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Universal banking and the development of secondary corporate debt markets: Lessons from 1830s Belgium

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Universal Banking and the Development of Secondary Corporate Debt Markets: Lessons from 1830s Belgium

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Abstract: *This paper proposes a reassessment of the old-age debate on universal banking and growth by putting it on a different plan. Modern financial economics are used to provide new theoretical foundations to Gerschenkron's (1962) hypothesis: universality is interpreted as a strategy for banks to reach the critical size needed in order to perform successful securitization of corporate debt. A relevant natural experiment in universal banking and industrialization (Belgium in the 1830s) illustrates the argument. The conclusion is that creating a new financial market also implies establishing intermediaries to supply crucial functions such as underwriting, certification, and liquidity provision.*

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This paper aims at providing a refreshing perspective on one of the most animated (albeit inconclusive) controversies in economic history: the debate on the contribution of universal banking to growth in emerging countries. The idea is to build on recent developments in financial economics in order to shift the debate to a different plan. But this is not all. Thanks to an original, hand-collected database, the paper also analyses the case of 1830s Belgium – an utterly relevant natural experiment in universal banking and industrialization. The results have wider implications for our understanding of the way financial markets emerge.

The substantial amount of theoretical and empirical material which makes up this paper is organized as follows. Section 1 surveys the state of art, underlines the shortcomings of the controversy, and puts forward a new Gerschenkronian hypothesis. Section 2 qualifies the hypothesis in the light of the theoretical literature in finance. Sections 3 to 6 are a case-study on 1830s Belgium, looking in depth at the role of universal banks in supplying the functions of underwriting (section 3), certification (section 4) and liquidity provision (section 5); the lessons of this investigation are listed in section 6. Finally, section 7 draws some general conclusions.

Section 1: A New Gerschenkronian Hypothesis

1.1: Gerschenkron and His Critics

In the field of economic history, few contribution have proved as influential as Alexander Gerschenkron's (1962). In the framework of a general synthesis on the historical aspects of economic backwardness (see Sylla and Toniolo 1991 for a brief survey), Gerschenkron famously argued that universal banking was the instrument through which moderately backward countries were able to overcome the financial impediments to their industrialization. The hypothesis mostly built on a comparison between the historical experiences of Britain and Germany – the latter being considered by Gerschenkron as the paradigmatic case.

Having experienced a vast diffusion, Gerschenkron's hypothesis on universal banking has been alternatively accepted and rejected by several economic historians. This is also due to fact that, as Fohlin (2007, p. 29) notes, it is difficult to articulate the hypothesis in a way that is both nontrivial and empirically testable. The most popular interpretation has been in terms of banks' superiority in avoiding adverse selection in lending, a point that has been modulated in a variety of ways – as an argument about control, monitoring, coordination, commitment, etc. In this framework, historians have devoted much attention to analyzing banks' direct provision of credit to industries. Although no consensus has emerged, evidence has mostly pointed to a rejection of the Gerschenkronian hypothesis as formulated as such[1].

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[1] Early results are surveyed by Sylla (1991). Looking at the allocation of credit in Imperial Germany, Edwards and Ogilvie (1996) claim that the contribution of universal banks to industrial development has been largely overemphasized. In a similar way, looking at the allocation of credit in Imperial Britain, Collins (1998) claims that the contribution of commercial banks to industrial development has been largely underemphasized.

1.2: The Gerschenkronian Hypothesis: Dead or Alive?

Gerschenkron (1962) thought of banks as capital suppliers acting as a sort of substitute for 'original accumulation', which backward countries lacked: in his view, universal banks became a necessity because other forms of financing (internal funding and loans by specialized intermediaries) were not available. In view of the results of recent historical research, these theoretical foundations can now be seen as too fragile to provide a satisfactory grounding to the Gerschenkronian hypothesis. Nonetheless, one of the core intuitions behind the argument – viz., the idea that early universal banks helped eliminate what was restraining the firms' access to credit – has not really been challenged to date. As a matter of fact, criticisms of the hypothesis suffer from two kinds of drawbacks.

First and foremost, more or less all of the critics look for counterexamples in the decades following 1870 – probably due to the scarcity of data for earlier years. Yet in so doing, they focus on a later period than the one in which the very first industrial take-off took place in most Western countries. As Gerschenkron was concerned with the original impediments to modern growth, such a choice necessarily makes them miss their target.

Second, critics of the hypothesis assume that the only channel through which intermediaries are supposed to contribute to industrial development is direct relationship lending. The assumption results from the establishment of a rigid dichotomy between so-called *market-based* and *bank-based* financial systems[2]. Yet the actual economic significance of such a clear-cut distinction has become a matter of doubt during the last decade, both from a theoretical (Allen and Gale 2000) and from an empirical point of view (Levine 2005)[3].

Guinnane (2002) calls for a reappraisal of the role played by other intermediaries than universal banks – such as savings banks and credit cooperatives – within the German financial system. A more systematic challenge to the Gerschenkron hypothesis comes from Verdier (2003), who builds a general theory of the evolution of national financial structures: in his view, financial systems naturally tend to be market-based, but the joint action of two factors (market segmentation and the presence of a lender of last resort) allows for the establishment of bank-based systems. Finally, Fohlin (2007) challenges Gerschenkron in the opposite way: analyzing corporate finance in Imperial Germany, she finds the distinction between market- and bank-based systems to be meaningless, as an important securities market flourished at the same time of the emergence of universal banks. Fohlin interprets the result as a refutation of the Gerschenkronian hypothesis, but this needs not be necessarily the case (see below).

[2] Since the appearance of Goldsmith's (1969) work, economists have displayed considerable interest in financial structure. Especially during the 1990s – in coincidence with the repeal of the Glass-Steagall Act – a vast literature has flourished on the pros and cons of market- and bank-based financial systems (Allen and Gale 2000). While most scholars have argued that market-based systems are superior in enhancing economic growth, the role of banks in stimulating development – by providing a 'big push' towards industrialization (Da Rin and Hellmann 2002), or by bridging entrepreneurs' and depositors' diverging expectations (Coval and Thakor 2004) – has been put forward as well. A variety of parameters have been indicated as the factors engendering the original establishment of the one or the other financial structure, including: economic integration within the real sector (Da Rin 1997), the relative cost of monitored and unmonitored lending (Greenwood and Smith 1997), borrowers' bargaining power with respect to lenders (Baliga and Polak 2004), wealth distribution (Chakraborty and Ray 2007).

[3] This contrasts with earlier investigations: in the previous decades, the rigid separation between market- and bank-based systems had mostly been shaped to fit the comparative study of four cases only – viz. US and UK on the one side, Japan and Germany on the other side. Such a limitation, however, made the analysis biased for at least two reasons. On the one hand, the fact that *postwar* Japan and Germany had relatively small stock markets and large banks was mostly related to the huge exogenous shocks generated by military defeat – that major banks managed to withstand much better than bourses; yet, this does not mean that *prewar* Japan and Germany

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Therefore, there is no point in maintaining this fairly restrictive assumption. As a matter of fact, there are other relevant channels than direct lending through which banks get involved in corporate finance: the most important of these is, by far, *securitization*[4].

1.3: A Reformulation of the Gerschenkron Hypothesis

The starting point of this paper is the idea that Gerschenkron's intuition that universal banking eliminated the financial impediments to growth remains a powerful argument, provided that the channels through which this took place are better specified. In particular, dropping the assumption that universal banks only perform direct lending vindicates the role of corporate debt securitization as a crucial channel. At the light of this, it will be contended that universal banking emerged as a means for intermediaries to perform such a securitization successfully.

Available historical evidence helps qualifying the argument. We know that backward countries faced much higher setting-up costs for competitive firms than first-comer countries had at the time of their take-off. We also know that internal funding soon proved insufficient in order for Continental firms to continue expanding, and that commercial and private banks did actually provide an important source of financing during the first half of the 19th century (Lévy-Leboyer 1964; Tilly 1966; Cameron 1967). At one moment, however, primary corporate debt markets became in turn insufficient, as banks were constrained by the illiquidity of industrial loans: as a matter of fact, at that time secondary corporate debt markets did not exist in most countries (Baskin and Miranti 1997). As a result, if banks wanted to discharge their industrial portfolios, they had to step in and help *create* secondary markets from scratch[5].

To sum up, the following enunciation of a new Gerschenkronian hypothesis is proposed:

When the amount of capital needed by industrial firms in order to grow exceeded the limits of both internal funding and primary corporate debt markets, universal banking emerged in

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had such thin stock markets (Fohlin 2007). On the other hand, even in the most studied market-based system (i.e. the US) financial structure had been heavily shaped by regulatory action, which has proved to be a transient rather than a constant factor over the decades (Calomiris 2006).

[4] In the recent departure from the classical notion of intermediaries and markets as competing entities, the crucial role of securitization has been highlighted by Song and Thakor (2009). In their model, the interaction between banks and markets mitigates frictions facing borrowers: on the one hand, intermediaries can reduce adverse selection in markets by 'securitizing' debt – i.e. by providing markets with certification; on the other hand, markets can reduce the intermediaries' reluctance to fund innovative projects by providing them with cheap capital – i.e. by reducing the opportunity cost of riskier investment. As a result, the model predicts that banks and markets complement each other and co-evolve.

[5] Most of the historical literature on universal banks has focused on all aspects of monitoring and control of firms, but in so doing it has passed by a crucial feature of early universal banking: intermediaries were mostly interested in floating corporate securities, not in keeping them in their portfolio. The point, however, had not been missed by earlier commentators. For instance, Whale (1930, pp. 11-12) argued that in Germany 'there was a place for some kind of agency which should obtain the confidence of the investing class, and use this confidence to direct their capital towards sound industrial undertakings. […] It was primarily to fill this place that the new credit banks were formed, and accordingly they gave a prominent place in their programme to the promotion of joint stock companies'. In a more explicit way, Chlepner (1943, pp. 44-45) pointed out that in Belgium 'the principal object of the bank was not a permanent investment, but to make a profit by selling shares'.

financially backward environments in order to overcome the impediments to the emergence of secondary corporate debt markets.

Which were the impediments intermediaries were facing in order to perform successful securitization of corporate debt? The next section will answer this question by resorting to recent theoretical developments in financial economics.

Section 2: Why Universal Banking? Insights from Financial Economics

2.1: The Financial Impediments to Growth

Financial economics offer a number of insights that are valuable for qualifying a modern interpretation of Gerschenkron's intuition. In particular, this literature is useful in trying to assess a question that is crucial for the theoretical foundations of the Gerschenkronian hypothesis – viz., why do firms face obstacles in having access to capital?

The starting point consists of modern theories of capital structure (see Harris and Raviv 1991 for a survey). A particularly relevant strand in this literature is the one pioneered by Myers and Majluf (1984). The authors provide a new foundation to the traditional 'pecking order hypothesis' that is based on an important class of market imperfections: information asymmetries. According to their model, information asymmetries cause equities to be underpriced on the market; as a result, firms will prefer forms of financing that suffer less from such a problem (internal funding first, then loans) and only turn to equity in the last resort. This conveys the idea that market imperfections and the forms in which corporate debt is issued cannot be analyzed separately.

