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## The Determinants of Multinational Banking during the First Globalization, 1870-1914<sup>+</sup>

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### Abstract

What determined the multinational expansion of European banks in the pre-1914 era of globalization? And how were banks' foreign investments related to other facets of the globalizing world economy such as trade and capital flows? The paper reviews both the contemporary and historical literature, and empirically investigates these issues by using an original panel data based on a sample of more than 50 countries. The dependent variable, aiming at measuring the intensity of cross-border activities operated by banks from foreign locations, is the number of foreign branches and subsidiaries of British, French and German banks. Explanatory variables are mainly selected on the base of the eclectic theory of multinational banking, but also include geographical factors (as suggested by gravity models) and institutional indicators advanced by recent studies inspired by new institutional economics, such as legal families and adherence to the Gold Standard. These regressors captures the impact of economic integration (trade and capital flows), informational development, institutional and economic characteristics of the host-market, as well as exchange rate and country risk factors, on banks' foreign investment decisions. The results suggest that, due to its prevailing 'colonial' features, pre-1914 multinational banking does not fit easily into augmented gravity models. The role of trade as a key determinant of banks expansion overseas is qualified, and both institutional factors as well as competitive interaction emerge as critical determinants of banks' decisions to invest in foreign countries. Moreover, the systematic comparison of determinants of foreign investments of banks from major core countries reveals that multinational banking was not a homogenous phenomenon, as banks of different nationality responded differently to economic, geographical and institutional factors.

**Keywords:** augmented gravity models, multinational banking, pre-1914 globalization

**JEL Classification:** F21, F23, G21

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## Introduction

The pre-1914 international economy was characterized by an unprecedented degree of financial and trade openness. The multinational expansion of banks's activity became one of the most visible epitomes of the emergence of a truly globalizing world. Large banks from financially advanced, industrialized Europe reacted to epoch-making shifts in communication technology, international trade and demand for capital by sovereign and private borrowers by rapidly expanding their cross-border and cross-currency business (Cameron 1991: 12-14). Bank internationalization was enhanced by the macroeconomic stability guaranteed by the Gold Standard, but also became a critical component of the struggle for world economic leadership, as it proved an essential facet of the British dominance, as much as part of the challenge brought home to it by Germany and France. International banking was in fact an almost exclusively European phenomenon, since regulatory constraints and the absence of a central bank prevented US banks from playing any significant role until the turn of the century (Wilkins 1970, Carosso and Sylla 1991).

This first wave of massive internationalization was compounded by structural changes in the world banking industry (Battilossi 2000). The dominance of traditional *haute banques*, who by the mid 19<sup>th</sup> century had already developed sizeable networks of international connections to manage both long-term foreign loans and the emerging business of acceptance credits, was gradually eroded. The establishment of specialized "overseas" banks was complemented by the fast rising internationalization of large deposit banks—an international reflection of the rise of joint-stock deposit banks in Britain, Germany and France since the 1870s. The emergence of modern foreign exchange banking brought about also the thriving of global interbank networks based on correspondent relationships, the relative decline of traditional techniques and the emergence of financial innovations in international liquidity management, such as overdrafts, telegraphic transfers and finance bills (Bloomfield 1959, Einzig 1970, Nishimura 1971).

During the past decade or so, a large literature has been produced on international banking in the Gold Standard period (for a survey and innumerable references, see Cameron and Bovykin 1991). Studies elaborated on the abundant information provided by contemporary studies (Baster 1932 and 1935, Feis 1930, just to mention the most relevant ones) but also benefited from an impressive wave of fresh

archival research. At the same time, the seminal studies by Geoffrey Jones (1990, 1992, 1993), Peter Hertner and others put for the first time this phenomenon into a broader theoretical perspective. In spite of the sheer volume of qualitative information now available, however, we are still far from being able to draw a general picture of pre-1914 international banking rooted into a comparative and empirical approach. Data on the magnitude and the geographical scope of the phenomenon are as abundant as scattered, and badly need to be amalgamated into a general data base. This paper, based on a unique data set covering Britain, France and Germany and compiled from a large variety of sources, is a first attempt to move systematically in this direction.

International characteristics of bank intermediation include assets and liabilities that can be either cross-border (claims on foreigners denominated in domestic currency), or cross-currency (claims on residents denominated in foreign currency), or both (claims on foreigners denominated in foreign currency) (Bryant 1987: 23-30). Two basic issues are related to international banking. The first one deals with banks as vehicles of international capital flows and addresses issues such as creation and distribution of international liquidity, efficiency and sustainability of the international monetary system, impact on monetary management, and regulation of banks' international activities. The second one, on which the paper focuses, is based on industrial organization as well as new institutional economics approaches, and analyzes the driving forces of multinational expansion of banks through branching and acquisitions (Aliber 1984). The critical aspect of multinational banking (MNB) is the decision by banks to operate foreign direct investments (either greenfield or through acquisitions) in order to locate part of their activities in a foreign country, instead of servicing their customers (both foreign and domestic) at arm's length from the parent bank or through correspondence banking.

The main purpose of the paper is empirically to test the relevance of the existing theory of multinational banking for our understanding of the pre-1914 international expansion of banks. Recent empirical research on the determinants of cross-border banking activities (including entry into foreign markets) in the 1980s and 90s provides a useful methodological benchmark. At the same time, their results allow us to make useful comparisons between the first and the second globalization, and possibly draw policy lessons. The paper is structured as follows. Section 1 surveys the building blocks of the theory of MNB and elaborates on the determinants of pre-1914 foreign expansion of banks as they are envisaged by the existing literature of banking history. Section 2

identifies the empirical issues that the extant literature left unaddressed—namely, a systematic comparison of the determinants and time patterns of multinational banking during the first globalization. Section 3 presents the data set and proposes a research strategy based on an econometric specification that combines economic and institutional variables in order to explain where and why British, German and French banks were attracted into peripheral economies both in Europe and overseas. Section 4 discusses the results of the empirical research. Section 5 concludes.

### **(1) Pre-1914 multinational banking: what theory suggests and what we know**

The analytical background of MNB is mainly based on the so-called *eclectic theory*—in fact, an extension of the theory originally proposed by John Dunning for MNEs that combines an industrial organization approach with new institutional economics (Williams 1997). This theory has been developed around three building blocks. The first one refers to competitive advantages that foreign banks enjoy relative to domestic or other foreign banks thanks to *ownership-specific advantages*—i.e., intangible assets of the parent bank such as size, reputation, information, customer base, product and service differentiation, human capital. This approach usually translates into a “follow-the-client” interpretation of MNB, which establishes a structural link between the internationalization of financial intermediation and the integration of the home country with the international economy. Given the information-intensive feature of banking services, banks accumulate non-tradable internal information on customers that can be exploited only by the banks themselves. Moreover, banks from financially advanced core countries are deemed to provide better and cheaper access to international credit and money markets. Their competitive advantages in providing services to domestic exporters tend to create a relationship between trade and banking FDI. Seemingly, the relationship between bank and non-bank FDI is usually explained in terms of “defensive” multinational expansion, where co-location allows banks to internalize existing long-term bank-client relationship and to fully exploit internal market for information, limiting the risk that multinational customers solicit services from local or international competitors.

A second theoretical block, based on an industrial organization approach, refers to *location-specific advantages*, stemming from regulatory and structural differentials

between domestic and foreign markets. Such location-specific advantages vary according to institutional and economic characteristics of the host country such as taxation, regulation of banking and financial markets, disclosure requirements, externalities, competition, as well as other macroeconomic conditions such as return on capital, economic growth rate, and exchange rate risk. According to this perspective, MNB would be driven by profit opportunities stemming from regulatory arbitrage or market structure.<sup>1</sup> The decision to locate in an international financial centre can be considered an extension of this approach. Banks are attracted there by the existence of externalities in the form of economies of scale either external to markets (infrastructures, human capital, regulatory attitude of monetary authorities) or internal to markets—i.e. the existence of deep, liquid and informationally efficient markets thanks to a high number of participants (Davis 1990, Revell 1994).

A third block that underpins the eclectic theory is *internalization*—i.e. a contractual form through which hierarchical managerial allocation (or intermediate arrangements such as alliances) overcome external market failure and avoid excessive transaction costs, thus allowing exploitation of advantages internal to the firm, such as information networks and commercial intelligence, efficiency and flexibility of internal fund transfers, or centralization, integration and coordination of business segments. Market failures leading to internalization may occur because of information asymmetries or the absence of efficient correspondent banks.

Which were the determinants of banks' foreign expansion during the first globalization as they emerge from the historical literature? And how those determinants can be related to theoretical underpinnings? Though based on a variety of strategies and organizational forms, two interrelated patterns of multinationalisation emerged before 1913: a "foreign dominance" pattern of expansion related to commercial penetration and foreign investments by core countries in peripheral economies; and a process of clustering into financial centres motivated by direct access to international capital and money markets (Battilossi 2000: 147-9). Before 1870, multinational banking remained largely a British phenomenon. Trade expansion and the absence of reliable correspondent institutions gave British merchants and financiers strong incentives to establish new banks overseas, especially in financially underdeveloped peripheral areas,

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<sup>1</sup> It is worth noting that there exists no consensus on the latter issue. It is generally held that banks tend to locate in systems where entry barriers are lower due to less regulatory constraints on intermediation. Others, nonetheless, argue that protected oligopolistic systems actually attract foreign banks because of higher spreads.

to provide trade finance and foreign exchange services. ‘Financial pioneering’ overseas (to borrow the expression used by Baster 1935: 126) was also related to investment banking services to sovereign and private borrowers raising capital in major European financial markets. In the 1870s and 1880s new specialist institutions—the “free-standing” British international banks operating in western offshoots of Americas and Australasia (Jones 1998)—thrive on the global ramifications of the London acceptance market. Incorporated under British law and with London-based head-offices, these banks were specialized in multinational service banking—mainly trade finance and related facilities, such as collection of credit information, enhancement of business opportunities, and collection of debts—along geographical lines, but occasionally diversified their activities to provide also agency services related to long-term loans to foreign governments and companies (Baster 1935: 4-5). In a number of cases, they became gradually naturalized and expanded towards local retail banking—an evolution characteristic of British banks that operated extensive branch networks in Australia, New Zealand, Canada and South Africa. The qualitative evidence suggests that British overseas banks of the 1860s and 70s basically responded to the ‘gravitational pull effect’ created by rising trade and foreign investments in overseas settlement economies, were launched often to ride booms in specific mineral and commodities (Jones 1993: 24), and prospered thanks to their ability to exploit ownership-specific advantages: size, reputation, managerial resources, informational advantages and, above all, access to cheap funding in London international money markets. However, British overseas banks were not a projection of existing domestic banks, did not run operations in Britain and sometimes had pretty small head offices in London (Jones 1995: 980). British joint-stock banks entered acceptance business only reluctantly. By the early 1900’s, they were slow in responding to increasing competition. A couple of deposit banks opened branches and subsidiaries in Continental Europe, but “the caution and hesitant progress was due to the general fear that continent branches of the deposit banks would become mobilier banks on the continental model, and lock up English deposits in long-term loans abroad” (Baster 1935: 58).

A radical change took place in the 1880s, when the massive move of French and German banks into multinational expansion—motivated by their ambitions to emancipate the financing of national trade from British dominance and create “naturalized” acceptance markets in francs and marks—gave cross-border banking a new competitive hedge, especially in Latin America and the Far East (Einzig 1931: 26-

48; Chapman 1985: 121-5). German banks proved particularly aggressive in replicating the British model of overseas banks, which nonetheless—unlike their British competitors—were outgrowths of large domestic joint-stock banks (Hertner 1990; Tilly 1991). Banks' multinational expansion was part of an aggressive international strategy to promote German business and trade—a challenge which gave rise to a “German craze” on the British and French press, and attracted thorough scrutiny by contemporary observers (Hoffman 1933).

On the contrary, French banks seemed to lack a comparable dynamism and initiative, especially overseas. Their attitude was explicitly blamed as responsible for the stagnation of French international trade, to the point that it used to raise severe criticism among contemporary observers and politicians: “Impressionnée par l’influence que les banques étrangères, surtout allemandes, avaient prise dans le développement du commerce extérieure de leur pays respectifs—wrote a contemporary French observer—l’opinion s’est développée que la faiblesse du montant de nos relations avec l’étranger était due à l’insuffisance de l’aide que nos banques apportaient à nos négociants. (...) Il en est résulté de nombreuses campagnes dirigée contre les opérations de nos établissements financiers et qui se sont particulièrement concrétisées en 1907 (et) 1909.. » (Caillez 1923 : 204). A similar sentiment of disappointment has transmigrated towards French historians (Bonin 1991). Commercial banks (“établissements de crédit”) used to justify their lack of activism in trade finance overseas with their characteristic of deposit banks, which discouraged them from engaging in what they deemed as a “special”, illiquid and highly risky business (Caillez 1923: 216-8). As a matter of fact, this fact did not prevent French commercial banks, such as *Credit Lyonnais* and *Société Générale*, from privileging major European financial centres (London, Paris, Brussels, Geneva) as their main foreign locations, chasing after the rich business provided by foreign securities for the benefit of French investors, as other “banques d’affaires” such as *Paribas* did. Moving overseas, French banks did not extensively deal with trade finance (the major exception being the *Comptoir*) and tended to concentrate on French colonies. They also gave up early attempts to launch individual initiatives, and privileged large joint ventures that as a rule enjoyed the political support of the French government. A typical case was the *Banque de l’Indochine*, which obtained from the government the monopoly of French trade financing in Asia.

In fact, German and French so much reacted to British dominance overseas, as pursued autonomous strategies of multinational expansion, mainly in European peripheries, through joint ventures with other foreign and local bankers. Whereas overseas they specialized their activities along British lines (foreign-exchange and trade related operations, with occasional spillovers on financing railways and public utilities (Levy 1991), German and French banks tended to export towards European countries universal and ‘credit-mobilier’ type of banking, thus engaging—typically through joint subsidiaries—in a much wider range of services to local industry and occasionally acting also as vehicles and promoters of home-country industrial interests.

The other main aspect of pre-1914 multinational banking—i.e., the clustering of banks into major European financial centres (essentially London and Paris)—was closely related to their expansion in peripheral countries. The basic economic rationale for branching in London or Paris was to internalize foreign-exchange and trade finance functions—which also meant enhanced access to information, economic intelligence, and network externalities, particularly valuable in information-oriented lines of business (Casson 1990; Cho 1985: 60). Since banks with multinational ambitions had to rely first on flexible access to resources (capital), large working capital, and the support of a well-developed money market, “large numbers of these institutions before the War were obliged to be strongly represented in London whatever their own national origin, because fierce competition in the various parts of the world where they met forced them to use the facilities of the cheapest and most reliable money market available” (Baster 1935: 13).<sup>2</sup> Some were also attracted into Paris, where money rates used to be fractionally lower than in London, although apparently not enough to overcome London’s substantial advantage in terms of banking externalities. Discrimination against bills drawn in currencies other than sterling (due to the fact that the sterling exchange market enjoyed an unrivalled depth) also provided continental banks with an additional strong incentive to locate in London: the emancipation of German trade from

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<sup>2</sup> In fact, foreign banks had only limited access to the London money market. The Bank of England did not normally take foreign banks’ acceptances for discount or as security for loans, and foreign banks had no clearing house seat. “With their rights thus limited—Baster (1935: 55-6) argued in response to those alarmed by the “foreign invasion”—they bring resources which, before the War at any rate, made the London market the cheapest in the world. They increase banking competition to the benefit of the trader doing foreign business; and they introduce high-class foreign investments. Before 1914 there does not seem any reason to doubt that the advantages of their presence on balance far outweighed the disadvantages”.

intermediation of British banks required first German banks to be fully and efficiently integrated in the City (Diouritch 1909: 260-4).

To sum up, this quick survey suggests the existence of quite different patterns of banking multinationalization before WW1. Although trade and foreign investments appear to be the prime drivers of European banks' foreign expansion, their relative importance may prove quite different in the British, French and German experience. If anything such national patterns of foreign expansion exists, they should also be considered the result of a combination of different characteristics of home-country banking systems (specialized VS universal-type), different areas of specialization (overseas VS continental peripheries) and different timing of expansion (first comers VS late entrants). Can we produce empirical evidence that provides quantitative support to the existence of such national patterns? And, which other factors—economic, political and institutional—should be also taken into account?

## **(2) Missing empirical links: where, why and when**

The extant literature on pre-1914 international banking suffers from three main weaknesses. First, there exists no empirical comparative study of the determinants of banks' decision to locate overseas: where did banks expand abroad and why? Second, the literature focuses almost exclusively on the entry decisions, and largely neglects divestment and exit, which is an equally fundamental aspect of internationalization (Calof and Beamish, 1995). Third, the time pattern of international expansion of banks and its relationship with other aspects of the first globalization remains largely unexplained: when did banks decide to enter (or exit) foreign markets? Did they follow the ebb and flow of trade and capital?

