A Century of Firm – Bank Relationships:

Did Banking Sector Deregulation Spur Firms to Add Banks and Borrow More?

Fabio Braggion
CentER - Tilburg University

Department of Finance
PO Box 90153, NL 5000 LE Tilburg, The Netherlands
Telephone: +31 13 4668209, Fax: +31 13 4662875
E-mail: f.braggion@uvt.nl

Steven Ongena [*]
University of Zürich, *SFI* and *CEPR*

Department of Banking and Finance
University of Zürich (UZH)
Plattenstrasse 32, CH-8032 Zürich, Switzerland
E-mail: steven.ongena@bf.uzh.ch

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Abstract

We study how firm-bank relationships and corporate financing evolved during the Twentieth century in Britain. We document a remarkable transition from single to multiple relationships. Transparent, larger, and global companies were more likely to add a bank, especially when located in more competitive local banking markets. Deregulation and intensifying competition in the banking sector during the 1970s spurred banks to supply credit through multilateral arrangements. Firms that added a bank following deregulation borrowed more than similar firms that did not add a bank, and their bank debt expanded while their trade credit and share issuance contracted. (96 words)

I. Introduction

How did firms and banks engage each other in the past? And how did firm – bank relationships evolve throughout the years? And what are the consequences for corporate financing when firms can and do engage more banks? This paper aims to answer these questions by studying how relationships between firms and banks evolved since the end of the Nineteenth century until the end of the Twentieth century in Britain.

We start by documenting a remarkable shift that took place in the beginning of the 1970s (after more than 80 years of stability) from bilateral to multilateral relationship banking. We relate this sudden increase in the number of firm-bank relationships to the onset of banking sector deregulation in 1970, an event that is unlikely driven by factors related to the firms' investment demand and can be considered an exogenous shock to the supply of capital to firms.

We then show that following deregulation the more transparent and levered firms started to engage more banks, yet that these firms did not necessarily do so before deregulation. Importantly, firm leverage and bank debt increased more for firms that added banks than that of observably similar firms that did not add banks following deregulation than prior to deregulation, while trade (and other) credit correspondingly contracted more.

We argue therefore that in a competitive banking market the penchant of corporates to borrow from multiple banks may be an important, yet so far overlooked, driver of corporate leveraging. When vying for market share competing banks may fail to fully internalize the consequences of future corporate indebtedness (Bizer and DeMarzo (1992), Degryse, Ioannidou and Schedvin (2011)), and accordingly banks may "overlend."

Our paper makes two contributions. First, we contribute to the growing literature that studies the evolution of finance over a very long period of time. Like Rajan and Zingales (2003), Chambers and Dimson (2009), Frydman and Saks (2010), Schularick and Taylor

(2012) and Philippon and Reshef (2013) we study the long-run development of a financial system to understand if and how the present financial practices are the result of historical processes. In particular we investigate one of the key components of a financial system, i.e., the interactions between firms and banks and its role for the corporate leveraging.

Long-run analysis provides us with a unique opportunity to test the validity of various relationship banking theories and their relevancy for the corporate leveraging in a new and unexplored context. Our analysis suggests that the transition to multiple banking coincided with a period of liberalization of the banking sector in the UK that greatly increased the level of competition among financial institutions and that may have contributed to the dramatic surge in the corporate leveraging.

Second, we provide an alternative channel through which a relaxation of credit supply constraints can affect firms' financial policies, i.e., the switch from bilateral to multilateral relationship lending. The study of bank relationships offers a clear and measurable channel that allows us to determine how financial deregulation may have an impact on firms' financial policy. In particular, we study if the deregulation that was intended to promote competition in the banking sector eased firms' access to additional banks and consequently changed firms' borrowing policies. Black and Strahan (2002), Stiroh and Strahan (2003), Bertrand, Schoar and Thesmar (2007), and Huang (2008), among others, investigate the relevance of banking deregulation for credit and real growth, while Leary (2009), Sufi (2009), Lemmon and Roberts (2010) and Rice and Strahan (2010), among others, investigate if the relaxation of credit supply constraints affects corporate borrowing.[1] Complementing their work we analyse

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[1] In this respect our paper also has some bearing on the recent financial crisis as its depth has been partly attributed by policymakers and academics alike to excessively high leverage of corporations and banks. Both were heavily indebted at the onset of the financial crisis as low interest rates may have promoted cheap debt

ninety years of pertinent corporate information, including vital (for the identification of the deregulation's impact) information on firm-bank connections, for all commercial and industrial listed firms in the UK to document the *differential* effect of banking deregulation on relationship banking and on corporate leveraging.

The reasons for studying the financial system in Britain are straightforward. Its financial markets had a preeminent role in the world for many decades and banks played a notable role in its performance. Yet, Britain's financial system was subject to many changes in its economic and legal environment. Crucial for our purposes financial information was always readily available in Britain. We can therefore collect a unique dataset that contains consistent financial records of all publicly listed firms, including key firm-bank relationship information,[2] during a 90-year period from 1896 to 1986.

With this long time-series data in hand, we first document that a remarkable and economically relevant transition took place in the second half of the Twentieth century from

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financing prior to the crisis, "exacerbating" the well-known structural tax advantages of debt. Goodhart and Schoenmaker for example argue that therefore "removing the tax advantages of debt is vital" to remove the structural bias towards debt financing that encourages companies to take on debt rather than equity (*Financial Times*, December 30, 2010). However, sharp increases of leverage ratios are not a recent phenomenon. Recent work by Graham, Leary and Roberts (2011) shows that the US corporate leverage doubled from pre-war years to the 1970s. They explain this phenomenon not only by looking at the changes that took place in taxation, but also by linking it with fundamental developments in industry composition, firm characteristics, assets and investments, and, important for our paper, credit supply conditions.

[2] We have the identity of <u>all</u> primary banks of <u>all</u> industrial UK publicly-listed firms between 1896 and 1986. Ongena and Smith (2001) and Karceski, Ongena and Smith (2005) know up to four primary banks of companies listed on the Oslo Stock Exchange between 1979 and 1995. Houston and James (1996) study 250 US publicly-listed firms present in 1980, 1985 and 1990 in COMPUSTAT and deduce relationship multiplicity from the firms' borrowing in the syndicated loan market segment. Mainly syndicated loans for very large firms in the US and around the world are the sole source of the relationship proxies that are derived from LPC Dealscan information (that commenced partial coverage in the mid-1980s) in Strahan and Qian (2006), Bharath, Dahiya, Saunders and Srinivasan (2007), Bharath, Dahiya, Saunders and Srinivasan (2009), De Haas and Van Horen (2013), among others.

single to multiple bank relationships.[3] Many firms had only one bank relationship prior to this change, demarcating a clean differentiation and possible transition from bilateral to multilateral banking during the sample years. Indeed, about 85 percent of companies in our sample were involved in a single bank relationship between 1906 and 1966. This figure considerably declines to 71 percent in 1976 and to 60 percent in 1986. The transition from single to multiple bank relationships is even more pronounced for larger companies: 65 percent of the top 200 companies (in terms of share capital issued) for example had a single relationship between 1906 and 1966. By 1986 this percentage almost halved to 38 percent.

Our detailed data then allows us to more precisely date the acceleration of the transition to multiple banking in the 1970s. Prior to deregulation larger firms were more likely to engage multiple banks.[4] After deregulation also firm transparency starts to matter. In particular, we find that especially officially listed firms (i.e., with securities that have direct access to a large market), and also firms with better governance (i.e., in terms of applying the one share - one vote principle), were more likely to switch to multiple banking. We also find that the

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[3] Multiple firm-bank relationships are a common feature in many financial systems, but there is large variation in the average number of bank relationships across firms within a country, across countries and over time (see Degryse, Kim and Ongena (2009) for a review). While the number of relationships maintained by large firms seems in some countries to vary at a business cycle frequency (Lefilliatre (2002); Sterken and Tokutsu (2003); D'Auria, Foglia and Reedtz (1999); see also Bolton, Freixas, Gambacorta and Mistrulli (2013)), overall the number of relationships seems quite stable (Proust and Cadillat (1996)), without any clear trend emanating (Hommel and Schneider (2003); Dietsch (2003)). But all of these studies have access to only a few decades of relationship information. Hence such short time windows may be inadequate to investigate the effect of structural changes - such as changes in legislation, monitoring technology or banking market conditions - on the number of bank relationships.

[4] Many studies regress a bilateral/multilateral relationship dummy or the number of relationships as the dependent variable on a variety of relation, loan, firm, bank, and/or market characteristics. Though the specifications differ across the many studies that have been published, a few results seem robust (Degryse, Kim and Ongena (2009)). Larger, but also older firms have more bank relationships ceteris paribus. Less profitable, distressed, low cash flow, intangible and leveraged firms also maintain more relationships. Farinha and Santos (2002) for example study why *de novo* firms in Portugal stay with one bank. Different from their analysis we take a long-run perspective. In particular we document that independently from their own life cycle most UK firms maintained only one relationship during a large part of the Twentieth century.

interaction between transparency and local banking market competition matters. Transparent firm headquartered in local banking markets that became less concentrated were even more likely to switch. For a subsample of firms we also know whether or not the firm had an outstanding loan with the bank, allowing us to even better gauge the intensity of the extant firm-bank relationship. We find that firms with outstanding loans with the bank were more likely to switch to multiple banking than firms that did not have any outstanding loans (and thus were more likely to just use the bank for cash management purposes for example).

Having established banking sector deregulation in 1970 as the most prominent and likely cause of the striking transition to multiple banking in the UK during the 1970s, we then investigate its effects on corporate leveraging. Identifying a causal relationship that runs from multiple relationships to financial policies is difficult, as unobservable variables that may lead firms to approach an additional bank may also have a direct effect on firms' borrowing and leverage ratios. Our identification strategy relies on a difference-in-difference analysis.

First, we control for time-invariant factors and compare outcomes of the same firm before and after it adds a bank to the existing relationship. As a result, any unobserved factor that drives both the decision to switch to multilateral relationship and firms' borrowing policies would have to explain both variables before and after a new bank is added.

Second, we compare the outcome variable of "adders" with the outcomes of observationally equivalent "stayers" that maintained a single relationship. In this way, we control for environmental and regulatory changes that may have an impact on similar firms beyond the decision of switching to multiple banks.

Third, we exploit the theoretical predictions of relationship lending models which imply that when the degree of competition in the banking market is fiercer, the adding of a (so-called

"inside") bank will have a stronger impact on borrowing conditions (Rajan (1992), von Thadden (2004), see also Fischer (1990), Sharpe (1990)). As a result, we expect that adders *post*-1970 will display larger changes of their debt composition and leverage ratios. This exercise is particularly meaningful in our context as the historical evidence suggests that banking deregulation was exogenous to firms' demand, making it very likely that we identify changes in the supply of capital conditions. Such deregulation was driven by the need of the Bank of England to have a more effective way to conduct monetary policy rather than aimed at accommodating specific needs of the corporate sector.