As a matter of fact, imperfections matter a lot in the setting of secondary debt markets: according to Gale (1992), they can be so extreme to prevent markets from emerging. If the cost of acquiring information about new securities is high, an investor may well decide to trade them without becoming informed, but at a price – as this makes him bear a greater risk than in the case of informed trading. In such a situation, the price at which uninformed investors are willing to trade can be so low that the market may not be worth opening. In Gale's (1992) model, the solution comes from standardization: if the availability of a whole class of securities is large, then the investor will have a greater incentive to acquire generic information about them, and this will allow the market to emerge.

To sum up, market imperfections are impediments for firms to have access to capital, especially if corporate debt is issued as an 'exotic' (non-standardized) kind of security on the secondary market. This actually corresponds to the situation of financially backward systems, in which there are extreme information asymmetries and no standardized corporate debt secondary markets. How can these obstacles be overcome? Some kind of device, working as a shortcut to information, is needed. This calls into question the role of *underwriters*.

2.2: Underwriters and Reputation in Emerging Markets

The literature on initial public offerings (hereafter IPOs) widely suggests that the performance of newly-issued securities on the secondary market depends on the identity of underwriters (see Ljungqvist 2007 for a survey). As a matter of fact, underwriters' reputation is the crucial ingredient to by-pass the information asymmetries preventing the market for new securities from emerging.

While this literature is focused on the creation of markets for new securities, the new Gerschenkronian hypothesis is concerned with the creation of new securities markets overall. To all evidence, the step from the first focus to the second one is very small. In shifting to it, however, one is faced with a problem: how can reputation exist in a completely new market? Flandreau and Flores (2009) suggest that prestige may depend on different factors. One of this is capital, which can work as a sort of insurance against moral hazard. A big capital not only prevents underwriters from acting like 'wildcats' – as they have a lot to lose; it also provides them with the means to intervene in the aftermarket and sustain the long-term performance of issued securities. In other words, prestige and size would tend to coincide in brand-new markets.

Still, one is faced with the question of how reputation is created. In the approach followed by Flandreau and Flores (2009), the nature of underwriters is exogenously determined: there are a number of investment banks, whose size (and hence reputation) is given[6]. The argument presented here will go one step further. The size of underwriters will be taken here as an endogenous factor: the crucial point is that intermediaries get big in order to perform underwriting properly. This opens new perspectives on the genesis of securities markets. As much as well-functioning, established markets need reputed intermediaries in order to smooth the effects of information asymmetries, the foundation of brand-new markets implies the creation of reputed (read, big) underwriters from scratch. To our knowledge, this point has never been put forward before as such.

2.3: Universal Banking and the Emergence of Secondary Markets: A Synthesis

This section has argued that financial theory allows to qualify Gerschenkron's impediments to growth as information asymmetries preventing the establishment of secondary corporate debt markets. If one wants a new securities market to emerge, and to emerge stably without collapsing after a short time, one needs prestigious underwriters. While in established markets reputed intermediaries may exist as the product of a long-term evolution, this cannot be the case in brand-new markets. Here, size acts as a substitute for reputation: as a result, the size of intermediaries is an endogenous factor. This explains why banks got universal in financially

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[6] Of course, it is possible to think of alternative strategies than growing big for 'importing' exogenously-determined prestige to a new market. For instance, one can be a reputed intermediary in another market (such as e.g. the one for acceptances) and thus transfer this reputation to the new one. No doubts, this played a role in the case of new universal banks, most of which were founded by already famous private bankers or even by well-known politicians (whose reputation was formed in a non-financial market).

backward environments: as a matter of fact, *universal banking emerged as a means for intermediaries to acquire the critical size needed in order to perform successful underwriting*[7]. With the aim of increasing their balance sheets as much as possible, intermediaries started to perform all kind of operations. In this framework, the distinguishing feature of early universal banks is not so much the combination of different functions (as traditionally emphasized by the literature), but rather the concentration of a relatively important fraction of available capital into a very small number of intermediaries – or differently said, it is not so much the fact that they were *mixed banks*, but rather the fact that they were *joint-stock underwriters*[8].

Now that all the theoretical foundations of the new Gerschenkronian hypothesis have been set, the following sections will take into scrutiny the case of one noteworthy natural experiment in universal banking and industrialization: 1830s Belgium. The empirical analysis of this case will provide for a relevant test of the hypothesis.

Section 3: The Belgian Case, I: Universal Banking and Underwriting

3.1: 1830s Belgium: A Natural Experiment

Following Gerschenkron's (1962) own perspective, Germany has long been seen as the natural field for any investigation on the phenomenon of universal banking. Nevertheless, another country provides a very relevant case for an analysis: Belgium[9].

There are at least three good reasons why studying the emergence of universal banking calls for focusing on 1830s Belgium. To begin with, this was the place and time in which universal banking firstly appeared at all (Chlepner 1926). Second, the intermediaries which appeared in this context were very similar to the 'prototypical' universal bank: they extensively underwrote strictly industrial securities and collected deposits from the public (Witte 1991;

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[7] Why bother creating a domestic corporate secondary market, when one could resort to an established foreign financial center? After all, there are plenty of historical examples of industrial equities successfully floated in foreign markets. The problem, however, rests in finding a reputed investment bank available to underwrite the issue. Corporate securities were perceived as very risky assets (Baskin and Miranti 1997), and prestigious houses were very eager not to connect their names to potentially unsound businesses. Moreover, the fact of being tied to firms operating abroad increased moral hazard problems to a considerable extent. A concrete example will help clarify the matter. In the 1830s, the Paris Rothschilds are known to have largely invested in Belgian industrial companies created by Société Générale (see below), which means that they considered them as a good placement; nevertheless, the house always refused to have its 'brand' explicitly associated to these securities (Gille 1961).

[8] As a matter of fact, early universal banks and private merchant banks used to perform the same range of operations, including deposit-taking.

[9] The relevance of the Belgian case has been already acknowledged as it attracted much interest in the past. As contentious as it may be, this was the opinion of the first President of the Brookings Institution, Harold G. Moulton: 'Although Belgium is a very small country possessed of distinctive economic characteristics, the evolution of the Belgian banking system has been similar in some respects to that of the United States. Although the banking structures and the methods of conducting operations were very different, it appears that Belgian banking played a part in the economic expansion of the country analogous to that played by American banks' (Chlepner 1943, p. V).

Ugolini forthcoming). It is important to underline this, as other early universal banks that have attracted much scholarly attention – such as France's Crédit Mobilier or Germany's *Kreditbanken* operating in the 1850s – lacked such characteristics[10]. The fact that Belgian intermediaries did actually bear them allows to ignore completely two standard criticisms of the Gerschenkron hypothesis – see e.g. Verdier (2003) on the segmentation of savings collection[11] and Fohlin (2007) on the limited role of banks in early industrialization. Third, 1830s Belgium provides us with a sort of natural experiment: due to the country's financial underdevelopment, the incorporation boom took place in a relatively isolated environment, with rather scanty contacts between the domestic and foreign equity markets (Ugolini forthcoming). Although such a claim should not be overemphasized, the fact that domestic agents played by far the most important role in the Brussels market makes the empirical analysis simpler.

The particular relevance of the Belgian case for testing hypotheses on early universal banking and economic development has already been acknowledged by past research (see e.g. Morrison 1967). More than that, it can even be seen as superior to the German one. In the words of Sylla (1991, p. 54), '*Gerschenkron chose Germany as his example of a moderately backward country that employed dynamic banking to industrialize. He might better have chosen Belgium*'.

As for any other emerging market, financial data for 1830s Belgium are rather scanty. They mainly include securities prices at the Brussels bourse and the balance sheets of universal banks, while information on other items (such as e.g. dividends) is only available for a handle of joint-stock companies. Unfortunately, this restricts the scope of the statistical tests that can be performed. Nonetheless, to our knowledge, the original database used in this paper is the first one to cover systematically the very early phases of an emerging secondary market. It has been collected by hand from a variety of sources: appendix A provides some details on the way it was constructed. Moreover, the analysis builds on insights from a rich historical literature[12]: above all, a special mention is deserved by Chlepner's (1926) groundbreaking work, based on an impressive collection of qualitative sources.

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[10] The Péreire brothers' Crédit Mobilier never actually dealt with industrial concerns *stricto sensu*: it extensively underwrote the securities issued by transportation (railways, tramways, liners), utilities (gaz), and real-estate (Paris renovation) companies (Paulet 1999). Being tied to public concessions, such securities were perceived as 'quasi-sovereign' – and thus less risky than 'purely corporate' ones (Baskin and Miranti 1997). Moreover, the French bank never developed depository branches. In a similar fashion, the early German Crédit-Mobilier-like banks focused on railways much more than on truly industrial concerns (Tilly 1966) – and did not engage in extensive deposit-taking activities before the last decades of the century (Fohlin 2007).

[11] Verdier (2003, p. 40) maintains that in Belgium 1) State banking preempted the development of savings banking, and that 2) an early lender of last resort was in place. However, neither argument is correct for the first half of the 19th century, as 1) the State savings bank Verdier refers to (CGER) was founded in 1865 (Ugolini forthcoming), and 2) the National Bank of Belgium was founded in 1850, and its assumption of lending-of-last-resort functions even then is disputed (Buyst and Maes 2008). As a result, both conditions apply only to a much later period than the one in which a universal banking system was established in Belgium.

[12] Early Belgian banking has been the subject of a large number of studies, mostly marked by a business history approach. Recent bibliography includes: Brion and Moreau (1998); Buyst and Van Meerten (1997); De Troyer (1974); Houtman-De Smedt (1997); Kurgan-Van Hentenryk (1996, 1997); Laureyssens (1975, 1992); Mabille, Tulkens and Vincent (1997); Van der Wee (1982); Van der Wee and Goossens (1991); Van der Wee and Van der Wee-Verbreyt (1999); Veraghtert (1992).

3.2: Historical Background

At the beginning of the 19th century, the financial capital of the Belgian region was still located in Antwerp. The seat of Belgium's rich aristocracy, Brussels just hosted a number of tradesmen and a few bankers specialized in wealth management (Ugolini forthcoming). Yet when in 1822 William I of the Netherlands decided to found a chartered bank of issue (and Treasury's agent) in the Southern part of his kingdom, he chose to locate it in Brussels. The choice was tied to the bank's first mission: although officially established to provide credit to infant industries in the Walloon region (as suggested by its name: *Société générale pour favoriser l'industrie nationale*, i.e. Financial Company for the Aid of National Industry), the bank was mainly intended for stimulating the emergence of a market for Dutch sovereign bonds in the South, where general defiance towards the Northern rulers hampered the diffusion of such securities. In order to accomplish this mission, the bank was allowed to perform an almost unlimited range of operations – including issuing banknotes, underwriting securities, trading in stock and bullion, discounting commercial paper, collateralized and uncollateralized lending, deposit taking, and even real-estate management. This made the new creature very atypical with respect to early-19th-century banks of issue, such as the Banque de France or the Nederlandsche Bank (Demoulin 1938, pp. 49-70).