The qualitative literature surveyed in section 1 strongly suggests that the pattern of overseas localization should reflect two major driving forces: long-term capital exports and international trade. Yet, by instance, Jones (1993: 28-9) argues that the growth of British MNB was obviously “related to the development of the British Empire, British capital exports, and British foreign trade”, but also notices that “the correlation between British multinational banking and British trade and capital flows was less direct than within the borders of the Empire”, since in the 1890s “British trade was heavily biased towards North America and the rest of Europe, the two regions in which British banks had the least direct investment”. In a similar vein, the pattern of British

capital exports shows “the disparity between the importance of the United States and Canada as recipients of British capital and their unimportance in British multinational banking”. Clearly, this scattered observations point to the need for more systematic empirical analysis of the foreign investment decisions by banks.

The absence of empirical research on the “where and why” issue is certainly due to the absence of ready-to-use data for the period prior to WW1, both at country level and, *a fortiori*, at bank level. In fact, research on the determinants of banks’ multinationalisation in the late 20<sup>th</sup> century—focusing either on individual countries or on cross-country panels—amounts nowadays to a large literature. Empirical studies tend to adopt an eclectic approach by looking at both micro- or macro-level explanatory variables which are selected on the basis of different underlying theoretical blocs, spanning MNB theories as well as structural models of banking FDI based on optimization of portfolio investments (for a survey, see Buch 2000 and Wezel 2004). Such literature provides a solid methodological benchmark which research on pre-1914 period can fruitfully elaborate on, once a viable data base has been constructed.

Apart from economic drivers of banking internationalisation, one neglected aspect is the fact that—in spite of the absence of entry restrictions in the form of regulatory constraints—other institutional characteristics of host countries could rise entry costs for foreign banks or bring them to failure. In fact, the classical study by Baster (1935) provided plenty of examples of institutional problems such as “low standards of commercial morality” and high risk of arbitrary expropriation by governments.<sup>3</sup> Moreover, after the seminal contributions by La Porta et al. (1997 and 1998), it is now widely accepted that some legal traditions are more conducive than others to financial development. In turn, banks can find easier to invest in countries with governance rules and legal procedures that stem from the same legal family: by instance, French banks may have a cost advantage over, say, British and German competitors when establishing footholds in Latin America.

A second neglected aspect is riskiness. Apart from institutional problems, international banks were exposed to economic uncertainties. Risk was much higher in

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<sup>3</sup> “In the past, in some countries of South America and the Near East, it was well known that justice could easily be bribed by persons anxious to escape from their commercial obligations; in other cases, there were no proper courts of justice at all”. The risks stemming from institutional weaknesses and political instability were epitomised by the expropriation of the Santa Fé branch of the London and River Plate Bank in 1876: Baster 1935, pp. 17 and 131-7 respectively.

“one-crop” countries, such as Brazil (coffee) or Chile (nitrate), and successful banks were those able to diversify risk by covering “several raw material regions, whose economic fluctuations may be expected to occur at different times” (Baster 1935: 17-8).<sup>4</sup> Finally, the increasingly competitive environment of international banking could prove a source of risk: again, references were made in the contemporary literature to instability caused by “destructive rivalries” between British, German and French banks, especially in South America, the Caribbean, Egypt and the FarEast.

Finally, as for the “when” issue, data collection problems may have been exacerbated by the characteristics of MNB theories. Recent empirical research on MNCs has widely criticised the static nature of the internalization paradigm (for a review, Nicholas and Maitland 1998). The same criticism can be easily extended to the analysis of MNB. The markets-hierarchy paradigm is silent when it comes to explain the forces behind the decision by firms to shift from externalization to internalization (and viceversa). Likewise, it fails properly to account for the dynamic, time-dependent nature of the process of internationalization—an aspect which in turn is systematically uncovered by empirical studies focusing on phenomena such as sequential stages (and forms) of overseas involvement or time clustering of investments overseas. The time dimension of the banks’ decision to enter and exit foreign markets assumes particular relevance since, as Buch (2000) emphasises, foreign direct decisions by banks may be subject to hysteresis depending on the level of fixed costs determined by entry and exit barriers. Some in fact argue that, since information about the foreign environment improve over time and banks’ revenues in foreign markets are stochastic, they may postpone entry (exit) until revenues increase (fall) sufficiently. Moreover, fixed costs of entry (and exit) depend on the form taken by the investment—i.e. greenfield investment (branching), acquisition of host-country banks, or joint-ventures. As a consequence, the time pattern of FDI in banking may show peculiarities that deserve further empirical research aiming at better understanding its relationship with trade, non-financial foreign investments and other time-varying variables.

### **(3) The empirical specification and the data base**

No systematic study has been undertaken so far of the determinants of European banks’ multinational expansion during the first globalization. A cross-country empirical

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<sup>4</sup> Baster referred to the postwar branch network of Barclays Bank and its overseas subsidiaries as the best single instance of such diversification.

analysis based on a homogenous methodology should give interesting insights on alternative or complementary explanations of multinational banking. In principle, an appropriate empirical specification should contribute to identify both country-specific and bank-specific factors that determined the multinational expansion of banks from different countries. More precisely, the empirical specification should help understand to what extent banks' behavior can be described as a single country-specific function and, conversely, how important were bank-specific factors emphasised by the eclectic theory. For this reason, a firm-level analysis should complement the country-level analysis. This goal however is beyond the scope of this paper, and is left for future research. Last but not least, unlike most recent studies, we are interested not only in the cross-section but also in the time dimension of the phenomenon of banking internationalisation. For these reason, a data panel has been constructed for multi-year (i.e. decennial) periods, setting 1880 as the starting point of our analysis, and 1890, 1900, 1913 as benchmark years and between period division. This is an empirical strategy usually adopted by cross-country studies, in order to defuse the effect of outlier years, minimize the impact of missing annual data, obtain a right-hand matrix of significant variance and avoid encountering too many invalid observations in the dependent variable (Clemens and Williamson 2000).

**Dependent variable.** The main objective of the paper is to understand whether and why banks from different core countries (Britain, Germany, France) followed different – or similar – patterns of multinationalization. Thus, the dependent variable aims to measure the direct participation of core country's banks in the host country's banking system. Recent studies based on OLS estimations of the determinants of foreign banking location on a bilateral country-level base use either the number of foreign bank offices (Brealey and Kaplanis 1996), the total assets of foreign subsidiaries (Goldberg and Johnson 1990, Galindo et al. 2003), or foreign direct investments by banks (Buch 2000, Wezel 2004) as a proxy. As an alternative, other studies use multinomial probit estimations with the endogenous variable taking a positive value when banks have foreign branches and/or subsidiaries in the host country (Focarelli and Pozzolo 2003). However, the probit method fails to give any indication of the magnitude of banks' involvement in a host country. In turn, more sophisticated proxies, such as assets of foreign subsidiaries or banks' FDI, either are not easily available (in the case of the latter) or, due to banks' multi-country area of activity, can be allocated to individual countries only with difficulties. Moreover, the use of foreign banks' assets

would make sense only relative to the size of the banking sector of host countries—unfortunately a kind of information still unavailable for a large number of countries, especially overseas.

For this reason, the dependent variable to be used to capture the size of cross-border investments by British, French and German international banks has been constructed on the base of the overall number of their foreign branches or subsidiaries. The construction of the dependent variable entailed some important identification problems, which deserve a thorough discussion. British multinational banks were not the offshoots of parent banks operating in Britain, but free-standing companies created by groups of merchants and financiers, usually with the purpose of operating in a geographically-specialized area. The degree of their Britishness was sometimes hard to ascertain. In the case of the “colonial” and “foreign” banks<sup>5</sup>, it is worth quoting a primary source to grasp the sense of how difficult may prove to identify what, for the sake of simplicity, we call “multinational banks”. Although some of them—wrote *The Economist* in his 1913 Banking Number (October 18, 1913, p. 769)—“were originally British-owned, having being formed under English laws, with their head-office in London”, later on some “found it advisable to remove the seat of management to the territory from which the business is drawn, and the ownership of part of the share capital has sometimes followed this movement. Other banks have been registered in the colonies, but have raised capital over here [in London]....Then there are what may be called the “native” colonial banks, formed and owned in the colonies, which have opened offices in London for the purpose of facilitating business between the colony and the Mother Country.” Thus, some of the colonial banks (the “natives”) had never been British and their presence in London was comparable to that of any other foreign bank; others, originally established in London, had their Britishness gradually diluted by naturalization. In turn, among “foreign” banks were enlisted banks registered under British law and unequivocally owned or controlled by British interest. However in the case of others, such as the many “Anglo” banks, the degree of involvement of British

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<sup>5</sup> Contemporary British sources, such as *The Economist* and the *Banking Almanac*, used to categorize banks as “colonial” or “foreign” not in base of institutional (e.g. charter) or ownership characteristics, but according to their geographical specialization. So “colonial” and “foreign” were dubbed all banks specialized in doing business with British colonial possessions or with foreign countries, respectively.

capital is harder to assess and requires the existence of disclosed information or historical investigation.<sup>6</sup>

A further identification problem stemmed from the multifacet characteristics of multinationalisation of banking business. The oldest form of cross-border expansion, still widely adopted in the 1870s, was to create a partnership (*kommandit*, *commandite*) with host-country private bankers. This strategy was extensively used by British international banks in the early period of their activity in order to establish a presence in major financial centres or ports, both on the Continent (e.g. Hamburg, Antwerp, Bordeaux) and overseas. Partnerships created a dense international network of business relationships and informational exchange, but went increasingly out of fashion as repeated failures proved agency problem to be increasingly intractable, thus risking to undermine the solidity and reputation of banks that suddenly found themselves involved in their partner's speculation and bankruptcy. Whereas the opening of foreign branches by the parent bank was rare and mainly confined to major international financial center, such as London or Paris, the most generalized strategy of entry into foreign markets was by establishment of new banks abroad, often through strategic alliances. The latter could range from small joint-ventures to large international consortia. Whereas in some cases, these ventures had a clear "nationality", in many others consortia spanned interests of different nationalities, including host-country's.<sup>7</sup> Another form of financial penetration widely used by French and German banks was the assumption of minority, though sometimes sizeable, shareholdings in host-country's institutions.<sup>8</sup> In spite of their relevance for a comprehensive assessment of the phenomenon of banking internationalisation before WW1, these strategies have not been considered in this paper. In the British case, the sample includes only banks that could be proved to be registered under English law, maintained their head office in London or kept a dominant presence of British interests in their ownership structure. In the German and French

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<sup>6</sup> By instance, it was possible to exclude the Anglo-Austrian Bank—a major financial institution operating a network of dozens of branches in the Austrian-Hungarian Empire—from the sample only thanks to historical evidence that the bank had fallen under the control of Austrian interests after 1875: see Cottrell 1969.

<sup>7</sup> A typical example was the creation of BCI (Banca Commerciale Italiana) at the initiative of a large consortium of German banks, which however included a significant number of Austrian, Swiss, French and Italian banks. Over time the French and the Italian parties increased its participation in the bank's capital, whereas the German founders (acting through a Berlin-based committee) significantly scaled down their direct involvement in the management of the bank. By 1913 BCI was in fact a full-blown Italian bank, though still widely perceived as "German".

<sup>8</sup> German banks' participations in Austrian institutions and the involvement of French banks in the capital of many Russian banks provide clear examples of such strategy.

case, only foreign branches of parent banks and autonomous banks that could be identified unmistakably as fully controlled subsidiaries (“tochtergesellschaften”, to use a widely used German expression: Hauser 1906) of major national banks or group of banks have been included. For this reason, recovering all the necessary information proved a demanding task, which required the use of a multiplicity of primary and secondary sources (see Appendix). One last important caveat has to do with survivor bias. Since foreign banks’ branches are observed at different points in time (1880, 1890, 1900 and 1913), the sample misses out all banks and branches established and closed between one benchmark year and the following one—a phenomenon about which there exists sizeable qualitative information. In fact, we are empirically analyzing the determinants of “successful” bank multinationalisation.

The basic information about the dependent variable so constructed are summarized in Tables 1 and 2 and in Graph 1, which jointly outline the time pattern and the spatial dimension of the multinational banking phenomenon in the period 1880-1913.

TABLE 1, 2 and GRAPH 1 HERE

MNB was basically a process of financial penetration into the peripheries of the emerging global economy, and left core North-Western European banking systems practically unaffected. The phenomenon recorded a significant acceleration in the decade after the turn of the century, when foreign branches worldwide increased by a 70 per cent relative to 1900. It is worth noting the timing of such take-off, which coincided with the peak in the growth rate of trade and capital flows: an attempt to disentangle the causal relationship between these three facets of globalization represents the main empirical task of the paper. The globally dominant position of British banks remained a characteristic of MNB until WW1 (92 per cent of branches in 1880, 81 per cent in 1913), but was not spread homogenously across regions. British maintained an uncontested dominance as foreign players in Australasia, Subsaharian Africa, North America (almost exclusively Canada), the Caribbean and Central America; in fact Australia, New Zealand and South Africa accounted for 70 per cent of total British foreign branches in 1913, and Canada for another 8 per cent. In turn, French enjoyed a dominant position as foreign bankers in Europe and the Near East, areas in which 70 per cent of their foreign branches were concentrated. Only in two areas was the established

British supremacy successfully challenged, namely in East Asia and Latin America, where French and Germans became significant players, jointly owning 30 and 45 per cent of foreign branches of the two regions. German foreign expansion accelerated dramatically after 1890, focusing mainly on one hand on Southern-Eastern Europe and the Near East (thus competing with the French), and on the other hand in South America, where they directed their aggressive strategy to eroding the established British dominance.

**Independent variables.** Moving from the assumption that the demand for bank intermediation is affected by a number of economic, institutional and geographical characteristics of both home and host countries, the determinants of multinational banking are investigated by running a cross-section analysis that regresses the endogenous variable on a set of “candidate” variables selected on theoretical grounds. These regressors can be grouped into four different vectors of “gravity”, “integration”, “market” and “risk” variables.

“Gravity” variables. Gravity models recently applied to international trade of financial assets (Portes and Rey 2000; Portes et al. 2001) and banks’ foreign investments (Papaioannou 2005) in the 1980s and 1990s have proved quite successful. Thus we want first to test whether pre-1914 MNB can be described as a basically “gravity” phenomenon as its contemporary counterpart.

**(1) Host-country economy’s size.** A gravity equation would predict that multinational banking expansion is positively associated with the economic size of countries pairs and inversely related to their distance. Since we estimate separately the empirical specification for British, French and German multinational banks, we can use the GDP of host country in order to detect size effects.

**(2) Distance and information flows.** The negative impact of geographical distance strongly suggests that distance can be held as a good proxy for asymmetric information and agency problems. Information asymmetries however do also depend on specific characteristics of the host-country, which may either magnify or offset the impact of distance. For this reason our specification includes not only physical distance between home and host countries, but also an original variable that captures the level of informational development of host countries as a proxy for information costs. For this purpose, data about the aggregate volume of postal traffic handled in each sample country (including items as different as letters, parcels and newspapers) have been collected, and normalized by population to remove size effects. In fact, the optimal

solution would be to measure bilateral flow of information between home and host countries—a kind of disaggregated information unfortunately not available at this stage. Host country’s “information per capita” can be interpreted as an indicator of information integration, which in turn is likely to reflect a country’s level of modernization, urbanization and social development—all factors that go hand in hand with economic development. Since, as explained below, the regression also includes GDP per capita as a regressor, we may well find that these two variables capture exactly the same phenomenon. Nonetheless, it is interesting to check whether information played any significant additional role.

“Integration” variables. They aim to capture the relationship between banks’ decision to invest abroad and the home economy’s linkages with host countries through commodity and capital markets’ integration.

**(3) Trade flows.** Both contemporary observers and the historical literature consider trade as the main engine of MNB, as banks from core countries were usually thought to act in response to the “gravitational pull effect” stemming from intense trade links between home and host countries. As such, trade links may partially or entirely offset the negative impact of distance. In order to assess whether in fact trade was a main shifter of banks’ multinational expansion during the first globalization, we experiment with different trade variables, namely: total bilateral trade (imports plus exports), and the ratios of total bilateral trade to host- and home-country total trade. As a rule, bilateral trade should be scaled by host-country GDP in order to control for size effects. In our case, this problem is addressed by the fact that the log of host-country GDP is used as independent variable in all specifications. The two trade ratios can be regarded as indicators of trade partnership dependency, but their interpretation significantly differs. If a positive and significant relationship between MNB and host-country trade dependence is found, this would mean that banks tended to locate in countries that were highly dependent on trade with the home country, irrespectively of the magnitude of this trade for the latter. In turn, if a positive relationship is found with home-country dependency, this could be interpreted as evidence that banks’ decisions was rather determined by the relevance of the host country as a partner for the British trade. Table 3 provides a general picture of both host-country and home-country trade dependence based on bilateral trade between Britain, France and Germany and the rest of sample countries in 1913.

