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The Performance of European Business in the Twentieth Century: A Pilot Study

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The purpose of this paper is to outline the conceptual framework of the project on "The Performance of European Business in the Twentieth Century," present some of the project's initial findings, and start a debate on the issue of performance among business historians. We launched the project to fill a major gap in the business history literature. It provides a comparative analysis of business performance in seven key European economies: Belgium, Britain, France, Germany, Italy, Spain, and Sweden. We preview the outcome of the project in this pilot study using the first and the last observation years: 1913 and 2000. We focus on two key measures of performance: return on equity and holding return, two complementary measures which can move in opposite directions (for example in 1913, an *annus horribilis* for investors despite high returns on equity). Our intent is to confront these results with qualitative data on a number of individual companies, making use of a prosopographical approach. Exploring the potential of integrating the history of the firm into a collective analysis of business performance should provide business history a contribution to the theme of performance, distinct from that of economics, accountancy, or business strategy.

The object of this paper is threefold. First, to outline the conceptual and methodological framework of the project on "The Performance of European Business in the Twentieth Century," second, to present some of

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the project's initial findings, and third, to start a debate on the issue of performance among business historians. [1]

Conceptual and Methodological Framework

In the last analysis, performance is at the very heart of business history. Its object is to explain the success or failure of a company, an entire industry, or, on a more global level, the relationship between business performance and economic performance. Yet, surprisingly, economic and business historians have neglected the analysis of performance. Data are of course available at the firm or even sectoral level.[2] There have been a few national analyses of profits and profitability, especially in France, with studies inspired by Jean Bouvier in the 1960s and Jacques Marseille in the 1990s;[3] and a recent German doctoral candidate has reassessed business profitability under the Weimar Republic and the Nazi regime.[4] At the European level, Youssef Cassis attempted a comparative analysis of the performance (defined in terms of net profits, returns on equity, and survival) of the leading British, French, and German companies in the course of the twentieth century as part of his study of big business in the three major European economies.[5]

The contributions from economics and business strategy, though important, do not fill the gaps in the literature. Neo-classical economics assumes that in a competitive environment expected profits converge in the long-term and pays little attention to the performance of individual companies. Institutional economics focuses attention on firms but has not directly addressed the question of performance. There have been a number of major research projects on company profits using applied economics, especially in Britain. Peter E. Hart's work on the interwar years and beyond, based on Inland Revenue data and figures from the Central Statistical Office, provided aggregate data by industry and considered a number of issues such as the appropriation of profit and the

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[1] We thank all the members of the project group for their contributions, and Terry Gourvish, Naomi Lamoreaux, and Margaret Levenstein for useful suggestions and comments on this paper.

[2] See for example Terence R. Gourvish and Richard G. Wilson, *The British Brewing Industry 1830-1980* (New York, 1994).

[3] Jean Bouvier, François Furet, Marcel Gillet, *Le mouvement du profit en France au XIXème siècle* (Paris, 1965); Jacques Marseille, ed., *Les performances des entreprises françaises au XXème siècle* (Paris, 1995).

[4] Mark Spoerer, *Von Scheingewinn zum Rüstungsboom: die Eigenkapital-rentabilität der deutschen Industrieakiengesellschaften, 1925-1941* (Stuttgart, 1996).

[5] Youssef Cassis, *Big Business: The European Experience in the Twentieth Century* (New York, 1997).

effects of the size of firm.[6] Geoffrey Whittington, in his analysis of company profits in the 1950s, based on the published accounts of all United Kingdom quoted companies engaged in manufacturing and distribution, was more directly interested in the profitability of firms, though at an aggregate level.[7] Similar studies have been undertaken in Continental Europe.[8] In a more recent comparative study, Dennis Mueller and others acknowledged the importance of firm characteristics to explain the persistence of diverging profit rates without going beyond the level of aggregate figures at the national level.[9]