Société Générale (hereafter SG) was supposed to be a purely private joint-stock company, but its capital base was provided by the king himself, who swapped stake with a vast real-estate endowment (crown forestlands located in the Belgian provinces), thus meaning to remain the main shareholder. The rest was intended for sale to the public, but the rights issue failed; as a result, William I found himself with a larger stake than planned (83%). The largest part of the remaining capital (a mere 9% of the total) was held by a group of Brussels notables (landowners, retailers and private bankers), from whom the members of the board came (Brion and Moreau 1998, pp. 23-24). In 1830, the directors took advantage of the opportunity offered by the Belgian revolt: as soon as the king of the Netherlands was declared the enemy *par excellence*, his stake was frozen and crown forestlands were seized as private assets of the company. *De facto*, the bank came to be owned by itself.

Economic distress caused by the Independence and ensuing international tensions had two important consequences on the shaping of the national financial structure. First, municipal savings banks, which had heavily invested in Dutch sovereign bonds, went bankrupt, and SG was called to a rescue by absorbing them: as a result, the bank assumed large deposit-taking activities, which were further developed in the following years (Ugolini forthcoming). Second, as the months passed without delivering a recovery, many Belgian industrial firms, still in their infancy, defaulted on the debts they had incurred in order to set up their fixed capital value. Due to the official mission William I had conferred to SG, the bank found itself very much exposed towards the industrial sector, especially coalmining and metallurgy in the Mons district (De Troyer 1974, p. 110). As a consequence, since late 1834, SG negotiated with defaulting entrepreneurs the conversion of frozen debts into stake, thus founding a number of new joint-stock companies. As argued by Briavoinne (1839, p. 230), the bank ventured into incorporation with the aim of *mobilizing* its own assets: mobilization through incorporation meant attracting fresh capital to previously staggering partnerships by

transforming them into promising joint-stock companies. The incorporation wave had started, and the first prototype of universal banking was born.

In 1834, a conflict burst between SG and the Belgian government, willing to seize the assets of the Dutch crown appropriated by the bank. In order to challenge SG's monopoly, in January 1835 a new joint-stock bank, called Banque de Belgique (hereafter BdB), was founded. The bank was intended to replace SG as the Treasury's agent, and therefore to become Belgium's main bank of issue – a step that the government did not eventually dare to take. BdB was designed on the model of SG in all details: the bank was allowed to perform all kinds of investment banking operations. This was tied to the fact that a number of private bankers and industrialists needing to restructure the corporate debt of a number of firms (especially from the Liège region) were sitting in the board (Chlepner 1926, pp. 63-67). As a result, as SG began to float new companies on the Brussels stock exchange, BdB followed suit. In the space of a few months, their example was imitated by a number of privates unconnected with banks.

The Belgian incorporation boom came to a sudden stop in December 1838, when an exogenous shock (harsh diplomatic tensions with the Netherlands, which sparked the fear of a new war) aroused a run on banks by depositors and banknote holders. BdB was unable to withstand the run: the bank was forced to suspend payments and had to be bailed out by the government. In contrast, SG managed to import bullion from abroad, and thus held out without suspending payments[13]. The effects of the shock were long-lasting: the Brussels stock market did not see a new incorporation wave before well into the 1850s (Ugolini forthcoming).

3.3: Universal Banking and Underwriting: Theoretical Issues

Before starting to analyze empirical evidence on 1830s Belgian underwriters, there are a couple of issues related to the structure of financial intermediation that are worth pointing out – as they may not coincide with the assumptions of much of the literature on underwriting. The first one concerns the structure of the primary market. This is generally taken as a competitive one by the literature. However, would-be joint-stock companies in emerging markets were typically not free to choose their underwriter, as they were already tied to a specific intermediary *before* incorporation[14]. Such a complete lack of competition on the primary market implies special incentives for underwriters: while in the traditional approach excessive underpricing will damage the underwriters' position in the long term, this will not be the case here. Moreover (and most notably), in stark contrast with much of the literature, this circumstance makes the structural features of borrowers an almost negligible element in the underwriting process.

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[13] With the intermediation of the Rothschilds, SG sold Dutch bonds in Amsterdam for gold guldens, exchanged guldens for silver francs in Paris, and shipped francs to Brussels (Gille 1961, pp. 79-92).
[14] On the one hand, firms that pre-existed the IPO were heavily indebted with the underwriting bank, and thus had no choice but negotiating the conversion of debt into stake. On the other hand, firms that did not pre-exist the IPO were actually set up by the bank itself, which bought the underlying assets on its own account.

The second issue concerns the underwriting process. Unlike in most models (but according to widespread 19th-century practice), the underwriting process takes place here through the 'firm commitment' system: underwriters are committed to buy the whole issue before reselling it to the public. This implies a different interpretation of underpricing – i.e. of the difference between issue price and market price. In the vast family of models of IPO underpricing originated by Rock (1986), price run-ups are interpreted as unbiased indicators of information asymmetries – i.e. the 'lemons premium' that issuers are obliged to pay in order for uninformed investors to be attracted[15]. In this framework, the aftermarket price is assumed to be the equilibrium price. Yet financial economists are not unanimous on the way underpricing should be interpreted. A growing body of the literature argues that price run-ups do not reveal the 'lemons premium', but rather some kind of aftermarket intervention by underwriters aimed at favoring insiders[16] – be it direct (such as price support) or indirect (such as sentiment creation)[17]. In the light of this, underpricing will not be taken here as an unbiased indicator of information asymmetries; more generically, it will be interpreted as an indicator of the success of the underwriting process. In practice, success is equivalent to the insiders' profits from their participation to the issue.

Figures 1, 2, and 3 about here

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[15] In some cases, such as e.g. Flandreau and Flores (2009), underpricing also includes (in the upper segment of the primary market only) a monopoly rent. In the approach adopted here, such a rent is impossible to identify as there is no segment of the primary market that is fully competitive.

[16] The term 'insider' is not used here in the same sense as Booth and Smith (1986) – viz. to indicate an agent who has access to information *on the firm* undisclosed to the underwriter. It is rather used to indicate who has access to information *on the underwriting process* – which is, of course, disclosed to the underwriter.

[17] In the family of models originated by Rock (1986), the issuer is not aware of the correct price of the issued securities, which is revealed through the behavior of informed investors: but taking some investors' information as superior to the issuers' one is disputable. Moreover, the assumption that aftermarket prices are unbiased estimates of equilibrium value has been questioned on the basis of empirical evidence of long-run underperformance of IPOs (Ritter 1991). Such criticisms have produced alternative approaches to the subject. Some scholars have developed 'institutional' explanations. For instance, Ruud (1993) argues that underpricing is due to the effects of underwriters' interventions in the aftermarket, aimed at supporting prices. Ellis, Michaely, and O'Hara (2000) find that underwriters always tend to become market makers in the aftermarket, and that their trading profits increase as the issue is more underpriced: they conclude that there could be an incentive for underwriters to enhance underpricing (albeit limited by competition). However, not all IPOs experience price support by underwriters (Asquith, Jones, and Kieschnick 1998). Moreover, the profits of price stabilization go to large, institutional traders – i.e. insiders (Benveniste, Erdal, and Wilhelm 1998). This opens scope for a distinction between insiders vs. outsiders, rather than a distinction between informed vs. uninformed investors. Behavioral models of IPOs, taking into account such a divide, have been developed. One example is provided by models of sentiment trading, where sentiment is exogenously determined. For instance, Derrien (2005) divides investors into rational insiders vs. irrational outsiders: assuming costly aftermarket intervention, the underwriter sets the offer price to allow the firm to benefit from a higher valuation than the insiders' one, and insiders benefit from selling their allocations to outsiders with higher valuations; hence, IPOs are overpriced in the long term, and bullish outsiders are the ones who leave money on the table. An alternative view is proposed by Welch's (1992) informational cascade model: outsiders observe insiders' behavior and ignore their own private information, thus engendering a cascade that leads to a rapid success (or failure) of the IPO. One prediction of this model is that underwriters have an incentive to have relevant information *hindered* rather than *revealed* in the market: as a result, outsiders' bullish expectations are rational and endogenous, rather than irrational and exogenous.

3.4: Universal Banking and Underwriting: Evidence

3.4.1: The Belgian Incorporation Boom
The Belgian incorporation boom of the 1830s is illustrated by figure 1. Starting from 1833, the number of companies founded kept growing until the 1838 peak – to collapse almost completely during the 1839 crisis. In terms of the volumes of capital demanded to the public, however, the crucial years were 1835 and 1836, when the most capital-intensive ventures were launched. Figure 2 shows which industrial sectors were touched by the rights issues: apart from banks and investment trusts[18], incorporations were concentrated in the field of heavy industry – viz. the coal and iron production, amounting for more than one-third of the total. Interestingly, companies tied to public concessions were completely absent from the picture: the State did not play any role in the process[19].

3.4.2: Universal Banks in the Incorporation Boom
What about universal banks? Figure 3 provides a first assessment[20]. Banks acted as underwriters for 37% of the new companies founded during the decade; if one looks at the amount of capital underwritten, though, they cover more than 60% of the total[21]. Yet in the secondary market for corporate securities, the role of banks becomes paramount: equities floated by SG and BdB represents 86% of the number of new industrial stocks listed at the Brussels bourse. Of course, this is a rather rough criterion for evaluating such a role; a better assessment would be in terms of stock market capitalization. Yet unfortunately, it is impossible to reconstruct the capitalization of non-affiliated companies, as data on both their start-up capital and their mid-term price performance are missing[22]. Albeit incomplete, an estimate of market capitalization can be worked out for affiliated companies (figures 4.1-2). The picture shows that the two universal banks were very different from each other: as much as SG had more than four times BdB's capitalization, SG-affiliated companies had a total market value of roughly four times BdB-affiliated companies. Moreover, while the market value of the BdB-affiliated firms more than halved in 1839, the capitalization of SG-affiliated firms decreased much less during the crisis.

3.4.3: Price Run-Ups
As it has been already pointed out, a crucial factor in the underwriting process is underpricing. The most popular measure of underpricing is the so-called IPO discount, i.e. the

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[18] This highly-concentrated sector includes the biggest Belgian companies by market capitalization: Banque de Belgique (holding company), Société de Commerce, Société Nationale, Mutualité Industrielle, Actions Réunies (see figures 4.1-2).
[19] This was partly due to the fact that the government had already begun the construction of the main railway lines of the country on its own account (Buelens and Van der Broeck 2005).
[20] Companies in our sample are divided into three groups: SG-affiliated, BdB-affiliated, and non-affiliated ones. The concept of 'affiliation' had a precise meaning at that time: an affiliated company was both incorporated and underwritten by the universal bank, which also appointed the first board of directors and performed the functions of house-bank of the new firm. As a result, affiliation had a long-term branding effect on securities.
[21] At the light of these data, Mokyr's (1976, pp. 65-66) contention that universal banks did not play an important role in promoting Belgium's industrialization appears seriously challenged.
[22] Of course, the fact that such critical data for non-affiliated companies are missing is *per se* an indicator of the negligible role played by these firms on the stock market (see below).

difference between the issue price and the market price of the stock at the end of the first day of flotation. Unfortunately, available data do not allow for a computation of IPO discounts in 1830s Belgium (see appendix A for details). In order to overcome this problem, the measure of underpricing taken here consists of the difference between the issue price and the mid-term equilibrium price of the stock – computed as the average price over the first six months in which the stock appears on bulletins. This measure is called the *mid-term price run-up*. Table 1 compares our mid-term price run-ups with actual IPO discounts for the only four stocks for which the latter quantity is computable. As expected, the two measures of underpricing differ, but they are of the same order of magnitude – except in one very special case[23]. Figure 5 shows mid-term price run-ups for the new issues made during the 1830s. Three general patterns can be observed: on average, SG-affiliated stocks display the higher degree of underpricing; BdB-affiliated stocks display a lower degree of underpricing; and non-affiliated stocks are generally overpriced. For all classes, underpricing declines over the years[24].