Our analysis correspondingly finds that adders subsequently increase their leverage and bank debt <u>more</u> and also decrease their trade (and other) credit <u>more</u> than other firms that did not add banks. Leverage increased by 2.5 percentage points more, which given a mean leverage (simply taken across all firms before and after deregulation for example) of 39.3 percent implies a semi-elasticity of 6.4 percent. Bank debt to total debt ratio increased by 4.2 percentage points, a 20.7 percent increase with respect to the matched firms prior to the event, while trade credit to total debt contracted by 3.8 percentage points, corresponding to a decline of 5.6 percent. The deregulation was partially reverted in 1973, when the treasury re-introduced some credit controls. Consistently with our "causal" interpretation of the results, we find that the stronger effects on adders' bank debt and leverage are between 1970 and 1972.

In this way we uncover an additional explanation for the increase in corporate leverage, i.e., one that runs from banking sector deregulation and intensifying competition between banks, over firm-bank relationship multiplicity, to corporate leverage and bank debt usage.

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We discuss these historical developments more in detail in the next section and summarize all relevant related empirical findings in Section III. Section IV introduces the data. Section V discusses the variables and results of our empirical analysis of the determinants of multiple firm-bank relationships prior to the transition. Section VI presents the duration analyses of the determinants of the transition to multiple banking. Section VII analyses the effects of multiple banking on corporate leverage. Section VIII concludes.

II. UK Banking in the Twentieth Century

A. Consolidation and Cartelization Prior to the 1970s

In 1870 a total of 387 banks were operating in the UK (Capie and Rodrik-Bali (1982)). British banks were mainly commercial banks involved in collecting funds from depositors and lending to industrial customers. Towards the end of the Nineteenth century the British banking industry experienced considerable growth in merger activity. By 1920 only 75 banks were left in the UK, of which just 20 were English or Welsh public banks (Capie and Rodrik-Bali (1982), Braggion, Dwarkasing and Moore (2012)).

The result of this process was the emergence of the `Big Five' banks in Britain: Barclays, Lloyds, Midland, National Provincial, and Westminster. These five banks constituted the core of the so called London Clearing Banks which starting in the 1920 they dominated retail banking in various parts of the UK.

Despite the concerns voiced by contemporaries about the lack of competition in the banking sector, the government did not intervene in the industry. On the contrary, after World War 2, the Treasury and the Bank of England actively promoted the existence of a cartel among the big British clearing banks and supported the introduction of interest rates ceilings

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and lending controls. [5] The management of the UK national debt led British policy makers to actually promote and defend the existence of a cartel until the 1970s. The rise of public debt during the two wars in fact increased the government's reliance on banks for the maintenance of a market in such debt. The authorities also believed that they could more effectively conduct monetary policy by relying on a small number of large banks who acted in concert.

B.   Deregulation and Intensifying Competition in the 1970s

In the late 1960s, the government and the Bank of England recognized the inadequacy of this arrangement. From 1971 on, the cartel was progressively dismantled and the UK authorities promoted greater competition among financial institutions. In particular, both ceilings on interest rates and direct credit controls were lifted. Banks were allowed to directly participate in the wholesale market to obtain financing and reserve requirements were relaxed. Before 1971, the clearing banks had been required to hold liquid assets equivalent to 28% of deposits. From 1971, this ratio was reduced to 12.5% of eligible liabilities (Davies, Richardson, Katinaite and Manning (2010)). Such a change in policy generated strong competition between banks and other financial intermediaries both on the deposit and loan market. The by-product was a rapid increase of money supply in the first years of the 1970s. The Bank of England reacted by sharply raising interest rates.

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[5] Most of the Cartel agreements were informal. The major provisions were: (a) No interest was to be paid by the clearing banks on current accounts and the rate on deposit accounts was to be fixed at 2 percent below the level of the Bank rate. (b) The minimum rate charged by the clearing banks on advances to 'blue-chip' borrowers was to be fixed at a given margin above the Bank rate. (c) A tacit agreement determined the prices charged for operating current accounts. (d) Uniform opening hours were adopted. (e) Clearing banks lent a certain proportion of call money to the discount houses at a rate of 4 percent below the Bank rate which was also the minimum rate at which they would buy bills. (f) Clearing banks did not compete on their own account with the discount houses by tendering for Treasury bills at the weekly tender but bought them from the discount houses after they had been held for more than seven days. (g) The clearing banks maintained cash and liquid assets ratios of 8 percent and 28 percent respectively. See Saunders and Ward (1976) for further details. After 1965, an increasing range of controls over bank lending, interest rates and asset ratios was applied to the clearing banks.

Figure 1 shows the evolution of the M3 multiplier and the size of the banking sector measured as bank assets over GDP from the second half of the Nineteenth century until the end of the Twentieth century based on data from the Bank of England and Sheppard (1971). The money multiplier describes the relationship between monetary base and total money supply. We interpret it as a proxy of banks' willingness and capability to lend. Its value becomes larger if banks' reserves (either required or voluntary) become smaller. The size of the banking sector over GDP proxies for the importance of the banking sector in the economy. Both series are relatively flat for about a hundred years between 1870s-1880s and 1970. After 1970, they display a sharp growth: the money multiplier grows from around 4 in 1960 to about 10 in 1986. Similarly, the size of the banking sector grows from 37% of GDP in 1960 to 237% in 1986.[6] While the size of banking sector over GDP displays some moderate growth already around 1968 and 1969, we observe a sharp increase in this ratio in the post reform period, especially between 1971 and 1973 and after 1976. These figures suggest that the 1971 reforms had a profound impact on the structure and activities of the banking sector.

The sharp increase of the money supply together with the sudden rise of short term interest rates created severe liquidity problems for the small banks (known as secondary banks), particularly for those involved in the property market (Saunders and Ward (1976)). Although these banks were relatively small in respect to the rest of the UK financial market, they had a sizable number of outstanding loans from the London Clearing banks, with the National

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[6] In the available historical series, the definition of banking assets used to construct size of the banking sector over GDP changes and considers a wider category of assets starting in 1967. To avoid combining date series constructed over different definitions, we rescale the variable in the following way. We replace the 1967 value of Bank assets over GDP with its 1966 value. We compute the annual growth rates of banks size over GDP every year after 1967. We then multiply the 1967 value by its growth rate in between 1967 and 1968 to obtain the new 1968 value and so on. Such a rescaling assumes that the different definitions of banking assets affect only the level of banking assets over GDP, but not its growth rate.

Westminster bank being particularly exposed (Reid (1982), Saunders and Ward (1976)). The Bank of England and the Treasury reacted to the crisis by organizing, with the cooperation of the clearing banks, a rescue scheme and by reintroducing some forms of control of credit. In particular, in 1973 lending restrictions were temporarily re-introduced, although such constraints were especially focused on loans to consumers, property developers and financial firms rather than on loans to the industrial sector.[7]

To conclude, following deregulation and intensifying competition, the UK banking sector in the 1970s started to supply the opportunities for corporations to seek more bank relationships. This corporate demand is discussed and investigated in the next sections.

We explore almost a hundred years of British financial history until 1986. Our sample period ends in 1986 because by then the transition to multiple relationships appears to be concluded (see the UK numbers in Ongena and Smith (2000) for example). We also do not study the so-called "Big Bang", the effects of the liberalization of the London Stock Exchange undertook in October 1986. In principle, we consider this to be outside the scope of our study as it involved more the structure of trading and ownership of the London Stock Exchange rather than the bilateral relationships between firms and banks.

C. A Banking Deregulation Exogenous to Corporate Borrowers' Demand

We document that the deregulation of the banking sector was an exogenous shock to the supply of credit to firms. It is unlikely that deregulation reflected factors related to firms'

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[7] The 1960s and 1970s also witnessed the rise of London as a centre of international banking. Especially after 1958, with the return to external convertibility of most Western currencies, London emerged as the hub for the market in "Eurodollars", i.e., the practice of trading time deposits denominated in foreign currency (especially US dollars) (Battilossi (2009)). As a result, many foreign banks established branches and activities in the City of London.

demand of external finance. In particular, it is unlikely that deregulation was introduced expecting firms to have more investment opportunities and a higher demand for financial capital after 1970. If this was the case, the policy change would be endogenous to firms' behavior, undermining the validity of our experiment.

The historical evidence provides two complementary explanations for the deregulation of the banks' cartel. Both explanations are unrelated to firms' demand and support a supply side interpretation. First, the cartel provisions applied only to the clearing banks. While clearing banks could have enjoyed such an arrangement in the aftermath of World War 2, technological developments allowed foreign banks to operate within the UK already in the 1960s. Foreign banks could work outside the restrictions imposed by the cartel and they became an important threat to the business of the large British banks. Lifting the cartel, constituted a response to this threat: Clearing banks could have had "free hands" to compete with foreign credit institutions. While we cannot rule out that clearer banks did lobby in favor of these measures, the available evidence suggests that any potential lobbying activity was done in response to a supply shock rather than to exploit an increase in the demand of credit (Goldberg and Saunders (1980); Hannah (2007), p. 162). Second, with more and new financial institutions operating in the UK, the Bank of England could no longer control monetary policy by relying only on a specific arrangement with the clearing banks. As a result, it was decided to abandon the cartel, and use different instruments such as open market operations to regulate money supply. Both explanations are exogenous to firms' demand for investment.

It is also important to emphasize that the deregulation was followed by the oil shocks and recessions, events that should have led to a decline, rather than a rise, in investment and in the

demand for external finance, alleviating concerns that deregulation is endogenous to firms'

behavior. And in 1973 the taxation of dividends was amended and the tax bias against

dividends practically removed (Cheffins (2008), p. 325), which *ceteris paribus* decreases the

demand for external debt finance.

III. Firm-Bank Relationships during the Twentieth Century

A. Data Source

The main data source is an annual publication known as *The Stock Exchange Official

Yearbook*. The Yearbook was published first in 1875 with the purpose of providing

information on joint stock limited liability companies quoted at the London Stock Exchange

and it is regarded as the most authoritative source of information on the matter. Between 1896

and 1966 we retrieve our data from eight issues, in particular from the 1896, 1906, 1916,

1920, 1924, 1934, 1938 and 1948. Starting in 1956 and ending in 1986 we accessed sixteen

issues on a bi-annual basis. We will refer to the 1896 – 1986 period as "the Twentieth

century", and shorthand the 1966 – 1986 period as "the transition period" (because during that

period multiple firm-bank relationships become more common). We collected data for all

companies listed in the yearbook in the sections "Commercial and Industrial" and "Iron and

Steel". With the exception of 1896, we believe we retrieved information for whole the

population of firms quoted in London and belonging to these sectors.[8]

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[8] Before 1905, the Yearbook provides a sufficient amount of information only for a selection of firms. Usually, the largest and the most traded firms are included. As a result, we suspect our 1896 sample is biased towards large and liquid companies.