The business strategy literature has more directly addressed the question of the relationship between organizational structure and performance at the company level, at least since Richard Rumelt's classic work on America's largest companies in the 1950s and 1960s. In the heyday of Chandlerian studies, Rumelt's conclusions pointed to strong performance for firms combining a strategy of diversification with a structure of divisional organization.[10] Interestingly, Richard Whittington and Michael Mayer have drawn similar conclusions in their recent analysis of the top 100 British, French, and German companies in the 1980s and 1990s.[11] One increasingly influential view of performance has been the measure of organizational longevity, notably James Collins and Jerry Porras' work on American firms.[12] Organizational longevity has also interested business historians, in particular Leslie Hannah, who has

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[6] Peter E. Hart, *Studies in Profit, Business Saving, and Investment in the United Kingdom, 1920-1962*, 2 vols. (London, 1965), 2, 68.

[7] Geoffrey Whittington, *The Prediction of Profitability and Other Studies of Company Behaviour* (Cambridge, U.K., 1971).

[8] See for example G. Echevarria and J. L. Herrero, "La evolución de la economia española durante el período 1940-1988 a partir de un indicator de la tasa de beneficio del sector industrial," *Información Comercial Española* (1989), 665; Xavier Taffunell, "Los beneficios empresariales en España, 1881-1980. Estimación de un índice annual de excedente de la gran empresa," in *Rivista de Historia Económica*, (1998), 16, 3, 707-46; Helmut Bruse, *Wettbewerbs-beurteilungen auf statischer und dynamischer Basis, illustriert anhand fer Aktiengesellschaften de "Bonner Stichprobe"* (Bonn, 1981).

[9] See in particular Dennis C. Mueller, ed., *The Dynamics of Company Profits: An International Comparison* (New York, 1990.)

[10] Richard P. Rumelt, *Strategy, Structure, and Economic Performance* (Boston, 1974).

[11] Richard Whittington and Michael Mayer, *The European Corporation: Strategy, Structure, and Social Science* (New York, 2000). Whittington and Mayer's aim was to extend the Harvard program of the early 1970s, which included studies by Rumelt on the United States, Channon on Britain, Dyas on France, Thanheiser on Germany and Pavan on Italy.

[12] James C. Collins and Jerry I. Porras, *Built to Last: Successful Habits of Visionary Companies* (London, 1994).

compared the world's largest 100 firms in 1912 and 1995.[13] There is undoubtedly much to be learned from the business strategy literature, especially concerning the analysis of performance in the last two or three decades. Nevertheless, it does not replace the long-term perspective and human dimension brought by the historical approach.

In the absence of historical evidence at the level of the firm, historians, and to an even greater extent other social scientists, have relied on macroeconomic data or made a number of assumptions regarding performance, chief among them the strategy and structure of the firm,[14] technological innovation,[15] multinational development,[16] state intervention,[17] industrial relations,[18] and social and cultural attitudes.[19] On this basis implicit or explicit rankings of national "models" have been established: "universality" of the American model in the 1950s and 1960s, "superiority" of the German model in Europe, "admiration" for Japanese practices until very recently.[20] However, scholars have begun to question the validity of many of these assumptions. Leslie Hannah has shown that,

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[13] Leslie Hannah, "Marshall 'Trees' and Global 'Forest': were 'Giant Redwoods' Different?," in *Learning by Doing in Markets, Firms, and Countries*, ed. Naomi R. Lamoreaux, Daniel M. G. Raff, and Peter Temin (Chicago, 1999). See also the current research projects undertaken by Howard Gospel and Martin Fidler on the Global 100 in the twentieth century, measured by employment, and on the largest British and German employers.

[14] See in particular Alfred D. Chandler, Jr., *Scale and Scope* (Cambridge, Mass., 1990); William Lazonick, *Business Organization and the Myth of the Market Economy* (Cambridge, U.K., 1991); Alfred D. Chandler, Jr., Franco Amatori, and Takashi Hikino, eds., *Big Business and the Wealth of Nations* (New York, 1997).

