DETERMINANTS OF CORPORATE FINANCIAL DISCLOSURE IN AN UNREGULATED ENVIRONMENT: EVIDENCE FROM THE EARLY 20TH CENTURY

This version: November 27, 2007

Wouter Van Overfelt

University of Antwerp

Marc Deloof (*)

University of Antwerp

Ann Vanstraelen

Maastricht University / University of Antwerp

Abstract

We investigate the determinants of corporate financial reporting in an unregulated setting. Prior to World War I, limited liability companies in Belgium were obliged to publish financial statements, but financial reporting was virtually unregulated. Investor protection was generally very poor. Nevertheless, Belgian stock markets were booming. While the amount of information disclosed in the financial statements was generally low relative to the current levels of disclosure, there was significant variation in financial reporting across firms. Our results suggest that financial reporting was significantly affected by universal bank affiliations, bond financing and stock returns. Dividends were a substitute for income statement transparency.

Keywords: financial disclosure, financial reporting regulation, investor protection, bank relationships, pre-World War I Belgium

 (*) corresponding author: Marc Deloof, Department of Accounting and Finance, University of Antwerp, Prinsstraat 13, 2000 Antwerp, Belgium; E-mail: marc.deloof@ua.ac.be; Tel: +32-3-220 41 69; Fax: +32-3-220 40 64.

1. Introduction

The corporate scandals at the start of the 21st century (Enron, WorldCom) were followed by calls for more stringent regulations. The underlying assumption was that these rules were required to restore investor confidence (Asare, Cunningham and Wright, 2007). However, it has been argued that since then New York as a financial centre has been loosing ground to London and Asia, in particular Hong Kong. Although it is still the biggest market for capital, America's dominance seems to be shrinking. The most spectacular collapse has come in the market for initial public offerings, where in 2006 the stock exchanges in New York trailed behind London and Hong Kong (The Economist, 23 November 2006). Hank Paulson, the U.S. Treasury secretary, called for a re-examination of the way the U.S. regulates its capital markets to ensure that they remain globally competitive (Financial Times, 21 November 2006). While Doidge, Karoyli and Stulz (2007) take a critical perspective on these claims, voices have been raised that also the reporting regulations zeal may have gone too far. Financial reporting is increasingly perceived as burdensome while financial reports are becoming less informative. The Financial Times reports that "the most prized communication between companies and investors takes place outside the confines or the accounts and annual reports." (Financial Times, 9 April 2007). In sum, there is much debate on the extent to which financial reporting should be regulated.

A libertarian alternative would be zero regulation. If there were no financial reporting rules, companies would be compelled to figure out on their own exactly what the markets want. Indeed, even in the absence of financial reporting regulation, companies have an incentive to voluntarily disclose financial information if the

expected benefits exceed the costs.[1] However, in the current environment in which regulation of financial reporting is abundant, it may be difficult to identify voluntary reporting incentives.[2] Therefore, we go back to the period preceding the First World War. Edwards (1989) indicates that at the time, the published accounts of most limited companies were almost totally free from regulation. Belgium was no exception (Théate, 1905). Indeed, this time period is probably as close as one can get to zero regulation.

To the best of our knowledge, Barton and Waymire (2004) is the only study investigating determinants of financial reporting in an unregulated environment. They look into financial reporting choices of NYSE listed firms in the year preceding the 1929 stock market crash and find that the quality of financial reporting increased with firms' incentives to supply higher quality information. In addition, they provide evidence that firms with higher quality financial reporting experienced less negative returns during the crash. Sivakumar and Waymire (1993) examine the information content (as opposed to the determinants) of financial reports for 51 NYSE listed firms over the period 1905-1910. They relate earnings changes and dividend changes to excess stock returns. They find that earnings decreases were associated with significant negative excess returns whereas earnings increases were associated with significant positive excess returns only for dividend paying firms. One interpretation is that earnings increases were not perceived as credible in the absence of dividends. Finally, Arnold (1997, 1998) investigates the evolution of the level of disclosure, as indicated

---

[1] This is not to say that regulation of financial reporting is useless. Market failures and welfare motivations may offer explanations for the usefulness of financial reporting regulation (Healy and Palepu, 2001).
[2] One could argue that it might be more useful to look at disclosure above legal requirements. On the other hand if essential disclosure requirements have been included in the law, the law of decreasing marginal returns implies that disclosure levels above legal requirements are expected to have a smaller impact.

by the volume and the distortion of information provided in 30 listed U.K. companies over the period 1900-1924.

This paper adds to the literature by looking into the determinants of financial reporting in Belgium over the period 1905-1909. In particular, our sample consists of listed corporations in the coal mining, textiles, trams and railways industries. We believe our study complements previous work in several respects.

First, the decade preceding the First World War is widely recognized as the first era of globalization[3] - according to some even comparable with the level of globalization we experience today (Bordo and Meissner, 2005 and Obstfeld and Taylor, 2002). Moreover, it was also the time when the limited liability corporation rose to prominence.[4] Not surprisingly, investors in Belgium were generally poorly protected and financial reporting was virtually unregulated (Théate, 1905). While Belgian legislation was among the first to mandate publicity of financial statements (Camfferman, 2000), the law did not stipulate any requirements relative to form or content.

In spite of unregulated financial reporting and poor investor protection, the Brussels stock exchange was thriving. Musacchio (2006) indicates that Brussels was, together with London and Paris, the centre of trading in foreign currency denominated bonds. Furthermore, Rajan and Zingales (2003) produce evidence that in 1913,

---

[3] Belgian imports and exports as a percentage of GNP respectively increased from 47% and 40% in 1890 to 75% and 55% in 1913 (Import and Export data from Mitchell, 1992; GNP data from Clement, 2000). Moreover, the percentage of listed Belgian companies with main activity in Belgium as a percentage of the total number of listed corporations on the Brussels Stock Exchange decreased from 75% to 52% over the same period while the total number of listed companies on the Brussels Stock Exchange increased from 246 in 1890 to 761 in 1913 (Source: SCOB database).
[4] Since government consent to establish a limited liability corporation was lifted, large corporations with anonymous shareholders became important actors in the world economy. Government consent was first lifted in the U.K. in 1856. Other countries would soon follow and, in Belgium, government approval would no longer be required from 1873 onwards. Frere (1951) indicates that a total number of 533 limited liability corporations is created between 1819 and 1873 while Chlepner (1930) indicates that 6,967 limited liability corporations were created between 1894 and 1913.

Belgium had the largest number of publicly traded domestic firms per capita and the second largest fraction of gross fixed capital formation raised through equity. The ratio of stock market capitalization over GDP (0.99) was similar to the ratio in the U.K. (1.09) and much higher than in the United States (0.39), Germany (0.44) or Japan (0.49). In sum, Belgium at the turn of the previous century combined an active stock market with virtual absence of regulation.

Finally, an important aspect of corporate finance in many industrializing countries at the turn of the previous century was the role of banks. Economic historians pointed out that, in Belgium, these banks also influenced financial reporting practices (Kurgan-Van Hentenryk, 1997). In a recent study of U.K. firms, Choi (2007) shows that the value relevance of a firm's income statement is increasing in a firm's bank dependence. The presence of universal banks in Belgian corporate finance allows us to look into the potentially important role of these banks in the determination of financial reporting policies.

Clearly Belgium at the turn of the previous century offers a very unique setting to analyze determinants of financial reporting. In particular, we question whether there is variation in the quality of financial reporting and if so, what drives this variation. We presume that corporations will trade off costs and benefits of disclosures and that this trade-off depends on the incentives they face. We relate financial reporting choices to *(i)* costs of asymmetric information; *(ii)* the controlling influences from universal banks; *(iii)* agency conflicts of debt; *(iv)* dividend payments; *(v)* corporate performance; and *(vi)* industry.

We first document that the amount of information disclosed in the annual reports was low compared with current levels of disclosure but comparable to disclosure levels observed at the time in the U.K. (Arnold, 1997) and The Netherlands

(Camfferman, 2000) . In a second step, we relate financial reporting choices to *(i)* costs of asymmetric information; *(ii)* the controlling influences from universal banks; *(iii)* agency conflicts of debt; *(iv)* dividend payments; *(v)* corporate performance and *(vi)* industry. We observe significant differences across corporations in the amount of information they reveal. In line with evidence provided by economic historians, we find that firms in which universal banks had a considerable interest significantly increased the transparency and amount of information revealed in income statements. Furthermore, firms relying on bond financing, a relatively new source of financing for corporations, not only increased the transparency of their balance sheets, they also disclosed significantly more information in their balance sheets. Consistent with the hypothesis that dividends may substitute for financial reporting as a source of information, we find that firms paying dividends had less transparent income statements. We also document that prior stock returns were negatively related with the number of items displayed in the balance sheet while younger firms disclosed significantly more information in their income statements. Finally, industry appears to be an important driver of financial reporting choice in both balance sheets and income statements.