For each company the Yearbook provides information on the name of the company and its location; the name of the directors; the total amount of nominal share capital issued by the company; and various information related to the company's corporate governance arrangements such as: Voting rights, directors borrowing powers and amount of share capital required to be appointed as directors. In some cases also dividend payments information is provided. After 1948, the Yearbook provides also a summary of the last available balance sheet. Crucial for our study, the Yearbook also reports the name of the banks trading with the company. Unfortunately, the Yearbook does not report the nature of the business relationship between the firm and the bank(s). In other words, we do not know whether the bank granted a loan to the firm, or the just bank assists the firm with cash management or both.

We complement the data available in the Yearbook with the information provided by two other data sources: The Cambridge/DTI Databank and the London Share Price Database (henceforth, LSPD). The Cambridge/DTI Databank offers a wide range of accounting data for many UK publicly-quoted companies covering from 1948 to 1990. Like the dataset we constructed from the Stock Exchange Yearbook, the Databank provides data for firms in the commercial and industrial sector. It contains detailed balance sheet information, including tangible and intangible fixed assets, earnings, long term debt, trade credit and –very important for our analysis- the amount of bank debt. Such information allows us to give a more precise content to the firm-bank relationship as we can observe whether the firm has an outstanding loan with its own bank. The Cambridge DTI databanks also provides data on the number of corporate acquisition undertaken by firms between 1948 and 1990. The London Share Price database contains information on share returns since 1955, a piece of information not

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available in the Stock Exchange Yearbook. The LSPD provide returns data for the largest firms quoted at the London Stock Exchange plus a random 33 percent of the remaining firms.

We also collect data on the location of bank branches from the Bankers' Almanac. Each year, the Bankers' Almanac lists the location and the address of the branches of each bank located in the UK. We collect this information at a biannual basis starting in 1964 until 1986.

B. Multiple Firm-Bank Relationships

Using the *Yearbook* information we create a variable labelled *Multiple Firm-Bank Relationships* that equals one if the company maintains multiple firm-bank relationships, and equals zero otherwise. This is our main dependent variable. We first discuss its relevant characteristics.

The upper panel in Table 1 presents the number of firm-bank relationships for each year in our sample. Relationships with a single bank prevail over the period 1900-1966. In these years, the average number of banks servicing a company is about 1.2, whereas the median is 1. At least 82 percent firms maintain a single bank relationship between 1906 and 1966. In 1948 and 1950 the percentage of firms with a single bank relationship stands as high as 87 percent. The figure looks quite different in 1976: The percentage of firms having only one bank relationships drops to 71 percent, whereas 18 percent of the companies have two relationships and about 11 percent more than one relationship. The shares of firms having only one bank relationships further decreases to 64 percent in 1986, with 20 percent of the companies displaying two relationships and about 16 percent more than one relationship.

These results are similar to the figures presented by Ongena and Smith (2000) for the year 1996. They investigate the number of bank relationship by sampling 138 large companies in the U.K and they find that only 23 percent of firms in their sample maintained a single bank

relationship. Moreover, they show that the average number of bank relationship is 2.9 and the median number is 2; both figures indicate that maintaining multiple bank relationships is more prevalent during the 1990s. In sum, the number of bank relationships has increased since 1966.

To provide more detail on the transition from bilateral to multilateral banking Table 1 Panel B reports the number of firm-bank relationships bi-annually for the 1966 – 1986 period for 602 firms that are reporting their relationships during the entire transition period. This selection of firms ensures that the average number of relationships the table reports is not affected by changes in the composition of firms on the stock exchange. For example like Rossi, Franks and Mayer (2009) we observe a decrease of the number of companies quoted on the London Stock Exchange from 1966 onwards. This can be partially explained by the increase in merger and acquisition (M&A) activity that took place on the stock exchange since then. M&As may increase for example the age and size of the firms listed on the stock exchange, corporate characteristics that are commonly found to positively affect the number of bank relationships a firm has (Degryse, Kim and Ongena (2009)).[9]

Either way, the results basically confirm Panel A (but because of selection the statistics in level differ somewhat from Panel A). The average number of relationships increases in twenty years from 1.3 to 1.8. In 1966 84 percent of firms engage one bank, in 1986 only 61 percent do. The decrease in the percentage single-bank firms is especially pronounced in 1972, 1974 and 1976 when the percentage point drop exceeds 2.5 percent percentage points in absolute

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[9] On the other hand, the group of 599 firms will on average get older during the sample period by one year each sample year. Limiting the group of firms to a specific age cohort of 40-50 years (30-40 years) for example, the percentage of the firms that have a bilateral relationship still decreases from 83 percent (79 percent) in 1966 to 62.5 percent (66 percent) in 1986.

value (3.2, 4.0 and 2.8 percentage points, respectively). Both Table 1 Panels A and B show that a transition to multiple relationships was already in place between 1966 and 1970, before the deregulation of the banking system was actually introduced. Panel B however shows that about half of pre-1970 transition is determined by the composition of the sample: many of the firms dropping out with our sample were single relationship firms. Panel B reinforces the idea that the bulk of the transition towards multiple banking took place after 1970, the period of bank deregulation.

In sum, there is a fundamental shift from bilateral to multilateral banking that takes places around the mid-seventies that our subsequent analysis aims to explain first by analysing the determinants of multiple banking observed during the Twentieth century prior to the transition period and then by focusing on the determinants of the switching to multiple firm-bank relationships during the period of transition to deregulation itself.

IV. Firm-Bank Relationships Prior to the Transition Period

A. Independent Variables

We now discuss the firm characteristics that we will employ as independent variables in our analyses of multiple banking. Following our earlier discussion on the history of the UK banking system we distinguish between during three distinct periods: An *Early Period* that goes from 1896 to 1938, the *Cartel Period* from 1948 to 1970, and the *Deregulation Period*

from 1972-1986 (recall that we have access to bi-annual data).[10] The upper panel of Table 2 lists all variable names, units and definitions.

The first variable that captures firm transparency is the dummy variable *Officially Listed (0/1)*, that equals one if the company had any class of its outstanding shares officially listed in London and traded on the floor, and equals zero otherwise. Being officially listed and traded makes a significant difference in the amount and quality of information that is available about the corporation, especially in the early years of the Twentieth century (Braggion (2011)). Another transparency variable is a dummy variable, *One Share - One Vote (0/1)*, that takes the value of one if company complies with the one share - one vote principle and zero otherwise. The one share – one vote dummy is a measure of the quality of governance that directly enhances firm transparency.

As controls we feature a proxy of size for which we employ the amount of share *Capital Issued*. The *Age* of a company is defined as a particular data year minus the company's registration year. We proxy the quality and efficiency of a company's corporate governance mechanisms with the size of the board of the directors, labelled *Board Size*. The size of the board is both a proxy for the monitoring abilities of the boards over the manager (in principle, bigger boards should monitor better), and the degree of bureaucracy and a board's lengthy decision making (bigger boards are more bureaucratic, see Yermack (1996)). Finally, the Stock Exchange Yearbook does not provide any direct information on earnings. Following Kaplan and Reishus (1990), we proxy corporate performance with a dummy variable, *Past Dividends (0/1)*, that takes the value of one if the company paid dividends in all the previous

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[10] 1948-1970 is also known as the "Classic Cartel Period". Historians have debated whether a cartel in the banking sector was already operative starting in the 1920s (Capie and Billings (2004)). In the context of our paper, results do not change if we extend the Cartel Period to the interwar years.

five years in respect to particular data year and 0 otherwise (i.e. the company did not pay a dividend in at least one of the previous five years). We don't have this variable for all companies so in specifications where we introduce this variable we add dummy indicating its availability (results are similar if we simply drop these observations).

B. Descriptive Statistics

The twelve columns in Table 3 present descriptive statistics for the independent variables for the three periods. Less than one third of the firms were officially listed in the Early Period, almost 90 percent were in the Deregulation Period, while the percentage firms with the one share – one vote principle increased only marginally from 52.8 to 53.3 percent.

Companies also became larger and older, from an average total amount of capital issued of 792,000 pounds and an average of 22 years old in the Early Period, to 24,313,000 pounds in capital and 70 years in the Deregulation Period. Table 3 presents the nominal amounts of issued capital but this result holds even in real terms.

The size of the board increased somewhat throughout the Twentieth century from an average of 5.2 members in the Early Period to an average of 6.7 in the Deregulation Period. According to our proxy of companies' performance, companies registered the worst performance in the Early Period where only 20 percent of firms paid a dividend in each of the two previous years. Performance improved towards the deregulation period when 78 percent had paid dividends.

C. Results

Table 4 presents the first set of regression results. We treat each period as a different sample and for each period we run three linear probability models where the dependent

variable takes the value of one if a company displays multiple bank relationships and zero otherwise.[11] In Model I we control for firm official listing, one share – one vote, size, age, and board size, and include year fixed effects. In Models II and III we add location (i.e., cities) fixed effects and profitability, respectively. The location fixed effects control for time invariant characteristics of the markets where firms had their headquarters: for instance, some components of the local banking and product markets that maintained the same features throughout our sample period.

Throughout the three periods two results appear to be persistent. First, firm and board size are strongly associated with a higher probability of multiple banks relationships, while the other control variables are never statistically significant. The coefficient on the logarithm of capital issued is positive and highly statistically significant in all three periods and all three specifications. Also the economic significance of the variable is quite persistent throughout the periods. If in the Early Period a company increases its size by one standard deviation the probability of having multiple relationships increases by 16 percentage points. This increase corresponds to a doubling in the probability of multiple relationships for the average firm (which equals 15.7 percent during this period).

Second, the two measures of transparency, i.e., officially listed and one share – one vote, have a significant impact on firms' choices of the number of bank only during the Deregulation Period. Officially listed firms are 5.1 percentage points (16%) more likely to trade with more than one bank. Firms that comply with the one share – one vote principle are 2.7 percentage points (10%) more likely to be in multilateral bank relationships. This is a key

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[11] We use a linear probability model instead of a Logit or Probit model to avoid a loss of observations when we control for location fixed effects.

finding which is consistent with the intensification of competition in the banking sector. Without competition all banks simply extract market rents, potentially ration credit, and offer the same set of products. Switching or adding banks is then a superfluous activity for the firms. With the intensification of competition in the banking sector, however, banks have to start relying on their informational advantage to try to extract rents. To limit holdup transparent firms may add a bank. Transparent firms are easier to monitor. When monitoring costs are lower, banks find profitable to lend in multilateral agreements, and, as a result the hold-up problem is alleviated (von Thadden (1992)). At the same time, as banks may start offering differentiated products firms find it more attractive to enter into multilateral bank relationships.