[15] See for example David C. Mowery and Nathan Rosenberg, *Technology and the Pursuit of Economic Growth* (Cambridge, U.K., 1991); François Caron, *Les deux révolutions industrielles du XXe siècle* (Paris, 1997).

[16] Alice Teichova, Maurice Lévy-Leboyer, and Helga Nussbaum, eds., *Multinational Enterprise in Historical Perspective* (Cambridge, U.K., 1986); Geoffrey Jones, *The Evolution of International Business: An Introduction* (London, 1996); Mira Wilkins and Harm Schröter, eds., *The Free Standing Company in the World Economy, 1830-1996* (New York, 1998).

[17] Martin Chick, ed., *Governments, Industries, and Markets: Aspects of Government-Industry Relations in the UK, Japan, West Germany, and The USA Since 1945* (Aldershot, 1990), Pier Angelo Toninelli, ed., *The Rise and Fall of State-Owned Enterprise in the Western World* (Cambridge, U.K., 2000).

[18] Howard F. Gospel and Craig R. Littler eds., *Managerial Hierarchies and Industrial Relations: An Historical and Comparative Study* (London, 1983); Steven Tolliday and Jonathan Zeitlin, eds., *The Power to Manage? Employers and Industrial Relations in Comparative Historical Perspective* (London, 1991).

[19] Keiichiro Nakagawa, ed., *Social Order and Entrepreneurship* (Tokyo, 1977); Alain Beltran and Michèle Ruffat (dir.), *Culture d'entreprises et Histoire* (Paris, 1991); Youssef Cassis ed., *Business Elites* (Aldershot, 1994).

[20] Etsuo Abé and Terry Gourvish, *Japanese Success? British Failure? Comparisons in Business Performance since 1945* (Oxford, U.K., 1997).

contrary to Chandler's assertions, the British were actually more successful than the Germans or Americans in establishing dominant firms in global oligopolies.[21] Cassis' estimates have revealed that British firms have proved more profitable than their German counterparts throughout the twentieth century, thus raising the question of the relationships between business performance at the microeconomic level and economic performance at the macroeconomic level.[22] One could similarly question most factors considered conducive to economic success: superiority of managerial over family control,[23] universal over deposit banking,[24] and so on.

In this project, we proposed to test the validity of a number of explanatory variables of business and economic performance through the empirical analysis of the performance of a sample of European companies. This raises the question of the methodological approach best suited to this end.

Methodology

Before dealing with the more technical aspects of methodology, it is essential to define the notion of performance. The many criteria for different aspects of performance can be divided into five broad categories: size, rate of return, survival and longevity, competitiveness, and reputation and ethics. Size (whether measured by market capitalization, turnover, workforce, or total assets) can be considered an indirect measure of performance, as growth is usually, though not necessarily, the outcome of strong competitive results. Rate of return (such as return on equity and holding return) is in many respects the most direct measure. Value added has recently been considered the key measure of business performance, but its calculation is highly problematic for most of the twentieth century.[25] Survival and longevity are partial measures of performance in that they can indicate success or failure, depending on the context. The sale of a company might be in the shareholders' best interest or part of an

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[21] Leslie Hannah, "Survival and Size Mobility Among the World's Largest 100 Industrial Corporations, 1912-1955," *American Economic Review* 88 (May 1998): 62-65, and "Marshall 'Trees' and Global 'Forest'."

[22] Youssef Cassis, *Big Business*.

[23] See for example Geoffrey Jones and Mary B. Rose, eds., *Family Capitalism*, Special Issue of *Business History* 35/4 (1993).