TABLE 3 HERE

Given their different implications, tests for both proxies—the host-to-home dyadic bilateral trade (host country’s imports from plus exports to home country) normalized alternatively by the total trade (imports plus exports) of the host country and the home country—are run.<sup>9</sup> In addition, we can also test the hypothesis that banks did take their decisions on the base of the total volume of host country’s bilateral trade, perhaps because of its importance on a regional scale (e.g. Latin America or Far East).

**(4) Capital flows.** In a similar vein, banks could be more attracted by foreign countries that were strongly linked to the home economy by intense capital flows. In this case, the location decision would be motivated by an internal information-driven strategy (“follow the customer”, reducing asymmetric information) as well as ownership-specific advantages that allowed banks to provide advanced financial services related to foreign borrowing. A positive (negative) relationship would suggest that bank multinationalisation was a complement of (a substitute for) capital movements. In a similar fashion as in trade, we use different proxies to capture the level of financial dependency, namely: the absolute volume of capital flows, and the ratio of the cumulative flow of home-country’s investment into host country, normalized by the home-country cumulative total flow of capital abroad (since reliable estimations of host-country total stocks are extremely difficult to obtain). This variable might prove particularly important for the German and French banks, which—due to their “universal” or “*crédit mobilier*” characteristics—used actively to participate in large consortia floating sovereign debt, as well as in the establishment of foreign companies, often in joint-venture with their industrial customers. The strategy of *unternehmergeschäft* systematically used by German banks in coordination with major electromechanical concerns (such as Siemens and AEG) is the most telling example. (Hertner 1990) Unfortunately, as explained in the Appendix, the poor quality of data on volume and geographical distribution of French and German capital exports casts serious doubts about the robustness of our results for these two country. In any case, the best estimates available are summarized in Table 4.

TABLE 4 HERE

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<sup>9</sup> As a further possibility, the ratio of dyadic trade to host- and home-country GDP can be used. In this case we would rather measure the two economies’ dependency on each other.

“Market” variables aim to measure the attractiveness of the host country economy in terms of banking business opportunities and institutional environment.

**(5) Real GDP per capita.** Demand for banking services in the host country—and consequently, the attractiveness to foreign banks—should be related to its income, so that in principle we should expect international banks to locate in rich countries. However, rich countries are also more likely to have a more developed financial system, with higher entry costs, keener competition and lower spreads. We should also carefully consider that the business of international banking, at least until the second half of the 20<sup>th</sup> century, used to be less a matter of competition than of cooperation, collusion and alliances between major international players. For this reason, multinational banks may well have preferred to use greenfield investment to enter developing markets, where the financial system was less complex and articulated, the position of incumbent banks highly contestable, the rents and claims of cumbersome “friends” weaker, competition lower and margins higher. Thus, the expected sign on this variable is ambiguous.

**(6) Business centre effect.** As seen in Section 1, banks had strong incentives to create a foothold in ‘core’ financial centres such as London and Paris in order to gain access to large international money markets. Nevertheless, peripheral business and exchange centres (usually ports of international relevance) could prove equally attractive, by instance in order to access regional foreign exchange markets and exploit externalities stemming from business clustering. The existence of financial centres can be empirically determined by measuring whether the banks’ presence exceed a “normal” level (Brealey and Kaplanis 1996). However, at this stage business centres have been identified in a more straightforward way on the base of their regional relevance, basically determined by the size and range of foreign exchange and commodity trade (Schwarzer 1991; Flandreau and Jobst 2005). Countries host to such centres have been assigned a dummy taking the value of 1. (See the Appendix for further details).

**(7) Institutional affinity.** We want also test whether political and institutional integration between host and home countries were important determinants of multinational expansion of banks. The recent stream of “law and finance” literature (La Porta et al. 1999, Berkowitz et al. 2003) emphasises the impact of different legal systems on enhancing (or hindering) financial and economic development. Recent research on contemporary international banking also suggests that institutional

differences—including legal origins, financial regulation and the rule of law—tend to increase foreign banks' entry costs and play a significant role in explaining foreign bank penetration (Galindo et al., 2003). We test for this possible determinant by using a legal origin dummy variable equal to 1 when the home and host countries belong to the same legal family.

**(8) Colonial link.** In the same vein, the existence of a colonial relationship might have provided a strong political rationale for the location of home-country banks into the host country, by allowing banks to overcome information asymmetries and sheltering them from international competition. We test for this possible determinant by using a dummy variable equal to 1 when a colonial link exists between the home and host countries. However, we should also check for possible multicollinearity that stems from overlapping with the legal origin variable—in fact, most peripheral countries “transplanted” legal institutions from a few origin countries via colonization. Moreover, the impact of colonial status could be already captured by the trade dependency variable, since being a colony usually meant having a disproportionate dependency on trade with motherland (as indeed the trade dependence variable presented in Table 3 suggests). Moreover, a particular identification problem arises for political entities—such as China and the Ottoman Empire (including Egypt)—in which, in spite of the absence of a clear colonial status, foreign powers (and their bankers and financiers) enjoined substantial extraterritorial rights. This problem has been solved in an *ad hoc* way, by considering post-1882 Egypt a British colony and by assigning China and the Ottoman Empire a dummy equal to 1 (i.e. colonial status) vis-a-vis Britain, France and Germany.

Finally, “risk” variables attempt to analyse the impact of institutional and macroeconomic uncertainty on banks' decision to invest overseas.

**(9) Exchange rate movements.** Theory suggests that the impact of such variable is ambiguous and depends on whether one assumes that decisions about multinationalisation are influenced by a bank's initial outlay or by expected gains from investment. In the former case, an appreciation of the home currency should encourage foreign expansion by lowering the cost of foreign investment. In the latter, it should discourage foreign expansion by lowering expected earnings in home currency terms. It is also questionable whether such exchange rate effect can practically be separated from other macroeconomic factors. Some recent studies (Buch 2000) suggest that host country's exchange rate volatility relative to home currency, by making expected

returns from investments overseas more unpredictable, can also represent a brake on multinational expansion of banks. As a matter of fact, exchange rate risk was an issue very present to the mind of past observers, who argued that fluctuating exchanges “introduce(d) an undesirable speculative element into international business, for which the banks (we)re, in any case, liable to suffer”. Adverse exchange movements could reduce the book value of capital assets abroad, as well as their home-currency earning power, as European banks operating in the East could appreciate during the fall in the gold value of silver of the 1890s, and in South America in the last half of the 19<sup>th</sup> century as a consequence of “wild currency experiments of some of the governments there” (Baster 1935: 19-20).<sup>10</sup> At the same time, exchange rate fluctuations could represent a sizeable source of profits for banks that engaged systematically in foreign exchange business. Moreover, the asymmetric structure of the pre-1914 network of international exchange—with peripheral currencies rarely quoted in the main financial hubs of the globalizing economy (Flandreau and Jobst 2005)—could provide an additional rationale for opening a branch in a peripheral country with an unstable currency.<sup>11</sup> For this reason, the expected sign of the exchange risk variables is ambiguous. We test the impact of foreign exchange fluctuations by using different indicators, namely: the average annual change and the cumulative decennial change in the nominal exchange rate of host country’s currency vis-a-vis the British pound, as well as an index of nominal exchange rate volatility that captures the exposure of banks to depreciation of the host-country’s currency.

**(10) Country risk.** On one hand, it is reasonable to assume that banks were less inclined to investing in risky countries. On the other hand, strategies of diversification

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<sup>10</sup> According to Baster, losses were usually suffered not on acceptance business, but on long-term investments. In case of local currency depreciation, banks could avoid losses by selling the proceeds of sterling drafts of exporters bought locally against disbursement of local currency to importers against receipt of local currency, with a small spread to cover the cost to the bank of the intermediation service provided. The widely believed idea that protection against risk could be obtained by capitalizing banks in terms of foreign currencies was regarded by Baster as a delusion: “the majority of the owners of such institutions as the Hongkong Bank, capitalized in silver dollars, have been Europeans, resident in...some gold standard country. Their main interest is...in the gold value of dividend payments. The fact of their capital being stated in the balance sheet in terms of silver dollars makes no difference whatever its sterling earning capacity. Such banks can claim no unique exemption from exchange fluctuations, any more than their sterling competitors” (pp.20-21). Protection could be provided either by restrictive practices (e.g., business only on gold basis) or by strict prudential criteria (e.g. creating large exchange reserves: indeed, “the ordinary cash reserves of overseas banks have in any case to be unusually high”, and large allocations of special reserves for exchange risk were a safeguard widely practiced.

<sup>11</sup> I owe this point to Marc Flandreau, whose comment I gratefully acknowledge.

could reduce the riskiness of foreign ventures; indeed, banks operating in riskier host countries may have felt stronger incentive to diversify risk away by multiplying their locations abroad, thus giving a boost to their foreign expansion. Many contemporary observers were convinced that banks' decisions to settle down overseas were heavily influenced by risk considerations. One major element was the institutional stability and financial reputation of the host country. In a telling passage about Latin America, Baster (1935: 126-7) suggested that in the 19<sup>th</sup> century British banks' penetration privileged "the richest and financially most stable regions" (the River Plate basin—i.e. Argentina and Uruguay—"though with records far from stainless"), and "after a long period of specialization in one area, gradually extended their interests" to the rest of the continent, where currency systems had proved "liable to collapse under strain". Another major factor was the risk stemming from the characteristics of the host economy, namely the degree of diversification of commodities produced and traded. Risk was regarded as considerably higher in monocultural economies subject to wild fluctuations in the price of one single commodity, than in countries whose production and exports spanned a wider set of products. A widely quoted example was the dramatic fall in the price of sugar that badly hit the West Indies in the early 1890s, but other cases raised in the literature were rice in Indochina, nitrate in Chile, coffee and caoutchou in Brazil—let alone the African colonies. Argentina was deemed to be a much less riskier location than, say, Brazil from this point of view (Caillez 1923, p. 36). Only by locating in different markets (usually within the same region, and even more on a global scale), banks could diversify their risk: la "diffusion du risque...doit etre la précaution primordiale des banques travaillant pour les pays neufs" (Caillez 1923, p. 40). In fact, a strategy of single-country location was rare, especially when banks decided to expand their operations towards Latin America or East Asia. However, measuring country risk (whether political, institutional or economic) in the pre-1914 period is not an easy task. Following the "good housekeeper seal of approval" literature (Bordo and Rockoff 1996), adherence to Gold Standard is usually considered a standard proxy for low country risk. The relationship between Gold adherence and country risk was not stable over time, however, as falling sovereign spreads since the late 1890s demonstrated (Obstfeld and Taylor 2003, Flandreau and Zumer 2004). Others (again Flandreau and Zumer 2004) convincingly argue that contemporary investors and observers attached a much higher value to debt sustainability when deciding about a country's probability of default. We mainly test for the possible impact of such considerations on banks' foreign

investment decisions by using an on/off gold dummy variable, taking the value of 1 when at each benchmark year the host country was on gold for five years at least, 0,5 if it was on gold for less than 5 years, and 0 otherwise. We also experimented with the sovereign spread proxy of country risk elaborated by Obstfeld and Taylor (2003); unfortunately, this information is available only for 22 countries, which dramatically reduces the sample size and consequently the robustness of the empirical estimations. In the same fashion the use of Flandreau and Zumer's measure of debt sustainability (i.e. the ratio of interest service on public debt to government revenues), which is available virtually for European countries only (plus Argentina and Brazil), had to be excluded. The intriguing issue of how empirically to capture the impact of geographical diversification on MNB has been left for future research. Perhaps a sequential analysis of multinational banks' location decisions could provide useful insights.

One last caveat is warranted. A serious shortcoming of our specification is that it entirely fails to test the impact of government regulation or intervention on the banking system. The USA are the most widely case of regulation adverse to international banking (both at entry and exit level), but it is not the only one. In fact we can find in the historical literature plenty of anecdotal evidence of host governments' heavy interferences either on foreign banks' entry or on their business conduct once a foothold had been established. This information however is obviously hard to amalgamate into a quantitative indicator. At the present stage, we can just frankly admit that, by being unable to measure this variable, we are probably missing out a very important part of the story.

The model for host country-level analysis takes therefore the following form:

$$B_{it}^F = \alpha_{it} + \sum_{w=1}^w \beta_w \text{GRAVITY}_{w,i,t} + \sum_{x=1}^x \beta_x \text{INTEGRATION}_{x,i,t} + \sum_{y=1}^y \beta_y \text{MARKET}_{y,i,t} + \sum_{z=1}^z \beta_z \text{RISK}_{z,i,t} + \varepsilon_{it}$$

where

$B_{it}^F = \text{BRANCH}$  = the log of 1 plus the total number of foreign branches/offices and subsidiaries of banks from home country  $i$  in the host country.

**GRAVITY** = a vector of up to  $w$  explanatory variables associated with an information-augmented "gravity" model, including:

**Host-country GDP.** The log of GDP is used as proxy for host-country economy's size.

**Distance.** The geographical distance from home to host country is measured as great circle distance between capital (or main) cities.

**Information.** The informational intensity of host countries is proxied by the log of the total volume of postal traffic per capita.

$INTEGRATION_{x,i,t}$  = a vector of up to x explanatory variables measuring the degree of integration between home and host country. They include:

**Bilateral trade.** We use different indicators of bilateral trade links, namely: the log of total bilateral trade (imports + exports) between host and home country (TRAD); the log of 1 plus the ratio of bilateral trade to host-country total trade (TRAHOST); and the log of 1 plus the ratio of bilateral trade to home-country total trade (TRAHOME). The last two variables can be considered as indicators of bilateral trade dependence of host and home country respectively.

**Capital flows.** We experiment with different indicators of bilateral capital market integration, depending on data availability, namely: the log of subperiod and cumulative capital flows from home to host country (CAP and CCAP), or the log of the stock of foreign investments of home to host country (CSTOCK); the log of 1 plus the ratio of the cumulative flow (or stock) of foreign investments of home into host country to home-country total cumulative flow (or stock) of home-country's foreign investments (CAPSHARE, CCAPSHARE, CSTOCKSHARE).

$MARKET_{y,i,t}$  = a vector of up to y explanatory variables measuring the characteristics and the attractiveness of the host country for home country banks, including:

**Gdp per capita.** The log of real GDP per capita of host-country is used as a proxy for the potential demand for banking services.

**Centre.** A dummy variable taking the value of 1 if a global or regional business centre was based in the host country, and 0 otherwise.

**Legal origin.** A dummy variable taking the value of 1 if the host country shared common legal origins with the home country.

**Colony.** A dummy variable taking the value of 1 if the host country had a colonial link with the home country, and 0 otherwise. In the case of the semicolonial regimes of the Ottoman Empire and Imperial China, in which European business enjoyed extraterritorial rights, the dummy always takes the value of 1.

$RISK_{z,i,t}$  = a vector of up to z explanatory variables measuring the riskiness of the host country for home country banks, including:

**Gold.** A dummy variable taking the value of 1 when the host country was on gold for more than 5 years at the benchmark date, and 0 otherwise;

**Exchange rate.** The decennial average and cumulative change of the nominal exchange rate of host-country's currency vis-a-vis the British pound (a positive sign denotes a depreciation of host country's currency);

**Volatility.** The log of 1 plus an asymmetric index of the average volatility of the exchange rate of host-country's currency vis-a-vis the British pound (see the Appendix for details).

In addition, we use other control variables in order to capture other possible determinants of MNB decisions, such as the interaction with banks of different nationality. Due to the historically-specific dynamics of MNB, dominated by first-comer advantages of British banks, the latter control is particularly relevant for the multinational expansion of second-comers (French and German banks). A positive impact of the presence of other foreign banks would suggest that significant externalities were created by clustering in relatively developed financial systems, and that second-comer banks privileged a strategy that challenge the dominance of British banks; a negative sign, in turn, would suggest that avoidance of competition played a role in the location decisions of multinational banks.

#### **(4) Empirical results**

We expect our empirical specification to provide original insights on a number of critical issues, such as: was MNB a phenomenon driven mainly by an economic rationale, or was there a geopolitical element in it? Did institutional and political factors such as legal framework, international monetary regime, colonial relationship and political stability play any significant role? How was MNB related to other facets of globalization such as the growing integration of commodity and capital markets? Were banks leaders or followers in their international expansion (a time-honoured but still debated question)? Can we empirically assess the causality links existing between these different phenomena?

