross national income has flowed to the financial industry (Philippon 2015; Morris and Phalippou 2020).

Is private equity sponsored debt a bubble?

The normalization of the buyout phenomenon has transformed the economic structure of the US economy, as a significant portion of US corporations are now heavily indebted and controlled by private equity. There are on-going concerns that the debt associated with these transactions is unsustainable, that is, that significant defaults will be the ultimate outcome of this lending bubble.

In 2019 private equity funds (including buyout funds and venture capital funds) had \$1.175 trillion in assets under management and another \$680 billion in commitments that had not been drawn. Assuming equity comprised on average 30% of the value of the companies controlled, then in 2019 private equity controlled companies were worth almost \$4 trillion.³⁸ At the end of 2019, the capitalization of US public equity markets was \$38 trillion. Thus, it is reasonable to estimate that private equity in 2019 controlled companies worth more than 10% of the US stock market. When committed capital is taken into account, this would allow private equity funds to buy another 6% of the US stock market (see Mauboussin and Callahan 2020: 5).

Furthermore, the aggregate value of private equity deals in the US increased each year from 2016 to 2019, when it reached \$755 billion. While it dropped in 2020, in 2021 the value jumped to over \$1 trillion. This amounted in a single year to 2% of US stock market capitalization. Due to rising interest rates, private

³⁸ While buyouts since 2000 have used more equity than in the past, they are also much more likely to be purchasers of already leveraged companies than in the past as secondary buyouts have dramatically increased and now account for more than 50% of firm exits (see Mauboussin and Callahan 2020: 38-39).

equity activity has been dropping on a quarterly basis since the end of 2021, but was still \$975 billion in 2022 (SIFMA 2022: 10; SIFMA 2023: 13).

To understand the significance of this buyout activity, recall that private equity controlled 0% of US companies forty years ago and less than 5% twenty years ago (Mauboussin and Callahan 2020: 30). In short, by the numbers private equity has risen very quickly to control a significant portion of the US corporate landscape, and is positioned to continue displacing the public corporate form at a rapid pace.³⁹

Needless to say, this private equity control has been accompanied by a significant increase in the debt carried by mid- and large-tier non-financial corporations (Holmstrom and Kaplan 2001; Davis 2016; Aldasoro et al. 2021). The consequences of this phenomenon are significant. In the 21st century central banks have found themselves repeatedly supporting the value of putatively ‘private’ credit in ways that were unthinkable a few decades ago.

After the 2007-09 financial crisis Federal Reserve policy rescued the leveraged debt markets from disaster. The initial policy of low interest rates ‘for an extended period’ that the Fed adopted in March 2009 was designed to address weaknesses in credit markets and to make it easier to refinance debt, both mortgages and corporate debt (FOMC 2009). What mattered most to leveraged debt markets, however, was Fed policy from 2011-14 when the maturing debt would need to be refinanced. By August 2011 the Fed had adopted a policy of holding interest rates at zero ‘through mid-2013,’ and an explicit purpose of this prolonged zero interest rate policy was to reassure financial markets that the policy would extend for more than three or four months (FOMC 2011: 128, 135). Then in early January 2012 the Fed extended the promise to maintain zero rates to the end of 2014 – or for three years. This extension of the zero interest rate policy was adopted explicitly to ‘exert some downward pressure on market interest rates’ (FOMC 2012a: 54, 167-68). Needless to say, this policy was extremely important to the ease with which both leveraged loans and junk bonds were refinanced.

The commitment to an extended period of low rates was not withdrawn until January 2015, when the statement was carefully worded to make it clear that it would be several meetings before interest rates were raised.⁴⁰ By this time the vast amount of high yield debt that required refinancing had already been dealt with. Only in December 2015 did the Fed finally raise interest rates.

³⁹ Indeed, Mauboussin and Callahan 2020 posit that even more funds may flow into private equity in the 2020s (p. 53).

⁴⁰ Specifically the statement read that “the Committee judges that it can be patient in beginning to normalize the stance of monetary policy” (FOMC 2015).

A case study of ‘the best leveraged buyout ever’ by Austin and Phalippou (2023) makes clear how the leveraged buyouts of the 2000s were heavily reliant on the Fed for their ultimate success. The buyout of Hilton Hotels in 2007 by the Blackstone Group, in which Blackstone earned a total of \$14 billion in capital gains, benefited dramatically from the decline in interest rates – which accounted for as much as 100% of the gains from the deal when evaluated in net present value terms (Austin and Phalippou 2023: Table 6). In other words, the Federal Reserve’s adoption of a policy of low interest rates for a period of three years or more served in particular to support the value of highly leveraged firms with adjustable rate debt. Companies with less leverage received smaller benefits from this policy.

Furthermore, in response to the Covid crisis in 2020, the Fed provided support that was specifically directed towards the debt issues of private equity-owned companies. Leveraged loans were supported by making the senior, and largest, tranche of a CLO eligible as collateral at Fed facilities.⁴¹ The junk bond market was directly supported by Fed purchases of high-yield ETFs that accounted for approximately one-eighth of all Secondary Market Corporate Credit Facility ETF purchases. In addition, even though the Primary Market Corporate Credit Facility apparently did not make any purchases, the fact that syndicated loans were eligible for purchase at the Fed almost certainly helped to support their value.

In this environment, pervasive high corporate debt is an on-going matter of concern particularly in an environment where interest rates are increasing (Smith and Cannon 2018; Platt et al. 2023). Whether or not this debt is ultimately deemed to have been a bubble may however depend on how long the central banks continue to provide support for this debt.