[24] See for example Youssef Cassis, Gerald D. Feldman, and Ulf Olsson, eds., *The Evolution of Financial Institutions and Markets in Twentieth Century Europe* (Aldershot, 1994); Jeremy Edwards and Sheilagh Ogilvie, "Universal Banks and German Industrialisation: A Reappraisal," *Economic History Review* 49 (Aug. 1996): 427-46; Michael Collins, "English Bank Development Within A European Context," *Economic History Review* 51 (Feb. 1998): 1-24.

[25] See for example John A. Kay, *Foundations of Corporate Success* (Oxford, U.K., 1993).

industry's necessary reorganization, while survival may be the result of a Malthusian policy. Competitiveness includes physical measures of performance such as market share, production per worker, and so on. It is a direct measure, which can be extremely useful for comparative purposes though only within a homogeneous group of industries. Innovative capacity, though important, should be considered as a factor rather than a measure of performance. Finally, reputation and ethics, with a variety of qualitative indicators ranging from jobs creation to carrying the national flag, could provide a fascinating complementary measure of business performance.

A study of the performance of European firms in the twentieth century encompasses a vast amount of information stretching across time and several countries. Such a project can only be carried out within a European, collective, and multidisciplinary framework. It relies on experts in the major European countries who advise and support a core team by providing contacts and expertise on individual countries, as well by contributing directly to the project and encouraging research on the subject.[26] Moreover, analyzing firms in Belgium, Britain, France, Germany, Italy, Spain, and Sweden for the benchmark years of 1913, 1927, 1954, 1972 and 2000, requires a robust and flexible methodological framework. Lucidity in definition and methods can enhance robustness. Flexibility is needed to capture historical and geographical diversities, and to deal with issues that arise as the work progresses. The fore-mentioned concerns led the project group to embark upon a pilot study using the first and the last observation years, 1913 and 2000.

One of the main methodological issues raised by this project concerns the selection criteria for the companies to be included in the database, in particular, questions related to measures of company size and sectors' representation. Companies have been selected based on assets, turnover, and market capitalization, but the criteria have been ranked differently over time.[27] The primary selection criterion for the 1913 sample is total assets, while turnover is the selection criterion for 2000, with

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[26] The project is jointly based at the Business History Unit, London School of Economics and the Maison des Sciences de l'Homme-Alpes, Université Pierre Mendes France, Grenoble, and is coordinated by Youssef Cassis with Camilla Brautaset (LSE) serving as research officer to the project. The team of European experts includes Franco Amatori (Bocconi), Dominique Barjot (Paris IV), Albert Carreras (Pompeu Fabra), Youssef Cassis (Grenoble 2 and LSE), Anne Dalmasso (Grenoble 2), Terry Gourvish (LSE), Riitta Hjerppe (Helsinki), Ginette Kurgan van Hentenryk (Bruxelles), Isabelle Lescent-Giles (Paris IV), Harm Schröter (Bergen), and Peter Wardley (West of England).

[27] We regarded total assets as preferable to other balance sheet indicators, for instance share capital. However, when using total assets, we take special care has to make sure that the figures represent a consolidated sum, in particular for multinationals, holding, and freestanding companies.

market capitalization serving as a control indicator for both years.[28] For companies operating in financial intermediation the same indicators (assets and market capitalization) have been applied for the entire time span.[29] We use this approach because banks' liabilities are made up of deposits, making their assets disproportionately large, which could bias the selection of companies and necessitate dealing separately with the financial sector.

The selection procedure has been as follows: a list of the 100 largest non-financial companies in Europe was established, complemented for each country by lists of the top 5 financial firms and the 10 largest non-financial firms.[30] Because we aim to embrace both the depth and breadth of European business, this procedure runs the risk of being incomplete if it does not ensure that the largest firms per sector are included in the sample. To do so while keeping the number of companies to a manageable size and weighting the national representations according to the size of their economy, we decided that Britain, France, and Germany would have three companies per sector, Italy two, and Belgium, Spain, and Sweden one.[31] Each country also has five "wildcards" to complement the national selection should the national experts feel that there are companies that ought to be included in the sample that do not fit the selection criteria.[32] Also, the database covers a far wider range of firms than those fitting the selection criteria, as collecting data for as many companies as possible is a prerequisite for establishing that we have included the largest firms in our

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[28] While total assets and turnover are more or less straightforward to define, we can measure market capitalization in numerous ways. Market capitalization is the multiple of price and value of the shares. We decided to use the share prices of the ordinary and preference shares on the last trading day of the year, and the number of ordinary and preference shares as volume.