3.4.4: Insider Trading

Due to the structure of the underwriting process, price run-ups provided a source of immediate gains for subscribers, who earned the difference between the issue price and the market price. As a consequence, it is interesting to determine who the subscribers were.

In fact, the mechanism of allocation of new issues was very opaque. In the case of universal banks, bearers of affiliated securities were granted the right to subscribe new shares underwritten by the bank – which amounted to a sort of informal embedded call-option on future IPOs (see appendix B). But criteria for allocation were unclear, and insiders (typically the directors themselves of banks) managed to secure the lion's share in the business (Chlepner 1926, pp. 87-91). As a result, the directors of banks had a clear incentive to multiply new IPOs: this explains why the number of incorporations skyrocketed in the space of a few months. This rent was extracted by subscribers at the expense of the underwriter: for newly-issued shares held on its own account, the bank was paid much less than the aftermarket price.

3.5: Universal Banking and Underwriting: A Sum-Up

This section has looked at the role of universal banks as underwriters of new industrial securities in Belgium's 1830s incorporation boom. The first result has been to show that universal banks were born at the very same moment in which intermediaries needed to discharge corporate debt from their own portfolio by creating a brand-new secondary market. Moreover, a focused empirical analysis of the underwriting process has pointed to the following conclusions: 1) access to the secondary corporate debt market through reputed

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[23] See next footnote.

[24] These conclusions do not seem to be valid for what concerns non-affiliated companies in 1838. However, these results are heavily influenced by one very atypical case, i.e. the Asphaltes Seyssel stock. The price of this stock experienced a spectacular rise during some weeks, it rapidly lost momentum, and then disappeared completely from listings (see figure 7.3): this gives a very high average price that cannot be considered as an equilibrium price. But if this aberrant point is eliminated from the chart, one gets general overpricing for non-affiliated issues and a declining trend line for this class of securities as well.

underwriters was an option only for a handful of firms affiliated to universal banks, while non-affiliated firms could only issue securities directly on the market; 2) the success of IPOs was direct proportional to the size of the underwriter; 3) insiders profited from the flotation process by pocketing the IPO discount, and this provided them with a big incentive to make the bank they controlled multiply new issues. Differently said, universal banks acted as the gatekeepers of the secondary corporate debt market, and insiders took profit from this monopoly power by extracting a rent from the underwriting process.

Figures 4.1-2 and 5, and Table 1 about here

Section 4: The Belgian Case, II: Universal Banking and Certification

4.1: Universal Banking and Certification: Theoretical Issues

How much risky did the market perceive the new corporate securities floated on the Brussels bourse? And was this perception justified by long-term performance? This section aims at investigating if the certificatory role of underwriters was effective in the longer term than the flotation period.

Before entering into detail, it is worth spending some words on the nature of the information asymmetries certification is supposed to overcome. Basically, there are two different ways of qualifying them. One is to think that information asymmetries are the effect of moral hazard. This has an extreme form in some approaches related to this one, such as e.g. Flandreau and Flores (2009) who deal with the underwriting of sovereign bonds: as no way for seizing collateral does exist in case of voluntary default of a sovereign entity, the certification function provided by underwriters is a mere guarantee that the borrower will repay its debt.

When one comes to variable-income corporate debt[25], however, the problem assumes different contours. Of course, moral hazard plays a role (specifically in the form of agency problems); however, this kind of concerns is limited by the fact that firms are subject to domestic legislation, and their assets can be seized in case of default. As a result, information asymmetries in corporate debt markets (especially in the case of innovative firms) mostly derive from incertitude on future performance, and certification provided by underwriters involves some form of industrial expertise. As a result, the certificatory function of universal banks will be interpreted here as the ability to influence the public's expectations of future dividends.

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[25] For brevity's sake, the case of purely fixed-income corporate securities is not discussed here – as it played a limited role in early corporate debt markets. For some comments on the nature of early corporate securities, see appendix B.

4.2: Universal Banking and Certification: Risk Pricing

4.2.1: Dividend Yields

In order to assess the performance of newly-floated corporate securities on the secondary market, one can start by determining 1) expected returns and 2) the spread between the yield of industrial shares and that of Belgian government bonds: through the combination of the two factors, it is possible to measure the perceived degree of riskiness of industrial stocks with respect to a crucial asset class such as national sovereign bonds. The simplest way for getting such results is based on computing the current dividend yield of each stock (i.e. the last dividend/price ratio)[26].

Unfortunately, data on dividends paid by Belgian industrial companies are exceedingly rare, being available just for a handful of them. Yet securities issued in 1830s Brussels were not simple stocks, as a minimum dividend (a coupon) was always granted to the holder[27]. As we have data on coupons paid by almost all industrial companies, figures 7.1-3 compute the so-called *current fixed-dividend yield* of each security (i.e. the coupon/price ratio). In order to ease comparison, the current dividend yield of Belgian government bonds is also added to the charts. Appendix B provides details on these computations, and explains how to read the charts (also see figure 6 for a graphical example).

In figures 7.1-3, results are sorted by underwriter. Some very different patterns take place: the current fixed-dividend yield is generally much lower than that of government bonds for equities issued by SG; only slightly lower for equities issued by BdB; and higher for equities issued by others.

Figures 6 and 7.1-3 about here

4.2.2: Firm-Specific Equity Premia

Further qualification is needed. The difference between the coupon/price ratio of an industrial stock and that of government bonds is determined by the difference between 1) the current variable-dividend yield (i.e. the ratio between how much the last paid dividend exceeded the coupon and the current price), which is assumed to be a measure of the expected future variable dividend, and 2) the perceived degree of riskiness of that industrial stock with respect to sovereign bonds, i.e. the *firm-specific equity premium* (see appendix B for more details). Figures 7.1-3 fail to tell what the absolute size of these two factors was. In other words: were SG-affiliated firms paying extremely high variable dividends, and yet suffering from only slightly lower risk premia? or were they paying low variable dividends, but enjoying very low risk premia?

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[26] This ratio has traditionally been considered as a factor reflecting expected returns on equities, and it is even seen as a good predictor of actual future returns under the assumption of perfect markets (Fama and French 1988). It has also been used to estimate equity risk premia, i.e. the average spread between government bond yields and equity yields (Rozeff 1984).
[27] Incidentally, the fact that early-19th-century equities had a bond-like component is consistent with the pecking-order hypothesis (Myers and Majluf 1984; Baskin and Miranti 1997).

In order to answer this question, one can look at the total dividend/price ratio of those few firms for which data on variable dividends paid are available[28]. In doing this, it must be bore in mind that the available data suffer from the survivor bias – which means that they supposedly cover the high-quality end of the stock market only. Evidence is organized in figure 8.1, where data are sorted per underwriter, and figure 8.2, where data are sorted chronologically (a boom year, i.e. 1838, and a bust year, i.e. 1839, are taken into scrutiny). Market prices of industrial stocks seem to reflect actual total dividends paid by companies: on the whole, one does not find very low current total-dividend yields[29]. Yet one does not find very high current total-dividend yields either: in the framework adopted here, this depends on the fact that the perceived risk of industrial stocks is close to zero[30].

As a result, it is possible to say that the lower current fixed-dividend yields of SG-affiliated stocks observed in figures 7.1-3 were tied to lower firm-specific equity premia with respect to other industrial securities, and not to higher past dividends paid. If one supposes that this situation also applies to the stocks for which data on variable dividends are missing, one can conclude that a correlation existed between the firm-specific equity premium of industrial stocks and the size of the underwriter: the bigger the underwriter, the lower the perceived risk.

Figures 8.1-2 about here

4.2.3: The Equity Premium: A Comparison

Figures 8.1-2 show that at the time of their first appearance on the Brussels bourse, some potentially very illiquid securities such as industrial stocks suffered from very low firm-specific equity premia. This finding seems to match with the historical series of the US average equity premium computed by Siegel (1992), who finds a very low (and often negative) premium for the first half of the 19th century. However, such a comparison needs qualification. Goetzmann and Ibbotson (2006, p. 37) spot two sources of concern in the mentioned series: 1) American financial markets were completely different from European ones at those times, but most of all 2) the yield of 19th-century sovereign bonds cannot be

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[28] Available data cover eight SG-affiliated companies, two BdB-affiliated companies, and no non-affiliated company. SG-affiliated companies include: SG Holding Company (financials), HF Couillet (ironworks), Hornu et Wasmes (coalmining), Levant du Flénu (coalmining), Produits au Flénu (coalmining), Sars-Longchamps (coalmining), Sclessin (ironworks), Manufacture de Glaces (glassworks). BdB-affiliated companies include: BdB Holding Company (financials), Actions Réunies (financials).

[29] Actually, the spike in prices observed in the first half of 1838 follows a wave of announcement of high dividends. This means that the hypothesis of a price bubble (i.e. that expected future returns are much higher than past ones) can be ruled out. This finding corroborates the assumption that expectations on future returns are based on observed past dividends. As a result, the firm-specific equity premium can be taken as reflecting expectations on the deviation of future returns from past ones.

[30] In figures 8.1-2, the firm-specific equity premium is given by the distance between the stock's total dividend yield and the 5% yield line. Not only were dividend yields for SG-affiliated firms generally in line with government bond yields (except in some cases in 1839, when the crisis impacted all stock prices); but dividend yields for the holding company of the group were even lower, which means that SG stock enjoyed a negative firm-specific equity premium. BdB-affiliated securities also suffered from apparently small equity premia (except for 1839, when their prices halved due to the crisis). However, it must be noted that these data concern only the two best performers within the group (i.e. the holding company, and Actions Réunies): the other firms of the group probably suffered from higher equity premia.

possibly taken as the US riskless interest rate[31]. This makes Siegel's (1992) series of the US average equity premium hardly a benchmark for the Belgian case[32].

Hwang and Song (2006) compute the average equity premium in the UK, a better term of comparison for Belgium. They find it to equal a mere 0.83% for the whole 19th century (1830-1913). Yet constructing a better-quality series covering the period 1825-1870, Acheson et al. (2009) find buoyant average stock returns in Britain (more than 8% in the late 1830s), largely exceeding Consol yields (around 3.5% in the same years). Buelens and Van der Broeck (2005) compute the equity premium for 19th-century Belgium, but limited to the railway sector only. They find it to be positive and small on average (around 1.5%), but with extreme fluctuations on a year-on-year basis. However, due to the specificity of the asset class covered by their sample (quasi-sovereign rather than purely corporate securities are at issue)[33], it is difficult to draw a comparison between their results and those of this section. In the end, the fact that firm-specific equity premia of industrial stocks issued by universal banks (and only those issued by universal banks) were extremely low is indeed a noteworthy result.