Interestingly, and supporting our interpretation of the results, in the early period at least one proxy of transparency, officially listed, is both statistically and economically significant. In the early period, and especially until the 1920s, the cartel in the banking industry did not exist, giving scope to firm to add a bank on top of the existing relationship. Like in the Deregulation period, this was more likely to happen to more transparent firms.

V. The Transition to Multiple Banking between 1966 and 1986

A. Duration Analysis of the Transition to Multiple Banking

We now investigate the possible drivers of the transition from single to multiple firm-bank relationships using a duration analysis on the observed relationships between 1966 and 1986 (we call this period the Transition and Deregulation Period). As in Farinha and Santos (2002) we define each single relationship as a spell and the transition to multiple banking as a switch (at which stage the spell ends and the firm exits the sample).

All spells start in 1966 or later and end before or in 1986. Single relationships that do not change into multiple banking are therefore right-censored in 1986 (or prior to that if the firm delists). To provide correct inferences the estimator will have to be right-censoring robust (see Kiefer (1988), Ongena and Smith (2001), and Degryse, Kim and Ongena (2009) for example for details).

B. Independent Variables

The determinants of the transition to multiple banking can be multiple. As before we also include two dummy variables capturing firm transparency, i.e., *Officially Listed (0/1)* and *One Share - One Vote (0/1)*. As a robustness check, in the survival analysis we also consider the dummy *Arm's Length Debt (0/1)* as a valid measure of a firm's transparency. In principle, this variable should capture only that firms with already outstanding arm's length debt are already under the close scrutiny of capital markets (Rajan (1992), Faulkender and Petersen (2006)). Finally, tangible firms are also more transparent than intangible firms, and in addition R&D intensive but high-quality firms may opt for a single bank (Bhattacharya and Chiesa (1995), Yosha (1995), von Rheinbaben and Ruckes (2004)). We measure *Tangibility* as property, plant and equipment divided by the book value of assets.

A higher degree of firm's transparency should reduce banks' monitoring costs making multiple bank relationships more desirable (von Thadden (1992)). When monitoring costs are lower, banks find profitable to lend in multilateral agreements, and, as a result the hold-up problem is alleviated. We therefore expect positive coefficients on these four transparency variables.

Firm size, complexity and international presence can lead to larger, more complex and geographically diverse corporate credit and service demands, necessitating multiple bank

relationships. To proxy for size we employ the logarithm of the firm's *Book Value of Assets*.[12]

For complexity we field the logarithm of one plus the *Age at Start* (we take the age of the firm at the start of the spell because otherwise firm age may spuriously determine the duration of the spell as deterministically the longer the spell, the higher the age).

To proxy for the general quality of corporate governance we include again the logarithm of one plus *Board Size*. In principle, the sign of the coefficient of Board Size could be either positive or negative. Larger boards can better monitor managers improving corporate governance; larger boards could be bureaucratic and not very effective in controlling managers worsening the quality of corporate governance.

We also include a dummy variable *Subsidiary (0/1)* that equals one if the company is controlled by another company, and equals zero otherwise, because internal capital market financing obtainable through the parent company may alleviate some of the firm's financing needs. We expect a negative sign on the subsidiary dummy. For international presence we feature the dummy variable *British (0/1)* that equals one if the headquarters of the firm is located in Britain, and equals zero otherwise. We expect a positive coefficient on this variable.

In addition to these control variables, we also have access to variables for which we have only fewer observations. The first one is a dummy variable labelled *Firm has an Outstanding Loan with the Incumbent Bank (0/1)* which equals one if a loan is outstanding with the incumbent bank, and equals zero otherwise. As a bank lends to a firm it may reach its internal exposure limit making it more likely a firm has to add another bank. We expect a positive coefficient on this variable. This variable also helps us to better define the content of the

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[12] As we have this variable available from 1966 onwards, we use it as a proxy of firm size instead of the book value of equity. Results do not change if, as in Table IV, we use the book value of equity.

relationship between the firm and the incumbent bank. In particular, firms with no outstanding loans may be more likely to use their bank just for cash management purposes for example.

Firm profitability is measured as *Return on Equity* which is total profits divided by total capital and reserves. Mergers between firms may also result in bank multiplicity if the merged firm has a tendency to maintain the extant bank relationships of the two (or more) merged units (Degryse, Masschelein and Mitchell (2011)) or if the merger leads to a much larger firm size and especially complexity. The *Number of Acquisitions in the Past Two Years* captures both effects and we expect a positive sign on this variable.

Firms may seek to diversify bank liquidity risk (Detragiache, Garella and Guiso (2000)). We introduce a dummy variable *Relationship Bank is National Westminster in 1974 or 1976 (0/1)* which equals one if the firm had a relationship with a secondary bank particularly affected by the liquidity shortages in the mid-1970s, *Relationship Bank Liquidity Ratio* which is the cash and marketable securities divided by the book value of assets of the relationship bank of the firm, and *Relationship Bank Capital Ratio* which is the total equity capital and reserves divided by the book value of assets of the relationship bank of the firm. If firms diversify, we would possibly expect a positive sign on the first variable and negative signs on the latter two.

Finally, firms are more likely to add a bank in areas where competition intensifies most. We therefore include a variable called *Change in Concentration of Banking Market Where Firm Has Headquarter*, which we calculate as the change in the sum of the banks' shares in terms of branch presence in the local banking market where the firm is headquartered (i.e., the change in the Herfindahl-Hirschman Index based on branch presence).

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Table 5 tabulates the descriptive statistics for a maximum of 15,434 relationship – year observations. 84 percent of the firms are officially listed and 48 percent follow a one share – one vote system, and 52 percent have arm's length debt outstanding. The mean (median) firm has a tangibility ratio that equals 36 (33) percent.

The mean (median) firm further has 15 (3) million British Pound in book assets, is 62 (63) years old, and fields 6 (6) board members. 14 percent of all firms are controlled by another company and 93 percent are headquartered in Britain. 74 percent have an outstanding loan with the incumbent bank.

The mean (median) firm has a return on equity that equals 24 (23) percent. The mean number of acquisitions in the past two years equals 0.11. Only 4 percent of the firm-years pertain to firms that had a relationship with National Westminster in 1974 or in 1976, while the liquidity ratio of the relationship bank of the average (median) firm equals 30 (28) percent while its capital ratio equals 16 (6) percent.

Finally, one third of the firms have their headquarters in London, while the mean (and median) change in concentration is close to zero, but with a substantial dispersion across local banking markets.

C. Results

In Table 6 we investigate more closely what the determinants are of the transition to multiple banking.[13] The table reports results based on maximum likelihood estimations of the

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[13] In unreported estimations we alternatively define each relationship as a spell and relationship termination as a switch at which stage the relationship spell ends but the firm remains in the sample with other and new relationships as in Ongena and Smith (2001). Consequently, spells start in 1966 or later and end before or in 1986, and relationships that do not terminate are right-censored in 1986 (or prior to that if the firm delists). Our estimates can be summarized as follows: The hazard rate averages around 3 percent per year and the median duration length is around 20 years, comparable in magnitude with findings for Argentina (Bebczuk (2004)), Italy

proportional hazard model using the Cox (1972) proportional hazard function as the baseline hazard (in unreported robustness exercises we also employ Weibull and exponential distributions but results are very similar). The independent variables are defined in Table 2. The number of observations varies between 14,641 and 5,057 according the combination of variables that is included.

Transparency matters a great deal. Being officially listed, one share - one vote, and arm's length debt all speed the transition, and do so quite consistently across many specifications. Being officially listed for example increases the hazard rate by more than half in Model IV (i.e., $1.57 = e^{0.453}$).

Firm size or having no controlling parent or having the headquarters outside of Britain has a positive impact on the likelihood of the transition to multiple banking as the estimated coefficients are all statistically significant and economically relevant. For example, being a British firm almost halves the hazard rate in Model IV (i.e., $0.59 = e^{-0.522}$).

If the firm has an outstanding loan with the incumbent bank the hazard rate more than doubles in Model V (i.e., $2.05 = e^{0.718}$). Profitability also increases the hazard rate, while an acquisition by the firm in the past two years has no statistically significant effect. Having National Westminster as a relationship bank in 1974 or 1976 increases the hazard rate (in

Model IX), consistent with a diversification-of-bank-liquidity-risk argument; on the other hand, having an illiquid relationship bank decreases the likelihood of engaging an additional bank, seemingly in pointed contrast this diversification argument.

In Models X to XVI we add the change in concentration in the local banking market. Because of multicollinearity we replace *British* by *Firm Has Headquarter in London*, and in Models XIV to XVI also focus on firms outside London where changes in concentration may even be more meaningful in capturing the changes in the degree of local competition in banking markets dealing with corporate financing (as in London many foreign banks also entered to focus on euro dollar business). The estimated coefficient on the change in concentration in Model X for example implies that a decrease in concentration by 0.10 increases the probability of adding a bank by 11 percent.

In Models XI, XII, XV and XVI we interact the change in concentration with the transparency variables being officially listed and one share - one vote. Consistent with our findings so far the estimated coefficients suggest that in local banking markets that become less concentrated it is especially the more transparent firms that add banks.

We also investigate which type of bank is added. We distinguish between clearing banks (mostly large London based banks), other British banks and foreign banks. Table 7 lists the number and percentage of relationship – year observations between 1966 and 1986 by the type of relationship bank and added bank. Clearing banks account for 96 percent of all relationship bank observations (85 percent are headquartered in London, 8 percent in Scotland and 3 percent in Ireland), while other British and foreign bank account for only 2 percent each.

Surprisingly, given these proportions, many firms add another clearing bank as a second bank, resulting in 62 percent of the added bank observations. Other (secondary) British banks account for 13 percent, while foreign banks for more than 25 percent (of which 8 percent to commonwealth banks and the remainder to other foreign banks). These percentages suggest that while many firms simply engage another clearing bank possible to increase access to credit, other firms "trade down" to a (secondary) British bank possibly to obtain a better size fit, or engage a foreign bank possibly to obtain better trade-related financial services.

In regressions we leave un-tabulated we also investigate more closely what the determinants are of the adding of a clearing bank, another British bank, or a foreign bank. Interestingly we find that transparent, larger, or independent firms are more likely to add a clearing bank. Smaller, non-British, listed or independent firms are more likely to add another British bank, while non-British, listed or one-share-one-vote firms are more likely to add a foreign bank. The higher the liquidity ratio of the current relationship bank the more likely a British bank is added.