A preliminary step is to compare the correlation coefficients of our dependent variable with the regressors in the three cases under study (See Table 5, 6 and 7). In the British case, MNB shows high correlation with all trade and capital variables; in the French and German cases, on the contrary, foreign branching appears significantly less correlated with the absolute size of bilateral trade and capital stock (for France, available 1900 and 1913 only) and flows (for Germany, available only for 1913), and shows no correlation with trade and capital ratios. Correlation with GDP is low in all

cases, contrary to what we find for trade and capital variables (see below): this suggests that size effect may be less pronounced in MNB, which would make the latter a phenomenon different from other “gravitational” aspects of economic integration. Moreover, distance is positively correlated with MNB in the case of Britain, but negatively in the cases of France and Germany, whereas in all cases the financial center variable shows significant correlation. Colonial location is strongly correlated in the case of Britain, and weakly in the case of France (since no information on trade and capital flows could be collected for German colonies, the colony dummy is irrelevant for the German case). This superficial inspection suggests that we may be in the presence of different patterns of multinationalisation that differed significantly under a number of important characteristics. We want further to explore to what extent such divergence can be related to differences in the time pattern of multinationalisation—that is, the fact that British banks enjoyed first-comer competitive advantages within the framework of imperial expansion and consolidation, whereas French and Germans were late comers that had to challenge the British dominance.

TABLES 5, 6 and 7 HERE

Correlation is helpful also to minimize disturbances stemming from multicollinearity in the empirical specification—a risk which is high due to the presence of many dummy variables, as well as because of possible correlation between some integration and institutional regressors. The analysis suggests that this in fact the case. In all three cases, trade variables (especially the absolute volume of bilateral trade and the share of bilateral trade on home-country total trade) appear to be highly correlated to capital flows variables, which should advise against their joint use in the econometric specification. In turn, both trade and capital variables show high correlation with GDP levels and GDP per capita, which confirms the presence of size and economic development effects. This strongly recommend the use of GDP in all specifications and justifies our preference for a trade variable less correlated to capital flows, such as trade dependence of host country. As expected, GDP per capita and the information variable (postal volume per capita) are highly correlated. Both also show high correlation with the gold dummy variable, which confirms (as suggested by previous studies) that staying on gold was significantly easier for richer, more developed economies. As obvious, the colony and legal dummy variables are highly correlated in the case of

Britain—which again advise against their joint use in the regressions, less in the case of France due to the fact that the French legal system was widely transplanted and adapted worldwide by independent countries in Europe, Latin America and Asia.

Unlike the vast majority of modern studies of determinants of MNB, which are usually based on standard OLS regressions and tend to explore only the cross-sectional dimension of the multinational banking phenomenon, our empirical analysis adopts an instrumental variables approach based on Pooled IV/Two-Stage Least Squares (2SLS) which takes into account both the cross-sectional and time dimensions. The use of instrumental variables is warranted as our empirical specification is exposed to a number of problems that render OLS not suitable to produce unbiased estimates of the causal effects of the explanatory variables on multinational banking. First, the presence of foreign branches is likely to enhance bilateral trade with the parent country, so that a problem of reverse causality would arise. Second, our specification has serious problems of endogeneity—i.e., some regressors are certainly determined or influenced by one or more of the other independent variables (by instance, “gravity” variables such as geographical distance and GDP, and “institutional” variables such as colonial status or legal affinity, are likely to influence “integration” variables such as bilateral trade and capital flows). Third, we cannot exclude the existence of omitted determinants—e.g. political alliances—that also can be correlated with some of the regressors. In order to reduce such problems, a 2SLS approach is adopted in which lags of both the dependent and independent variables are used as instruments. In the first stage, this procedure estimates the portion of endogenous and exogenous variables that can be attributed to the instruments; then, in the second stage, the original specification is estimated with all variables replaced by the fitted values obtained from the first-stage regression, in order to obtain 2SLS estimates of the relevant parameters. We proceed first by estimating a benchmark specification based on an augmented “gravity” model that includes the information variable. Then we add recursively different combinations of “integration”, “market” and “risk” variables to test whether they alter significantly the results obtained. Due to the high probability of cross-section heteroskedasticity, all specifications are estimated with cross-section weights, in order to obtain robust PSCE heteroskedasticity-consistent standard errors and covariances. Alternatively, we use period fixed effects, in order to account for the increased dimension of the multinational banking phenomenon over time.

The results for British MNB are presented in Table 8. The simplest, augmented gravity equation suggests that large, remote and informationally-intensive economies were the preferred destinations of British banks (col. 1-2). When additional regressors are included, however, the GDP variable takes on a persistent negative sign and shows statistical significance in all specifications, which suggests the presence of negative size effects. This result runs against gravitational expectations, but can be sensibly explained by the fact that large, advanced economies (such as those of Central and Northern European countries) had also more developed banking systems, where correspondent relationships possibly decreased the incentives for British banks' direct investments. In such systems, national incumbents also enjoyed relative protection against penetration of foreign competitors. As for integration variables, we preliminarily experimented with different trade variables. Both the volume of bilateral trade and host country's trade dependence proved highly significant and robust to all perturbations, thus confirming that intense trade relationship were a key determinant of British banks' expansion abroad, although the related parameters decrease significantly when other institutional variables are included. As trade variables produced consistent outcomes, only results based on bilateral trade are presented (col. 3 onwards). Since GDP is strongly correlated with bilateral trade but not with host country's dependence, the latter allowed us to perform a further check on GDP parameters: since we observe again mainly negative signs (but seldom statistical significance), we cannot rule out the presence of negative size effects. Using capital flows either as an alternative integration variable or jointly with trade links does not improve significantly the explanatory power of the specification, although capital variables have the expected sign and are statistically significant. Moreover, when including additional regressors, instability emerges in the coefficient associated with the capital flows variables, reflected in wrong signs or loss of statistical significance. The lack of robustness of the capital flows variable points to possible collinearity problems, and advises to drop it from the regression in subsequent specifications. The information variable (postal volume per capita) shows a similar lack of robustness, changing sign and losing significance when integration and institutional variables are included (col. 5 onwards); moreover, it proves highly collinear with the GDP per capita variable, which is consequently dropped from the regressions. Conversely, distance has consistently a positive sign in all specifications. This result, again at odds with gravity models, can be partially explained by the concentration of British banks' direct investments in extra-European locations but also suggests that they

were able successfully to overcome information asymmetries and agency problems stemming from operating in remote locations. This is also consistent with their prevailing characteristic of free-standing companies deeply integrated in local overseas economies. When integration and institutional variables are included, however, the parameter on distance gets almost halved. In fact, trade links as well as institutional integration under the British Empire may contribute to explain why distance did not represent any constraint on British banks' foreign branching. Indeed, the results confirm the strong preference of British banks for escalating branching in countries with a colonial status (col. 7-8), such as Canada, Australia, New Zealand, India, Egypt and South Africa. The impact of the colonial link is difficult to ascertain separately from that of the legal origin variable (the latter takes on the wrong sign and becomes insignificant when used jointly with the colonial link variable, as shown in col. 9-10). As a matter of fact, the parameter of the legal origin variable—which actually captures also the existence of colonial links—is high and significant throughout all specifications. Likewise, the pulling effect of financial centres of global and regional relevance is confirmed (col. 11 onwards). Interaction with main foreign competitors also proves a significant determinant: specifically, the results suggest that British banks did not target countries where French banks intensified their expansion, but reacted positively to the multinational expansion of German overseas banks (col. 13-14). Finally we experiment with different risk variables, such as adherence to the Gold Standard and exchange rate volatility, only to find them statistically insignificant (col. 15-20). The absence of any clear impact of Gold adherence in our regression should not come as a surprise, however, to those (such as Eichengreen and Flandreau 1996) who suggest that size, economic development and imperial links were major determinants of the adoption of the Gold Standard. A quick look back to our correlation matrix for British banks reveals in fact very high correlation between the Gold dummy and the information variable. In general, if we compare the baseline augmented gravity plus trade regression (col. 3-4) with more comprehensive specifications (col. 5 onwards) we find that the inclusion of additional variables increases the explanatory power of the regression (especially the unweighted  $R^2$ ).

TABLE 8 HERE

What do we find when replicating the analysis for French and German banks? We must notice first that in both cases we had to exclude *a priori* capital flows from the list of explanatory variables. In fact, we have no data on French and German capital flows comparable to British data; moreover, estimates of French and German capital stock abroad are of poor quality, and available only for 1900 and 1913, so that we could include them in the regressions only at the cost of a serious loss of observations, while obtaining in any case hardly robust results. Also in both cases all specifications show a noticeable fall in explanatory power (particularly dramatic in the case of German banks), suggesting the likely existence of some relevant missing determinant—by instance, geopolitical factors?—not included in our list of independent variables. Turning to French banks, interestingly all augmented gravity variables (GDP, geographical distance, informational development) carry a negative sign, although only distance and information are also statistically significant. This is consistent with the fact that French banks focused their foreign expansion in underdeveloped but relatively proximate countries (South-Eastern Europe and the Mediterranean Basin accounted for almost half of French foreign branches), possibly because their centralized organizational structure was ill-suited to deal effectively with operations in remote locations (as the failure of their early investments in the Far East in the 1870s would suggest). Among trade variables, only bilateral trade has the correct positive sign and shows statistical significance in almost all specifications (col. 3 onwards); on the contrary, host country's trade dependence either gets the wrong sign or proves insignificant. This suggests that, when deciding foreign investments for trade-enhancing purposes, French banks privileged to absolute size of trade with host countries rather than the market share of French goods (col. 3 onwards). Colonial links also have a positive impact (col. 7), although hardly significant, possibly because of the marginal economic importance of French colonies such as Algeria, Tunis, Madagascar or Cochinchina (it is also worth reminding that Egypt, one major destination of French banks expansion, is included in the sample as a British colony in spite of the significant political influence of French governments on the country, whereas both China and the Ottoman Empire are included as 'colonies' of all European powers due to their semi-colonial status). On the contrary, common legal origins seem to have either a negative or a statistically insignificant impact, suggesting that French banks did not show any relevant preference for countries that had adopted French-inspired institutions; at the same time it is difficult to ascertain whether is just an outcome stemming from the

widespread adoption of French codes worldwide. In turn, the clustering of French banks into main financial centers emerges clearly from the results (col. 11 onwards), although this variable loses significance when used jointly with interaction factors such as the presence of British and German banks. In fact, French banks seem to have reacted positively to both the expansion of both British and German banks, although the estimated parameters suggest that they responded with particular energy to the challenge brought home by the rapid expansion of German overseas banks (col. 13 onwards). Yet, at least in part, the latter result is possibly the outcome of their converging preference for countries on Gold, as the fall in the parameter of the interaction variable with German banks when the Gold dummy is included would suggest (col. 23). On the contrary, risk considerations seem to have played a minor role, as all exchange risk variables either have a negative sign or are insignificant (col. 19-22). In turn, the Gold adherence dummy has the expected positive sign and is also significant (col. 23-24), which may reflect a preference for countries perceived as less risky.

TABLE 9 HERE

Turning finally to German banks (Table 10), we find rather puzzling results. The baseline (augmented gravity plus trade) specification (col. 3-4), even enriched with the financial centre dummy (col. 5-6), has virtually no explanatory power. The statistical irrelevance of the latter in all specifications suggests that the pulling effect of global and regional financial centre was modest and German banks did not tend to cluster in large business hubs of global or regional importance. Whereas geographical distance is positive and significant across different specifications, neither significant size effects can be detected, nor informational development seems to have played a significant role. Whereas host countries' dependence on German trade has no statistical significance (consistent with the marginal though emerging role of German trade in the world market), the volume of bilateral trade with Germany seems to have had a small impact on German banks' overseas expansion—although it loses most of its significance when more comprehensive regressions are specified. This fact suggests that, when deciding over their overseas expansion, German banks did not follow existing trade links but possibly used strategically foreign branching as an instrument of promoting new trade relationships. We observe an important jump in the explanatory power of regressions

only when we include the interaction with other foreign banks, which reinforces the intuition that German banks' expansion was strategically motivated by a challenge to incumbents competitors in overseas markets. In fact, the estimates suggest that German banks did not escalate their investments in countries where British banks were numerous and dominant, but energetically competed with French banks in their multinational expansion (col. 7 onwards). Neither risk variables do add explanatory power. However, exchange rate risk variable are in fact never significant, but gold adherence seems to have been a positive determinant of German banks' decision (as in the case of French, and consistently with the interaction variable above).

TABLE 10 HERE

To what extent are such results influenced by the very unbalanced structure of pre-1914 multinational banking? As a matter of fact, the bulk of our dependent variable is accounted for by the impressive growth of British banks' branches in settlement economies such as Australia, New Zealand, Canada and South Africa, from which French and German banks were virtually absent. As a robustness check, therefore, we may want to test whether our estimates are driven by such outliers. For this purpose, we reestimate some specifications for a reduced sample of countries that excludes the four settlement economies mentioned above, as well as the USA (where foreign banks' expansion was hampered by regulatory constraints). The results, summarized in Table 11, are largely similar to those obtained from the whole sample, with only one noticeable exception.

TABLE 11 HERE

In fact, exchange rate volatility appears now positively to have contributed to British banks' foreign expansion, whereas Gold adherence proves to have been a significant negative determinant of their investments abroad (col. 3 and 4); in the latter specification, also the sign on the parameter of the interaction variable with French banks is reversed, becoming positive (though lower than with German banks) and significant. This result suggests that, outside large settlement economies, British banks responded positively to risk variables by investing in countries with riskier profiles.

## 4. Conclusion

Our empirical analysis suggests that, unlike its modern counterpart, pre-1914 multinational banking is not easy to fit into augmented gravity models. The making of a global economy was shaped by preferential relationships created by colonial empires and by semicolonial entities, which led to the emergence of specific trade and financial dependence within the context of the competition for world political and economic leadership between old and new European powers. European banks were part of this process of creation of areas of economic influence. In general, British banks enjoyed sizeable first-comer advantages, and French and German banks' overseas expansion mainly took the form of a challenge to British incumbents. Not surprisingly banks from different core countries responded differently to geographical, economic and institutional factors, so that neither can pre-1914 banks' multinational expansion be explained as a homogenous pattern.

The empirical results qualify and occasionally challenge some old and new interpretations. In the case of British and French banks, the link between MNB and business opportunities created by bilateral trade appears robust, but less dramatic than conventional wisdom uses to argue. On the contrary, trade shows no significance whatsoever as a determinant of German banks' multinational expansion. Such evidence suggests that British and French banks were rather followers than leaders, whereas German banks played a role of active promoters of economic penetration within the framework of a comprehensive challenge to British and French dominance brought home by German business overseas. This seems to be particularly the case with Latin America and would confirm that the perception that contemporaries had of the German challenge was basically correct. The relationship between MNB and capital flows is much harder to detect. In fact too much noise is created in the empirical estimation by collinearity in the case of British capital, and the lack of sufficiently disaggregated data on German and French capital exports prevents the analysis from being extended to other European banks.

Other empirical findings of the paper give evidence of the enduring benefits of the incumbent enjoyed by British multinational banks, which by 1880—the starting period of our analysis—had already experienced decades of financial pioneering and business abroad. Their subsequent multinational expansion was functionally linked to consolidation of the British imperial economic space. Our estimates suggest that the

political and institutional integration promoted by the Empire allowed them successfully to offset the gravitational pull of distance, to overcome informational asymmetries and to thrive in the fast-growing settlement peripheries of the periphery. Sheltered from significant foreign competition, they prospered on the dense network of trade and financial links that one century of economic and political development had created not only between Britain and her colonies, but also between the colonies themselves and other countries in their region. French banks tended to gravitate towards more proximate and less developed countries—a finding in line with the idea of France struggling to maintain an area of economic penetration and influence across Southern and Eastern Europe, from which British virtually abstained. At odds with the intuition of recent new institutional economics, legal system affinities do not seem to have influenced their foreign investments decisions, whereas some latent, unobserved variable—possible, geopolitical factors—may have played a significant role. In turn German banks, which lacked a significant colonial background, had to clash with competing interests wherever they moved: with the French in European peripheries, with the British in East Asia and Latin America. Significantly, whereas they moved into Asian markets through a strategic alliance based on a German consortium, they also seemed to compete among themselves when moving to Latin America: again, this suggests that corporate connections should have played a significant role, as indicated by the eclectic theory. In their mutual interaction, both British and French banks tended to react mainly to the expansion of German competitors, whereas the latter mainly targeted countries where the growth of French banks was more dynamic.