4.3: Universal Banking and Certification: Long-Term Performance

So far, the analysis has been limited to the performance of newly-issued stocks during the boom-and-bust cycle. What about the long term, though? How did the firms launched in the 1830s behave during the stagnation of the 1840s?

Figures 9.1-2 compare the total dividends paid by a number of companies (the only ones for which information is available) up to the 1848 crisis. Despite the caveat that the sample may suffer from the survivor bias, some interesting facts do emerge nonetheless. As early-19th-century stocks had a bond-like component which granted the bearer a minimum dividend every year, paying a lesser dividend than the statutory one (typically 4 or 5%) was equivalent to a default.

Figure 9.1 shows that throughout the 1840s, SG-affiliated companies generally continued to pay high dividends – albeit lower than in the 1830s. There are exceptions, though: three companies 'defaulted' on at least one due payment (the ironworks Sclessin from 1840 to 1845; the ironworks Couillet from 1842 to 1848; and the colliery Hornu et Wasmes in 1847). Does this mean that these SG-affiliated securities were turning into junk bonds? Archival evidence suggests this was not the case. The enduring stagnation of the 1840s prompted a

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[31] As a matter of fact, due to weakness of the Federal budget, Treasury bonds used to be rather poorly reputed before the Civil War, up to the point that American States used to borrow at better conditions than the Federation itself (Vam Malle 2008). Moreover, trading in Federal bonds was discontinued in the first half of the century as it completely ceased during the Jacksonian era. In order to overcome these shortcomings, Siegel (1992, p. 31) takes as the riskless rate a composite series of Treasury bond and high-grade municipal bond yields.

[32] Unlike the US, Belgium was a centralized country with an efficient tax-farming system, and national sovereign bonds were actively traded on the Brussels and Antwerp bourses. Moreover, the quality of data used by Siegel (1992) has also been questioned. The problem is scrutinized by Goetzmann et al. (2001), who recognize that available data on 19th-century US dividends are exceedingly scarce. As a consequence, they construct two different series of average dividends according to different assumptions, but the difference between the two is so large that a proper appreciation of actual equity premia is impossible.

[33] When railway stocks began to be actively traded in Brussels in the 1850s, this industry hardly was not a risky and an innovative one anymore: its profitability had already been shown by the successful performance of the railway network built and run by the State during the 1830s.

general restructuring of heavy industries aimed at improving competitiveness; this came at a cost for shareholders. However, it was the bank itself to suffer most of the losses: as a matter of fact, SG and the investment trusts it controlled (Société de Commerce, Société Nationale, and Mutualité Industrielle) actually owned 50.6% of Sclessin, a 78% of Couillet, and 59% of Hornu et Wasmes (Brion and Moreau 1998, pp. 95-103). Therefore, SG was continuing to do considerable efforts in order for its reputation not to be impaired by the consequences of the 1839 crisis.

The picture is different for BdB-affiliated securities. Figure 9.2 shows that the two biggest companies of the group (the holding company BdB, and the investment trust Actions Réunies) 'defaulted' from 1842 to 1846. This was tied to the fact that the post-crisis strategy of the bank diverged substantially from the pre-crisis one: newly-appointed directors (tied to the shareholders who had stepped in with the 1841 recapitalization) aimed at transforming BdB into a purely commercial bank by liquidating its investment banking activities (Chlepner 1926). As a result, BdB had by then no interest in investing into its reputational capital as an underwriter[34].

Figures 9.1-2 about here

4.4: Universal Banking and Certification: Sum-Up

The findings of this investigation into the market perception of corporate risk and the long-term performance of issued securities can be summarized as follows: 1) the perceived degree of risk of industrial stocks depended on the size of the underwriter; 2) securities affiliated to the biggest underwriter had lower dividend yields than government bonds; 3) the certificatory function of underwriters proved effective in the case of the most prestigious one, less so in the case of less reputed ones. All in all, the market perception of corporate risks was heavily influenced by the presence of universal banks.

Section 5: The Belgian Case, III: Universal Banking and Liquidity

5.1: Universal Banking and Liquidity: Theoretical Issues

The fact that securities are *listed* on a stock market does not mean that they are actually *traded*. The degree of liquidity is one of the major features distinguishing peripheral from

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[34] One could object that commercial banks are not exempt from reputational blows in case they pay low dividends *on their own stock*. However, the 1841 recapitalization agreement provided for the new capital to be issued as preferred stock and to be kept distinct from the old stock issued in 1835 (i.e. the one for which data are provided here). As a result, the 1841 issue was considered as the 'true' stock of the new company – and was actually never 'defaulted' during the 1840s.

core financial centres. This section deals with the role of underwriters in providing liquidity to newly-issued securities.

The question of the liquidity of newly-issued securities has seldom been addressed specifically by the literature on underwriting. Actually it is generally assumed that flotation takes place in an established financial center: in this context, a transfer of trading activities from other floors is easy to attain. In the case of emerging financial centers, though, the way in which brand new secondary markets become liquid is not obvious, and deserves investigation.

Why such an emphasis on liquidity? Financial economists now generally acknowledge that liquidity plays a crucial role in asset pricing (Acharya and Pedersen 2005). Empirical evidence proves liquidity to be a very significant factor: this is the case both when one compares assets traded in established markets with assets traded in emerging ones (Bekaert, Harvey, and Lundblad 2007) and when one compares sovereign with corporate bond yields (Chen, Lesmond, and Wei 2007). This is due to the fact that investors expect to face liquidity shocks and borrowing constraints in the future, so that they ask for a compensation for holding assets with high transaction costs (Huang 2003).

As a result, one would expect underwriters to keep a close eye on the liquidity of the securities they issue, and to intervene in the market in order to discard the risk of illiquidity. This section investigates if this was the case in 1830s Belgium.

5.2: Universal Banking and Liquidity: Measuring Liquidity

Different measures of liquidity have been proposed by financial economists (see Goyenko, Holden, and Trzcinka 2009 for a survey). In the simplest form, liquidity is estimated by looking at bid-ask spreads, a proxy for transaction costs: the higher the transaction costs, the lower the liquidity of the asset. In the case of emerging markets, however, even reconstructing bid-ask spreads is often an impossible task (Bekaert, Harvey, and Lundblad 2007). This is also the case for 1830s Belgium. In order to overcome this problem, it is useful to follow the suggestion by Lesmond, Ogden, and Trzcinka (1999) to focus on non-zero returns to equity. The idea is straightforward: lack of price movements over time is interpreted as evidence of illiquidity.

Figure 10 shows the number of securities listed on the Brussels stock exchange displaying non-zero week-on-week returns. It is possible to observe increasing liquidity up to the first months of 1838, and then a collapse in the summer of the same year. Although the results of these computations should not be overemphasized (they could be partially tied to the way in which data are provided by sources: see appendix A), one element clearly emerges from the picture: securities issued by universal banks were relatively liquid, while non-affiliated ones were utterly illiquid. Was this merely the effect of certification supplied by underwriters, or were there other factors at work?

5.3: Universal Banking and Liquidity: Liquidity and Lending-of-Last-Resort

The liquidity of a financial asset crucially depends on the presence of a 'lender of last resort' (LLR) operating on the market for that specific asset. Through its commitment to lend on the asset at any moment at some price, the LLR provides a ceiling to transaction costs; in other words, the presence of a LLR acts as a guarantee against future liquidity shocks. As a result, assets covered by such a guarantee have a clear competitive advantage with respect to assets exposed to illiquidity risks. European central banks started enacting LLR policies in the mid-19th century (Bignon, Flandreau, and Ugolini 2009), but for many decades they limited their action to a rather narrow range of securities – mainly high-quality commercial paper and a limited number of sovereign and quasi-sovereign securities (Bagehot 1873, VII.73; Ramon 1929, pp. 173-175 and 255): corporate securities were left outside this privileged list. This obliged underwriters to step in: as a matter of fact, 19th-century banks saw as a positive duty the commitment to lend on the securities they had themselves issued (Flandreau and Sicsic 2001).

What about Belgian universal banks? For both banks, available information on the securities accepted as collateral covers one single date only – viz. the day they were obliged to disclose their books to inspectors in the event of their bailout: December 13, 1838 for BdB, and March 1, 1848 for SG[35] (tables 2.1-2). Evidence shows that universal banks almost exclusively lent on the securities they had underwritten themselves, while they only exceptionally took other securities (sovereign bonds included) as collateral. As confirmed by qualitative sources as well (Malou 1863, p. 45), Belgian universal banks did actually grant their affiliated securities eligibility for loans – i.e. they took the engagement of acting as LLR for them.

To what extent did banks act as LLR on their affiliated securities? Figures 11.1-2 give the total sums lent on securities by SG and BdB during the boom-and-bust cycle. They clearly show that as time passed, banks became more and more involved in meeting the demand for loans on this kind of assets. In the case of SG (for which we have data on the average sums engaged in these operations every year), lending on securities peaked in 1839; while in the case of BdB (for which we have only end-of-year figures), lending on securities was declining at the end of 1838 – when the bank had already fallen victim to the run. Thus, as the speculative wave was losing momentum, more and more customers were bringing their securities to the banks in order to have cash. This means that borrowing conditions on the market were worse than those offered by banks. As a result, from being the lenders of last resort, banks ended up being the *market-makers of last resort* of affiliated securities, as the market for such securities ceased to exist outside the banks themselves. This explains why, on the one hand, the observed liquidity of BdB-affiliated securities evaporated once the run prevented BdB from continuing to perform its lending policies; and why, on the other hand,

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[35] Although data for SG concern a much later date than the events analyzed here, we know that most loans had been contracted back in 1839 and systematically rolled-over thereafter (Annales Parlementaires 1848). As a consequence, we can feel confident that these data are representative of SG's policy during the 1830s.

the observed liquidity of SG-affiliated securities was not completely impaired by the crisis, as SG continued to lend up to the point of 'absorbing' the whole market[36].

5.4: Universal Banking and Liquidity: Sum-Up

This inquiry into the liquidity of the Belgian corporate secondary market allows to conclude that 1) securities issued by big underwriters were fairly more liquid than non-affiliated ones as 2) the underwriters' commitment to act as LLR for affiliated securities provided a ceiling for transaction costs, but 3) such a ceiling was soon reached in the open market, and banks were forced to step in and substitute for the whole market. In other words, even the most important of the functions of markets, i.e. the provision of liquidity, heavily depended on the action of universal banks.

Figures 10 and 11.1-2, and tables 2.1-2 about here

Section 6: The Belgian Case, IV: Summary of Results

This case-study on the emergence of universal banking in 1830s Belgium bears a number of important lessons that are relevant to support the new Gerschenkronian hypothesis. They can be summarized as follows:

I)   Universal banking was 'invented' as a way for 'mobilizing' frozen industrial debts – i.e. as a way for creating a corporate secondary market. This meant attracting fresh capital from outsiders to the new trading floor.

II)   If successful, this securitization process proved very profitable for subscribers; but as subscribers mostly coincided with insiders, an incentive existed for banks to multiply new issues.

III)   Underwriters provided their certification to new issues, and effectively so: affiliated corporate securities were perceived as less risky, and thus became attractive for outsiders as well. However, such a perception was also crucially tied to the lending policies of banks – which amounted to an insurance against the illiquidity of securities. The drop of the liquidity provision would have undermined the whole system; in order to avoid such an outcome, banks accepted to become 'market-makers of last resort'.