In sum, it is a reduction in firm opaqueness coupled with an increase in firm size that made firms without access to parent financing to engage multiple banks: Larger and more transparent firms simply add another clearing bank, while more transparent and non-British firms more likely add another British or foreign bank. Coinciding deregulation and intensifying banking competition therefore likely fostered the banks' supply.

D. Other Explanations

On the basis of the precise timing of the transition, we consider some other explanations to be less likely to be important drivers of the transition to multiple banking. First, it is improbable that the improvement of creditors' protections legislation, established with various

Companies acts from 1929 onward, can alone explain our results.[14] Improvements in creditor protections and accounting standards may reduce banks' monitoring costs and increase the probability of observing multiple banks relationships (Rajan (1992), von Thadden (2004)).[15] In the UK, the bulk of the creditor protection and accounting reforms took place in 1948, twenty years before the transition to multiple relationships started. The improvement of investor protection makes also less likely that "soft budget constraint" problems and related strategic default issue are among the driver of the transition to multiple banking. According to these theories, the improvement of creditor protection should make multiple-relationship banking less desirable, but in our data we observe that the number of relationship banks increases during the Twentieth century.

Second, we think it is unlikely that the transition from a single to multiple bank relationships is due to a firms' need to diversify increased bank liquidity risk (Detragiache, Garella and Guiso (2000)). British banks were liquid and since the crisis of 1890 (the so-called "Baring Crisis") did not experience any major crisis until 2007 (i.e., well beyond the end of our sample period), with the possible exception of liquidity problems that arose at the small, secondary banks during the mid-1970s. Duration analyses on bi-annual relationship

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[14] The Twentieth century was characterized by a marked improvement in the UK in the legislation regarding investor protections and companies' disclosure requirements. Originally, the UK common law system did not provide minority shareholders and investors with an automatic right of protection. It was the 1948 company Act that established various provisions intended to protect creditors and minority shareholders from managers' expropriation. For instance, the Act set in voting by proxy, provisions for shareholders to force an EGM with 10 percent of the voting equity capital, and special resolutions to make it easier for shareholders to remove directors. Further progresses were made in the late 1960s by, for instance, considering managers liable of crimes if they communicate false corporate information.

[15] Asymmetric information problems between a borrowers and a single lender that get resolved over time in a relationship create an informational advantage for the inside lender that can be exploited to extract rents (Rajan (1992), von Thadden (2004)). Multiple bank relationships may reduce the hold-up problem of relationship lending. When banks' monitoring costs lower, it becomes more profitable for banks to lend in multilateral agreements with other banks and firms should be more likely to engage multiple banks (von Thadden (1992)).

data for the 1966 to 1986 time period, suggest that having a relationship in 1974 or 1976 with

National Westminster for example, a bank that was particularly affected by these liquidity

shortages, does not change the probability firms switches from single to multiple banking,

while having a liquid and well capitalized bank in general actually increases the probability

the firm switches. Consequently also the diversification motive does not explain the

remarkable transition to multiple relationships.

Finally, it is similarly implausible that the banks nudged their borrowers to maintain

multiple relationships to diversify their own risk exposure (Carletti, Cerasi and Daltung

(2007)). Carletti, Cerasi and Daltung (2007) predicts that a decrease in the monitoring cost

should lead to a decrease of multiple lending, exactly the opposite of what we observe in our

data (see also Carletti (2004), Fluet and Garella (2007)).[16]

VI. Multiple Banking, Corporate Financing and Performance

A. Corporate Financing and Performance

We now investigate the impact of the transition to multiple banking on corporate financing,

i.e., leverage, bank debt to total debt, long term debt to total debt, trade credit to total debt,

and the growth in these measures, and on corporate performance, i.e., return on equity, during

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[16] In terms of the quality of firm financial information, the Twentieth century was also characterized by constant and gradual improvements. The quality of information presented in published accounts at the turn of the Twentieth century was limited when compared to present day standards. The Companies Act, 1900 required auditors to certify that the accounts reflected a "true and correct view of the state of the Company's affairs". Annual balance sheets were required to be furnished by firms, and although usually provided, annual profit and loss statements were not mandatory by law until 1929 (see Hein (1963)). The 1948 Companies Act introduced disclosure rules for prospectuses and specific penalties for non-disclosure, detailed provisions regarding the content and form of both balance sheets and profit and loss accounts and a requirement that company accounts be prepared on a basis that gives a "true and fair" view of a company's financial position, a litmus test of company accounts that has been applied to the present day.

five- and fifteen-years periods before and after 1970. Table 8 provides the descriptive statistics for these corporate characteristics for the 1966 – 1976 and 1955 – 1986 periods.

B. Methodology

We relate the changes in corporate financing and performance to multiple banking by judiciously investigating the difference between firms that add banks and otherwise observably similar firms that did not add banks. Following Angrist and Krueger (1999) and Lemmon and Roberts (2010), we adopt a difference in difference analysis to understand whether adding a bank to the existing relationship has an effect on firms' financial policies. We then see whether this effect is stronger for firms that added a bank after the 1971 bank liberalization. While performing the difference in difference analysis we make sure that the key identifying assumption behind this strategy, usually referred as "parallel trends assumption" is satisfied. Such an assumption requires similar trends in the outcome variable during the pre-shock era for both treatment and control groups. In the current context, this assumption translates into similar growth rates of firms' aggregates such as leverage or equity issuance for the treatment and control groups prior to the year in which a firm added a new bank.

We start by generating a dummy variable which we label EVENT that takes the value of one if a firm adds a bank and equals zero otherwise. We generate this variable at the biannual frequency for which we collected the number of bank relationships for each firm.

At a biannual frequency, between 1956 and 1986, we compute the propensity score by running a probit model where the dependent variable is EVENT. The propensity score is computed using a comprehensive set of the following firm variables we have maximum access to: Officially Listed (0/1), One Share - One Vote (0/1), Arm's Length Debt (0/1),

ln(Book Value of Assets), ln(1+Age), Subsidiary (0/1), British (0/1), the growth rates (over the last seven years) of Leverage, Bank Debt, Long Term Debt, Trade Credit, Share Issuance and Return on Equity, and seventeen industries dummies. We also require that the match is done in the two years preceding the event. The dummy variables are lagged for two periods because EVENT, i.e., the adding of a new bank to an existing firm-bank relationship, is recorded at a biannual basis. All continuous variables are the averages of the pre-adding period.

We select a matching firm by using the nearest-neighbor method. For each adding firm we select the nearest neighbor and we take the average values for leverage, bank debt to total debt, etc., of the matching firms. We compute the standard errors of our matching estimators using the procedure outlined by Abadie and Imbens (2006).

Taking the example of leverage as an outcome variable, for both the treated and the (average) matched firm we compute the average leverage two years (or three years) before and after the EVENT:

(1) $$AvgLevPre_{i,t} = \sum_{t=-3}^{-1} lev_{i,t}, \text{ and}$$

(2) $$AvgLevPost_{i,t} = \sum_{t=0}^{2} lev_{i,t},$$

where $i = \{\text{Treated, Matched}\}$.

For both the treated and the matched firm take the difference between the average leverage before and after the event:

(3) $$DiffLev_{i,t} = AvgLevPost_{i,t} - AvgLevPre_{i,t}.$$

As a final step, we take the difference of:

(4) $$DDLev_t = DiffLev_{Treated,t} - DiffLev_{Matched,t}$$

The results we present (in Table 10) correspond to the average difference-in-difference analysis for two periods, i.e., 1966 – 1976 and 1956 – 1986, with in both cases a pre-1970 period (1970 included), and a post-1970 period. This procedure has two benefits. First, it controls for firm-specific time-invariant factors and compares the outcomes for the same firm before and after the event of adding a bank to the existing relationship bank. As a result, any unobserved factor that drives both the decision to switch to multilateral relationships and the firms' borrowing policies would have to explain both variables before and after a new bank is added. As noted by Sufi (2009) such an approach controls also for other factors related to firm's investment demand such as market to book ratio.

Second, the propensity score analysis controls for environmental and regulation changes that may have an impact on the borrowing of similar firms' beyond the decision of switching to multiple banks. For instance, the 1970 banking deregulation could have led large firms to increase their proportion of bank to total debt, independently of the decision of adding an extra-bank. We undertake the propensity score analysis employing a one-to-one nearest neighbour matching and we run several diagnostics to evaluate the quality of the matching procedure.

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We also obtain additional identification power by exploiting the predictions of the theory of relationship banking: Adding a bank should have a stronger impact on corporate borrowing when the degree of competition in the banking market is higher. As a result, we expect that post-1970 adders will display larger changes in their debt composition and leverage ratios.

C. Results

Table 9 first reports for the pre- and post-matching samples, the mean (and the standard deviation) of the matching variables for the firms that did not add banks ("the stayers") and the firms that add banks ("the adders"), and the difference between the two means. It also assesses the difference in means between the pre- and post-matching samples, reporting the t-statistic for a test of the equality of the means assuming equal variances (the Kolmogorov-Smirnov test statistic yields qualitatively similar results). The testing confirms that matching does generate samples that are mostly equal in the matching variables (similar to Lemmon and Roberts (2010) and to match on individual firm growth we employ seven year growth rates or averages of continuous variables, as indicated; results are robust to further lengthening of this time period while shortening it decreases matching performance somewhat without affecting our main estimates of interest).[17]

Table 10 reports the difference-in-difference analysis for the two periods and the different subsamples. For both periods we find that both overall and long-term leverage of firms that add a bank increases more than otherwise similar firms that did not add a bank. This difference is however only significant in the period after 1971, when these "adders" are

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[17] Table IX shows that only the difference between the growth of long term debt remains statistically different from zero between the treated and the control sample. This is almost unavoidable, given that we match on a total of 30 variables (including 17 industry dummies) and we require each match to happen in the year before the addition of a new bank.

observed to increase bank debt, yet leave long-term debt issuance unaltered and decrease trade credit taken and equity share issuance.