As far as risk variables are concerned, the results suggest that only British banks were able to exploit profit opportunities stemming from operating in riskier host countries, possibly thanks to their long-dated experience in overseas markets as well as their larger endowment of human capital and intangible assets. The evidence also suggests that, on the contrary, both French and German attempted to control the riskiness of their ventures overseas by privileging countries on gold..

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## TABLES AND GRAPHS

**Table 1**  
**Foreign Branches of British, German and French Banks by region, 1880-1913**

		<b>TOTAL</b>	<b>of which</b>		
	<b>Year</b>	<b>BRANCHES</b>	<b>British</b>	<b>German</b>	<b>French</b>
<b>NORTH-WESTERN AND CENTRAL EUROPE</b>	1880	13	38,46	23,08	38,46
	1890	11	18,18	27,27	54,55
	1900	27	18,52	51,85	29,63
	1913	32	31,25	21,88	46,88
<b>SOUTHERN AND EASTERN EUROPE</b>	1880	18	55,56	0,00	44,44
	1890	28	64,29	0,00	35,71
	1900	26	34,62	11,54	53,85
	1913	48	18,75	33,33	47,92
<b>MEDITERRANEAN BASIN AND NEAR EAST</b>	1880	30	33,33	0,00	66,67
	1890	38	34,21	0,00	65,79
	1900	51	29,41	0,00	70,59
	1913	187	27,81	16,04	56,15
<b>NORTH AMERICA</b>	1880	28	96,43	0,00	3,57
	1890	34	94,12	0,00	5,88
	1900	49	95,92	0,00	4,08
	1913	105	100,00	0,00	0,00
<b>CARIBBEAN AND CENTRAL AMERICA</b>	1880	15	100,00	0,00	0,00
	1890	31	100,00	0,00	0,00
	1900	28	100,00	0,00	0,00
	1913	31	90,32	9,68	0,00
<b>SOUTH AMERICA</b>	1880	22	100,00	0,00	0,00
	1890	40	95,00	2,50	2,50
	1900	66	75,76	16,67	7,58
	1913	125	54,40	28,80	16,80
<b>AUSTRALASIA</b>	1880	252	100,00	0,00	0,00
	1890	441	100,00	0,00	0,00
	1900	419	100,00	0,00	0,00
	1913	621	100,00	0,00	0,00
<b>SOUTH-EAST ASIA</b>	1880	85	92,94	2,35	4,71
	1890	103	91,26	1,94	6,80
	1900	97	83,51	5,15	11,34
	1913	144	69,44	9,72	20,83
<b>SUBSAHARIAN AFRICA</b>	1880	62	100,00	0,00	0,00
	1890	93	98,92	0,00	1,08
	1900	179	98,32	0,00	1,68
	1913	317	97,48	0,00	2,52
<b>GRAND TOTAL</b>	1880	525	91,81	0,95	7,24
	1890	819	92,92	0,73	6,35
	1900	942	88,11	3,50	8,39
	1913	1610	80,87	6,58	12,55

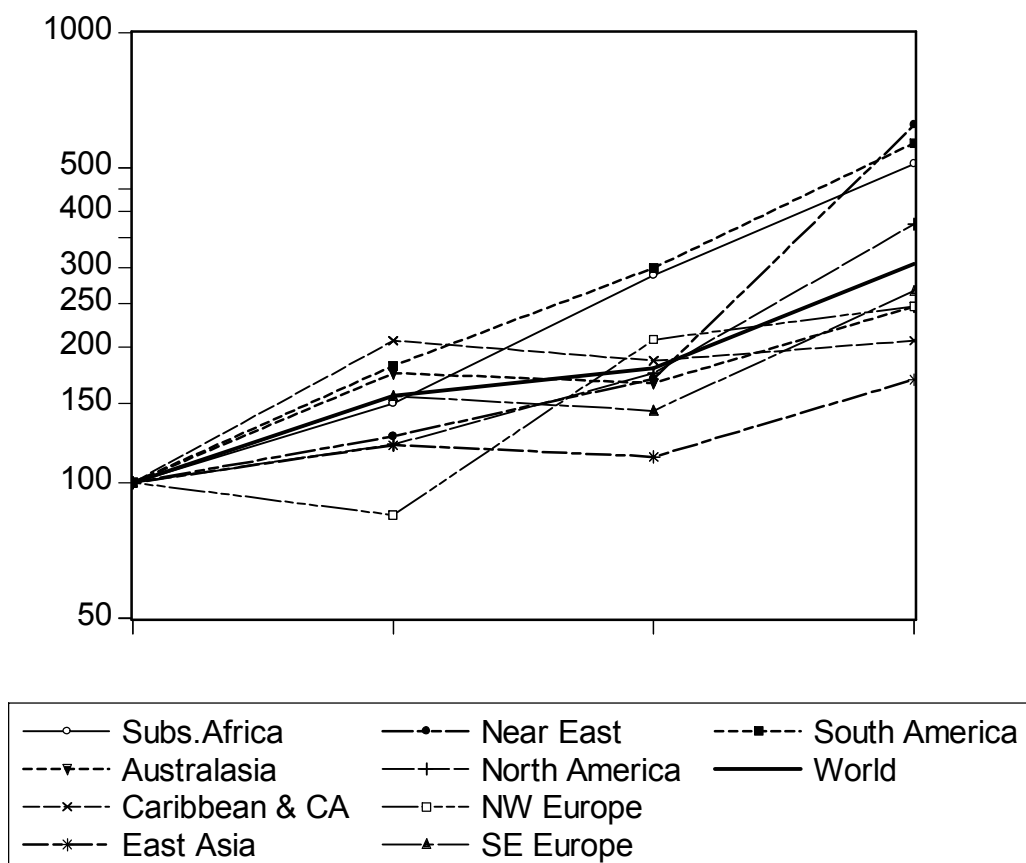
Source: see Appendix

**Table 2**  
**Regional distribution of British, French and German MNB (per cent), 1913**

Regional Areas	British MNB	German MNB	French MNB
NW and Central Europe	0,77	3,85	4,83
SE Europe	0,69	15,38	11,11
Mediterranean and Near East	3,99	29,81	55,56
Subsaharian Africa	23,73	0,00	3,86
North America	8,06	0,00	0,00
Caribbean and Central America	2,15	2,88	0,00
South America	5,22	34,62	10,14
East Asia	7,68	13,46	14,49
Australasia	47,70	0,00	0,00
<b>Total branches</b>	<b>1.302</b>	<b>104</b>	<b>207</b>

Source: see Appendix

**Graph 1**  
**Growth Index of British, French and German banks' foreign branches by region, 1880-1913**



Source: see Appendix

**Table 3**  
**Bilateral trade of host countries with Britain, Germany and France, 1890-1913**  
**(average % share)**

	Host country	TRADE DEPENDENCE ON			TRADE SHARE OF		
		Britain	Germany	France	Britain	Germany	France
NORTH-WESTERN AND CENTRAL EUROPE	Austria-Hungary	4.61	40.82	3.56	0.83	10.15	1.29
	Belgium	18.49	15.38	25.65	4.04	5.28	11.43
	Denmark	42.95	31.16	2.24	2.13	2.35	0.22
	France	18.58	9.03		8.99	6.80	
	Germany	13.85		7.56	8.90		10.12
	Italy	12.47	14.44	12.39	2.04	3.58	4.07
	Netherlands	17.26	15.58	1.43	6.29	9.27	1.15
	Sweden	34.33	27.83	6.14	2.16	2.73	0.80
	Switzerland	10.74	28.53	18.07	1.14	4.71	3.89
	United Kingdom		8.90	8.91		13.85	18.33
EASTERN AND SOUTHERN EUROPE	Bulgaria	11.26	9.04	3.82	0.11	0.13	0.09
	Greece	32.32	7.42	16.90	0.39	0.12	0.41
	Portugal	31.63	10.68	10.84	0.69	0.35	0.50
	Romania	16.57	17.77	7.53	0.61	1.04	0.58
	Russia	24.43	38.41	7.03	4.94	12.12	2.96
	Serbia	5.14	13.85	1.67	0.02	0.09	0.02
	Spain	26.95	9.11	24.62	2.48	1.15	4.82
MEDITERRANEAN BASIN AND NEAR EAST	Algeria	4.28	0.81	83.59	0.13	0.04	5.68
	Morocco	41.99	7.65	34.67	0.17	0.05	0.31
	Tunisia	9.16	0.78	59.98	0.06	0.01	0.75
	Egypt	45.89	4.04	9.38	1.77	0.26	0.78
	Persia	11.89	1.56	1.85	0.12	0.02	0.03
	Turkey	30.64	7.34	17.01	1.55	0.54	1.78
NORTH AMERICA	Canada	38.55	2.13	1.50	3.90	0.33	0.35
	USA	33.54	12.12	6.92	19.47	11.03	8.41
CARIBBEAN AND CENTRAL AMERICA	British West Indies	33.65	1.62	4.70	0.55	0.04	0.15
	Cuba	7.36	3.74	1.17	0.28	0.20	0.10
	Haiti	12.82	9.93	43.66	0.06	0.05	0.51
	Honduras	3.16	2.99	0.71	0.00	0.00	0.00
	Mexico	10.32	6.81	7.18	0.34	0.29	0.46
	Nicaragua	5.70	5.56	4.58	0.01	0.01	0.01
	Salvador	4.74	5.48	5.79	0.01	0.02	0.01
SOUTH AMERICA	Argentina	32.16	12.72	24.86	3.06	1.87	3.95
	Bolivia	21.66	9.02	0.27	0.18	0.09	0.00
	Brazil	21.31	12.46	9.85	1.83	1.88	1.71
	Colombia	24.49	6.46	19.26	0.21	0.09	0.38
	Chile	25.85	16.16	9.01	1.15	1.05	0.76
	Ecuador	17.38	16.39	3.51	0.08	0.10	0.03
	Peru	41.30	12.54	10.68	0.35	0.14	0.12
	Uruguay	18.00	10.85	16.87	0.33	0.29	0.62
	Venezuela	13.92	8.31	14.38	0.12	0.07	0.30
AUSTRALASIA	Australia	52.96	5.12	4.46	6.92	0.89	1.13
	New Zealand	71.13	0.81	0.33	2.11	0.04	0.02
EAST ASIA	French Cochinchina	1.01	0.00	11.73	0.02	0.00	0.47
	Ceylon	41.44	2.92	2.60	0.74	0.08	0.07
	China	17.71	2.99	9.34	1.55	0.43	1.71
	British India	45.31	4.30	4.31	11.06	1.45	2.43
	Japan	17.41	6.08	6.53	1.24	0.70	0.89
	Strait Settlements	16.78	2.09	3.56	1.15	0.22	0.49
	Siam	7.81	2.38	0.50	0.08	0.03	0.01
SUBSAHARIAN AFRICA	British West Africa	68.02	24.52	5.30	0.60	0.30	0.09
	Madagascar	3.99	2.19	46.61	0.01	0.01	0.29
	South Africa	81.42	3.00	0.49	4.72	0.29	0.06

Source: see Appendix

**Table 4**  
**Foreign capital investment of Britain, Germany and France by region and country**

Recipient country	1865-1913		1913		1913		1900-1913		1900-1913	
	Cumulative investment BRITAIN min \$	Cumulative investment BRITAIN % of total	Stock estimate GERMANY min \$	Stock estimate GERMANY % of total	Stock estimate FRANCE min \$	Stock estimate FRANCE % of total	Subperiod investment BRITAIN min \$	Subperiod investment BRITAIN % of total	Subperiod investment GERMANY min \$	Subperiod investment GERMANY % of total
<b>EUROPE</b>	<b>1595</b>	<b>9,58</b>	<b>2980</b>	<b>52,65</b>	<b>4690</b>	<b>51,15</b>	<b>363</b>	<b>4,88</b>	<b>3708</b>	<b>60,26</b>
Austria-Hungary	161	0,97	715	12,63	425	4,63	40	0,54	1225	19,91
Italy	199	1,20	na	na	251	2,74	5	0,07	1566	25,45
Bulgaria	0	0,00	na	na	24	0,26	0	0,00	27	0,44
Greece	84	0,51	na	na	na	na	24	0,33	0	0,00
Portugal	0	0,00	na	na	174	1,89	0	0,00	167	2,71
Romania	0	0,00	na	na	314	3,42	0	0,00	193	3,13
Russia	609	3,66	430	7,60	2181	23,79	284	3,81	528	8,58
Spain	150	0,90	na	na	579	9,15	9	0,13	3	0,04
Balkan States			405	7,16						
Iberian Countries			405	7,16						
<b>NEAR EAST</b>	<b>414</b>	<b>2,48</b>	<b>430</b>	<b>7,60</b>	<b>1274</b>	<b>13,89</b>	<b>94</b>	<b>1,26</b>	<b>233</b>	<b>3,79</b>
Egypt	220	1,32	0		637	6,95	67	0,90	0	0,00
Turkey	194	1,17	430	7,60	637	6,95	27	0,36	233	3,79
<b>NORTH AMERICA</b>	<b>5665</b>	<b>34,02</b>	<b>881</b>	<b>15,57</b>	<b>386</b>	<b>4,21</b>	<b>3047</b>	<b>40,95</b>	<b>1086</b>	<b>17,66</b>
Canada	1788	10,74	na	na	77	0,84	1161	15,60	85	1,38
USA	3877	23,28	na	na	309	3,37	1886	25,35	1001	16,28
<b>CENTRAL AMERICA</b>	<b>505</b>	<b>3,03</b>	<b>14</b>	<b>0,25</b>	<b>404</b>	<b>4,40</b>	<b>295</b>	<b>4</b>	<b>275</b>	<b>4</b>
Cuba	127	0,76	na	na	4	0,04	100	1,34	35	0,57
Mexico	378	2,27	na	na	386	4,21	195	2,63	240	3,90
Other			na	na	14	0,15				
<b>SOUTH AMERICA</b>	<b>2986</b>	<b>17,93</b>	<b>960</b>	<b>16,96</b>	<b>1186</b>	<b>12,93</b>	<b>1460</b>	<b>19,62</b>	<b>132</b>	<b>2,13</b>
Argentina	1587	9,53	250	4,42	386	4,21	829	11,14	95	1,54
Brazil	801	4,81	500	8,83	676	7,37	446	5,99	18	0,30
Chile	286	1,72	75	1,33	41	0,45	130	1,74	18	0,29
Peru	177	1,06	100	1,77	10	0,11	31	0,41	0	0,00
Uruguay	136	0,81	2	0,04	39	0,42	25	0,33	0	0,00
Other					35	0,38				
<b>AUSTRALASIA</b>	<b>1873</b>	<b>11,25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>406</b>	<b>5</b>	<b>0</b>	<b>0</b>
Australia	1514	9,09					314	4,22	0	0,00
New Zealand	358	2,15					92	1,23	0	0,00
<b>EAST ASIA</b>	<b>2188</b>	<b>13,14</b>	<b>240</b>	<b>4,24</b>	<b>386</b>	<b>4,21</b>	<b>898</b>	<b>12,07</b>	<b>327</b>	<b>5,37</b>
Chi na	341	2,05					200	2,69	20	0,38
India	1473	8,85					411	5,53	0	0,00
Japan	374	2,24					286	3,85	307	4,99
<b>AFRICA</b>			<b>480</b>	<b>8,48</b>						
South Africa	1426	8,56					828	11,13	4	0,06
<b>GRAND TOTAL</b>	<b>16651,5</b>	<b>100</b>	<b>5660</b>	<b>100</b>	<b>9170</b>	<b>100</b>	<b>7440</b>	<b>100</b>	<b>6116</b>	<b>100</b>

Source: see Appendix for details.