IV)   In order to provide for the establishment of the corporate secondary market, banks entered deep into every aspect of the functioning of the market itself (underwriting, certification, liquidity provision): they really were *universal* in the sense that they were present in every single corner of the financial system. The

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[36] The effect of this 'absorption' of the market by the bank was the complete immobilization of the assets side of its balance sheet: although SG managed to avoid suspending payments in 1839, its structure became extremely fragile and could not survive the following liquidity crisis in 1848 (Annales Parlementaires 1848).

market proved unable to stably develop its own liquidity 'outside banks': as soon as conditions turned adverse, banks ended up 'reabsorbing' the whole market they had created. This was due to the fact that despite initial success, in the long term banks failed to attract enough outsiders to the new trading floor. However, the fact that the events of the 1830s resulted in a big market failure does not mean that the methods followed by banks were fundamentally insane. As a matter of fact, the very same methods were applied anew by Belgian universal banks in the following decades, and then met a considerable success in creating new securities markets (Ugolini forthcoming; Van Overfelt et al. 2009).

V)   At the end of the game, insiders were the winners – while the losers were not really outsiders, but rather the banks themselves. As long as the liquidity provision was granted by banks, outsiders had the chance of avoiding potential losses and to defer realization of the loss *ad libitum* (Annales Parlementaires 1848). Hence, when the market unravelled, banks were the ones to suffer the long-term losses tied to the boom-and-bust cycle as they had to reabsorb a huge amount of the securities they had issued (see figures 11.1-2). In the end, the fact that universal banks found themselves with permanent industrial portfolios was the outcome of the crisis rather than the effect of a deliberate choice.

VI)   During the 1830s, SG stock displayed a negative equity premium (see figure 12). This was not due to the fact that SG was 'a State within the State' as its opponents argued (Chlepner 1926, p. 129), but rather to the fact that Belgium was 'a State without a bank'. As no intermediary was committed to act as LLR on their market, Belgian sovereign bonds faced the risk of illiquidity – and such a risk was priced by the market. These circumstances explain why, in the following decade, the government made considerable efforts to create a new bank of issue (the National Bank of Belgium) whose main task was the maintenance of low interest rates in the domestic market – which meant improving borrowing conditions not only for one banking group, but for the country as a whole (Ugolini 2010).

VII)   The proposed reformulation of the Gerschenkron hypothesis is fully supported by the Belgian case: when the primary market for corporate debt became insufficient in order to meet the capital needs of developing industries (like the Walloon coal mines and ironworks), universal banking emerged as a strategy to implement the establishment of a corporate secondary market in a financially backward environment (as 1830s Belgium actually was). In order to perform this successfully, banks needed to act as the ultimate warrantors of the workings of new markets: such a commitment was made credible by their size. Hence the incentive for intermediaries to concentrate in their balance sheets as many financial resources available in the domestic system as possible.

These findings open new paths for future research. The following section will review them.

Figure 12 about here

Section 7: Conclusions

This paper has proposed a reassessment of the age-old controversy on universal banking and growth by shifting it to a different plan. While universality has traditionally been seen as a device for reducing adverse selection *in the banking system*, this paper has argued that it should be seen as a device for reducing adverse selection *in the stock market*. As reputation and size of intermediaries are endogenous factors to the system, going universal allows banks to reach the critical size needed in order to perform successful securitization of corporate debt. The results do not only put forward a brand-new, testable interpretative paradigm for the history of corporate finance in the Western world[37]. They also shed new light on the genesis of financial markets overall. They suggest that founding a new market means establishing a whole package of services: this includes intermediaries providing crucial functions such as underwriting, certification, and liquidity provision. As a consequence, creating a new financial market is not merely a question of institutions: it is also a question of 'industrial organization' – i.e. the structure of intermediation and the market power of participants. The implications of these findings for developing countries cannot be underemphasized.

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[37] Scope is provided for a reassessment of the results of case-specific investigations into a new general framework. The new Gerschenkronian hypothesis is indeed consistent with available historical evidence beyond the boundaries of the Belgian case. Universal banks did not appear in Britain and the Netherlands because financial markets were advanced and sufficiently reputed intermediaries specialized in floating corporate securities existed in those countries (Collins 1998; Jonker 1996). They did not appear (at least in their European form) in the US, due to a very peculiar regulation leading to extreme fragmentation of the banking system; the effect of such a segmentation was the underdevelopment of secondary corporate debt markets until well into the 20th century (O'Sullivan 2007). They did ephemerally appear in France (see the case of Crédit Mobilier) in order to compete with established intermediaries in the sector of quasi-sovereign securities (hence the harsh competition between the Péreire brothers and the Réunion Financière led by the Rothschilds: Landes 1956), but rapidly disappeared thereafter (Lévy-Leboyer and Lescure 1991). Yet they did appear in almost any other financially backward country facing industrialization, including Russia (Crisp 1967; Bovykin and Anan'ich 1991). The new hypothesis could be further buttressed by a systematic analysis of the motivations of the founders of new universal banks. On the one hand, we know that in many cases universal banks derived from small private banks unable to continue business with their current capital (as in the case of the Schaaffhausen'scher Bankverein: Tilly 1966) or willing to 'punch above their weight' (as in the case of the Péreire brothers' Crédit Mobilier: Landes 1956). On the other hand, we also know that universal banks were sometimes created as a sort of 'sub-brand' for very prestigious investment banks unwilling to downgrade their 'top-class brand' by issuing riskier securities (as in the case of the Rothschilds' Austrian Creditanstalt: Gille 1967). No doubt, increasing attention to the strategies through which intermediaries enhanced the creation of secondary corporate debt markets will bear fruitful results for future historical research.

Appendix A: The Brussels Stock Price Database

Reconstructing the listings of the Brussels bourse in the second half of the 1830s is not an easy task. Apparently, the official bulletin published by the state-appointed brokers only survived for the year 1839. As a result, for earlier years one has to rely on Belgium's official gazette, the *Moniteur Belge*. But this source is incomplete, as it provides information for a certain number of securities. In order to overcome this problem, data from the *Moniteur* are complemented with data from the *Journal de Commerce d'Anvers*, available for the years 1837 and 1838. The *Journal de Commerce* did not report prices quoted on the official stock market but those quoted on the after-trade market (the so-called Lloyd Bruxellois, apparently a very active market as transactions took place after information on the closing prices of the Paris bourse had arrived in Brussels: Chlepner 1926, p. 152); nonetheless, a methodical comparison between prices provided by both sources showed very few differences. Despite being built from a variety of different sources, the overall series is arguably reliable.

Due to the nature of our sources most securities are not quoted from their first day of floatation, but once they 'break through' they do not disappear unless their trading volumes become nil: this means that the numerous gaps in the series *after* the stock has already been quoted once stand for a lack of trading activity (whereas this is not the case for gaps *before* the stock has first appeared). As a consequence, available data do not allow to observe proper IPO discounts, where these are defined as the difference between the issue price and the closing price on the first day of floatation.

Appendix B: Current Fixed-Dividend Yields and Firm-Specific Equity Premia

Securities issued in 1830s Belgium were not simple equities, but rather sophisticated instruments to price. The total dividend of the security D^S was made up of three components: 1) a bond-like component D^B, i.e. a fixed coupon; 2) an equity-like component D^E, i.e. a variable additional dividend; and 3) an option-like component D^O, which consisted of a call on future IPOs made by the same underwriter:

$$D^S = D^B + D^E + D^O$$

For almost all securities issued in 1830s Brussels, we know the value of D^B; unfortunately we have data on D^E only for a handful of securities; while the value of D^O is impossible to assess directly. In the light of these data, the following method is applied.

The current dividend yield Y^S of these securities is defined as:

$$Y^S = \frac{D^B + D^E + D^O}{P^S}$$

But data on D^E and D^O are largely unavailable, so Y^S cannot be computed. To substitute for that, the *current fixed-dividend yield* Y^B is computed as the ratio of the fixed coupon paid by the security D^E and the current price of the security P^S:

$$Y^B = \frac{D^B}{P^S}$$

Which means that:

$$Y^S = Y^B + \frac{D^E + D^O}{P^S}$$

The next step is to compare the yield of industrial securities with that of Belgian sovereign bonds. Given $\overline{D^B}$ the coupon of government bonds and $\overline{P^B}$ their price, their current dividend yield $\overline{Y^B}$ is equal to:

$$\overline{Y^B} = \frac{\overline{D^B}}{\overline{P^B}}$$

The *firm-specific equity premium* Y^P is defined as the difference between the yield of a given industrial share and that of a sovereign bond, i.e.:

$$Y^P = Y^S - \overline{Y^B}$$

By substitution, the difference between the current dividend yield of sovereign bonds and the current fixed-dividend yield of industrial equities is equal to:

$$\overline{Y^B} - Y^B = \frac{D^E + D^O}{P^S} - Y^P$$

So $\overline{Y^B} - Y^B$ 1) increases if already paid variable dividends increase and 2) decreases if the firm-specific equity premium increases. As the current dividend yield is assumed to reflect expectations of future earnings (see text), then the wider the difference between $\overline{Y^B}$ and Y^B, the higher the expectations that the overall dividend paid by the security will exceed the sovereign bond yield. To give a very rough example: if $\overline{Y^B}$ is 5% and Y^B is 3%, we can suppose that the expected future dividend to be paid by the industrial security is 7% if there is no equity premium, 8% if the equity premium is 1%, etc.[38]

This method has an advantage for the study of the Belgian financial market in the 1830s. As a matter of fact, throughout the scrutinized period a) sovereign bond yields remained more or less at 5%, and b) almost all industrial equities were issued at a price of 1,000 francs and paid a coupon of 50 francs. This means that for industrial equities, $Y_0^B = \overline{Y^B}$ at the moment of the IPO. The condition for Y^B to equal $\overline{Y^B}$ in the long term, i.e. the condition for the equilibrium price of the security $\widetilde{P^S}$ to equal its issue price P_0^S, is given by

$$\frac{D^E + D^O}{P^S} = Y^P$$

But in case expected variable dividends exceed the firm-specific equity premium, Y^B is supposed to become smaller than $\overline{Y^B}$ once the security is floated (i.e. $\widetilde{P^S} > P_0^S$). In other words, the larger expected variable dividends with respect to the equity premium, the higher the underpricing of newly issued securities (see figure 6)[39].

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[38] Of course, in this example it is assumed that the value of the call option on future IPOs is zero.

[39] In computing the Y^S/P^S ratio for the few firms for which data on D^E are available, it is assumed that D^O equals zero: unfortunately, it is impossible to price the call option on future IPOs. Still, it is reasonable to think that the value of this option plays a role in determining the equity premium Y^P: the higher the value of the call, the lower the firm-specific equity premium.