The remainder of the paper is structured as follows. Section 2 provides background and develops hypotheses. Section 3 provides details relating to the sample and the construction of the variables. Section 4 investigates the empirical determinants of corporate financial reporting. Section 5 concludes.

2. Determinants of unregulated financial reporting

To explain financial reporting choices, we consider variables suggested by existing research on voluntary disclosure. As potential determinants of disclosure choices we include *(i)* costs of asymmetric information; *(ii)* controlling influences of universal banks; *(iii)* agency conflicts of debt financing; *(iv)* dividend payments; *(v)* corporate performance; and *(vi)* industry.

2.1. Asymmetric Information

It is well established that asymmetric information potentially leads to a higher cost of capital (Botosan, 1997; Healy and Palepu, 2001). If corporate insiders seek to attract external capital, rational investors will apply a lemon's discount. Managers anticipating to attract external capital will in turn want to reduce information asymmetries in order to reduce the lemon's discount. Therefore, we expect firms where asymmetric information problems are likely to be more severe to supply higher quality information. Variability of performance may measure the unpredictability of performance and may proxy for asymmetric information. Consequently, we expect firms with more volatile earnings to explain more carefully why their earnings are volatile. Similarly, we expect managers of smaller and younger firms to have greater incentives to provide high quality information. On the other hand, although size is often used as an inverse proxy for asymmetric information in the corporate finance literature, this interpretation may prove invalid in the context of unregulated financial reporting. To the extent that disclosure costs are decreasing with firm size, we expect a positive relation between firm size and the amount of information disclosed. Consequently, one reason why asymmetric information problems faced by larger firms

are less severe as compared to smaller firms may be precisely because they are able to reduce asymmetric information at a lower cost.

2.2. Influence from universal banks

An important role in industrializing continental European countries is attributed to banks. According to Carosso (1970) and Baskin and Miranti (1997), in the second half of the 19th century specialized railroad underwriters - banks with reputations for honesty and competency - mitigated uncertainties associated with railroad finance. Hawkins (1963) indicates that during the nineteenth century investors bought securities primarily on the basis of their confidence in the underwriter offering the issue. Wealthy investors in both the U.S. and Europe relied on the professional counsel of J. P. Morgan & Company and Kuhn-Loeb & Company in deciding where to commit capital. It has been argued that a primary role of banks in the late 19th and early 20th century was to remove barriers for firms to capital markets (e.g. Carosso, 1970; DeLong, 1991; Ramirez, 1995; Baskin and Miranti, 1997; Franks, Mayer and Wagner, 2006). Ramirez (1995) finds that firms affiliated with J. P. Morgan in the early 20th century were less liquidity constrained. DeLong (1991) and Simon (1998) show that the presence of directors affiliated with J. P. Morgan was associated with higher firm value.

In Belgium, as in Germany, the banking sector was characterized by a limited number of powerful universal banks (Durviaux, 1947). These universal banks usually offered multiple services and had considerable influence. They assisted companies in the issuance of securities, took direct equity participations and were often involved in the management of companies. Recent research documents that universal banks in Belgium significantly affected capital structure (Deloof and Van Overfelt, 2007), dividend policy (Deloof, Roggeman and Van Overfelt, 2006) and performance (Van

Overfelt, Annaert, De Ceuster and Deloof, 2006) of companies under their control. Furthermore, economic historians documented that these banks also influenced financial reporting of companies. For instance, Kurgan-Van Hentenryk (1997) indicates that the Société Générale, the dominant Belgian universal bank before the First World War, appointed Edmond Mesens to every auditor's position that became available in companies it controlled. De Beelde (1992) provides evidence of written correspondence between the Société Générale and the companies under its control relating to financial reporting rules the bank had imposed.

Therefore, if these banks seek to establish or preserve a reputation of honesty and reliability, we expect a universal bank relation to have a positive influence on financial reporting. On the other hand, the fact that these universal banks could both underwrite debt[5] and take direct equity participations may lead to conflicts of interest between the bank and minority shareholders. If banks suffer from conflicts of interest, they may support corporate secrecy in order to facilitate the looting of companies under their control.[6]

2.3. Agency conflicts of debt

Agency conflicts refer to the problems that arise after investors have committed their capital in a business. It is well known that after committing capital, corporate insiders have incentives to make business decisions that expropriate investors. Indeed, Hawkins (1963) indicates that U.S. companies issuing more detailed financial reports at the beginning of the 20th century usually did so because of their heavy dependence

---

[5] While we know that Belgian universal banks could hold both debt and equity, we have no data on the importance of debt holdings.
[6] Lower levels of disclosure from bank affiliated firms may also arise if firms are affiliated with a bank because they choose bilateral (as opposed to multilateral) financing arrangements in order to avoid information is leaked to competitors (Yosha, 1995).

on outside sources of financing. At the turn of the previous century, bond financing was a relatively new form of financing for corporations. The rights of bond holders were ill defined in pre-World War I Belgium. Resteau (1913) indicates that there was virtually no legislation protecting bondholders. Before 1913 the issuer of a bond was not required to issue a prospectus. The only protection in the law vis-à-vis bondholders was that they had the right to see financial statements disclosed to shareholders and that they had an advisory role in the annual general meeting. In such circumstances, economic theory predicts that firms willing to attract long term financing through bonds should provide higher quality financial reporting. Since bondholders typically commit capital for longer periods, one might expect the influence of bonds financing on financial reporting to be more important than the influence of other types of debt.[7]

2.4. Dividends

The annual reports need not be the only source of information available to investors. It was already indicated in the previous section that universal banks may certify the quality of firms. An important alternative source of information for investors may be dividends. There is considerable literature trying to explain why firms pay dividends. One view holds that dividend payments signal good future prospects (e.g. Bhattachary, 1979; Miller and Rock, 1985; John and Williams, 1985). Another view holds that dividend payments may reduce agency problems by reducing the amount of cash available to corporate insiders (Grossman and Hart, 1980; Easterbrook,

---

[7] One could argue that if bond ownership was concentrated in the hands of a limited number of investors, it is possible that a corporation communicated critical information to bondholders outside the confines of the annual reports. While Resteau (1913) indicates that bondholders started to act in group, we have no evidence that corporations provided any information other than through financial statements. One could also argue that if bond holders also provided short term financing to the corporations (e.g. banks), they could have had to rely less on annual reports for their information because they could monitor firms through the repayment of short term loans. Unfortunately, we have no information on the identity of bondholders or the dispersion of bond ownership.

1984 and Jensen 1986). Although these views differ as to why dividends are important to investors, both views imply that dividends are an important source of information. Cheffins (2006) argues that in the U.K. during the 20th century, dividends constrained corporate insiders and provided investors with information about the companies. This is endorsed by Graham and Dodd (1934), who assert that dividends played a central role in equity valuation shortly after 1900 because many firms did not disclose detailed financial reports. Consistent with this assertion, Sivakumar and Waymire (1993) find that dividend changes were more important than earnings changes for explaining transaction volumes. They suggest that one interpretation of their results is that favorable earnings reports are not perceived as credible in the absence of dividends. If dividends provide an alternative source of information to outsiders, they may substitute for information in the financial statements. On the other hand, if corporations want to signal information through dividend payments, dividends may complement information in financial statements.

2.5. Firm Performance

It is intuitively clear that the willingness to disclose information may be related to firm performance. Performance is included in almost every disclosure study either as a variable of interest or as a control variable (Miller, 2002). However, the direction of the correlation is not clear. Lang and Lundholm (1993) indicate that empirically the relation between firm performance and disclosure is mixed. On the one hand, Miller (2002) documents an increase in disclosure during a period of increased earnings. Barton and Waymire (2004) also document a positive correlation between disclosure quality and return-on-equity. On the other hand, one could expect a negative correlation if controlling shareholders have an incentive to explain the causes of bad

performance, for example to avoid that investors loose confidence after poor performance. In that case, firms may provide more information when confronted with bad performance. Furthermore, owners hold managers accountable. Warner, Watts and Wruck (1988) indicate that CEO turnover is often associated with poor stock return performance. This result is confirmed by Fohlin (2006) for pre-World War I Germany. She produces evidence that poor performance significantly increases managerial turnover.