The statistical differences we observe are also economically meaningful. For the 1966 – 1976 (1956 – 1986) period, leverage increases in the period after 1971 by 2.5 (2.6) percentage points, for a mean leverage of firms equal to 39.3 (33.5) percent implying a semi-elasticity of 6.5 (7.7) percent. Leverage does not increase statistically significantly before 1971. Similarly, long term leverage increases by 4.2 (4.3) percentage points, a semi-elasticity of 27.8 (28.0) percent, bank debt to total debt increased by 4.2 (3.7) percentage points, a semi-elasticity of 20.6 (21.5) percent, while trade credit to total debt contracted by 3.8 (3.8) percentage points, a semi-elasticity of 5.6 (5.2) percent, and share issuance by 1.7 (1.2) percentage points, implying it more than halves. The effects are even more pronounced immediately after the deregulation in 1971-1972, and before the re-introduction of some lending restrictions in 1973. In 1971-72, bank debt to total debt increased by 13.7 percentage points, as semi-elasticity of 68 percent. Similarly, leverage grew by 8.5 percentage points corresponding to a semi-elasticity of 22 percent. These figures lend support to our causal interpretation of the results: we would expect both competition among banks to be fiercer and the effect on firms' financial policy to be stronger when deregulation is full.

Important to note is that in none of the periods "little happens" to long term debt to total debt. This finding is consistent with the similarity in the estimated coefficients on long-term leverage and on bank debt to total debt. Firms that add banks alter leverage and its maturity only after deregulation, not before, and they do so with bank- and not public debt. Why did firms add banks in the pre-deregulation period if it did not have effect on their financial policy? In the analysis of Table 4, we find that firms' size is the main determinant leading to

multiple relationships during the cartel period. In the cartel period, lending controls and interest rate ceilings restricted the provision of loans by each bank. Even when keeping their leverage ratio constant, larger firms may have needed more financial resources to keep pace with their growth. But in order to obtain more resources, they had to establish a relationship with the new bank. Given the lending restrictions in place, their original relationship bank was unable or unwilling to provide additional funding.

Finally, in a set of robustness exercises (left unreported) we run the entire Table 10 for placebo dates of 4 and 6 years, respectively, prior to deregulation. In these placebo tests there are no differences between the adders and stayers before-versus-after. We also run the corporate financing and performance variables on firm controls and interaction terms of Post 1970 (0/1), a dummy that equals one for years after 1970 and equals zero otherwise, with the three variables that explain the adding of banks, i.e., Officially Listed (0/1), One Share - One Vote (0/1), and Arm's Length Debt (0/1). Results broadly confirm that firm transparency which corresponded to more banks being engaged also involves more corporate leverage and bank financing. The semi-elasticities of the impact of One Share - One Vote and Arm's Length Debt after 1970, respectively are on leverage 2.8 and 7.0 percent, on bank debt over total debt 10 and 13 percent, on long term debt over total debt 8.3 and 19.4 percent, and on trade credit over total debt -3.5 and -2.7 percent.

In sum, the multiplicity of bank relationships as the outcome of factors on the supply (deregulation) and demand (firm transparency) side is consistently reflected in higher leverage.

VII.   Conclusions

In this paper we analyze how relationships between firms and banks have evolved during the Twentieth century in Britain. We document a remarkable shift from bilateral to multilateral relationship banking during this period. Our detailed data allows us to more precisely date the acceleration of the transition to multiple banking in the 1970s. On the basis of this more precise dating we can rule out a number of possible explanations, such as an improvement of creditors' protections legislation, the intended diversification of bank risk exposure, the variation in the cost of bankruptcy, or the deterioration in bank liquidity.

Using duration analyses on bi-annual relationship data for the 1966 to 1986 time period we document that transparent, larger or global companies, or located in local banking markets that become less concentrated - especially so when transparent - have a higher propensity to switch to multiple firm-bank relationships.

Before that we observed over a time span of almost a hundred years that mainly firm level increases in size and international presence led to multiple banking. But this process of over-time increasing demand for more bank credit and more sophisticated services may eventually have found its supply during the 1970s because of the far-reaching banking deregulation and the intensification of competition in the banking sector that took place then. Following deregulation also more transparent firms started to add banks.

Yet, vying for market share competing banks may fail to fully internalize the consequences of future corporate indebtedness and banks may "overlend." More than suggestive on this account is the difference in the increase in leverage and bank debt taken by firms that added a bank compared to those that do not before and after banking deregulation. Banking deregulation and intensifying competition may therefore be one of the factors explaining the

dramatic increase in corporate leverage observed in the UK and potentially also throughout the rest of the world during the Twentieth Century.

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FIGURE 1
THE M3 MULTIPLIER AND BANK ASSETS OVER GDP IN THE U.K. BETWEEN 1871 AND 2008

M3 Multiplier (left-scale)   Bank Assets / GDP (right-scale)
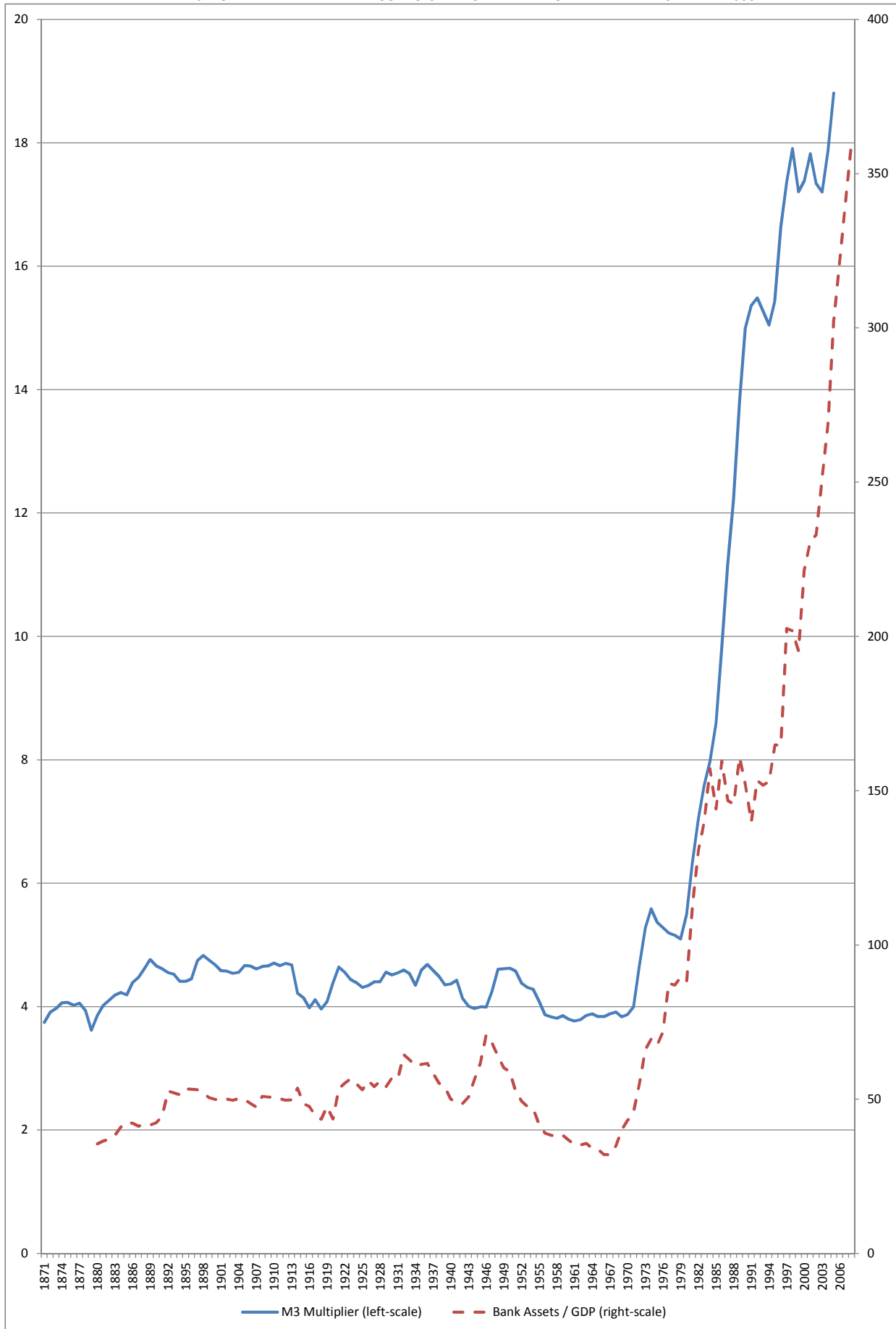
Sources: Bank of England, Sheppard (1971) and own calculations (see text).

TABLE 1

NUMBER OF FIRM-BANK RELATIONSHIPS THROUGHOUT THE 20TH CENTURY IN BRITAIN

Year	Observations	Number of Bank Relationships			% Firms with N Bank Relationships		
		Average	Median	Maximum	N=1	N=2	N>2
Entire Sample							
1896	678	1.15	1	4	86.9	11.7	1.5
1906	1,790	1.22	1	5	83.4	12.9	3.7
1916	1,815	1.22	1	6	83.8	12.2	4.1
1920	1,908	1.22	1	8	83.4	12.6	3.9
1924	2,140	1.23	1	6	84.1	11.3	4.6
1934	2,432	1.24	1	7	82.9	12.6	4.4
1938	2,882	1.19	1	7	86.3	10.3	3.4
1948	3,236	1.19	1	7	86.9	9.7	3.4
1956	3,377	1.16	1	9	85.6	10.2	4.2
1958	3,394	1.17	1	9	88.3	8.6	3.0
1960	3,309	1.17	1	7	87.4	8.9	3.7
1962	3,204	1.19	1	9	87.1	9.6	3.4
1964	3,120	1.20	1	9	86.1	10.2	3.7
1966	3,116	1.20	1	9	86.2	9.5	4.2
1968	3,023	1.23	1	9	85.2	10.4	4.5
1970	2,687	1.28	1	7	80.9	13.0	6.1
1972	2,526	1.36	1	12	76.7	15.7	7.6
1974	2,295	1.45	1	10	72.5	17.4	10.1
1976	2,098	1.50	1	11	71.0	17.5	11.6
1978	1,876	1.59	1	11	68.0	18.6	13.4
1980	1,756	1.61	1	8	66.7	19.0	14.3
1982	1,948	1.68	1	11	64.7	18.7	16.5
1984	1,973	1.71	1	10	63.5	19.5	17.0
1986	2,004	1.69	1	10	63.6	20.1	16.3
Firms Followed from 1966 until 1986							
1966	602	1.30	1	8	83.9	9.8	6.3
1968	602	1.31	1	8	82.4	11.5	6.1
1970	602	1.32	1	6	80.9	12.2	6.9
1972	602	1.37	1	8	77.4	17.6	5.0
1974	602	1.44	1	10	73.6	17.2	9.2
1976	602	1.50	1	11	70.7	17.6	11.7
1978	602	1.62	1	11	68.1	17.9	14.0
1980	602	1.63	1	7	65.3	18.4	16.3
1982	602	1.70	1	9	66.1	15.3	18.6
1984	602	1.77	1	9	63.6	16.8	19.6
1986	602	1.78	1	8	61.5	18.8	19.8

NOTE. -- The table reports the number of firm-bank relationships during the 20th century in Britain. For each year the upper panel reports the number of observations, the average, median and maximum number of firm-bank relationships, and the percentage of sample firms that report one, two or more than two relationships. The lower panel reports the same statistics for 599 firms that can be followed from 1966 to 1986. In 1896 only data for a selection of the largest listed firms was reported.