[29] We consider market capitalization too volatile to serve as the main selection criteria; in addition, especially for the early part of the century it also excludes the non-quoted family companies.

[30] For 1913, the railway sector was in a special position as it represented many of the largest European and indeed the World's largest companies in terms of assets. Though it can be seen as abstracting from the real world where all the big enterprises were railways, it was decided to deal with railways separately and take these firms out of the lists of the largest firms. This was, among other reasons, to avoid a total domination of railways in our study, and the fact that for a few of the countries in the sample railways were already nationalized at this point; the top 10 companies' lists also exclude railways. However, there are additional lists for each country of the top 5 railway companies where appropriate, as well as a list of the top 20 railways in Europe for 1913.

[31] In addition, as a fundamental principle of the project, we carried out the research from the perspective of the firm, not national economies, and the sample therefore includes subsidiaries.

[32] This may particularly be true of smaller economies, or in the case of countries where the economy is dominated by a given sector.

sample. In addition (although less relevant for 1913 than for 2000), there are firms in the top 100 European list that originated outside the seven countries under study.[33] The data for these firms were collected, but not included in our analysis.

Another important issue concerns the definition of sectors and industries. The business history literature shows strong diversity in labeling economic activities. Peter Payne, rather than using any standard classification or aggregated categories, specified firms individually by the nature of their core activities.[34] In his *Scale and Scope*, Alfred Chandler applied the U.S. 1972 Standard Industrial Classification.[35] Peter Wardley adopted an individually defined classification.[36] He argued that preferred international standards tend to identify products rather than activities, and that despite the availability of a wide range of taxonomies, there is no universally accepted classification.[37] In a later work, Wardley adopts the Standard Industrial Classification (SIC).[38] Christopher Schmitz does not specify the basis of his definition of industrial sectors, moving between broad categories and the core activity of the firm.[39] Cassis worked with three major categories: Industry, Banking and Finance, and Services, each of these three being divided into broad subgroups.[40]

Public statistics also contribute to the intricacies of terminology, as there is diversity in time due to the many revisions of nomenclatures over the years and space due to national and regional variations. In short, one

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[33] Defining Europe in the broadest sense (including Eastern-Europe, Russia, and Turkey), 17 of the 100 largest firms in 2000 ranked by turnover were from other countries. However, this also implies that this study covers 83 per cent of the largest firms.

[34] Peter L. Payne, "The Emergence of Large-Scale Companies in Great Britain, 1870-1914," *Economic History Review* 20 (1967): 539-542.

[35] Chandler, *Scale and Scope*, 632.

[36] Peter Wardley, "The Anatomy of Big Business: Aspects of Corporate Development in the Twentieth Century," *Business History* 33 (April 1991): 281.

[37] While the first objection may be correct, international classifications have been the case for most of the member states in the United Nations since the 1950s. Wardley specifies three main categories: Services, Goods production, and Conglomerates and Holding Companies. Services have five subgroups: Transport and trade, Financial services, Retail and distribution, Personal services, Communication and information, and Utilities. Goods production is divided into two subgroups: Extraction and Manufacturing. Each of the subgroups has one or more satellite posts.

[38] Peter Wardley, "The Emergence of Big Business: The Largest Corporate Employers of Labour in the United Kingdom, Germany and the United States c. 1907," *Business History* 41 (Oct. 1999): 89, 101-112. Wardley does not explicitly define which standard he applied. However, looking at his categories, it seems he uses SIC Rev. 2.