**Table 5**  
**Correlation matrix of determinants of British MNB, 1880-1913**

	BRANCH	TRAHOST	TRAHOME	TRADE	CAPSHARE	CCAPSHARE	CAP	CCAP	INFO	DIST	GDP	GDPPC	CENTER1	CENTER2	GOLD	COLONY	LAW	EXRATE1	EXRATE2	EXRATE3	EXVOL	CRISK	EUROPE	LATAM	ASIA
BRANCH	1																								
TRAHOST	0.5784606	1																							
TRAHOME	0.302714	0.2531025	1																						
TRADE	0.4320498	0.4211352	0.7613778	1																					
CAPSHARE	0.5466579	0.3268043	0.7263438	0.5400841	1																				
CCAPSHARE	0.5304199	0.3344332	0.797819	0.5834409	0.9648934	1																			
CAP	0.6219296	0.3123857	0.5399531	0.6156262	0.7480405	0.7613998	1																		
CCAP	0.5926829	0.2906384	0.5240668	0.6253601	0.6736431	0.7166036	0.971055	1																	
INFO	0.13085	0.1040702	0.4068926	0.5414883	0.2880606	0.2917744	0.2085705	0.2089237	1																
DIST	0.4631947	0.2706954	-0.149344	-0.209653	0.1857885	0.1559001	0.1685788	0.1243449	-0.308631	1															
GDP	0.2423975	-0.009507	0.6385771	0.6739438	0.4245972	0.4711907	0.5419446	0.5699356	0.3056428	-0.356957	1														
GDPPC	0.2223037	0.0862239	0.4477699	0.6122991	0.3530249	0.3851536	0.3986427	0.4248369	0.8749325	-0.386264	0.4831162	1													
CENTER1	0.5328729	0.2456993	0.5315035	0.5405541	0.5460355	0.5613708	0.6867518	0.6726915	0.1002338	0.1229468	0.4880926	0.1932752	1												
CENTER2	0.1233864	-0.019417	0.5052879	0.4024615	0.3713741	0.4113257	0.412448	0.4206021	0.2385947	-0.12526	0.4587135	0.2399251	0.6319876	1											
GOLD	0.2301566	0.242422	0.3075365	0.4608305	0.1863134	0.1989018	0.1897332	0.1923056	0.61086	-0.234539	0.2835119	0.5339889	0.1767586	0.1704694	1										
COLONY	0.6278811	0.6289651	0.1397292	0.2815607	0.2524206	0.2401598	0.2199006	0.1946609	0.1046603	0.3158889	-0.067373	0.0219442	0.1426321	-0.162023	0.2200761	1									
LAW	0.6556669	0.5811133	0.362149	0.3757757	0.4603823	0.4498276	0.3175526	0.2683466	0.2386381	0.3539118	0.117245	0.0674239	0.2358073	0.1060244	0.1913066	0.8517298	1								
EXRATE1	-0.146358	-0.209417	-0.209897	-0.343374	-0.155571	-0.166108	-0.150737	-0.137467	-0.262606	0.1882955	-0.147005	-0.289224	-0.098703	-0.118219	-0.320322	-0.260819	-0.227005	1							
EXRATE2	-0.096773	-0.169837	-0.176112	-0.306148	-0.115804	-0.133573	-0.122324	-0.112538	-0.293525	0.2237545	-0.123891	-0.301416	-0.044234	-0.095088	-0.316997	-0.266925	-0.228693	0.903733	1						
EXRATE3	-0.102081	-0.16071	-0.173149	-0.296067	-0.116292	-0.132626	-0.124987	-0.114926	-0.284062	0.21298	-0.133502	-0.292707	-0.041431	-0.089471	-0.337953	-0.238679	-0.199339	0.944438	0.9596534	1					
EXVOL	-0.026338	-0.226222	-0.250619	-0.347395	-0.118858	-0.14043	-0.058086	-0.055587	-0.295938	0.2750825	-0.147361	-0.330164	-0.064292	-0.14384	-0.484728	-0.185626	-0.143136	0.6414286	0.6271797	0.6350169	1				
CRISK	-0.19176	-0.205043	-0.313922	-0.570918	-0.231482	-0.235167	-0.013606	-0.03198	-0.397986	0.0618103	-0.243586	-0.365925	-0.078373	0.0216308	-0.492721	-0.403935	-0.415677	0.1764755	0.2293361	0.2016104	0.3626883	1			
EUROPE	-0.354175	-0.186072	0.1134609	0.2853213	-0.168854	-0.132961	-0.057253	-0.003819	0.2800752	-0.847377	0.3972109	0.4836029	-0.09245	0.1392517	0.2133099	-0.31997	-0.342624	-0.198812	-0.233593	-0.231152	-0.256361	0.0142331	1		
LATAM	-0.109363	-0.140973	-0.308542	-0.381515	-0.104662	-0.118648	-0.049653	-0.059016	-0.28592	0.4887834	-0.584565	-0.337303	-0.09245	-0.105494	-0.318002	-0.224062	-0.250623	0.2540255	0.2517064	0.2604947	0.3222721	0.3676186	-0.45	1	
ASIA	0.2237116	-0.036168	-0.030583	-0.051643	-0.053692	-0.06719	-0.078167	-0.091589	-0.359945	0.3261897	0.1769785	-0.309966	0.1337415	-0.033735	-0.133765	0.1671355	0.1594203	0.0650079	0.0982069	0.0817279	0.1104767	-0.050082	-0.342624	-0.342624	1

**Table 6**  
**Correlation matrix of determinants of German MNB, 1880-1913**

	BRANCH	TRAHOST	TRAHOME	TRADE	CAPSHARE	CAP	INFO	DIST	GDP	GDPPC	CENTER1	CENTER2	GOLD	COLONY	LAW	EXRATE1	EXRATE2	EXRATE3	EXVOL	CRISK	EUROPE	LATAM	ASIA
BRANCH	1																						
TRAHOST	0,0506493	1																					
TRAHOME	0,0171999	0,4158642	1																				
TRADE	0,2694257	0,537139	0,8004856	1																			
CAPSHARE	-0,0648439	0,2947908	0,5240013	0,4746578	1																		
CAP	0,2196782	0,3335409	0,4534142	0,5768429	0,7228699	1																	
INFO	0,0564511	0,1350782	0,3895336	0,4998242	0,2101687	0,2048981	1																
DIST	-0,0062622	-0,4427659	-0,4749926	-0,5154457	-0,2532564	-0,2917561	-0,2824767	1															
GDP	0,3040424	0,1871941	0,5896067	0,6840786	0,4274904	0,5201273	0,3094037	-0,3271224	1														
GDPPC	0,1643918	0,1701646	0,475756	0,5689115	0,307226	0,4243297	0,8769721	-0,3654268	0,4957369	1													
CENTER1	0,3503229	-0,2876477	0,1488109	0,2033295	0,0520328	0,1915334	0,1035421	0,1805764	0,4897847	0,2111884	1												
CENTER2	0,2545308	-0,1291253	0,3883121	0,3268423	0,1462492	0,2420942	0,2440951	-0,0535331	0,4622305	0,2694387	0,6319876	1											
GOLD	0,1914309	0,0487562	0,2446454	0,2920215	0,0009578	0,1413933	0,6120955	-0,2132465	0,2845637	0,5365983	0,1767586	0,1704694	1										
COLONY																							
LAW	0,1649007	0,220496	0,0942694	0,1672074	0,247565	0,3832795	0,0770054	-0,1469113	0,2425494	0,0810533	0,1295297	0,0973773	-0,0361311		1								
EXRATE1	-0,0061182	0,106357	-0,0400275	-0,1170488	-0,1053091	-0,0855345	-0,262773	0,1787936	-0,1472904	-0,289791	-0,0987028	-0,1182195	-0,3203224		0,1240108	1							
EXRATE2	0,0014933	0,0236334	-0,0784009	-0,1277424	-0,0794607	-0,1158173	-0,2937033	0,2160749	-0,1241806	-0,3013728	-0,0442336	-0,095088	-0,3169969		0,1012587	0,903733	1						
EXRATE3	0,0036812	0,0201158	-0,0790767	-0,1269287	-0,0687258	-0,0831382	-0,2842342	0,2052876	-0,1337624	-0,2927107	-0,0414307	-0,0894707	-0,3379528		0,0979199	0,944438	0,9596534	1					
EXVOL	0,033417	-0,0579503	-0,19408	-0,2202175	-0,1953621	-0,1536409	-0,2961446	0,2627131	-0,1478734	-0,3321816	-0,0642921	-0,1438397	-0,4847279		0,0339299	0,6414286	0,6271797	0,6350169	1				
CRISK	-0,0849991	-0,1721766	-0,3952013	-0,4157513	0,1563326	0,0948794	-0,4439775	0,0618103	-0,3303049	-0,422963	-0,1407006	-0,1235245	-0,5123686		-0,1039972	0,1847881	0,2350973	0,2074715	0,3705084	1			
EUROPE	0,095247	0,4776996	0,4723552	0,5205388	0,3082898	0,4157355	0,2821685	-0,8411901	0,3985401	0,4921224	-0,09245	0,1392517	0,2133099		0,1923048	-0,198812	-0,2335934	-0,2311519	-0,2563613	-0,0610162	1		
LATAM	0,0117687	-0,0685639	-0,2880515	-0,274568	-0,1934689	-0,1911725	-0,2868934	0,4826107	-0,5841924	-0,3390128	-0,09245	-0,1054937	-0,3180018		-0,2060408	0,2540255	0,2517064	0,2604947	0,3222721	0,3821566	-0,45	1	
ASIA	0,0381781	-0,3067281	-0,201356	-0,1754126	-0,1359542	-0,1723019	-0,3603908	0,3198477	0,1756929	-0,3103254	0,1337415	-0,033735	-0,1337652		0,1464184	0,0650079	0,0982069	0,0817279	0,1104767	-0,0223387	-0,3426241	-0,3426241	1

**Table 7**  
**Correlation matrix of determinants of French MNB, 1880-1913**

	BRANCH	TRAHOST	TRAHOME	TRADE	CSTOCK	CSTOCKSH	INFO	DIST	GDP	GDPPC	CENTER1	CENTER2	GOLD	COLONY	LAW	EXRATE1	EXRATE2	EXRATE3	EXVOL	CRISK	EUROPE	LATAM	ASIA
BRANCH	1																						
TRAHOST	0.2488896	1																					
TRAHOME	0.2506378	0.1531788	1																				
TRADE	0.4407828	0.3138009	0.7816666	1																			
CSTOCK	0.3743854	-0.223945	0.3080921	0.4912208	1																		
CSTOCKSHARE	0.4262408	-0.083879	0.1681428	0.3652466	0.6672763	1																	
INFO	-0.095158	-0.134391	0.4075417	0.3888791	0.2324735	-0.039497	1																
DIST	-0.260443	-0.180161	-0.432211	-0.426421	-0.462861	-0.262622	-0.278099	1															
GDP	0.4009768	-0.143439	0.5515871	0.6598242	0.5221016	0.4268822	0.3177925	-0.320258	1														
GDPPC	0.0801907	-0.184476	0.4650223	0.4334847	0.4435388	0.1395935	0.8770706	-0.359866	0.4974648	1													
CENTER1	0.3597698	-0.148511	0.3347959	0.3758329	0.2553494	0.1364769	0.1094597	0.2007611	0.4923225	0.2115582	1												
CENTER2	0.3635942	0.0127077	0.5730359	0.5023483	0.3552607	0.1731608	0.2537186	-0.025615	0.4676761	0.270065	0.6319876	1											
GOLD	0.1996381	-0.057906	0.2673791	0.2570209	0.1458325	0.1022015	0.6125929	-0.207098	0.2861471	0.5365419	0.1767586	0.1704694	1										
COLONY	0.2192779	0.673661	0.0285886	0.1357146	-0.303671	-0.125269	-0.078621	-0.028599	-0.052802	-0.190886	-0.141313	-0.089308	0.0984768	1									
LAW	0.1674112	0.4518477	-0.119876	0.0613031	0.1340651	0.1691328	-0.47929	0.1036181	-0.239186	-0.371391	-0.176295	-0.084491	-0.325974	0.2055303	1								
EXRATE1	-0.152506	0.0275141	-0.176291	-0.202595	-0.116041	-0.098303	-0.26331	0.1771751	-0.148117	-0.289908	-0.098703	-0.118219	-0.320322	0.0447107	0.2279076	1							
EXRATE2	-0.140507	0.0460002	-0.151618	-0.165675	-0.153185	-0.155791	-0.293936	0.2154611	-0.125023	-0.30144	-0.044234	-0.095088	-0.316997	0.031562	0.2458235	0.903733	1						
EXRATE3	-0.144065	0.044949	-0.146987	-0.170179	-0.149105	-0.155681	-0.28441	0.2045728	-0.134516	-0.29278	-0.041431	-0.089471	-0.337953	0.0386306	0.224099	0.944438	0.9596534	1					
EXVOL	-0.130127	-0.020892	-0.221351	-0.223234	-0.087306	-0.079092	-0.29764	0.2606855	-0.14938	-0.332431	-0.064292	-0.14384	-0.484728	-0.035966	0.2616405	0.6414286	0.6271797	0.6350169	1				
CRISK	-0.045252	0.3835991	-0.306163	-0.239541	0.2270686	0.1868115	-0.443977	0.0618103	-0.330305	-0.422963	-0.140701	-0.123525	-0.512369		0.6113699	0.1847881	0.2350973	0.2074715	0.3705084	1			
EUROPE	0.2521813	-0.056653	0.3686382	0.3842557	0.6100332	0.3877813	0.2852658	-0.841026	0.4005292	0.4922129	-0.09245	0.1392517	0.2133099	-0.176369	-0.166856	-0.198812	-0.233593	-0.231152	-0.256361	-0.061016	1		
LATAM	-0.309166	0.0427585	-0.246676	-0.256733	-0.061995	-0.152147	-0.287868	0.4843075	-0.58342	-0.338979	-0.09245	-0.105494	-0.318002	-0.176369	0.4475977	0.2540255	0.2517064	0.2604947	0.3222721	0.3821566	-0.45	1	
ASIA	0.1482073	-0.115491	-0.160865	-0.103676	-0.315439	-0.116383	-0.360153	0.3203819	0.1735964	-0.310266	0.1337415	-0.033735	-0.113765	0.2118719	-0.039323	0.0650079	0.0982069	0.0817279	0.1104767	-0.022339	-0.342624	-0.342624	1

**Table 8**  
**Determinants of British MNB, 1880-1913**  
Dependent variable: number of bank branches in host country

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
GDP	0.31*** (10.44)	0.29*** (4.17)	-0.09 (-1.69)	-0.06 (-0.72)	-0.05 (-0.95)	-0.03 (-0.25)	0.12** (3.68)	0.15* (1.84)	0.12** (3.51)	0.14 (1.62)
DISTANCE	1.44*** (33.79)	1.50*** (9.35)	1.25*** (20.89)	1.36*** (9.44)	1.09*** (35.36)	1.08*** (9.17)	1.11*** (26.71)	1.19*** (10.68)	1.11*** (25.38)	1.18*** (9.98)
INFORMATION	0.17*** (4.47)	0.25** (2.49)	-0.11** (-2.57)	0.03 (0.26)	-0.05 (-1.53)	-0.02 (-0.18)	0.15*** (5.32)	0.20* (1.97)	0.15*** (5.18)	0.19* (1.88)
BILATERAL TRADE			0.53*** (10.72)	0.51*** (4.41)	0.32*** (5.66)	0.32** (3.04)	0.11** (3.98)	0.11 (1.07)	0.12** (3.96)	0.11 (1.14)
LAW					1.16*** (6.71)	1.26** (3.52)			-0.13 (-0.58)	0.03 (0.06)
COLONY							1.73*** (12.62)	1.70*** (4.99)	1.83*** (8.05)	1.67** (3.51)
Cross-sections	41	41	37	37	37	37	37	37	37	37
Total pool (unbalanced) observati	101	101	92	92	92	92	92	92	92	92
Adjusted R2	-	0.54	-	0.61	-	0.67	-	0.73	-	0.72
Weighted Adjusted R2	0.94	-	0.90	-	0.97	-	0.95	-	0.94	-
Unweighted R2	0.56	-	0.63	-	0.69	-	0.74	-	0.74	-
Cross-section weights	yes	no	yes	no	yes	no	yes	no	yes	no
Period fixed effects	no	yes	no	yes	no	yes	no	yes	no	yes

	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]
GDP	-0.11** (-2.82)	-0.09 (-0.90)	-0.11** (-2.18)	-0.07 (-0.66)	-0.20*** (-4.58)	-0.12 (-1.00)	-0.21*** (-4.46)	-0.15 (-1.26)	-0.11** (-3.11)	-0.09 (-0.76)
DISTANCE	0.79*** (12.72)	0.77*** (4.97)	0.76*** (10.09)	0.73** (3.91)	0.72*** (11.51)	0.79** (4.28)	0.80*** (10.49)	0.83*** (4.43)	0.77*** (10.54)	0.74** (3.97)
INFORMATION	0.04 (1.32)	0.01 (0.05)	-0.01 (-0.12)	-0.01 (-0.09)	0.02 (0.57)	-0.01 (-0.04)	0.05 (1.58)	0.02 (0.16)	0.04 (0.98)	0.04 (0.41)
BILATERAL TRADE	0.11*** (7.57)	0.14* (1.63)	0.15*** (6.37)	0.10 (1.09)	0.14*** (4.58)	0.12 (0.83)	0.19*** (6.68)	0.19 (1.22)	0.14*** (5.92)	0.11 (1.15)
LAW	1.54*** (10.30)	1.52*** (4.19)	1.70*** (8.11)	1.86** (3.99)	1.95*** (8.75)	1.57** (3.22)	1.93*** (7.54)	1.34** (2.55)	1.74*** (8.62)	1.86** (3.98)
CENTER	0.96*** (6.63)	0.91** (3.61)	0.69** (3.16)	0.72* (2.14)	0.68** (2.71)	0.88** (2.45)	0.51** (2.31)	0.95** (2.53)	0.54** (2.81)	0.70* (2.04)
FRENCH BANKS			-0.22** (-2.31)	-0.11 (-0.58)	-0.10 (-0.74)	-0.02 (-0.13)	-0.04 (-0.47)	0.04 (0.20)	-0.01 (-0.18)	-0.06 (-0.30)
GERMAN BANKS			0.33* (2.17)	0.38 (1.12)	0.42** (2.69)	0.01 (0.03)	0.46* (2.25)	-0.21 (-0.53)	0.38** (3.07)	0.39 (1.21)
EXCHANGE RATE					0.07 (0.33)	0.16 (0.29)				
EXCHANGE RATE VOLATILITY							2.75* (1.68)	3.46 (0.93)		
GOLD									-0.16* (-1.71)	-0.25 (-0.84)
Cross-sections	37	37	35	35	31	31	31	31	35	35
Total pool (unbalanced) observati	92	92	86	86	79	79	79	79	86	86
Adjusted R2	-	0.71	-	0.70	-	0.71	-	0.70	-	0.70
Weighted Adjusted R2	0.93	-	0.97	-	0.94	-	0.94	-	0.89	-
Unweighted R2	0.72	-	0.73	-	0.73	-	0.73	-	0.73	-
Cross-section weights	yes	no	yes	no	yes	no	yes	no	yes	no
Period fixed effects	no	yes	no	yes	no	yes	no	yes	no	yes

Note. Pooled IV/Two-stage EGLS with cross section weights (uneven columns) and period fixed effects (even columns). Robust PSCE heteroskedasticity-consistent standard errors and covariances. Instruments are lagged dependent and independent variables. T-statistics in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 % level respectively.