TABLE 2
VARIABLE DEFINITIONS

Variable Name	Unit	Variable Definition
Variables Available for Years in the Period 1896 - 1986		
Multiple Firm-Bank Relationships (0/1)	0/1	=1 if the company maintains multiple firm-bank relationships, =0 otherwise
Officially Listed (0/1)	0/1	=1 if the company had any class of its outstanding shares officially listed in London and traded on the floor, =0 otherwise
One Share - One Vote (0/1)	0/1	=1 if the company applies the one share - one vote principal, =0 otherwise
Capital Issued	000 BRP	Amount of total share capital issued by the company
Age	years	Age of the company in the sample year
Board Size	-	Number of members in the administration board
Past Dividends (0/1)	0/1	=1 if the company always paid a dividend in the previous five years, =0 otherwise
Variables Available for the Period 1966 - 1986		
Tangibility	-	Property, plant and equipment divided by the book value of assets
Book Value of Assets	mln. BRP	Firm book value of assets
British (0/1)	0/1	=1 if the headquarters of the firm is located in Britain, =0 otherwise
Subsidiary (0/1)	0/1	=1 if the company is controlled by another company, =0 otherwise
Return on Equity	-	Total profits divided by total capital and reserves
Number of Acquisitions in the Past Two Years	-	Number of corporate acquisitions undertaken by a firm in the past two years
Relationship Bank is National Westminster in 1974 or 1976 (0/1)	0/1	=1 if the relationship bank is National Westminster in 1974 or 1976, =0 otherwise
Relationship Bank Liquidity Ratio	-	Cash and marketable securities divided by the book value of assets of the relationship bank
Relationship Bank Capital Ratio	-	Total equity capital and reserves divided by the book value of assets of the relationship bank
Firm Has Headquarter in London (0/1)	0/1	=1 if the firm has its headquarter in London, =0 otherwise
Change in Concentration of Banking Market Where Firm Has Headquarter	-	First differences of the Herfindhal Index of bank concentration. The Herfindhal index is constructed using the number of branches of the banks located in the town where the firm is headquartered

TABLE 3
SUMMARY STATISTICS FOR THE DIFFERENT TIME PERIODS

	Early Period: 1896-1938				*Cartel Period: 1948-1970*				*Deregulation Period: 1972-1986*			
	N	Mean	Median	St.Dev.	N	Mean	Median	St.Dev.	N	Mean	Median	St.Dev.
Dependent Variable												
Multiple Firm-Bank Relationships (0/1)	12,866	0.157	0	0.364	27,460	0.137	0	0.344	11,217	0.299	0	0.458
Independent Variables												
Officially Listed (0/1)	12,863	0.313	0	0.464	24,309	0.737	1	0.440	11,084	0.898	1	0.302
One Share - One Vote (0/1)	12,866	0.528	1	0.508	27,460	0.425	0	0.494	11,217	0.533	1	0.499
Capital Issued	12,866	792	196	13,158	27,460	7,155	350	905,263	11,217	24,313	1,000	927,158
Age	12,866	21.670	19	16.040	27,460	52.810	54	31.650	11,217	69.910	72	32.340
Board Size	12,866	5.238	5	2.477	27,460	5.971	6	2.409	11,217	6.734	6	2.998
Past Dividends (0/1)	12,866	0.196	0	0.397	27,460	0.688	1	0.463	11,217	0.780	1	0.414

NOTE. -- The table reports the descriptive statistics of the dependent and the independent variables employed in the ensuing analysis. The Early, Cartel and Deregulation Periods comprise bi-annual data from 1896 to 1938, 1948 to 1970 and 1972 to 1986, respectively. The table reports the number of observations (N), the mean, median and standard deviation (St.Dev.).

TABLE 4

MULTIPLE FIRM-BANK RELATIONSHIPS: LINEAR PROBABILITY REGRESSIONS FOR THE KEY PERIODS DURING THE 20TH CENTURY

Period	Early Period: 1896-1938			Cartel Period: 1948-1970			Deregulation Period: 1972-1986		
Model	I	II	III	I	II	III	I	II	III
Officially Listed (0/1)	0.039***	0.039***	0.040***	0.004	0.000	-0.000	0.038**	0.051***	0.044**
	(0.012)	(0.013)	(0.013)	(0.009)	(0.009)	(0.009)	(0.016)	(0.018)	(0.018)
One Share - One Vote (0/1)	0.001	0.001	0.001	0.015*	0.011	0.012	0.010	0.027*	0.026*
	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.013)	(0.015)	(0.015)
ln(Capital Issued)	0.056***	0.057***	0.057***	0.052***	0.052***	0.052***	0.053***	0.056***	0.056***
	(0.006)	(0.006)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)
ln(1 + Age)	-0.004	-0.005	-0.004	0.014	0.010	0.008	-0.015	-0.022*	-0.027*
	(0.005)	(0.005)	(0.005)	(0.009)	(0.010)	(0.010)	(0.012)	(0.014)	(0.014)
ln(1 + Board Size)	0.099***	0.098***	0.098***	0.043***	0.040***	0.040***	0.074***	0.059***	0.058***
	(0.016)	(0.017)	(0.018)	(0.012)	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
Past Dividends (0/1)			-0.014			-0.019			-0.034
			(0.009)			(0.025)			(0.043)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Location Fixed Effects	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
R2	0.063	0.139	0.139	0.052	0.155	0.155	0.060	0.217	0.217
Number of Observations	12,752	12,473	12,473	23,966	21,589	21,589	10,767	10,023	10,023

NOTE. -- The estimates in this table come from linear probability models. The Early, Cartel and Deregulation Periods comprise bi-annual data from 1896 to 1938, 1948 to 1970 and 1972 to 1986, respectively. The dependent variable is Multiple Firm-Bank Relationships (0/1) which equals one if the number of firm-bank relationships equals more than one and equals zero otherwise. The independent variables are defined in Table 1. Model III also includes a dummy variable that is equal to one if firm dividend information is consistently available and that is equal to zero otherwise. The estimated coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. *** Significant at 1%, ** significant at 5%, * significant at 10%.

TABLE 5
DESCRIPTIVE STATISTICS FOR 1966-1986 TRANSITION AND DEREGULATION PERIOD

Variable	N	Mean	Median	Std. Dev.
Officially Listed (0/1)	14,583	0.835	1	0.371
One Share - One Vote (0/1)	15,434	0.482	0	0.5
Arm's Length Debt (0/1)	14,593	0.521	1	0.5
Tangibility	15,434	0.358	0.326	0.199
Book Value of Assets	15,434	14.910	2.881	46.500
Age at Start	15,434	61.910	63	32.150
Board Size	15,434	6.263	6	2.541
Subsidiary (0/1)	15,434	0.143	0	0.35
British (0/1)	15,434	0.931	1	0.253
Firm has an Outstanding Loan with the Incumbent Bank (0/1)	6,136	0.743	1	0.437
Return on Equity	6,128	0.237	0.231	0.155
Number of Acquisitions in the Past Two Years	5,180	0.112	0	0.765
Relationship Bank is National Westminster in 1974 or 1976 (0/1)	15,434	0.042	0	0.201
Relationship Bank Liquidity Ratio	11,382	0.300	0.279	0.111
Relationship Bank Capital Ratio	11,382	0.158	0.056	1.308
Firm Has Headquarter in London (0/1)	12,003	0.341	0	0.474
Change in Concentration of Banking Market Where Firm Has Headquarter	7,936	0.006	0	0.063

NOTE. -- The table reports descriptive statistics of key firm variables for N relationship - year observations between 1966 and 1986.

TABLE 6

SURVIVAL ANALYSIS OF GOING FROM SINGLE TO MULTIPLE FIRM-BANK RELATIONSHIPS DURING THE 1966-1986 TRANSITION AND DEREGULATION PERIOD

Model	I	II	III	IV	V	VI	VII	VIII	IX
Officially Listed (0/1)	0.514***		0.514***	0.453***	1.027**	0.801*	0.804*	1.016**	0.643***
	(0.154)		(0.154)	(0.154)	(0.427)	(0.466)	(0.462)	(0.427)	(0.187)
One Share - One Vote (0/1)		0.144*	0.145*	0.157*	0.189	0.269*	0.278*	0.170	0.124
		(0.084)	(0.084)	(0.083)	(0.132)	(0.144)	(0.144)	(0.133)	(0.092)
Arm's Length Debt (0/1)				0.558***					
				(0.096)					
Tangibility				-0.266					
				(0.221)					
ln(Book Value of Assets)	0.133***	0.154***	0.139***	0.102***	0.142***	0.118**	0.147***	0.140***	0.132***
	(0.021)	(0.021)	(0.022)	(0.023)	(0.043)	(0.049)	(0.047)	(0.044)	(0.024)
ln(1 + Age at Start)	-0.014	-0.025	-0.011	0.001	0.009	0.012	0.013	0.023	0.046
	(0.102)	(0.100)	(0.100)	(0.098)	(0.157)	(0.175)	(0.181)	(0.157)	(0.109)
ln(1 + Board Size)	0.059	0.072	0.070	0.038	-0.219	-0.354	-0.305	-0.220	0.060
	(0.114)	(0.115)	(0.114)	(0.114)	(0.220)	(0.229)	(0.226)	(0.221)	(0.124)
Subsidiary (0/1)	-0.417***	-0.434***	-0.392***	-0.359***	-0.734*	-0.899	-0.929	-0.714*	-0.495***
	(0.138)	(0.140)	(0.140)	(0.138)	(0.413)	(0.627)	(0.642)	(0.413)	(0.161)
British (0/1)	-0.507***	-0.450***	-0.528***	-0.522***	-0.186	0.047	-0.123	-0.180	-0.392**
	(0.140)	(0.138)	(0.140)	(0.139)	(0.406)	(0.512)	(0.492)	(0.407)	(0.164)
Firm has an Outstanding Loan with the Incumbent Bank (0/1)					0.718***	0.730***	0.779***	0.739***	
					(0.214)	(0.237)	(0.243)	(0.214)	
Return on Equity						0.581***			
						(0.200)			
Number of Acquisitions in the Past Two Years								0.576	
								(0.385)	
Relationship Bank is National Westminster in 1974 or 1976 (0/1)									0.337*
									(0.190)
Relationship Bank Liquidity Ratio									1.097**
									(0.470)
Relationship Bank Capital Ratio									0.427
									(0.369)
Industry Fixed Effects	No	No	No	No	No	No	Yes	No	No
Number of Observations	14,641	14,641	14,641	14,637	6,070	5,057	5,057	6,070	11,471