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Charts and Tables
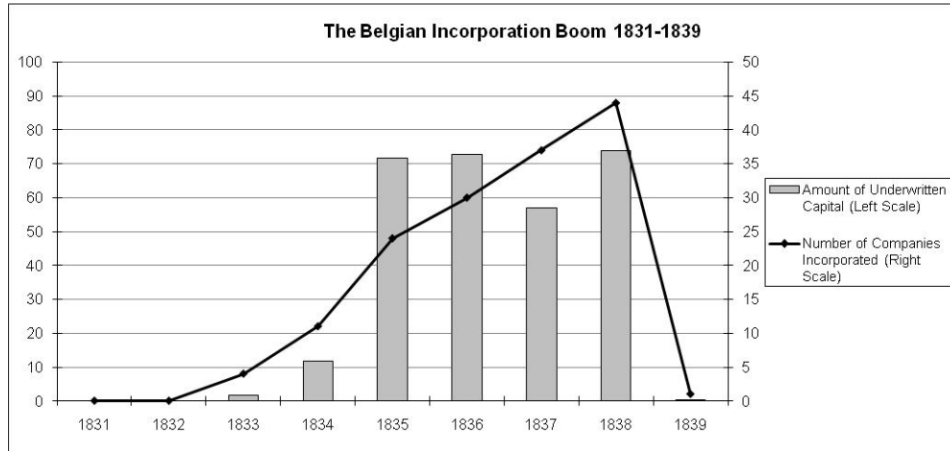
Figure 1: Belgium, 1831-1839: Total number of joint-stock companies founded (right scale) and total underwritten capital (in million francs, right scale). Source: Briavoinne (1839, pp. 223-224).
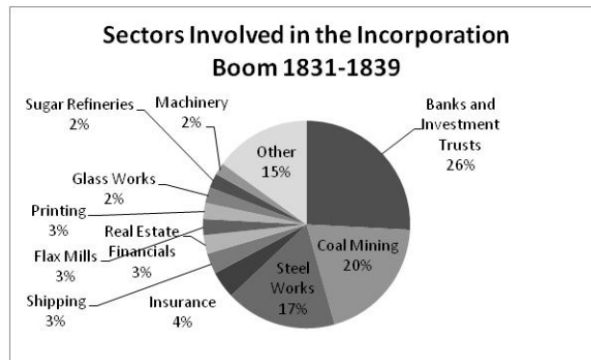

Figure 2: Belgium, 1831-1839: Distribution of total underwritten capital to industrial sectors. Source: Briavoinne (1839, pp. 224-226).
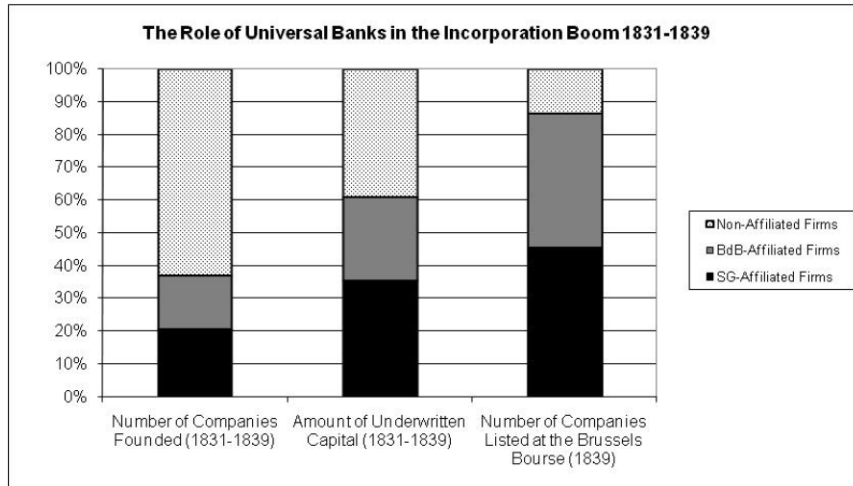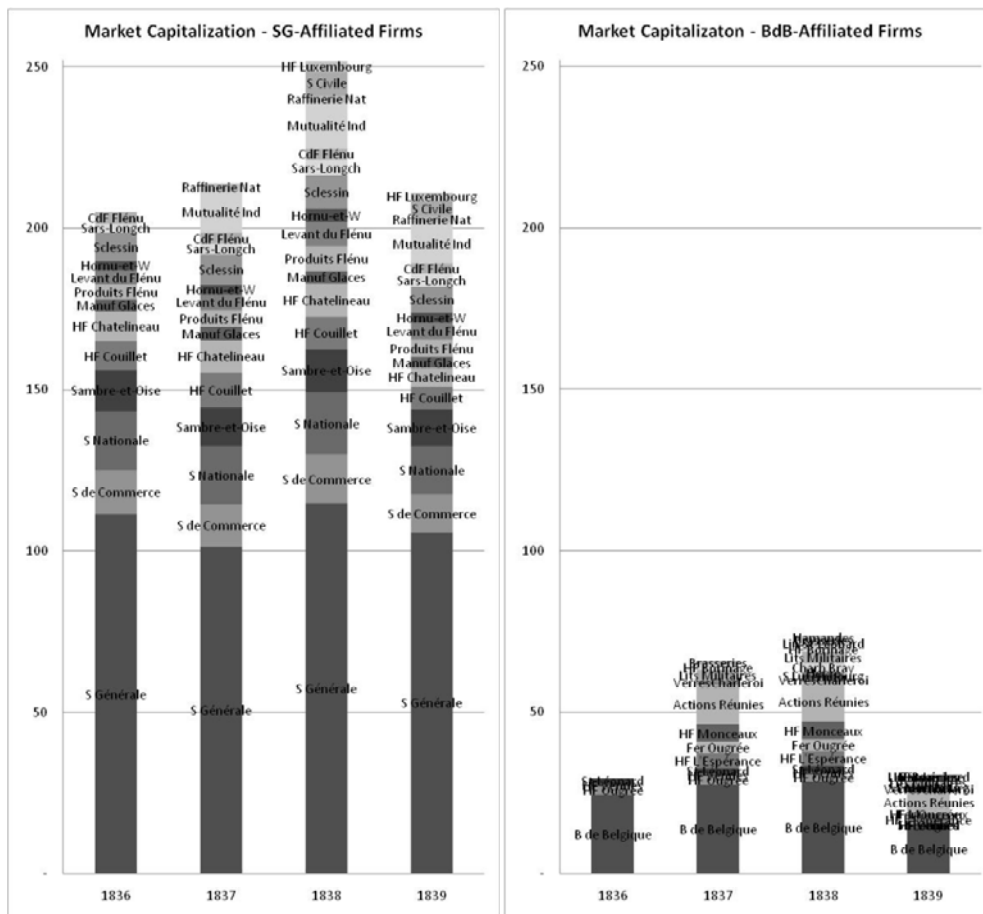
Figure 3: Belgium, 1831-1839: Presence of universal banks in the number of companies founded, the total amount of underwritten capital, and the number of companies listed at the Brussels bourse. Source: Briavoinne (1839, pp. 223-224); Cours Officiel de la Bourse de Bruxelles (1839).

Figures 4.1-2: Brussels bourse, 1836-1839: Estimates of stock market capitalization. Source: author's database.
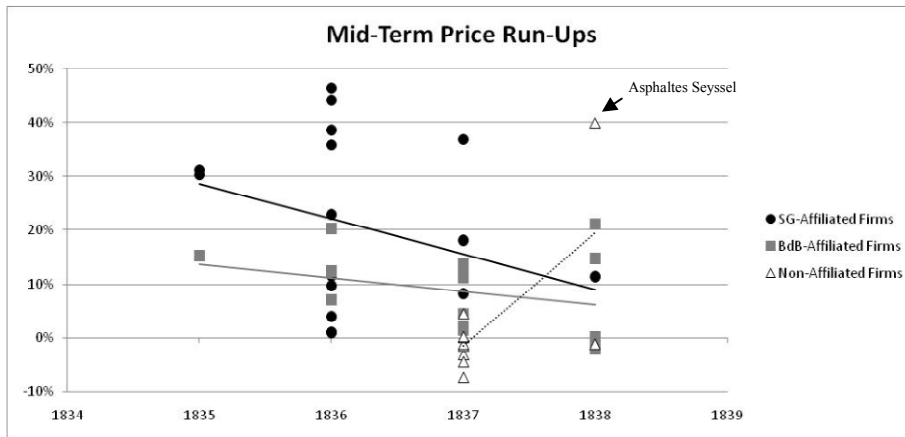
Figure 5: Brussels bourse, 1834-1839: mid-term price run-ups (defined as the difference between issue price and the average market price during the first six months of presence on the bulletins). Source: author's database.
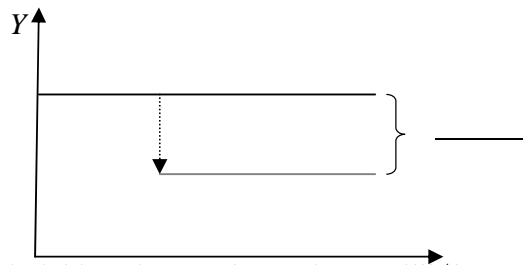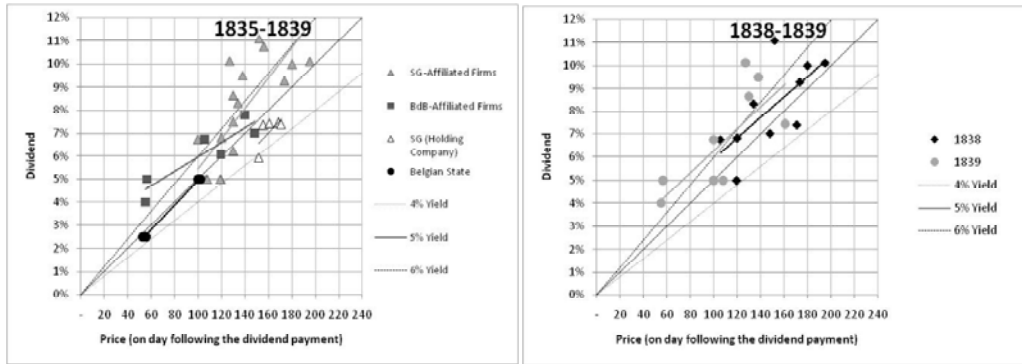