2.6. Industry

Camfferman (1997) asserts that industry is possibly an important determinant of corporate disclosure. A relationship between disclosure and industry can be explained in two ways. First, industry effects may be related with the interactions of companies within an industry. For example more intense competition within an industry may lead to fewer disclosures because firms fear adverse actions from competitors. On the other hand, it is possible that disclosure is mainly related to firm specific attributes and that industry effects are a reflection of the concentration of companies of a particular type in a given industry. Camfferman (1997) acknowledges that it is difficult to unequivocally relate industry to disclosure.

3. Sample and Variables

Our sample consists of Belgian listed companies in the coal mining, railways, trams and textiles industries over the period 1905-1909. These industries were the largest industries in terms of number of corporations in that industry and in terms of number of companies associated with universal banks. It contains 131 different firms

and 567 firm-year observations. All financial statements were hand-collected from the appendices of the official gazette. Although the law did not stipulate any requirements about the form or the content of either the balance sheet or the income statement, it was mandatory for every limited liability company to publish financial statements (including both balance sheet and income statement) in the appendices of the official gazette no later than two weeks after the approval by the General meeting (Théate, 1905).[8] For a number of companies we were able to obtain the annual report presented at the general meeting, and we found that the balance sheet and income statement in the annual report were the same as the ones reported in the appendices of the official gazette.

3.1. Measuring corporate disclosure

We rely on two different gauges to assess corporate financial disclosure practices. Our first measure focuses on the disclosure of key items in income statements and balance sheets while the second measure reflects the overall level of disclosure. Our second measure is a simple count of the number of items displayed in balance sheets and income statements (Arnold, 1997 and Camfferman, 2000). Although disclosure levels cannot be entirely isolated from accounting measurement practices, the simple count of items disclosed in the profit and loss account provides an objective measure of the volume of disclosure. However, it is important to realize that both measures potentially address different dimensions of corporate financial

---

[8] However, we were unable to find the financial statements for 15 different firms (25 firm-year observations). Of these 15 firms, there were 2 firms that published a balance sheet but did not provide an income statement. For 6 firms the pages were the financial statements were published were missing from the official gazette, for the other 7 firms, the reason we could not find the financial statements is unknown. Only companies for which we could obtain both balance sheet and income statement were included in the analysis.

reporting. For example, a company may disclose a lot of unimportant items in its financial statements while omitting information on key components.

3.1.1. Income statement and balance sheet transparency

Following Barton and Waymire (2004), we construct two indices reflecting the transparency of financial statements: *(i)* income statement transparency and *(ii)* balance sheet transparency. These indices reflect the disclosure of key items and they take values between 0-5 depending on whether or not a particular item is reported. To score a five on income statement transparency, the corporation has to make separate disclosures of *(i)* gross revenues; *(ii)* production costs; *(iii)* operating profit; *(iv)* depreciation expense; and *(v)* other operating expenses. Balance sheet transparency on the other hand is based on the separate disclosure of *(i)* fixed assets; *(ii)* intangible assets; *(iii)* depreciation; *(iv)* reserves other than depreciation; and *(v)* earned surplus. The appendix illustrates our coding of transparency of financial statements for two sample firms. The first firm, Linière Gantoise, is an example of lower transparency. The firm scores a two on balance sheet transparency and a one on income statement transparency. With respect to balance sheet transparency, the firm scores one for reporting fixed assets and one for reporting reserves other than for depreciation. It scores one on income statement transparency for reporting profit in the income statement. The second firm, Tramways Est-Ouest de Liège, is an example of higher transparency. It scores five on both income statement and balance sheet transparency. This firm discloses all relevant items separately.

Table 1 displays the distribution of the transparency measures over sample firms and by industry. Panel A and B give information on the distribution of income statement

transparency while panel C and D summarize the distribution of balance sheet transparency. It is clear from the table that there are considerable differences across industries in both income statement and balance sheet transparency. For example 15.32% of coal mining firms display all relevant items in their income statement while only 1.20% of textile firms score 5 on the income statement transparency measure. If we look at balance sheet transparency, a similar picture of sector differences emerges. The tram industry has on average the highest balance sheet transparency score (3.53), while the average score in the railway industry is only 1.95. On the other hand, we see that no textile company provides information on the depreciation reserve in its balance sheet.

Insert Table 1 about here

It is interesting to compare the scores on transparency measures of sample firms with the scores of U.S. firms before the 1929 stock market crash (Barton and Waymire, 2004). The percentage of firms providing information about costs of production in our sample is the same as the percentage of firms providing information about cost of sales in the sample of Barton and Waymire (2004) (27% in both samples). Also the percentage of firms providing information about other expenses is about the same in both samples (75% in the Belgian sample vs. 74% in the U.S. sample). On the other hand, only 27% of firms in our sample provide information on production costs while 63% of U.S. firms give information on sales. Similarly, the percentage of firms providing information on depreciation expense in the Barton and Waymire sample (77%) is higher than in our sample (56%). With respect to balance sheet transparency,

we see that 98% of sample firms provide information about property, plant and equipment. This is somewhat higher than the 92% in the Barton and Waymire sample. Also the percentage of firms displaying reserves other than for depreciation is with 93% slightly higher in the Belgian sample than in the U.S. sample (85%). On the other hand, the percentage of firms displaying intangible assets (14%) and depreciation reserve (27%) is lower than in the Barton and Waymire sample (50% and 75% respectively).

3.1.2. Levels of disclosure: number of disclosed items

The second measure of corporate financial disclosures is the simple count of the number of items displayed in the balance sheet and the income statement. Instead of focusing on key components, the simple count of items provides an objective measure of the volume of disclosure. Furthermore, it allows us to compare the amount of information provided by Belgian companies with the amount of information provided in the U.K. and the Netherlands.

Table 2 shows disclosure levels for income statement (Panel A) and balance sheet (Panel B) across industries and over time while Figure 1 - Figure 4 display corresponding box plots. The first thing to note is that the information in the balance sheets is considerably more disaggregated than the information in the income statements. One possible explanation put forward in the literature is that companies were not accustomed to publish detailed income statements. [9] Second, consistent with Arnold (1997), we find that the level of disclosure is more or less constant over time

---

[9] Camfferman (2000) notes that it was only after 1880 that most companies in the Netherlands published an income statement. Before that time, corporate financial reporting was usually restricted to the publication of a balance sheet. Edwards (1989) indicates that the presentation of a profit and loss account to shareholders in the U.K. became universal practice only when the provisions of the Companies Act (1928) took effect.

both for disclosures in income statement as for balance sheet disclosures. Comparing the levels of disclosure in Belgium with disclosure levels in the U.K (Arnold, 1997) or the Netherlands (Camfferman, 2000) indicates that disclosure levels were similar in these three countries.[10]

Insert Table 2 about here
Insert Figure 1 - Figure 4 about here
----

*Table 2*Table 2 reveals significant differences in the amount of information displayed in both income statements and balance sheets. Panel A illustrates that the income statements of coal mining companies contain significantly less information than income statements of railway and tram companies. Panel B on the other hand shows that only tram companies provide significantly more information in their balance sheets as compared with the coal mining companies.

Finally, the box plots reveal that, there is considerable variation in the level of disclosure of companies within the same industry. In every industry the number of items in the balance sheets ranges between as few as twelve and as much as forty-six. Relating to the income statement the amount of information in the trams industry is diverse ranging between five items and thirty-five items, while the number of items in the income statements of railway companies is less diverse ranging between nine and nineteen items.

---

[10] The average number of items displayed in the income statement of U.K. firms in 1905 was 13.2, in the Netherlands the average number of elements in the income statement in 1901 (the latest available year) was 12.9. In the same years, the numbers of items disclosed in the balance sheets were respectively 21.0 in the U.K. and 25.7 in the Netherlands.

3.2. Explanatory Variables

The basic hypothesis for this paper is that absent regulation, self-interested companies will provide relevant information after trading off costs and benefits. This means that we relate the measures of corporate financial reporting to the incentives faced by managers (see Barton & Waymire, 2004):

$$\textbf{Financial Reporting} = \beta_0 + \textbf{Incentives} \times \beta_1 + \varepsilon \qquad (1)$$

Where Financial Reporting is a vector of the firm year specific disclosure as defined in the previous section and Incentives is a vector capturing incentives to provide disclosure. As described in the second section, the incentives we consider are: *(i)* costs of asymmetric information; *(ii)* the controlling influences from universal banks; *(iii)* agency costs of debt; *(iv)* dividend payments; *(v)* corporate performance and *(vi)* industry.