**Table 9**  
**Determinants of French MNB, 1880-1913**  
Dependent variable: number of bank branches in host country

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
GDP	0.23*** (10.14)	0.19*** (4.64)	-0.03 (-0.77)	-0.07 (-1.06)	-0.02 (-0.65)	-0.09 (-1.05)	0.04 (1.11)	-0.01 (-0.02)	0.04 (1.08)	-0.01 (-0.13)	0.02 (0.40)	-0.06 (-0.84)
DISTANCE	-0.20*** (-5.40)	-0.18* (-1.80)	-0.13** (-2.93)	-0.08 (-0.83)	-0.13** (-2.87)	-0.09 (-0.84)	-0.05* (-1.81)	-0.04 (-0.39)	-0.05* (-1.76)	-0.04 (-0.40)	-0.25*** (-5.98)	-0.28* (-1.85)
INFORMATION	-0.23*** (-9.68)	-0.27** (-3.30)	-0.37*** (-11.18)	-0.40** (-3.88)	-0.36*** (-8.56)	-0.43** (-3.39)	-0.28*** (-8.52)	-0.34*** (-4.15)	-0.27*** (-6.79)	-0.34** (-3.54)	-0.27*** (-5.98)	-0.32** (-3.38)
BILATERAL TRADE			0.38*** (11.01)	0.41*** (4.11)	0.38*** (9.14)	0.43** (3.63)	0.31*** (11.23)	0.34** (4.02)	0.31*** (8.08)	0.35** (3.61)	0.28*** (5.48)	0.26** (2.81)
LAW					-0.01 (-0.07)				0.02 (0.18)	-0.05 (-0.31)	0.15 (1.26)	0.07 (0.41)
COLONY							1.35* (1.96)	1.12* (1.64)	1.35* (1.95)	1.11* (1.62)	1.16* (1.82)	0.83 (1.29)
CENTER											0.41** (3.69)	0.61** (2.20)
Cross-sections	40	40	35	35	35	35	35	35	35	35	35	35
Total pool (unbalanced) observations	98	98	87	87	87	87	87	87	87	87	87	87
Adjusted R2	-	0.17	-	0.28	-	0.26	-	0.35	-	0.34	-	0.39
Weighted Adjusted R2	0.65	-	0.53	-	0.53	-	0.50	-	0.48	-	0.46	-
Unweighted R2	0.16	-	0.26	-	0.26	-	0.35	-	0.36	-	0.38	-
Cross-section weights	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Period fixed effects	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes

	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]	[23]	[24]
GDP	-0.04* (-1.61)	-0.02 (-0.25)	-0.14* (-2.36)	0.01 (0.12)	-0.04 (-1.04)	-0.01 (-0.13)	0.08 (1.04)	0.04 (0.33)	0.01 (0.06)	-0.00 (-0.00)	-0.06 (-1.55)	-0.05 (-0.57)
DISTANCE	-0.66*** (-6.12)	-0.52** (-2.59)	-1.00** (-3.96)	-0.48** (-2.24)	-0.60*** (-4.33)	-0.49** (-2.57)	-0.53** (-3.81)	-0.45** (-2.40)	-0.61*** (-4.67)	-0.45** (-2.36)	-0.47*** (-4.86)	-0.47** (-2.70)
INFORMATION	-0.28*** (-8.92)	-0.29** (-2.84)	-0.46*** (-5.48)	-0.27** (-2.77)	-0.32*** (-10.65)	-0.28** (-2.89)	-0.27*** (-6.89)	-0.27** (-2.97)	-0.28*** (-8.02)	-0.29** (-3.11)	-0.34*** (-6.82)	-0.40** (-3.07)
BILATERAL TRADE	0.15*** (4.53)	0.21* (1.71)	0.35** (3.60)	0.18 (1.46)	0.11** (2.27)	0.19* (1.66)	0.02 (0.27)	0.13 (0.79)	0.15* (1.90)	0.20 (1.30)	0.25*** (4.72)	0.28* (2.29)
BRITISH BANKS	0.25*** (5.52)	0.20* (2.27)	0.31** (3.66)	0.18* (1.97)	0.18** (3.20)	0.14 (1.38)	0.15** (2.71)	0.14 (1.26)	0.22*** (4.37)	0.15 (1.33)	0.09* (2.36)	0.11 (1.19)
GERMAN BANKS	1.13*** (8.32)	0.77* (2.10)	0.90*** (11.06)	0.88* (2.42)	1.04*** (8.04)	0.66* (1.63)	0.99*** (6.18)	0.72 (1.32)	0.97*** (6.73)	0.55 (1.02)	0.43*** (3.12)	0.27 (0.69)
LAW			-0.48** (-3.59)	-0.33 (-1.46)	-0.29** (-3.16)	-0.23 (-0.93)	-0.07 (-0.51)	-0.16 (-0.58)	-0.18 (-1.57)	-0.10 (-0.38)	-0.09 (-0.88)	-0.11 (-0.49)
COLONY			0.81 (1.42)	1.18* (2.06)	0.92 (1.56)	1.05* (1.79)	1.03* (1.78)	1.05* (1.77)	1.05* (1.72)	0.98* (1.64)	1.01** (2.49)	0.67 (1.07)
CENTER					0.30 (1.44)	0.26 (0.56)	0.26 (1.19)	0.25 (0.48)	0.11 (0.43)	0.28 (0.52)	0.47** (2.57)	0.45 (1.09)
EXCHANGE RATE CHANGE							-0.45* (-1.87)	-0.91** (-2.13)				
EXCHANGE RATE VOLAT									-0.12 (-0.06)	-3.51 (-0.99)		
GOLD											0.25** (2.55)	0.41 (1.56)
Cross-sections	35	35	35	35	34	34	30	30	30	30	34	34
Total pool (unbalanced) observations	84	84	84	84	84	84	77	77	77	77	84	84
Adjusted R2	-	0.23	-	0.24	-	0.37	-	0.37	-	0.41	-	0.47
Weighted Adjusted R2	0.82	-	0.98	-	0.97	-	0.94	-	0.92	-	0.80	-
Unweighted R2	0.00	-	0.07	-	0.18	-	0.28	-	0.26	-	0.52	-
Cross-section weights	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Period fixed effects	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes

Note. Pooled IV/Two-stage EGLS with cross section weights (uneven col.) and period fixed effects (even col.). Robust PSCE heteroskedasticity-consistent standard errors and covariances. Instruments are lagged dependent and independent variables. T-statistics in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 % level respectively

**Table 10**  
**Determinants of German MNB, 1880-1913**  
Dependent variable: number of bank branches in host country

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
GDP	0.07** (3.12)	0.08* (2.27)	-0.07* (-2.61)	-0.05 (-0.70)	-0.10* (-2.40)	-0.13 (-1.53)	-0.11** (-3.01)	-0.07 (-0.97)	-0.10* (-1.93)	-0.05 (-0.58)	-0.11* (-2.00)	-0.04 (-0.45)	0.01 (0.15)	-0.04 (-0.54)
DISTANCE	0.17** (3.71)	0.11 (1.22)	0.28*** (5.49)	0.17 (1.45)	0.27*** (4.41)	-0.01 (-0.07)	0.26** (2.94)	0.15 (0.91)	0.28** (2.80)	0.13 (0.86)	0.31** (3.03)	0.12 (0.78)	0.38** (3.33)	0.10 (0.60)
INFORMATION	-0.03 (-0.85)	-0.08 (-1.22)	-0.22*** (-6.15)	-0.23** (-2.75)	-0.22*** (-5.06)	-0.22** (-2.89)	-0.07* (-1.98)	-0.07 (-0.92)	-0.03 (-0.59)	-0.02 (-0.21)	-0.06 (-1.28)	-0.02 (-0.18)	-0.12* (-1.84)	-0.14 (-1.53)
BILATERAL TRADE			0.17*** (4.95)	0.10 (1.02)	0.16*** (4.46)	0.09 (1.00)	0.06** (2.82)	-0.01 (-0.11)	0.03 (0.49)	-0.14 (-1.08)	0.04 (0.72)	-0.16 (-1.20)	0.01 (0.11)	-0.05 (-0.49)
CENTER					0.11 (0.78)	0.49* (1.82)	0.14 (0.85)	0.52 (1.50)	0.22 (1.16)	0.71* (2.13)	0.26 (1.32)	0.82* (2.31)	0.04 (0.27)	0.58* (1.74)
BRITISH BANKS							-0.08*** (-3.49)	-0.14 (-1.33)	-0.12** (-2.59)	-0.23* (-2.14)	-0.13** (-2.70)	-0.26* (-2.32)	-0.13** (-3.16)	-0.14 (-1.34)
FRENCH BANKS							0.49*** (7.55)	0.26 (1.43)	0.47*** (6.01)	0.21 (0.92)	0.44*** (5.77)	0.16 (0.72)	0.43*** (5.48)	0.17 (0.95)
EXCHANGE RATE									0.10 (0.83)	0.51 (1.32)				
EXCHANGE RATE VOLAT											0.02 (0.02)	1.33 (0.44)		
GOLD													0.31** (3.05)	0.37 (1.61)
Cross-sections	40	40	33	33	33	33	33	33	28	28	28	28	32	32
Total pool (unbalanced) obs.	98	98	79	79	79	79	76	76	69	69	69	69	76	76
Adjusted R2	-	0.11	-	0.20	-	0.23	-	0.28	-	0.28	-	0.24	-	0.28
Weighted Adjusted R2	-0.06	-	0.16	-	0.07	-	0.56	-	0.51	-	0.51	-	0.52	-
Unweighted R2	-0.03	-	0.10	-	0.09	-	0.27	-	0.27	-	0.27	-	0.28	-
Cross-section weights	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no
Period fixed effects	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes

Note. Pooled IV/Two-stage EGLS with cross section weights (uneven col.) and period fixed effects (even col.). Robust PSCE heteroskedasticity-consistent standard errors and covariances. Instruments are lagged dependent and independent variables. T-statistics in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 % level respectively.

**Table 11**  
**Determinants of British, French and German MNB, 1880-1913 (reduced sample)**  
Dependent variable: number of bank branches in host country

	British Banks				French Banks				German Banks			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
GDP	-0.13** (-4.22)	-0.14** (-2.65)	-0.23** (-4.04)	-0.19*** (-4.54)	-0.11 (-1.23)	-0.04 (-0.55)	-0.11 (-1.09)	-0.08 (-1.40)	-0.01 (-0.06)	-0.02 (-0.23)	-0.04 (-0.50)	0.07 (1.17)
DISTANCE	0.63*** (9.27)	0.74*** (7.90)	0.66*** (5.03)	0.72*** (8.78)	-0.87** (-3.75)	-0.86*** (-4.47)	-1.05** (-3.41)	-0.49** (-3.54)	0.20* (2.05)	0.14 (1.04)	0.17 (1.05)	0.26* (1.84)
INFORMATION	-0.03 (-0.94)	-0.02 (-0.30)	0.02 (-0.38)	0.07* (1.77)	-0.40*** (-4.74)	-0.28* (-2.43)	-0.48* (-2.11)	-0.20* (-1.91)	0.06 (1.05)	0.09 (1.29)	0.05 (0.75)	0.04 (0.41)
BILATERAL TRADE	0.10*** (7.25)	0.08 (1.50)	0.17*** (5.18)	0.13** (4.16)	0.16* (2.03)	0.13 (1.20)	0.10 (1.09)	0.27** (2.70)	-0.01 (-0.24)	0.01 (0.04)	0.04 (0.35)	-0.09* (-1.70)
LAW	0.40* (2.04)	0.19 (0.80)	-0.22 (-0.82)	0.06 (0.31)	-0.28 (-1.55)	-0.15 (-0.82)	-0.40 (-1.17)	0.23 (1.23)				
CENTER	0.37* (1.80)	0.13 (0.57)	0.09 (0.31)	0.27 (1.30)	0.07 (0.20)	-0.01 (-0.02)	0.06 (0.17)	0.76** (3.11)	0.23 (1.02)	0.30 (1.28)	0.32 (1.35)	0.21 (0.82)
BRITISH BANKS					0.27* (2.37)	0.38** (3.14)	0.30** (2.67)	0.25** (2.84)	0.01 (0.35)	0.07 (0.44)	0.07 (0.32)	-0.01 (-0.02)
FRENCH BANKS	0.01 (0.16)	0.11 (1.54)	0.07 (0.56)	0.19** (3.77)					0.44*** (5.56)	0.38** (3.85)	0.35** (3.58)	0.33** (2.96)
GERMAN BANKS	0.64** (3.67)	0.70** (3.33)	0.82* (2.39)	0.57** (3.43)	1.36*** (11.37)	1.11** (3.72)	1.40** (2.99)	-0.01 (-0.02)				
EXCHANGE RATE CHANGE		-0.20 (-0.92)				-0.15 (-0.66)				0.08 (1.03)		
EXCHANGE RATE VOLAT			6.59* (2.21)				1.17 (0.55)				-0.42 (-0.43)	
GOLD				-0.48*** (-4.74)				0.44** (3.50)				0.41** (3.87)
Cross-sections	29	25	25	29	29	25	25	29	27	23	23	27
Total pool (unbalanced) obs.	74	67	67	74	75	68	68	75	67	60	60	67
Weighted Adjusted R2	0.94	0.96	0.97	0.93	0.84	0.86	0.93	0.79	0.63	0.51	0.51	0.68
Unweighted R2	0.55	0.57	0.52	0.60	-0.22	0.04	-0.28	0.48	0.26	0.28	0.30	0.31

Note. Excluding four large settlement economies (Australia, New Zealand, South Africa, Canada) and the USA. Pooled IV/Two-stage EGLS with cross section weights. Robust PSCE heteroskedasticity-consistent standard errors and covariances. Instruments are lagged dependent and independent variables. T-statistics in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1 % level respectively.

## Appendix: The Data Base

All data used in this paper come from an original data set which has been constructed on purpose. In some cases, data have been collected from primary sources, and checked against the information provided by a variety of published sources. In other cases, existing databases made available by other scholars have been enriched and complemented with data from primary and secondary sources, in order to adjust them to the country sample on which this paper is based. Data availability has been the main criterion adopted in the construction of the sample. Originally, data were collected for 60 countries including:

Western and Central Europe: Austria-Hungary, Belgium, Denmark, France, Germany, Italy, The Netherlands, Norway, Sweden, Switzerland, United Kingdom.