[39] Christopher Schmitz, '"The Worlds Largest Industrial Companies of 1912," *Business History* 37 (Oct. 1995): 86-90.

[40] Cassis, *Big Business,* 239-266.

can argue that statistical classification largely follows the trend of regionalization and the development of trading blocs over the past decade, while the United Nation's statistical division is the body that provides co-ordination and comparability between the different sets of standards. There are several international systems of classifications, applicable when systemizing data on company activities, leaving the choice of standard to depend on the questions one wants to address.[41]

We decided to design an approach that is flexible with regard to the historical context, but robust when defining business activities. On an aggregated level, the sectors will reflect the economic structure of the time of the benchmark years. There are 16 sectors in 1913, and 21 sectors for 2000. For 2000, there are sectors such as post and telecoms, while the 1913 sectors give more openings to "old industries." Each firm will be uniquely identified according to its core business activities by an ISIC code.[42] Thus, while the sectors are flexible, the company identification is not and the ISIC codes are the same for all observation years.[43]

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[41] International Standardised Industrial Classification (ISIC) is a classification system designed and applied by the United Nations Statistics Division (UNSD). The standard corresponds with the other key classification nomenclatures, Broad Economic Categories (BEC), Standard International Trade Classification (SITC), Nomenclature statistique des Activités économiques (NACE), and System of National Accounts (SNA). BEC was designed to serve as a means for converting external trade data compiled on the STIC into end-use categories that are meaningful within the framework of the SNA, namely categories approximating the three basic classes of goods in the SNA: capital, intermediate and consumer goods. It should be mentioned here that NACE Rev. 1 is the classification of economic activities corresponding to ISIC Rev.3 at European level. Though more disaggregated than ISIC Rev.3, NACE Rev.1 is in line with it and can thus be regarded as ISIC's European counterpart. Classification of Products by Activity (CPA) within the European Economic Community is a product nomenclature structured according to industrial origin. It is harmonized with other Community classifications and with the corresponding UN's classifications. Use of the CPA became compulsory with Council Regulation in 1993, which was amended in 1998. Inspired by the former U.S. SIC, standard, most countries also have a national coding. For instance, the United Kingdom's national statistical classification is the UK SIC, which was recently revised. There are plans for a major revision of this standard along with the ISIC and the NACE in the next major revision in 2007. The national standards do, however, correspond with the international standards. Thus, in the case of the United Kingdom, the national SIC corresponds with the NACE Rev.1.1.

[42] Moving closer to the present day, such coding gets increasingly challenging due to conglomerates and diversified product strategies. We are following the practice set by the large statistical bodies, for instance the Eurostat, in classifying the firms according to their core activities, which are defined as the share each business activity represents in total turnover.

[43] We have chosen to adopt the latest version of ISIC, i.e., ISIC Rev. 3.1.

There are both practical and theoretical reasons behind the choice of this approach. First, there is the potential for international comparisons. Comparative studies of this scale require that one is able to implement and handle the set of tools offered by statistical bodies in order to make use of the large amount of data collected and to make it compatible to similar studies around the globe. Though the European perspective is interesting *per se*, we also would like to communicate our results with colleagues in the rest of the world, particularly in the United States and in Japan, and the ISIC will allow us to do so.[44] Second, as the standard is continuously updated, it will allow us to update the database according to applied and accepted international standards of classification. Third, and finally, we emphasize that the American version of the SIC is now totally outdated and should no longer be used. The SIC coding was initially an American standard designed to suit the American economy, derived from various censuses, and was established in the interwar period. In the late 1990s, the U.S Census Bureau itself abandoned the SIC and replaced it by the North American Industrial Classification System (NAICS).[45]