Model	X	XI	XII	XIV	XV	XVI
Sample	UK	UK	UK	Outside London	Outside London	Outside London
Officially Listed (0/1)	0.833***	0.851***	0.831***	1.088***	1.137***	1.091***
	(0.252)	(0.253)	(0.254)	(0.325)	(0.328)	(0.329)
One Share - One Vote (0/1)	0.070	0.069	0.076	-0.093	-0.094	-0.085
	(0.103)	(0.103)	(0.102)	(0.125)	(0.126)	(0.124)
ln(Book Value of Assets)	0.122***	0.122***	0.121***	0.172***	0.172***	0.172***
	(0.027)	(0.027)	(0.027)	(0.037)	(0.037)	(0.037)
ln(1 + Age at Start)	0.029	0.029	0.030	0.085	0.084	0.086
	(0.122)	(0.122)	(0.122)	(0.167)	(0.167)	(0.167)
ln(1 + Board Size)	-0.152	-0.152	-0.156	-0.044	-0.043	-0.047
	(0.148)	(0.148)	(0.148)	(0.192)	(0.192)	(0.191)
Subsidiary (0/1)	-0.656***	-0.656***	-0.657***	-0.576**	-0.575**	-0.577**
	(0.187)	(0.187)	(0.187)	(0.247)	(0.247)	(0.247)
Firm Has Headquarter in London (0/1)	0.016	0.017	0.011			
	(0.107)	(0.107)	(0.107)			
Change in Concentration of Banking Market Where Firm Has Headquarter	-1.078*	0.246	-0.519	-1.087*	1.507	-0.669
	(0.660)	(1.154)	(0.905)	(0.634)	(1.296)	(0.800)
*Change in Concentration * Officially Listed (0/1)*		-1.459			-2.762*	
		(1.352)			(1.449)	
*Change in Concentration * One Share - One Vote (0/1)*			-3.028*			-2.929*
			(1.626)			(1.772)
Number of Observations	7,971	7,971	7,971	5,259	5,259	5,259

NOTE. -- The estimates in this table are based on ML estimations of the proportional hazard model using the Cox (1972) proportional hazard function as the baseline hazard. The independent variables are defined in Table 1 and are lagged one period of two years, except Age at Start which is taken in 1966. Coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. *** Significant at 1%, ** significant at 5%, * significant at 10%.

TABLE 7

TYPE OF BANKS THAT WERE ENGAGED AND ADDED DURING THE
1966-1986 TRANSITION AND DEREGULATION PERIOD

Bank Type	Relationship Bank		Added Bank	
	N	%	N	%
Clearing Bank	*19,928*	*95.8*	*1,073*	*61.6*
London Clearer	17,682	85.0	908	52.2
Scottish Clearer	1,627	7.8	93	5.3
Irish Clearer	619	3.0	72	4.1
Other British Bank	*489*	*2.4*	*222*	*12.8*
Foreign Bank	*379*	*1.8*	*446*	*25.6*
Commonwealth Bank	301	1.4	142	8.2
Other Foreign Bank	78	0.4	304	17.5

NOTE. -- The table reports descriptive statistics of the number and percentage of relationship - year observations between 1966 and 1986, by the type of relationship bank and added bank.

TABLE 8
DEPENDENT VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS

Variable Name	Variable Definition	1966 - 1976 (N=9,028)			1955 - 1986 (N=32,400)		
		Mean	Median	St.Dev.	Mean	Median	St.Dev.
Leverage	Total debt divided by total book value of assets	0.393	0.395	0.184	0.335	0.318	0.187
Long Term Leverage	Bank and long term debt over assets	0.202	0.185	0.172	0.157	0.117	0.162
Bank Debt to Total Debt	Bank overdrafts and loans divided by total debt	0.203	0.179	0.186	0.172	0.106	0.196
Long Term Debt to Total Debt	Long term liabilities divide by total debt	0.121	0.020	0.169	0.107	0.000	0.179
Trade Credit to Total Debt	Trade and other credit divided by total debt	0.676	0.657	0.232	0.721	0.730	0.246
Share Issuance	Net issue of ordinary and preferrred shares divided by the book value of assets at the beginning of the year	0.013	0	0.102	0.015	0	0.132
Return on Equity	Total profits divided by total capital and reserves	0.255	0.233	1.478	0.212	0.209	0.849

NOTE. -- The table reports the definitions and descriptive statistics of the dependent variables employed in the ensuing analysis is based. All variables are collected from the Cambridge DTI database. N is the number of firm-year observations. We miss one observation for ROE.

TABLE 9
DIFFERENCE BETWEEN FIRMS THAT ADD BANKS AND FIRMS THAT DID NOT, PRE- AND POST-MATCHING

Matching Variables	Pre-Matching				Post-Matching			
	I	II	III	IV	I	II	III	IV
Firms That	Did Not Add Banks	Add Banks			Did Not Add Banks	Add Banks		
	Mean (St. Dev)		Difference in Means	T-statistic	Mean (St. Dev)		Difference in Means	T-statistic
Officially Listed (0/1)	0.874	0.952	0.078	3.313***	0.974	0.954	-0.020	-0.92
	(0.332)	(0.215)			(0.160)	(0.210)		
One Share - One Vote (0/1)	0.410	0.398	-0.012	-0.358	0.366	0.386	0.020	0.353
	(0.492)	(0.491)			(0.483)	(0.488)		
Arm's Length Debt (0/1)	0.473	0.747	0.274	7.077***	0.739	0.752	0.013	0.262
	(0.499)	(0.436)			(0.441)	(0.433)		
ln(Book Value of Assets)	8.401	9.111	0.710	7.299***	9.018	9.184	0.166	1.193
	(1.283)	(1.249)			(1.174)	(1.255)		
ln(1 + Age)	2.881	2.709	-0.172	-2.648***	2.834	2.688	-0.146	-1.553
	(0.833)	(0.892)			(0.744)	(0.898)		
Subsidiary (0/1)	0.0469	0.0120	-0.035	-2.82***	0.00654	0.0131	0.007	0.579
	(0.211)	(0.109)			(0.0808)	(0.114)		
British (0/1)	0.967	0.982	0.015	0.98	0.980	0.980	0.000	0
	(0.178)	(0.134)			(0.139)	(0.139)		
Leverage growth	0.0104	0.0176	0.007	2.903***	0.0168	0.0186	0.002	0.584
	(0.0288)	(0.0326)			(0.0223)	(0.0319)		
Bank Debt Growth	0.0150	0.0203	0.005	1.048	0.0181	0.0215	0.003	1.043
	(0.0611)	(0.0294)			(0.0288)	(0.0281)		
Long Term Debt Growth	0.00891	0.0196	0.011	4.337***	0.00886	0.0204	0.012	3.108***
	(0.0307)	(0.0406)			(0.0193)	(0.0415)		
Trade Credit Growth	0.0295	0.0427	0.013	3.46***	0.0390	0.0451	0.006	1.296
	(0.0479)	(0.0478)			(0.0321)	(0.0486)		
Share Issuance Growth	0.00608	0.00588	0.000	-0.033	0.00484	0.00638	0.002	0.383
	(0.0965)	(0.0307)			(0.0382)	(0.0319)		
Return on Equity Growth	0.0626	0.0758	0.013	0.918	0.0551	0.0770	0.022	1.801*
	(0.123)	(0.114)			(0.0955)	(0.117)		
Number of Observations	7,657	166			153	153		

NOTE. -- The table reports for the pre- and post-matching samples, in Columns I and II the mean and below the standard deviation of the matching variables for the firms that did not add banks ("the stayers") and the firms that add banks ("the adders"), in Column III the difference between the two means, and in Column IV the t-statistic for a test of the equality of the means assuming equal variances.

TABLE 10

DIFFERENCE IN FIRM FINANCING AND PERFORMANCE BETWEEN FIRMS THAT ADDED A BANK AND MATCHED FIRMS THAT DID NOT BEFORE AND AFTER 1970

Panel A: *1966 - 1976*	I	II	III	IV	V	VI	VII
			Bank Debt to Total Debt	Long Term Debt to Total Debt	Trade Credit to Total Debt		
Dependent Variable:	Leverage	Long Term Leverage				Share Issuance	Return on Equity
1966 - 1976	0.013	0.023	0.033**	-0.015	-0.018	-0.027	-0.029**
	(0.011)	(0.014)	(0.017)	(0.013)	(0.018)	(0.018)	(0.013)
1966 - 1970	-0.001	-0.021	0.013	-0.017	0.004	-0.043***	-0.047
	(0.022)	(0.024)	(0.037)	(0.029)	(0.037)	(0.015)	(0.037)
1971- 1976	0.025*	0.042**	0.042**	-0.004	-0.038*	-0.017*	-0.051**
	(0.014)	(0.019)	(0.021)	(0.015)	(0.021)	(0.010)	(0.021)
1971- 1972	0.037**	0.085***	0.137***	-0.046**	-0.090***	-0.020	-0.011
	(0.018)	(0.027)	(0.033)	(0.020)	(0.032)	(0.015)	(0.026)

Panel B: *1956 - 1986*	I	II	III	IV	V	VI	VII
			Bank Debt to Total Debt	Long Term Debt to Total Debt	Trade Credit to Total Debt		
Dependent Variable:	Leverage	Long Term Leverage				Share Issuance	Return on Equity
1956 - 1986	0.013	0.023	0.033**	-0.015	-0.018	-0.027	-0.029**
	(0.011)	(0.014)	(0.017)	(0.013)	(0.018)	(0.018)	(0.013)
1956 - 1970	0.006	0.005	0.007	-0.000	-0.007	-0.019	0.021*
	(0.012)	(0.012)	(0.020)	(0.017)	(0.021)	(0.012)	(0.012)
1971- 1986	0.026**	0.043***	0.037**	0.001	-0.038**	-0.012*	-0.036
	(0.011)	(0.016)	(0.017)	(0.012)	(0.018)	(0.007)	(0.022)

NOTE. -- The dependent variables are defined in Table 8. The difference-in-difference coefficients are listed in the first row, standard errors are reported in the second row between brackets, and the corresponding significance levels are in the first row adjacent to the estimated coefficients. The number of observations for each period: 1966 - 1976: 153; 1966 - 1970: 66; 1971-1976: 87; 1971-1972: 40; 1956 - 1986: 251; 1956 - 1970: 127; and 1971-1986: 124. *** Significant at 1%, ** significant at 5%, * significant at 10%.