Eastern and Southern Europe: Bulgaria, Greece, Portugal, Romania, Spain, Russia, Serbia

Mediterranean Basin and Near East: Algeria, British Possessions (Cyprus, Malta, Gibraltar), Egypt, Morocco, Tunisia, Turkey (European and Asian)

Middle and South-East Asia: Ceylon, China, Cochinchina (French), India (British and French), Japan, Java, Persia, Philippines Islands, Straits Settlements, Siam

Australasia: Commonwealth of Australia, New Zealand

North America: Dominions of Canada, United States

Caribbean and Central America: Costa Rica, Cuba/Santo Domingo (Spanish West Indies up to 1898), Republica de Guatemala, Haiti, Honduras, Mexico, Nicaragua, El Salvador

South America: Argentina, Bolivia, Brasil, Colombia, Chile, Ecuador, Peru, Uruguay, Venezuela

Subsaharian Africa: British colonies of East Africa, South Africa and West Africa, and Madagascar (French).

However, in many cases missing data for a number of important variables have proved the rule rather than the exception, especially for the period prior to 1900. As a consequence, the nature of the sample is extremely unbalanced, and regressions have been run on samples generally including between 30 and 40 countries.

**Branches of multinational banks.** The basic information for this original data set has been extracted from the *Banking Almanac*, a specialized journal published in London by Waterlow and Sons since 1844. The Almanac published annually a complete directory of banks, both British and foreign, operating in banking places outside the UK (including British colonies), compiled by Sir Inglis Palgrave and containing additional information about their London office, agents or correspondents. The scope and ambitions of Palgrave's colonial and foreign directory increased noticeably over time and went hand in hand with the growing size of the international banking phenomenon. The directory used to occupy less than 60 pages in the early 1880s, but had grown up to more than 400 pages by 1912. Based on such information, an international banking matrix showing the number and location of international banks' branches worldwide has been constructed, and its exhaustiveness subsequently checked "to the best of my knowledge and effort" on the base of other primary sources as well as published studies. As for British international banks, selected balance sheet information (including aggregate data on branches and total assets) have been recovered from the "Statement of Bank Accounts in a Summarized Form", a banking supplement regularly published twice a year by *The Economist*. Also, the time pattern of their foreign expansion has been checked against the information provided by A.S.Baster in his companion

volumes, *The Imperial Banks* (1929) and *The International Banks* (1935), originally published by P.S.King and Sons, and later republished by Arno Press in the 1970s. A further check was based on the detailed qualitative and quantitative information published by Geoffrey Jones in his seminal study on *British Multinational Banking 1830-1990* (Oxford 1993). As for German banks, details of their international expansion have been reconstructed on the base of the information provided by a number of studies published in the early decades of the 20<sup>th</sup> century. In fact, the stunning pace of their new international thrust attracted the systematic attention of contemporary observers. Amongst those who dealt with the subject, R. Hauser's *Die Deutschen Überseebanken* (Jena 1906), G. Diouritch's *L'Expansion des Banques Allemandes à l'Étranger* (Paris and Berlin 1909), J. Riessers's *Die deutschen Grossbanken und ihre Konzentration* (Jena 1912) and K. Strasser's *Die Deutschen Banken in Ausland* (Innsbruck 1924) have proved complete and reliable references. On the contrary, the contemporary expansion abroad of French banks made much less a hot subject, first of all for French observers themselves, who could not help but observe their rivals' successes abroad with a mix of fear and fascination, while blaming French banks for their lack of comparable energy and initiative. Nonetheless, basic information has been extracted from A. Goumain-Cornille, *Les banques coloniales* (Paris 1902), M. Blondel, *Les succursales à l'étranger des établissements de credit francais* (Paris 1908) and M. Caillez, *L'organisation du crédit au commerce extérieur en France et à l'étranger* (Paris 1923). Other useful reference studies were J. Rivoire, *La Crédit Lyonnais : histoire d'une banque* (Paris 1989), and M. Meuleau, *Des pionniers en Extrême-Orient : Histoire de la Banque de l'Indochine 1875-1975* (Paris 1990). More generally, a further check was conducted by going through the mine of information that can be recovered from the volume *International Banking 1870-1914* edited by R. Cameron and V. Bovykin (Oxford 1991), essentially to make sure that no major episode of multinationalisation had been missed out.

**Bilateral trade flows.** Data on bilateral trade of a wide set of countries with the United Kingdom, Germany and France are provided by the *International Trade Database* maintained by Kathy Barbieri as part of the COW (Correlates of War) Project. The database is available online at: <http://www.correlatesofwar.org/> The database provides both dyadic (i.e. bilateral) trade figures and national trade figures, and only includes reported statistics derived from trade reports; no estimation techniques are employed to replace missing values. It represents the best existing source for pre-1914 international trade data, having been constructed through an exhaustive search of historical documents, including national almanacs, commerce dictionaries, and government documents. Namely, *The Statesman's Yearbook* was the main primary source for trade figures by country, supplemented with data from published sources such as Mitchell's *International Historical Statistics*. This dataset is most reliable, having passed a number of checks, but presents at least two major problems for the period 1870-1914. First, due to Barbieri's original purpose (her Ph.D. dissertation on "Economic Interdependence and Militarized Interstate Conflict, 1870-1985", Binghamton University, 1996), data were collected only for sovereign states within the interstate system, so that countries with a colonial status were excluded from the sample. Second, whereas data on trade with Britain were generally available for most countries during the whole period (with exceptions), observations on trade with Germany and France turned out to be much less complete and systematic. Therefore, I've been forced to resort to alternative primary sources to fix these problems. Data on the colonial trade of Britain and France were collected by using official reports, such as the *Statistical Abstract for the Several Colonial and Other*

*Possessions of the United Kingdom*, and *Tableau général du commerce de la France avec ses colonies et les puissances étrangères*, respectively. The latter provides also basic statistical information about the French trade with her colonies and the rest of the world. A systematic check of consistency between Barbieri's figures on French total trade (taken mainly from the *Stateman's Yearbook* and expressed in current dollars) and those provided by the *Tableau Général* (expressed in French francs) proved satisfactory: in fact Barbieri's figures correspond perfectly to the *Tableau's* figures on "commerce spécial". However, frequent discrepancies, sometimes significant, emerged between the two sets of data on dyadic trade of individual countries with France. Assuming that the French source has a superior reliability when dealing with French trade, I've therefore revised Barbieri's data on French trade to take into account the new figures. Although the reconstruction of a more reliable matrix of international trade for the pre-1914 period was far beyond the scope and purposes of this paper, a similar effort of revision may well prove necessary in the future for German figures too. Finally, in order to include colonial trade, I have assembled a small original dataset on dyadic trade of British colonies and dominions, as well as of some important countries missing from Barbieri's dataset such as Egypt, based on cross-checks of the *Stateman's Yearbook* and the *Statistical Abstract*. Bilateral and total trade, and derived ratios, used in the regressions are 5-year (occasionally less, due to missing data) averages ending in the benchmark years.

**Foreign capital investment.** Assessing the trend and the geographical distribution of foreign investments has proved perhaps the most challenging task during the construction of the data base. In spite of many efforts, this is still the weakest data set used in the paper. In order to be used as regressors in my empirical estimation, the indicators for foreign investments should mirror as much as possible those for trade, so that my objective was to construct a proxy of financial dependence (host-to-home and viceversa) and an indicator of the absolute magnitude of capital attracted by each host country. But, first problem, when it comes to pre-1914 foreign investments, practically only stock guess-estimates are readily available for German and French capital. As it is well known, the accuracy and reliability of pre-1914 stock data on foreign investments has been seriously questioned. In the British case this problem has been eventually fixed, as researchers can now count on the groundbreaking work by Irving Stone (*The Global Export of Capital from Great Britain, 1865-1914*, St. Martin Press, 1999), based on a detailed reconstruction of gross capital flows. Unfortunately, nothing even vaguely comparable to Stone's work is available for either French or German foreign investments. Stock data are still the only common base on which their relative size and the geographical distribution can be broadly compared. We are brought back to as early as 1930, when Herbert Feis published his famous study, *Europe the World's Banker 1870-1914* (New York 1930, pp. 50-51). A systematic enquiry into the French sources has proved that Feis elaborated on figures originally provided by Harold Moulton and Cleona Lewis (*The French Debt Problem*, London 1925, pp. 11-19), and subsequently used also by Harry D. White (*The French International Accounts 1880-1913*, Cambridge, Mass., 1933, pp. 87-123). These figures, in turn, are largely based—a part from complementary, scattered information brought together from sources on uneven reliability—on statistical work carried on by French scholars (such as Alfred Neymarck, Paul Leroy-Beaulieu, R.G. Levy) in the early 1910s and by an official enquiry commissioned by the French government, whose findings are summarized by L. Guillaume, *L'Epargne Francaise et les Valeurs Mobilières Étrangères* (Paris 1907). A summary discussion of this studies and their methods was offered by Moulton and

Lewis, and White. On the same data Rondo Cameron and Renè Girault subsequently built up new aggregate estimates in the 1970s. Levy Leboyer (in his presentation of the collective work *La Position Internationale de la France*, Paris 1977, pp. 116-118) provided a definite reassessment of their figures. Analogous estimates of the German foreign investment were provided by German scholars at the turn of the century. Their aggregate figures are presented and summarily discussed by H. Mouldon and C.E. McGuire, *Germany's Capacity to Pay* (New York and London, 1923, pp. 257-260). All available data and sources on stock estimates for foreign investments in Latin America have been assembled and discussed by Mark Twomey, whose material (downloadable at <http://www-personal.umd.umich.edu/~mtwomey/fdi/Notes.doc> and also accessible through EH.NET databases) proved extremely illuminating. Also J.F. Rippy, "French Investments in Latin America," *Inter-American Economic Affairs* (1948, 52-71, and UN-ECLA(1965) *External Financing in Latin America* (1965), proved a valuable source.

Having said that, the foreign investment variables used in the paper are as follows. For the British case, using Stone's published data, which divide flows according to borrowers (sovereign and private) and sectors, investment to the banking sector have been subtracted from the total, and then the cumulative flow of net-of-banking capital to each country from 1865 up to each benchmark date (1880, 1890, 1900, 1913) as well as during each period in between has been calculated. Having proved impossible to complement this data with figures on total capital that each country received from core countries other than Britain, the ratio variable had to be designed as the share of British capital received by each country over the total of British foreign investment. Lacking comparable data for France and Germany, I have made a reasonable use of the available stock "guess"-estimates (as described above) in order to obtain the share of French and German capital received by each panel country on the total French and German stock of foreign investment in each benchmark year with valid observations. In the case of Germany, I've tried to bring together some figures broadly comparable to Stone's, for the period 1899-1908, by calculating the nominal cumulative flow of German capital to each country from data reported by W. Steinmetz, *Die Deutschen grossbanken im Dienste des Kapitaleports* (Luxemburg, 1913). The discovery of a huge, recent and well informed study on *Deutsche Portfolioinvestitionen im Ausland 1870-1914*, by K.C.Schaefer (Hamburg, 1993), generated a short-lived uprise of enthusiasm, until I discovered to my deep regret that after filling in no less than 500 hundred pages, the author had not found any space left to sum up the time pattern and geographical distribution of German investments in any manageable format.

**Information flows.** As a growing number of countries joined the International Post Union, data on the volume of mail intercourse became widely available. This figures, published systematically by the *Stateman's Yearbook*, were nonetheless reported in different formats, sometimes providing a detailed breakdown of letters, postcards, books, packets, newspapers (etc.), others simply giving mere aggregate numbers. I have privileged the aggregate figures both because they give a more comprehensive proxy of the volume of information flowing through countries, and assure a higher level of comparability. The per capita information volume has been obtained by using population data also taken from the *Stateman's Yearbook*, occasionally complemented by Maddison's data, *The World Economy: Historical Statistics* (OECD Development Center, Paris 2003), whose database is available online at:

**GDP level and GDP per capita.** All data come from A. Maddison, *The World Economy: Historical Statistics* (OECD Development Center, Paris 2003). The database is available online from Maddison's webpage at the University of Gröningen: <http://www.eco.rug.nl/~Maddison/> Data for Western Europe and settlement economies are complete. GDP per capita of Austria-Hungary is estimated as a weighted sum of GDP p.c. of Austria and Hungary, using their share of the aggregate GDP as weights. In the case of Southern and Eastern Europe, as well as developing countries of Africa, Asia and Latin America, estimations do not cover the entire period 1870-1913. In this cases, missing years are estimated by geometric interpolation. GDP p.c. for Peru and Chile before 1900 is estimated by assuming a growth rate equal to that of Argentina in the same period. GDP p.c. for Colombia before 1900 is estimated by assuming a growth rate equal to that of Brasil in the same period. Their GDP level is obtained by multiplying the estimated GDP p.c. by total population. For Caribbean countries, Maddison provides an individual estimation of GDP and GDP p.c. for Jamaica, but only an aggregate estimation of GDP per capita for the rest of the Caribbean islands. Their GDP level is estimated by multiplying GDP p.c. by estimated population. East Africa, Madagascar and West Africa are assumed to have the same GDP p.c. of Ghana as reported by Maddison; their GDP level is estimated by multiplying GDP p.c. by the estimated population. Costa Rica, Guatemala, Honduras, Nicaragua, Salvador, Bolivia, Ecuador are assumed to have the same GDP p.c. as Jamaica; their GDP level is estimated by multiplying GDP p.c. by the estimated population.

**Colonial link.** Colonial status has been assigned on the base of information provided by the *Stateman's Yearbook*. Countries such as China and the Ottoman Empire are considered semicolonial entities open to the economic and financial influence of all European powers (and the USA, in the case of the former).

**Legal origins.** Legal families of countries that transplanted codes from main "origin" countries are based on La Porta et al. (1999), 'The quality of government', *Journal of Law, Economics and Organization*, 15 (1), pp. 222-279, usefully complemented with D. Berkovitz et al. (2003), 'Economic Development, Legality and the Transplant Effect', *European Economic Review*, 47 (1) pp. 165-195. No legal family could be assigned to Russia on the base of these two sources.

**Distance.** Great circle distance between capital cities, the only exception beeing the use of Rio de Janeiro for Brasil, and New York for the USA.

**Financial center.** Financial and business centres of global and regional relevance have been selected by adapting O. Schwarzer, 'Das System des Internationalen Zahlungsverkehrs', in J. Schneider et el. (eds.), *Währungen der Welt I. Europäische und Nordamerikanische Devisenkurse 1777-1914* (I) (Stuttgart 1991), pp. 21-22. A narrow as well as a broad list have been used. The narrow list includes only the main centres of the most important regional areas: London, Paris and Berlin for Western Europe, New York for North America, Buenos Aires for Latin America, Hong Kong/Shanghai for East Asia, and Constantinople for the Near East. In the broad list, other major centres of regional relevance have been added, such as Rio de Janeiro and Valparaiso for South America, Calcutta/Bombay and Yokohama for East Asia, Cairo for the Near East, Sydney for Australasia, and Capetown for South Africa.

**Years on gold.** The variable on/off gold has been determined on the base of Table DB20 in M. Flandreau and F. Zumer (2004), *The Making of Global Finance 1880-1913* (Paris), complemented by data from M. Obstfeld and A. Taylor (2003), 'Sovereign risk, credibility and the Gold Standard: 1870-1913 versus 1925-31', *The Economic Journal*, 113, n. 487. Flandreau and Zumer's data can be accessed through EH.NET's datasets: <http://eh.net/databases/finance/>. Obstfeld and Taylor's database is available online at the Royal Economic Society's website: <http://www.res.org.uk/economic/datasets/datasetdefault.asp>. For countries not included either in Flandreau and Zumer or in Obstfeld and Taylor, the information provided by the *Stateman's Year Book* has been used.

**Exchange risk.** The nominal exchange rate's annual change and volatility for the decennial subperiods has been calculated on the base of the average annual rates published in the series *Währungen der Welt*, edited by O. Schneider et al. Nominal exchange rates of the Turkish lira and the Egyptian pound have been downloaded from Global Financial Data (<http://www.globalfinancialdata.com>). In the absence of official quotations, the nominal exchange rate variation of currencies on silver or bimetallic standard has been proxied by the change in the Pound price of silver. Since international banks operating abroad were particularly vulnerable to depreciation of host-country currency (as discussed in the main text), the index of decennial volatility has been calculated by adapting the weighted formula suggested by Flandreau and Zumer (2004) to measure the vulnerability of public finances to foreign exchange fluctuations:

$$Vol = \sum_{t=1}^{10} \text{Ln}(X_t/X_{t-1})$$

with  $\text{Ln}(X_t/X_{t-1}) = 0$  if  $\text{Ln}(X_t/X_{t-1}) < 0$ .

**Country risk.** The country risk is measured by the spread of sovereign debt of host countries over British consols, as reported in Obstfeld and Taylor's (2003) database. Data are available for 22 countries only.

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