The purpose of these procedures is to obtain the best possible methodological framework for analyzing a firm's performance. Because perceptions of performance vary, we chose two variables for the quantitative part of the study, return on equity and holding return. Using 1913 as an example, and expressing relative measures, these ratios are calculated as follows:

$$\text{Return on equity: } = \left[\frac{\text{Net profits } 1913}{\text{Shareholders equity } 1913} \right] * 100$$

"Shareholders' equity" comprises the following: Paid-up capital (ordinary and preference), reserves, balance carried forward, and other undistributed profits. "Net profits" are profits after tax. However,

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[44] The current classification standard in Japan is Standard Industrial Classification for Japan (JSIC). This standard is not directly linked to the ISIC; however the UN's statistical division offers correspondence tables between ISIC and JSIC.

[45] http://www.census.gov/epcd/www/naics.html. Some journals, e.g., *Fortune*, have not updated the standard. Thus, if one looks at the Fortune's Global 500 list, their coding is based on the Office of Management and Budgets 1987 SIC codes. This posed a problem, as services were not included in the mentioned nomenclature. In 1995 *Fortune's Global 500* list was changed to also include service companies, however, the classification of firms are based on *Fortune's* own development of the initial SIC 87 standard and is not really compatible to the other standards around.

corporate tax systems vary between countries and over time.[46] Corporate tax was not yet introduced on a permanent basis in Europe in 1913.[47] Therefore, the net profit concept of 1913 will be operational profits (gross profits) minus capital cost and other cost that can be associated with the firms' activity within the accounting year. The nomenclature may vary, but net profits are the figure used before deducting reserves, distributing dividends, and to carry forward any remaining capital.

We calculate the holding return (HR) as follows:

$$HR = \left[\frac{(\text{Share price } 31.12.1913 - \text{Share price } 31.12.1912) + \text{Dividend(s)}}{\text{Share price } 31.12.1912} \right] * 100$$

The selection of these two measures is not a coincidence. Return on equity and holding return provide a complementary measure of profitability, the former from a firm's perspective, the latter from the investor's perspective.

The database consists of cross-sectional data. However, as some of the firms are represented for more than one year, panel data are also available. Panel data makes it possible to study other aspects of performance, for instance survival. For each of the companies, qualitative data will be also collected.

The data for the pilot study of 1913 and 2000 have been collected and systemized according to the above-mentioned criteria and standards. Though there is almost a hundred years separating the two observation years, they have a lot in common. Both can be seen as bridges between periods of globalization, financial booms, and growth, and periods of gloomy markets and economic crisis. Moreover, they challenge the business historian by reaching many years back in time, yet remaining close to the present day. We face both a lack of information and an information overload. For 1913, the most important sources for the quantitative data have been the company's balance sheets, stock exchange intelligence, and various business histories. For 2000, histories are not

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[46] Despite a long history of reports and initiatives on the harmonization of corporate income taxes within the European Union (EU), the 15 EU countries still operate their own national corporate income taxes, with only limited coordination between them.

[47] Corporate governance problems led to the introduction of the corporate tax in the United States through the Corporate Excise Tax of 1909. Widespread use of stock-watering led to asymmetric information between the investment object and the investors, leading the public to invest in too thinly capitalized corporations. After the Sixteenth Amendment (1913), a corporation income tax superseded the 1909 tax. In Great Britain in 1920, a tax was levied on corporations, including foreign companies of limited liability doing business in the United Kingdom, but exempting the profits of corporations that receive income from other corporations already taxed.

available, so most data were based from the Bloomberg financial database, *Financial Times*, *Fortune*, various national financial journals, and company reports. Thus, the database for these two years covers a wide set of observations: assets, turnover, market capitalization, share capital, shareholders equity, total borrowings, gross profits, net profits, overall dividends, workforces, share prices, and dividends per share.

When examining aggregated figures for performance, arithmetic means do not take the firm's size into account; for performance ratios that reflect both profitability and size, we offer weighted averages by sector, country, and the European level. The bases for the weighting are the selection criteria (total assets for 1913, and turnover for 2000).[48] Because both banks (1913 and 2000) and railways (1913) have large assets that would skew the weighted averages, these sectors are dealt with separately.