Figure 6: Fixed-dividend yields at issue price and at equilibrium price (see appendix B).
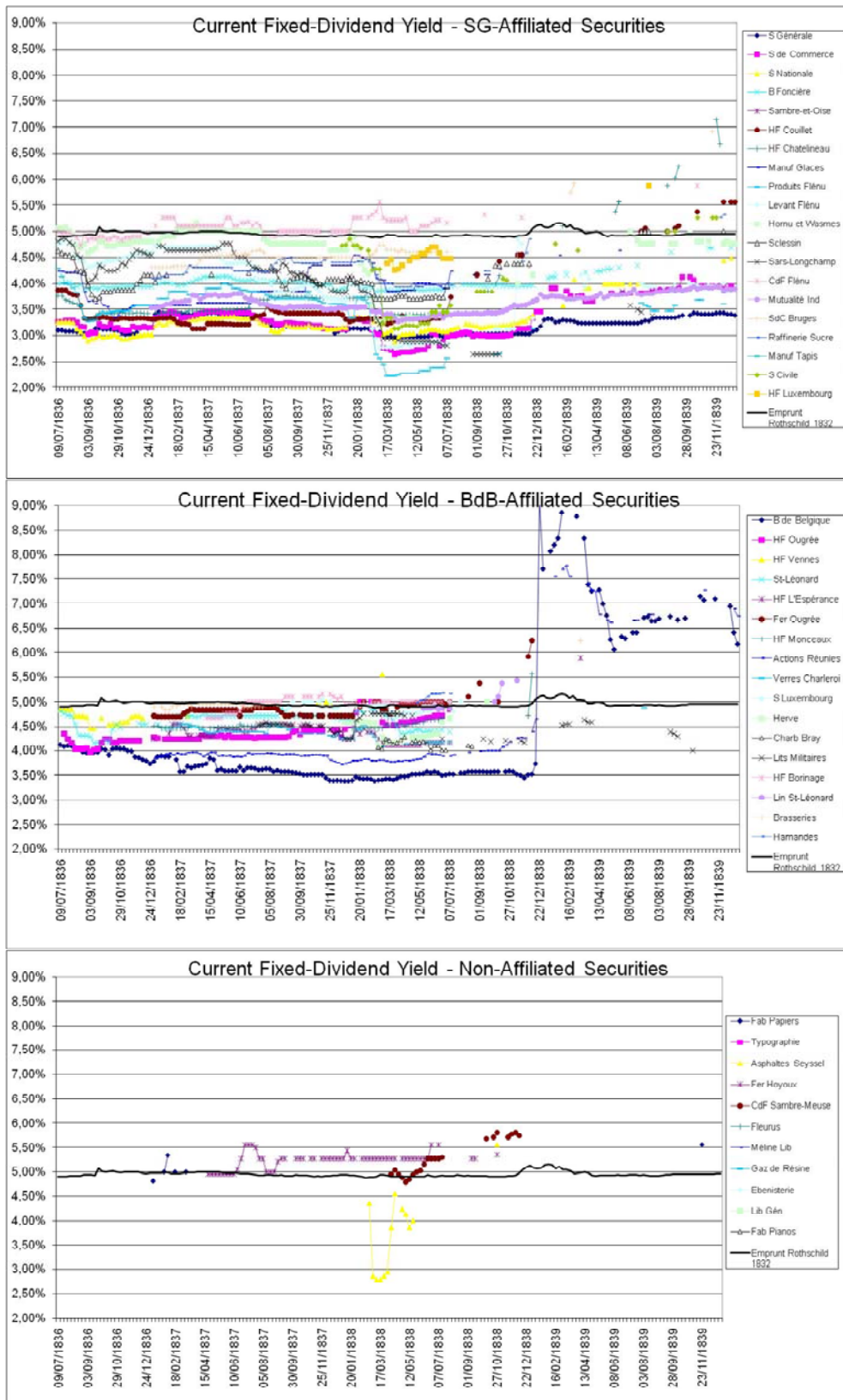
Figures 7.1-3: Brussels bourse, 1836-1839: Current-fixed dividend yields of industrial stocks and sovereign bonds, by affiliation. Source: author's database.

Figures 8.1-2: Brussels bourse, 1835-1839: Total dividend yields of a number of securities, by affiliation and by year. Source: author's database; SCOB database.
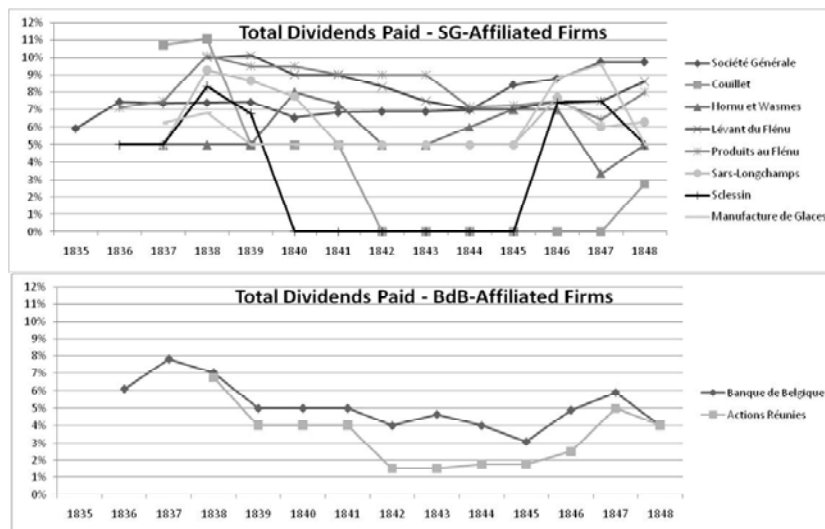
Figures 9.1-2: Brussels bourse, 1835-1848: Total dividends paid on some industrial stocks, by affiliation. Source: SCOB database.
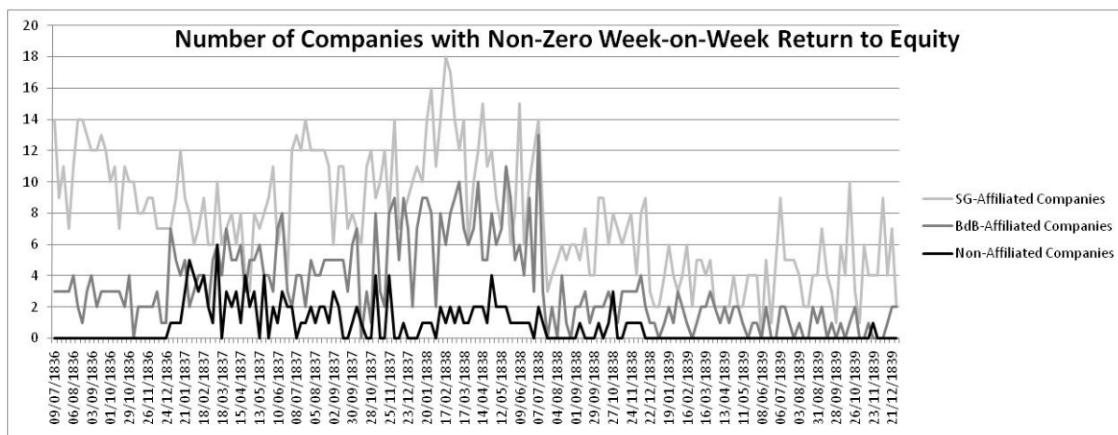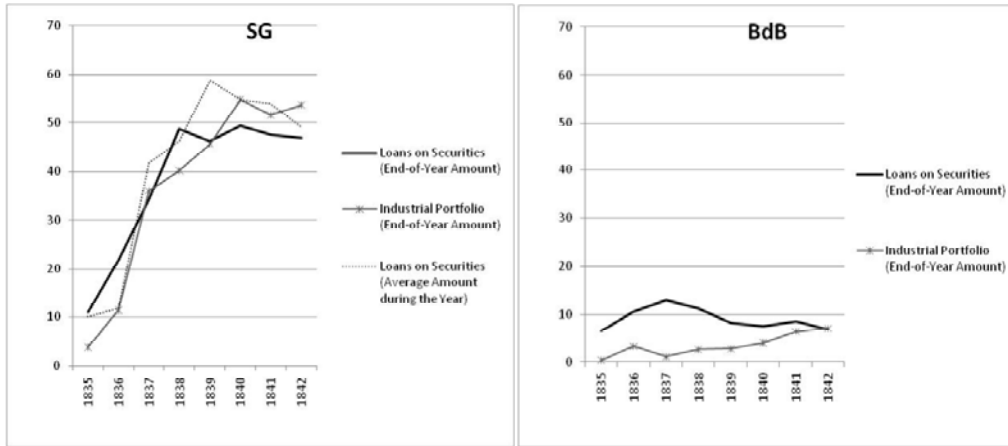

Figure 10: Brussels bourse, 1836-1839: Number of companies with non-zero week-on-week return to equity, by affiliation. Source: author's database.

Figures 11.1-2: SG and BdB, 1835-1842: Loans on securities and industrial portfolio (end-of-year amount, in million francs). Source: Malou (1863, pp. I-IV); Chlepner (1926, pp. 78-79). SG, 1835-1842: Average amount lent on securities during the year (in million francs). Source: author's computations on Malou (1863, p. XX) and Annales Parlementaires (1848).
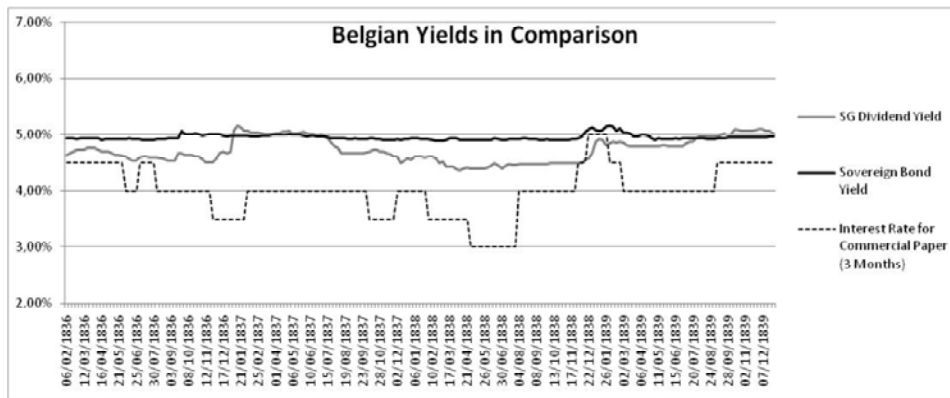

Figure 12: Belgium, 1836-1839: Dividend yields of sovereign bonds (Rothschild loan 1832) and SG stock, and market interest rate for 3-month commercial paper in Antwerp. Source: autor's database; SCOB database.

Company	Affiliation	IPO Discount		Mid-Term Performance	
		Date	Price Run-Up	Period	Price Run-Up
Société de Commerce	SG	Mar. 21, 1835	24%	Jan.-Jul.1836	31.15%
Sars-Longchamps	SG	Nov. 4, 1835	14%	Jul.1836-Jan.1837	11.56%
Raffinerie Nationale	SG	Jun. 19, 1836	12%	Jan.-Jul. 1837	18.04%
Asphaltes Seyssel	None	Feb. 10, 1838	10%	Mar.-May 1838*	39.92%*

Table 1: Brussels bourse, 1835-1838: IPO discounts and mid-term price run-ups of four selected stocks. Source: Chlepner (1926, p. 92); Brion and Moreau (1998, p. 62); author's database.

Own stock	16,95%
Main 4 affiliated 'financials'	32,87%
Main 3 affiliated 'collieries and ironworks'	11,27%
Main 3 affiliated 'other sectors'	13,41%
Undetermined	25,51%

Table 2.1: SG, 1st March 1848: Repartition of the total sums lent on securities (by classes of securities). Source: author's computations on Annales Parlementaires (1848) and Cours Officiel de la Bourse de Bruxelles (1847).

Own stock	2,12%
Listed affiliated 'financials'	24,68%
Listed affiliated 'collieries and ironworks'	34,22%
Listed affiliated 'other sectors'	9,74%
Générale group stock	1,54%
Listed non-affiliated stock	9,36%
Unlisted stock	2,14%
Sovereign bonds	16,19%

Table 2.2: BdB, 13th December 1838: Repartition of the total sums lent on securities (by classes of securities). Source: author's computations on AGR/AR Brussels, Fonds Min. Finances, 307/1/15, A.