Our measures of asymmetric information include the volatility of earnings, age and size. We measure the volatility of earnings as the standard deviation of return-on-assets.[11] "Ln (age)" is the natural logarithm of age, where age is defined as the difference between the current year and the year the company was transformed to a limited liability corporation as indicated in the Recueil Financier.[12] "Ln (size)" is the natural logarithm of the book value of total assets at the end of the fiscal year.

To measure the controlling influences from universal banks, we use two different measures. First, "bank director" is a dummy variable that takes a value of one

---

[11] Following Barton and Waymire (2004) we also estimated all regressions with the coefficient of variation of return on assets (the standard deviation of return-on-assets divided by its mean). The results were qualitatively the same and are available upon request.

[12] The Recueil Financier is a financial annual containing a wide variety of firm-specific information.

if the company has an executive board member of a bank on its executive board and zero otherwise.[13] We cannot rule out the possibility that some of these directors were industrialists sitting on the board of a bank, and not bankers on the board of industrial firms. However, anecdotal evidence suggests that this is not the case. For instance, Edouard Despret, who died in October 1906, held board positions in 19 different firms at the time of his death. He was the vice-president of the Société Générale, which was the largest bank in Belgium. In November 1906, he was succeeded on the board of the Société Générale by Jean Jadot. Before becoming a director of the Société Générale, Jadot held no board positions at all. Three years later, he was a director in 14 different firms. In eight of these firms, Despret had been a director when he died.[14]

Second, we also take into account direct equity participations from the banks in affiliated corporations. Information on direct equity participations is available in the Receuil Financier.[15] The variable "bank equity stake" is a dummy variable that takes a value of one if a universal bank has a direct equity stake in the company and zero otherwise. Since universal banks usually held positions in the executive board if they had a direct equity stake in a company, we also create a variable "bank director - no equity" that takes a value of one if there is a banker on the board of the company but the bank does not have a direct equity stake in the company.

We control for agency costs of debt financing by including two variables relating to leverage. Since bond financing is a relatively new form of corporate financing (Théate, 1905), we include "Bonds" as a separate variable. "Bonds" is a

---

[13] The bank director dummy is based on the boards of 1905. For some companies that went public after 1905, we also used the 1905 board if it was available. If it was not available, we used the board from the year the listing started. Data on the board of directors is collected from the Recueil Financier.

[14] Sources: The 1906 annual report of the Société Générale and the 1906 and 1910 editions of the Recueil Financier.

[15] For the Société Générale, the largest Belgian bank at the time, we checked the entries in the Receuil Financier with the annual reports and found no differences.

dummy variable if a company has bonds outstanding, as disclosed in its balance sheet and zero otherwise. We measure the presence of bond financing using a dummy variable because it differentiates between companies using bond financing and companies not using bond financing. We feel that the use of bond financing is more relevant in this context than the relative amount of bond financing outstanding at a particular moment in time. In addition, we control for other forms of debt as well. In particular, we include the variable "Leverage", which is defined as the book value of debt excluding bond financing scaled by book value of total assets.

Because a history of dividends is a natural benchmark against which investors can assess equity values, we also control for the possibility that dividend payments are a substitute for financial reporting. Following Barton and Waymire (2004) we include a dummy variable, "Dividend", that takes a value of one if the corporation paid a dividend and zero otherwise.

Finally, we include two variables related to corporate performance: Return-on-assets and stock return. Return-on-assets is defined as the ratio of operating profit divided by the book value of total assets.[16] "Stock return" is defined as the market return on equity that was realized over the year. It is calculated as the difference between the market value of equity at the end of the year and the market value of equity at the beginning of the year divided by the market value of equity at the beginning of the year.

---

[16] The 3% of firms that did not disclose a measure of operating profit (see Table 1), provided insights in revenues and costs however. Therefore we were able to compute ROA based on the information provided in the income statement of these firms. We also performed the regressions without taking into account the operating profit score for the calculation of the income sheet transparency measure. The results were qualitatively the same except for the bonds dummy that attained a p-value of 0.10 in regression 1.

Insert Table 3 about here

Table 3 displays descriptive statistics for the variables included in the regressions. About 38% of sample firms had at least one banker on their executive board but the banks had a direct equity stake in only 13% of the companies. The "Bonds" variable reveals that in spite of the fact that bond financing was a relatively new form of financing for corporations, 47% of firms used long term debt. "Leverage", the ratio of debt excluding bonds over book value of total assets, is 14.2% on average.[17] About 85% of sample firms paid dividends. The large proportion of firms paying dividends reflects the importance of dividend payments to outside investors. The average of previous year stock returns is 8.9% while the median past stock return is only about 3.2% revealing serious skewness in the return distribution. Our other measure of firm performance, return-on-assets is 13.6% on average while the median value of return-on-assets is with a value of 11% only slightly lower. The age of sample firm ranges between 1 year for the youngest firm and 81 years for the oldest firm. Average age is about 28 years while the median corporation is 24 years old. The average size, as measured by the book value of total assets is about 9 million francs. The book value of the median firm, however, is only about 4.5 million francs. Finally, the average standard deviation of return-on-assets is 4.3%.

---

[17] Note that the minimum value of "Leverage" is zero. Three firms do not mention any leverage in their balance sheets. We ran all regressions excluding these observations. The results were qualitatively the same.

4. Empirical Results

In this section we asses the multivariate impact of our dependent variables on our transparency measures - income statement transparency and balance sheet transparency - and on the number of items displayed in either the balance sheet or the income statement. To this end we use ordered logit regressions including time fixed-effects. Given the persistence in the disclosure measures, we also cluster standard errors by firms to determine the significance of the regression coefficients. Standard errors clustered by firm account for the fact that standard errors of regression coefficients are downward biased if residuals are correlated across time for a given firm. When both a firm and a time effect are present in the data, the time effect can be addressed by including time dummies and then estimate standard errors clustered on the other dimension (Petersen, 2007).

Insert Table 4 about here

Table 4 displays the results of an ordered logit regression in which either income statement transparency (equation 1 and 2) or balance sheet transparency (equation 3 and 4) are the dependent variables. If firms have no incentive to supply information in their financial reports, the factors capturing their incentives should have no explanatory power. However the regressions in Table 4 indicate that the variables capturing the incentives of managers, explain between 5% and 16% of variation in the transparency measures.

In equation (1) all variables except the standard deviation of return-on-assets have the predicted sign.[18] In addition, the coefficients on bank director (p-value 0.062) and dividend (p-value 0.028) are significantly related to the transparency of the income statement. In addition, the coefficient of leverage is close to significance (p-value 0.101).[19] In equation (2), we divide the firms having an executive board member of a universal bank into *(i)* firms in which the bank has a direct equity stake and *(ii)* firms that have a banker on their executive board but in which the bank has no direct equity stake. We find that firms in which the banks have a direct equity participation significantly increase the transparency of their income statements (p-value 0.001) while the effect of having a banker on the board is still positive but no longer statistically significant. As in the first equation, the results reveal that dividend payments significantly reduce the transparency of the income statement (p-value 0.022). Finally, both equation (1) and equation (2) illustrate that industry effects are important. The transparency of income statements in coal mining corporations is significantly higher than the income statement transparency of tram and textile companies.

Equation (3) and (4) relate to the transparency of the balance sheet. The results suggest that factors driving balance sheet transparency are different from the factors driving income statement transparency. In contrast with income statement transparency, we find that balance sheet transparency is significantly positive related with bond financing, while dividend payments and bank control do not affect balance sheet transparency. One possible explanation is that the balance sheet provides information on the liquidation value of the company which is more important to debt

---

[18] The variation coefficient of return-on-assets is significantly negative in Barton and Waymire (2004).

[19] If we consider one-tailed p-values for tests on signed predictions (Barton and Waymire, 2004), we find that both bond financing and the degree of debt other than bonds significantly increase the transparency of the income statements in equation (1).

holders, while the income statement provides information about the earnings opportunities of a company. Equation (3) and (4) also indicate that industry differences are significant. Both railway and textile companies have significantly less transparent balance sheets than coal mining companies.

Insert Table 5 about here

Table 5 relates the same independent variables to the second measure of financial reporting quality, the number of items reported. Instead of focusing on key items, this measure provides an objective way to take into account the amount of information disclosed. We group the companies in our sample in 5 groups based on the number of items they disclose.[20] As in Table4, the first two equations relate to the income statement while the latter two refer to the balance sheet. Consistent with the results in Table 4, we find that the variables capturing incentives matter: the pseudo R^2 ranges between 6% and 9%.