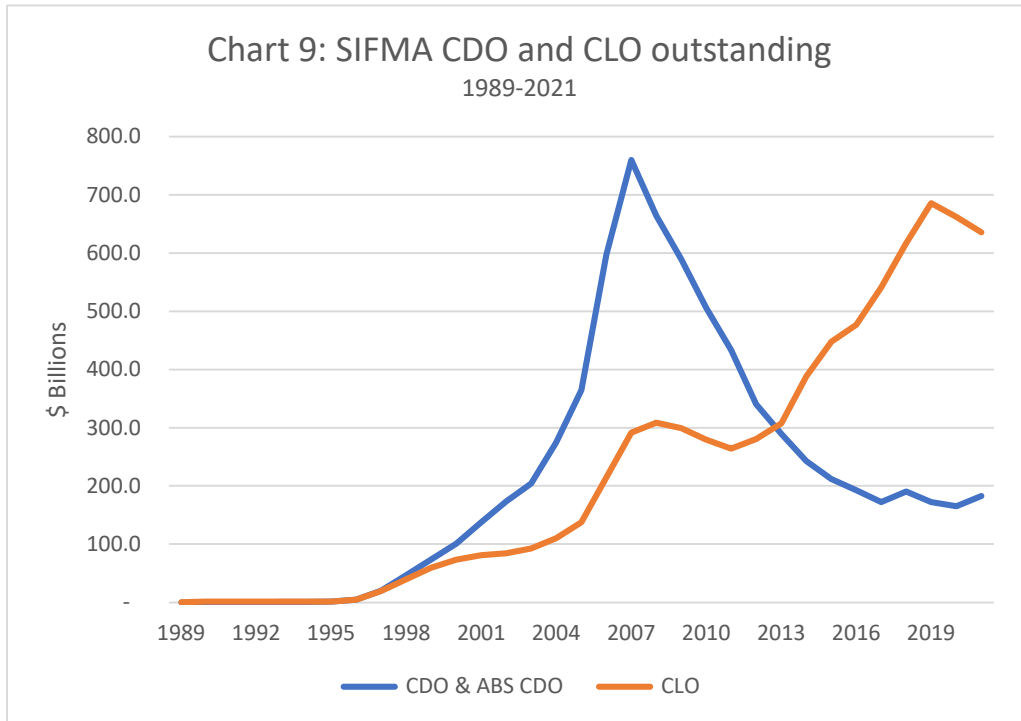
V. Conclusion: Bank-driven financial innovation today

The previous section explained how bank-driven buyouts played an important role in redirecting US national income to the financial sector and may have generated a bubble in private equity sponsored debt. The example of bank-driven buyouts also provides a new framework for understanding financial innovation. When banks play a significant role in funding a financial innovation, there is a risk that bank-funding is creating a distortion in the economy. Here, we briefly discuss two candidates for further study, the collateralized loan obligation (CLO) and ‘private credit.’

From the late 1990s banks began to transfer leveraged loans to non-bank investors (after collecting fees for origination). To do so, the banks relied on structured finance vehicles in the form of CLOs, as depicted

⁴¹ This collateral was accepted at the Primary Dealer Credit Facility and the Term Asset-Backed Securities Loan Facility, two 2007-09 crisis facilities that were re-opened in 2020.

in Chart 9 (Bullock 2008; Mauboussin and Callahan 2020: 20).



Source: SIFMA US CDO CLO Outstanding available at <https://www.sifma.org/resources/archive/research/statistics/> (downloaded 18 July 2023).

CLOs allowed the volume of leveraged loans to grow dramatically from 2003 to 2007 as financial structuring was used to increase demand for the product (Monga 2009; see also Mauboussin and Callahan 2020: 20; BIS QR Sept 2019 p. 11). All of the big names in private equity played a role in the buyout boom of 2005-07: Apollo Management LP, Bain Capital LLC, Blackstone Group LP, Kohlberg Kravis Roberts & Co, and others relied on this debt to finance huge deals that were considered ‘mega-buyouts’ at the time (Monga 2009; Schwartz 2010). A private equity executive’s evaluation was that ‘The PE firms were not investing in specific industries. They were investing in the capital markets’ (Monga 2009).

Ultimately, however, leveraged loan defaults peaked in 2009 and the market did not experience a collapse at all similar to the subprime mortgage backed security or CDO markets. This can be explained by the Federal Reserve’s extremely prolonged low interest rate policy, as was discussed above. This raises the question whether bank-sponsored CLOs are also playing a role in the distortions discussed above: the increase in the flow of US national income to the financial sector and the risk that private equity company debt will turn out to be a bubble. This is however a topic for future work.

A more recent financial innovation is an asset class called ‘private credit’ which according to Moodys (2024) is ‘non-bank lending to mostly private-equity-owned, middle-market companies that aren’t publicly traded or issued.’ In theory, this would appear to be an alternative to bank-originated leveraged loans. In practice, banks play an important role in financing the private credit firms (Zelter 2024), and rely on private credit as they relied on junk bonds to provide the supporting debt that makes its possible for a deal to be completed (Cai and Haque 2024). Indeed, the large banks typically have private credit arms that both invest in this debt and provided financing for the funds that invest in this debt (Whittall 2019; Whittall 2022). Whether private credit is another bank-driven phenomenon requires further research, but this paper indicates that it is an important question that should be investigated.

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