We find that firms in which universal banks had either a director on the board or a direct equity stake were significantly more likely to report more items in their income statements, consistent with the results in Ta ble 4. In addition, younger firms are also significantly more likely to report more information than their older counterparts. On the other hand, dividend payments do not significantly affect the

[20] We also performed regressions by grouping the companies in 10 groups based on the number of items they disclose. The results were qualitatively the same, with minor differences. Ln(size) was significantly positive in equation (5) while bank director - no equity was no longer significant in equation (6). In addition, we estimated all regressions using a poisson count model with clustered standard errors. The results were again qualitatively the same with minor differences. Ln(size) was significantly positive at the 10% significance level in equations (5), (7) and (8) while bank equity stake was no longer significant in equation (6). The results of all additional regressions are available upon request.
.

number of items displayed in the income statement. Finally, the regressions illustrate the importance of taking into account industry differences. We find that railway companies are significantly more likely to disclose more information in their income statements than coal mining companies.

Equation (7) and (8) relate to the number of items displayed in the balance sheet. Consistent with the results in Table 4, we find that bond financing significantly increases the number of items displayed in the balance sheet. The regressions also reveal that firms with lower stock returns in the previous year significantly increase the number of items they disclose in the subsequent year. Finally, if a universal bank has a direct equity participation in a company, the company is likely to disclose fewer items in its balance sheet (p-value 0.050). This is consistent with the hypothesis that by investing in a company, the bank attaches its reputation of honesty and reliability which in turn reduces firms' incentives to disclose disaggregated information in the balance sheet. Finally, we find that tram companies disclose significantly more information in their balance sheets than do coal mining companies.

Although the financial reporting measures used in this paper potentially address different dimensions of corporate financial reporting, the results in Table 4 and Table 5 identified three common drivers of corporate financial reporting. First, our results suggest that universal banks focus on information in the income statement rather than the balance sheet. The focus by universal banks on the earnings opportunities of a company is consistent with the hypothesis that universal banks certified the value of affiliated companies in the stock market. Second, the availability of bond financing seems to be an important driver of both balance sheet transparency as well as the amount of information disclosed in the balance sheet. This is consistent with the fact that balance sheets provide information on the liquidation value of a company and are

therefore potentially more relevant to bondholders than income statements. Third, although we were able to identify firm-specific drivers of corporate financial reporting practices, our results suggest that industry characteristics are also an important driver of corporate financial reporting.

5. Conclusion

This paper investigates the determinants of financial reporting quality in Belgium, a French legal origin country, during the first era of globalization. The economic environment was characterized by poor investor protection not only by modern standards but also in comparison with other western European economies. In spite of poor investor protection, the Belgian economy was characterized by booming financial markets and strong universal banks. In addition, legislation of financial reporting was virtually non-existent. Except from mandatory publication of balance sheets and income statements in the appendices of the official gazette, firms faced no rules about how and what to report in their financial statements.

Our results show that in this setting there is substantial variation in the amount of information disclosed by firms. Furthermore, the amount of information disclosed was low in comparison with contemporaneous disclosure levels but in line with disclosure levels observed in the U.K or the Netherlands around that time. Consistent with economic historians accounts, our results indicate that universal banks significantly influenced financial reporting practices of companies under their control. In addition, our results suggest that dividend payments significantly reduced the incentives to provide transparent income statements consistent with the hypothesis that dividend payments were important substitutes for the quality of financial reporting. We also find that bond financing, a relatively new form of financing for corporations

increased both the transparency and the number of items displayed in the balance sheet. Finally, we find that low stock returns in the preceding year significantly increase the number of items displayed in the balance sheet in the subsequent year and that younger firms typically provided more disaggregated income statements.

As a limitation of our study, we acknowledge that we are unable to relate our measures of voluntary disclosure to economic consequences. However, Healy and Palepu (2001) indicate that even many contemporaneous studies making this link suffer from significant endogeneity and measurement error problems.

References

Arnold, A. J. (1997), 'Publishing your private affairs to the world: corporate financial disclosures in the UK (1900-24)', *Accounting, Business and Financial History*, Vol. 2, pp. 143-173.

Arnold, A. J. (1998), 'UK accounting disclosure practices and information asymmetry during the first quarter of the twentieth century: The effects on book returns and dividend cover'. *Journal of Business Finance and Accounting*, Vol. 25, Nos. 7-8, pp. 775-794.

Asare, S. K., L. A. Cunningham and A. Wright (2007), 'The Sarbanes-Oxley act: legal implications and research opportunities', *Research in Accounting Regulation*, Vol. 19, pp. 81-105.

Barton, J., Waymire, G., (2004), 'Investor protection under unregulated financial reporting', *Journal of Accounting and Economics*, Vol. 38, pp. 65-116.

Baskin, J.B. and P.J. Miranti, Jr. (1997), *A History of Corporate Finance* (Cambridge: Cambridge University Press).

Bhattacharya, S., (1979), 'Imperfect information, dividend policy and the "bird in the hand" fallacy', *Bell Journal of Economics*, Vol. 10, pp. 259-270.

Bordo, Michael D. and Christopher M. Meissner (2005), 'The Role of Foreign Currency Debt in Financial Crises: 1880-1913 vs. 1972-1997', Working Paper (National Bureau of Economic Research).

Botosan, C. A. (1997), 'Disclosure level and the cost of equity capital', *The Accounting Review*, Vol. 72, pp. 323-349.

Camfferman, K. (1997), *Voluntary annual report disclosure by listed Dutch companies, 1945-1983* (New York: Garland).

Camfferman, K. (2000), 'Jaarrekeningpublicatie door beursgenoteerde naamloze vennootschappen in Nederland tot 1910', *Jaarboek Nederlands Economisch Archief*, Vol. 63, pp. 71-103.

Carosso V.P. (1970), *Investment Banking in America : A History* (Cambridge: Harvard University Press).

Cheffins, B.R., (2006), 'Dividends as a substitute for corporate law: the separation of ownership and control in the United Kingdom', Unpublished Manuscript (Cambridge University).

Chlepner, B. S. (1930), *Le marché financier depuis cent ans* (Brussels: Falk)

Choi, W. (2007), 'Bank relationships and the value relevance of the income statement. Evidence from income statement conservatism' *Journal of Business, Finance and Accounting*, Vol. 34, pp. 1051-1072.

Clement, P. (2000), *Government consumption and investment in Belgium, 1830-1940: the reconstruction of a database* (Leuven: Leuven University Press).

De Beelde, I. (1992), 'Accounting information and its use in a number of Belgian coalmines during the first half of the twentieth century', Unpublished PhD Dissertation (Ghent University).

De Long, Bradford. J. (1991), 'Did J. P. Morgan's Men Add Value? An Economist's Perspective on Financial Capitalism.', in P. Temin (ed.), *Inside Business Entreprise: Historical Perspectives on the Use of Information* (Chicago: University of Chicago Press).

Deloof, M. and W. Van Overfelt (2007), 'Were modern capital structure theories valid in Belgium before World War I?', *Journal of Business Finance and Accounting*, Forthcoming.

Deloof, M., A. Roggeman and W. Van Overfelt (2006), 'Who's Afraid of Universal Banks? Universal Bank Affiliations and Corporate Dividend Policy in Pre-World War I Belgium', Working Paper (University of Antwerp).

Doidge, C., A. G. Karolyi and R. M. Stulz (2007), 'Has New York become less competitive in global markets? Evaluating foreign listing choices over time', Working Paper (Ohio State University).

Durviaux, R. (1947), *La Banque Mixte: Origine et Soutien de l'Expansion Economique de la Belgique* (Brussels : Etablissements Emile Bruylant).

Easterbrook, F. H. (1984), 'Agency-Cost Explanations of Dividends', *American Economic Review*, Vol. 74, pp. 650-659.

Edwards, J. R. (1989), *A history of financial accounting* (London: Routledge).

Financial Times (2006), 'Paulson seeks more flexible U.S. market rules', 21 November.

Financial Times (2007), 'Why corporate reporting so seldom enlightens', 9 April.

Fohlin, C. (2006), *Finance Capitalism and Germany's Rise to Industrial Power: Corporate Finance, Governance, and Performance from the 1840s to the Present* (Cambridge: Cambridge University Press).

Franks, J., C. Mayer and H.F. Wagner (2006), 'The Origins of the German Corporation – Finance, Ownership and Control', *Review of Finance*, Vol. 10, No. 4.

Frère, L. (1951), *Etude historique des sociétés anonymes belges* (Brussels: Desmet-Verteneuil).

Graham, B. and D.L. Dodd (1934), *Security analysis* (New York: McGraw-Hill).

Grossman, S. J. and O.D. Hart (1980), 'Takeover bids, the free-rider problem, and the theory of the corporation', *Bell Journal of Economics*, Vol. 11, pp. 42-54.

Hawkins, D. F. (1963), 'The development of modern financial reporting practices among American manufacturing corporations', *Business History Review*, Vol. 37, pp. 135-168.

Healy, P. M. and K.G. Palepu (2001), 'Information asymmetry, corporate disclosure and the capital markets: a review of the empirical disclosure literature', *Journal of Accounting and Economics*, Vol. 31, pp. 405-440.

Jensen, M.C. (1986), 'Agency Costs of Free Cash Flow, Corporate Finance and Takeovers', *American Economic Review* , Vol. 76, pp. 323-329.

John, K. and J. Williams, J. (1985), 'Dividends, dilution, and taxes: a signaling equilibrium', *Journal of Finance*, Vol. 45, pp. 1053-1070.

Kurgan-Van Hentenryk, G. (1997), 'The Société Générale, 1850-1934', in H. Van der Wee, H. (ed.), *The Generale Bank* (Tielt: Lannoo).

Lang, M. and R. Lundholm (1993), 'Cross-sectional determinants of analyst ratings of corporate disclosure', *Journal of Accounting Research*, Vol. 31, pp. 246-271.

Miller, G. S., (2002), 'Earnings performance and discretionary disclosure', *Journal of Accounting Research*, Vol. 40, pp. 173-204.

Miller, M. H. and K. Rock (1985), 'Dividend policy under asymmetric information', *Journal of Finance*, Vol. 45, pp. 1031-1051.

Mitchell, B. R. (1992), *International historical statistics* (New York: Stockton Press).

Musacchio, A. (2006), 'Can Civil Law Countries Get Good Institutions? Creditor Rights and Bond Markets in Brazil (and the World), 1850-2003', Working Paper (Harvard Business School).

Obstfeld, M. and A.M. Taylor (2002) 'Globalization and capital markets', Working Paper (National Bureau for Economic Research).

Petersen, M.A. (2007), 'Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches', *Review of Financial Studies*, forthcoming.

Rajan, R.G. and L. Zingales (2003), 'The Great Reversals: The Politics of Financial Development in the (20th Century', *Journal of Financial Economics*, Vol. 69, No. 1, pp. 5-50.

Ramirez, C.D. (1995), 'Did J. P. Morgan's Men Add Liquidity? Corporate Investment, Cash-Flow and Financial Structure at the Turn of the Twentieth Century.', *Journal of Finance*, Vol. 50, No. 2, pp.661-678.

Resteau, C. (1913), *Commentaire Législatif de la Loi du 25 mai (1913 Portant Modifications aux Lois sur les Sociétés Anonymes* (Brussels : Imprimerie Veuve Ferdinand Larcier)

Simon, M. C. (1998), 'The rise and fall of bank control in the United States: 1890-1939', *American Economic Review*, Vol. 88, pp. 1077-1093.

Sivakumar, K. N. and G. Waymire (1993), 'The information content of earnings in a discretionary reporting environment: Evidence from NYSE industrials, 1905-1910'. *Journal of Accounting Research*, Vol. 31, pp. 62-91.

The Economist, (2006), What's wrong with Wall Street?, 23 November.

Théate, T. (1905), *Les Sociétés Anonymes: Abus et Remèdes* (Paris: Mish & Thron).

Van Overfelt, W., J. Annaert, M. De Ceuster and M. Deloof (2006), 'Do Universal Banks Create Value? Universal Bank Affiliation and Company Performance in Belgium, (1905-1909', Working Paper (University of Antwerp).

Warner, J. B., R. L. Watts and K.H. Wruck (1988), 'Stock prices and top management changes', *Journal of Financial Economics*, Vol. 20, pp. 461-492.

Yosha, O., (1995), 'Information disclosure costs and the choice of financing structure', *Journal of Financial Intermediation*, Vol. 4, pp. 3-20.

APPENDIX: EXAMPLES OF BALANCE SHEETS AND INCOME STATEMENTS

Below are examples of financial statements as published in the appendices of the official gazette for two of our sample firms. One that we classify as having lower quality financial reporting (Linière Gantoise) and the other as having higher quality financial reporting (Tramways Est-Ouest de Liège et Extensions).

Linière Gantoise

Balance Sheet (Assets)	
Immeubles et mobilier industriel	5,896,463.75
Espèces en caisse et effets en portefeuille	103,751.66
Provisions diverses en magasin	310,904.46
Matières brutes et fabriquées	4,437,321.85
Débiteurs Divers	4,102,616.02
Total	14,851,057.74

Balance Sheet (Liabilities)	
Capital	7,500,000.00
Obligations	1,158,000.00
Fonds de réserve	938,298.89
Prévision Extraordinaire	435,244.12
Créanciers divers	2,666,023.68
Solde en Bénéfice	2,153,491.05
Total	14,851,057.74

Linière Gantoise

Income Statement	
Bénéfice net	2,153,491.05
Total	2,153,491.05
Au fonds de réserve 5%	61,701.11
A repartir conformément à l'article 25 des statuts	215,349.10
Dividende de 200 francs par action	1,500,000.00
Prévision extraordinaire	376,440.84
Total	1,412,570.00

Balance sheet transparency = 2

    i.   *Property, Plant & Equipment* = "Immeubles et mobilier industriel"

    ii.   *Intangible Assets* = Missing

    iii.   *Depreciation Reserve* = Missing

    iv.   *Reserves other than for depreciation* = "Fonds de Réserve"

    v.   *Earned Surplus* = Missing

Income statement transparency = 1

    i.   *Gross Revenue* = Missing

    ii.   *Production Costs* = Missing

    iii.   *Operating Profit* = "Bénéfice Net"

    iv.   *Depreciation* = Missing

    v.   *Other Expenses* = Missing

Tramways Est-Ouest de Liège et Extensions

Balance Sheet (Assets)

Obligations 2° Série à la souche 376 titres	188,000.00
Concessions	839,170.00
Premier établissement, études et expropriations	39,971.11
Immeubles et aubette	486,825.56
Voies	696,184.31
Matériel fixe	417,341.12
Matériel roulant	737,769.45
Equipement électrique	459,884.13
Outils et Accessoires	23,199.62
Mobilier	12,044.75
Cavalerie et harnais	1,432.00
Magasins et charbons	67,761.67
Cautionnement de concessions	10,000.00
Portefeuille	3,000.00
Masse d'habbillements	2,037.60
Banquiers	279,683.00
Caisse	10,818.56
Débiteurs divers	8,436.56
Cautionnements des administrateurs et commissaires (compte d'ordre)	70,000.00
Cautionnement du personnel (compte d'ordre)	16,925.00
Total	4,370,484.44

Tramways Est-Ouest de Liège et Extensions

Balance Sheet (Liabilities)

Capital: 7200 actions à 250 francs	1,800,000.00
Obligations: 1re série: 1,462 à 500 francs en circulation	731,000.00
Obligations: 2e série: 1,507 à 500 francs	753,500.00
Réserve Légale (ex. 1898/1899 à 1906/1907 inclus)	112,922.78
Fonds d'amortissement	471,000.00
Prévision pour renouvellement	113,988.37
Caisse d'encouragement	583.05
Créditeurs divers	31,247.37
Salaires dus	2,007.78
Coupons à Payer:	
Actions: 11.2% sur 1,800,000	201,600.00
Obligations et coupons en retard de présentation et pro rata d'intérêt du 1er janvier au 31 mars 1907	26,829.00
Total	228,429.00
Tantièmes aux administrateurs et commissaires et gratifications au personnel	33,480.09
Déposants administrateurs et commissaires (compte d'ordre)	70,000.00
Déposants personnel (compte d'ordre)	16,925.00
Solde à reporter	5,401.00
Total	4,370,484.44

Tramways Est-Ouest de Liège et Extensions

Income Statement (Crédit)	
Solde à nouveau	1,105.46
Recettes d'exploitation, intérêts, etc.	938,520.45
Total	939,625.91
Income Statement (Débit)	
Charges des obligations	88,447.21
Frais généraux	81,589.44
Salaires du personnel du mouvement	178,676.29
Salaires et entretien pour la traction électrique	113,210.58
Entretien du matériel roulant	39,050.17
Entretien de la voie et des bâtiments	26,918.32
Assurance du personnel et des tiers	29,748.38
Caisse de retraite au profit du personnel	2,072.00
Caisse de secours au profit du personnel	1,565.00
Règlement d'indemnités diverses et frais de procès	4,157.90
Balance	374,190.62
Total	939,625.91

Income Statement (Application du Bénéfice)	
1°) 5% à la réserve	18,709.53
2°) 11.2% sur 1,800,000 francs	201,600.00
3°) Tantièmes administrateurs et commissaires et gratifications au personnel	33,480.09
4°) Au compte d'amortissement	80,000.00
5°) Au compte prévision pour renouvellement	35,000.00
6°) Report à nouveau	5,401.00
Total	374,150.62

Balance sheet transparency = 5

i. *Property, Plant & Equipment* = Various fixed assets are provided: e.g.: "Immeubles et Aubettes" or "Matériel Fixe"

ii. *Intangible Assets* = "Concessions"

iii. *Depreciation Reserve* = "Fonds d'amortissement"

iv. *Reserves other than for depreciation* = "Réserve Légale (ex. 1898/1899 à 1906/1907 inclus)"

v. *Earned Surplus* = "Solde à reporter"

Income statement transparency = 5

i. *Gross Revenue* = "Recettes d'exploitation, intérêts, etc."

ii. *Production Costs* = Disaggregated production costs are provided: e.g.: " Salaires du personnel du mouvement" or "Entretien du matériel roulant",

iii. *Operating Profit* = "Balance"

iv. *Depreciation* = "Au compte d'amortissement"

v. *Other Expenses* = Various non production related costs are provided e.g.: "Règlement d'indemnités diverses et frais de procès" or "Caisse de secours au profit du personnel

Table 1

Sample firms across levels of income statement and balance sheet transparency

Panel A: Income statement transparency

% of firms disclosing:	Full sample	Coal mining	Tram	Railways	Textile
Gross revenues	27%	37%	99%	35%	48%
Production costs	27%	37%	99%	35%	48%
Operating profit	97%	97%	91%	100%	100%
Depreciation expense	56%	59%	61%	11%	59%
Other operating expense	75%	72%	89%	100%	59%

Panel B: Income statement transparency

Distribution of scores	Full Sample	Coal mining	Tram	Railways	Textile
5 items	11.64%	15.32%	9.90%	5.41%	1.20%
4	10.41%	13.01%	0.00%	29.73%	3.61%
3	38.10%	38.15%	42.57%	5.41%	46.99%
2	28.22%	24.86%	36.63%	59.46%	18.07%
1	11.64%	8.67%	10.89%	0.00%	30.12%
0	0.00%	0.00%	0.00%	0.00%	0.00%
Average (median) score	2.82 (3)	3.01 (3)	2.61 (3)	2.81 (2)	2.27 (3)

Panel C: Balance sheet transparency

% of firms disclosing	Full sample	Coal mining	Tram	Railways	Textile
Property plant equipment	98%	98%	99%	89%	100%
Depreciation reserve	27%	16%	13%	14%	0%
Intangible assets	14%	15%	58%	27%	47%
Reserves other than for depreciation	93%	98%	92%	93%	93%
Earned surplus	69%	86%	91%	69%	0%

Panel D: Balance sheet transparency

Distribution of scores	Full Sample	Coal mining	Tram	Railways	Textile
5 items	3.00%	2.02%	9.90%	0.00%	0.00%
4	21.52%	22.25%	43.56%	2.70%	0.00%
3	54.14%	63.58%	36.63%	35.14%	44.58%
2	17.11%	11.27%	9.90%	16.22%	50.60%
1	4.23%	0.87%	0.00%	45.95%	4.82%
0	0.00%	0.00%	0.00%	0.00%	0.00%
Average (median) score	3.01 (3)	3.13 (3)	3.53 (4)	1.95 (2)	2.40 (2)

The sample consists of 567 firm-year observations (131 different firms) listed on the Brussels Stock Exchange over the period 1905-1909. Financial reporting variables come from the financial statements as published in the appendices of the official gazette. Income statement transparency relates to the number of following items disclosed: gross revenues; production costs; operating profit; depreciation expense; other operating expenses. Balance sheet transparency relates to the number of following items disclosed: property, plant and equipment; intangible assets; depreciation reserve; reserves other than for depreciation; earned surplus.

Table 2

Disclosure levels in income statement and balance sheet across years and across industries

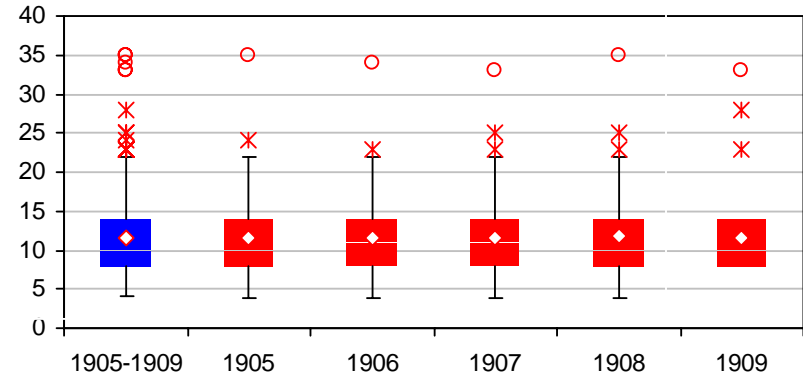|	*Panel A: # items in income statement*									
	Full Sample		Coal		Rail		Tram		Text	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
1905	11.51	5.07	10.64	3.97	13.71*	3.86	14.31*	8.01	11.33	5.14
1906	11.56	5.15	10.83	4.27	14.13**	3.13	14.30*	7.39	9.58	4.62
1907	11.60	5.08	10.86	4.36	13.75**	2.87	14.86**	6.81	9.95	4.61
1908	11.72	5.16	10.81	4.48	13.86**	2.79	15.36***	6.87	10.05	3.78
1909	11.57	4.98	10.59	4.23	14.00**	2.77	15.32***	6.60	9.95	3.59
	Panel B: # items in balance sheet									
	Full Sample		Coal		Rail		Tram		Text	
	Mean	Std	Mean	Std	Mean	Std	Mean	Std	Mean	Std
1905	22.72	10.05	19.81	7.65	27.43	11.73	32.00***	12.39	23.83	9.99
1906	22.61	10.22	20.43	8.56	25.13	12.51	30.30***	11.75	20.83	9.54
1907	22.87	10.08	20.66	8.48	25.63	12.87	30.57***	11.65	21.50	8.87
1908	23.29	10.40	20.96	9.07	24.86	12.93	31.86***	10.71	21.37	9.03
1909	23.06	10.28	20.82	8.83	26.29	13.76	31.95***	11.07	19.75	7.08

The sample consists of 567 firm-year observations (131 different firms) listed on the Brussels Stock Exchange over the period 1905-1909. Financial reporting variables come from the financial statements as published in the appendices of the official gazette. ***, ** and * indicate that the average number of items displayed is significantly different from the average number of items in the coal mining industry at the 1%, 5% and 10% significance level respectively (two tailed t-tests are used to assess significance).   .
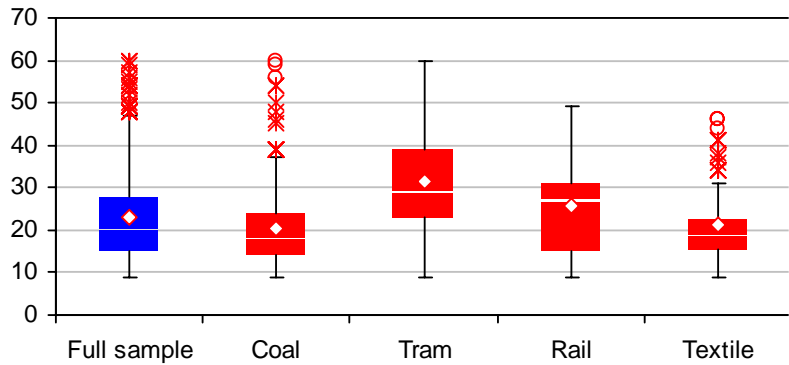
Figure 1: # items balance sheet: full sample and by year
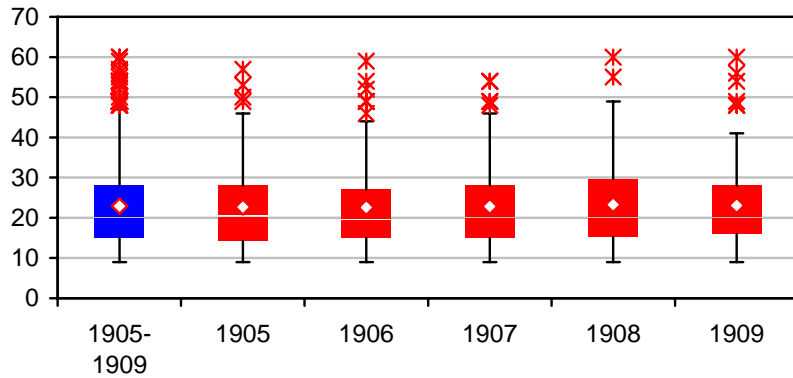
Figure 2: # items income statement: full sample and by year

Figure 3: # items balance sheet: full sample and by industry

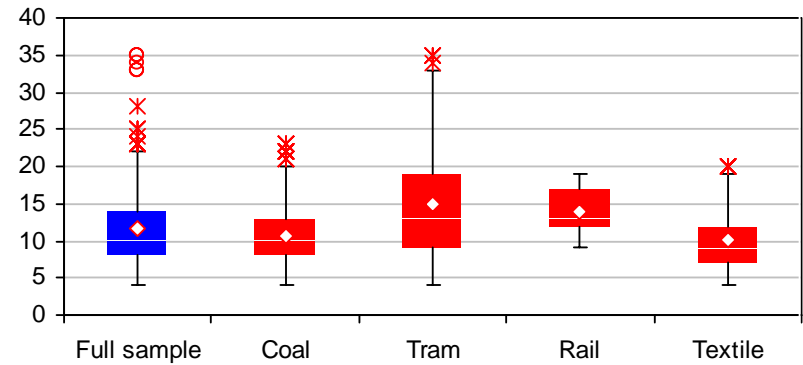**Figure 4: # items income statement: full sample and by industry**

Figure 1 - Figure 4 display box plots for sample firms across industries and across time. The sample consists of 567 firm-year observations (131 different firms) listed on the Brussels Stock Exchange over the period 1905-1909. The white line in each box represents the median number of items while the square represents the average. The boundaries of the boxes are the 25th and 75th quartile, so that the width of the box represents the inter-quartile range. The whiskers are calculated as 25th percentile minus 1.5 times the inter-quartile range and 75th percentile plus 1.5 times the inter-quartile range. The stars are data points that fall outside the range defined by median minus 1.5 times the inter quartile range and median plus 1.5 times the inter quartile range but within median minus three times inter-quartile range and median plus three times inter-quartile range. The dots are beyond three times the inter-quartile range.

Table 3

Descriptive statistics for independent variables

Variable	Mean	Median	Standard deviation	Min	Max
Bank director	0.379				
Bank equity stake	0.132				
Bonds	0.474				
Dividend	0.848				
Leverage	0.142	0.093	0.137	0.000	0.744
Stock return	0.089	0.032	0.259	-0.712	0.988
Ln(age)	3.066	3.178	0.815	0.000	4.394
Ln(size)	15.459	15.338	0.985	11.054	18.725
Return-on-assets	0.136	0.110	0.119	-0.255	0.872
Standard deviation return-on-assets	0.043	0.035	0.037	0.000	0.196

The sample consists of 567 firm-year observations (131 different firms) listed on the Brussels Stock Exchange over the period 1905-1909.

Table 4

Determinants of income statement and balance sheet transparency

	Exp. Sign	Income statement transparency		Balance sheet transparency	
		(1)	**(2)**	**(3)**	**(4)**
Bank director	+	0.788* (0.062)		-0.116 (0.755)	
Bank director -no equity	+		0.269 (0.517)		-0.077 (0.857)
Bank equity stake	+		2.148*** (0.001)		-0.224 (0.648)
Bonds	+	0.517 (0.154)	0.433 (0.243)	0.859** (0.022)	0.866** (0.020)
Leverage	+	1.591 (0.101)	1.166 (0.294)	-1.026 (0.366)	-1.013 (0.373)
Dividend	+/-	-0.816** (0.028)	-0.917** (0.022)	0.174 (0.759)	0.184 (0.744)
Stock return	+/-	-0.186 (0.579)	-0.193 (0.580)	-0.285 (0.471)	-0.283 (0.477)
Ln(age)	-	-0.065 (0.775)	-0.033 (0.879)	-0.360 (0.120)	-0.359 (0.123)
Ln(size)	+/-	0.180 (0.373)	0.128 (0.571)	-0.186 (0.392)	-0.176 (0.452)
Return-on-assets	+/-	1.157 (0.555)	1.064 (0.589)	0.999 (0.599)	0.989 (0.608)
Standard deviation return-on-assets	+	-4.536 (0.543)	-3.528 (0.635)	-8.052 (0.330)	-8.054 (0.332)
Railway dummy		-1.282 (0.103)	-1.256 (0.276)	-3.705*** (0.005)	-3.720*** (0.005)
Tram dummy		-1.471*** (0.008)	-1.120** (0.050)	0.528 (0.411)	0.492 (0.472)
Textile dummy		-1.745*** (0.001)	-1.514** (0.013)	-2.527*** (0.000)	-2.543*** (0.000)
Year fixed effects		Included	Included	Included	Included
Pseudo R²		0.06	0.08	0.16	0.16
Wald $\chi^2_{(k)}$		29.44**	40.17**	55.13***	55.82***

The sample consists of 131 Belgian listed firms (567 firm-years) in the coal mining, trams, railways and textiles industry over the period 1905-1909. The regression results are based on ordered logit models with clustered standard errors. Income statement transparency relates to the number of following items disclosed: gross revenues; production costs; operating profit; depreciation expense; other operating expenses. Balance sheet transparency relates to the number of following items disclosed: property, plant and equipment; intangible assets; depreciation reserve; reserves other than for depreciation; earned surplus. ***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels respectively based on two-tailed tests. p-values are given in parentheses.

Table 5

Determinants of the number of items displayed in income statements and balance sheets

	Exp. sign	# Items income statement		# Items balance sheet	
		(5)	(6)	(7)	(8)
Bank director	+	1.008*** (0.008)		-0.153 (0.719)	
Bank director-no equity	+		0.703* (0.089)		0.263 (0.529)
Bank equity stake	+		1.579*** (0.007)		-1.256** (0.050)
Bonds	+	0.224 (0.547)	0.159 (0.675)	0.757** (0.024)	0.883*** (0.009)
Leverage	+	-0.094 (0.937)	-0.254 (0.838)	-0.671 (0.638)	-0.549 (0.682)
Dividend	+/-	-0.170 (0.667)	-0.205 (0.604)	-0.199 (0.612)	-0.109 (0.785)
Stock return	+/-	-0.359 (0.443)	-0.299 (0.537)	-0.682* (0.068)	-0.743* (0.059)
Ln(age)	-	-0.480** (0.037)	-0.485** (0.038)	-0.057 (0.797)	-0.046 (0.827)
Ln(size)	+/-	0.283 (0.176)	0.250 (0.245)	0.085 (0.727)	0.157 (0.512)
standard deviation return-on-assets	+	7.209 (0.305)	7.717 (0.291)	0.100 (0.988)	0.038 (0.995)
Return-on-assets	+/-	0.594 (0.707)	0.451 (0.776)	-0.104 (0.940)	-0.267 (0.846)
Railway dummy		1.471** (0.035)	1.595** (0.026)	0.511 (0.512)	0.492 (0.624)
Tram dummy		0.758 (0.214)	1.013 (0.140)	1.519*** (0.004)	1.233** (0.014)
Textile dummy		-0.301 (0.617)	-0.192 (0.764)	0.043 (0.942)	-0.087 (0.881)
Year fixed effects		Included	Included	Included	Included
Pseudo R²		0.06	0.07	0.07	0.09
Wald $\chi^2_{(k)}$		32.51***	32.57***	40.49***	49.79***

The sample consists of 131 Belgian listed firms (567 firm-years) in the coal mining, trams, railways and textiles industry over the period 1905-1909. The number of items displayed in balance sheets and income statements are divided in five groups. The regression results are based on ordered logit models with clustered standard errors. ***, ** and * denote significance at the 0.01, 0.05 and 0.10 levels respectively based on two-tailed tests. p-values are given in parentheses.