Results

The results presented in this paper are the preliminary findings for the year 1913 and 2000 data. In addition to discussing the two performance indicators selected for this pilot study, return on equity and holding, we also attempt to compare the situation in 1913 with that in 2000.[49] These results are preliminary because we are still collecting and processing data. While the pilot study has been limited to a single year at each end of the twentieth century, the project database will include a three-year average around each benchmark year to avoid possible distortions caused by occasional erratic results. Moreover, other performance measures will be introduced at a later stage.

Overall, returns on equity were higher in 2000 than in 1913, by about 3 percent (14.78 versus 11.81). These are fairly high rates for Europe as a whole, as they come close, especially in 2000, to the 15 percent return on equity business leaders consistently consider to be a satisfactory result.[50] From a national comparative perspective, there is a surprising similarity between the 2 years. Spanish firms appear to have been the most profitable in both 1913 (with a return on equity of 18.74 percent) and 2000 (with 20.04 percent), ahead of those of the larger North Western economies, Britain and Germany (see Table 1).

The Spanish performance remains to be fully explained, but a few points can be made at this stage. First, the number of Spanish companies included in the sample is relatively small. Second, this performance should be seen in light of Spain's integration into the world economy. In 1913, the country's four most profitable companies were all subsidiaries of

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[48] Banks are weighted by assets for both years.

[49] As for the analysis and interpretation of these results, we limit them to some general comments. Given the international character of this inquiry, with seven countries included, they will deepen and broaden as a result of the collective effort of the team.

[50] See Cassis, *Big Business*, 86.

large foreign multinationals: one Belgian (Real Compañia Asturiana de Minas), two British (Rio Tinto and the Tharsis Mines) and one French (Peñaroya), with returns on equity exceeding 50 percent for the Real Compañia Asturiana de Minas and approaching 40 percent for Rio Tinto. An underlying reason behind the Spanish firms' extraordinary performance may also be the fact that Spain was perhaps the least developed country in our sample. With higher risks and imperfect markets, it was less likely that competition would do away with supernormal profits. This stands in stark contrast to Spanish firms in 2000. By the turn of the century Spain was established as a leading economy in Europe due to Spain's rapid economic growth following the country's entry into the European Union, and the strong performance of its telecommunications companies (Telefonica Moviles España, the most profitable company in Europe in 2000, Telefonica Internacional España, and Ericsson's Spanish subsidiary).[51]

British and German results are more in line with expectations, though the higher German rates must be attributed, at least in part, to the fact that banks and other financial institutions were not included in the national averages. In 1913, the leading chemical and iron and steel concerns performed particularly well; while in 2000, four of the ten most profitable German companies were foreign subsidiaries (Deutsche Shell, Deutsche BP, Alcatel, and Michelin).

TABLE 1
Return on Equity for Selected Firms, National Weighted Averages, 1913 and 2000

	1913		2000	
Country	ROE (%)	#	ROE (%)	#
Spain	18.74	16	20.04	22
Germany	11.89	42	17.55	42
Britain	11.59	55	14.06	50
France	10.79	28	12.92	34
Sweden	10,71	17	n.a	
Italy	6.85	16	10.14	36
Belgium	n.a		n.a.	
Europe (total)	11.81	165	14.78	136

In Britain, free standing multinationals such De Beers and Rio Tinto were exceptionally profitable before the First World War (the same

[51] The example of Spain illustrates the value of having national weighted averages. Though this is a pan-European study, country-specific explanations are important in order to get a full grasp of the performance of firms.

was true in France), while pharmaceuticals, media, and services to business were prominent in 2000. Two Italian firms (Compagnia italiana di grande alberghi, a hotel company, and Lloyd Italia, a shipping company) and four Swedish ones (including Ericsson, with 31 percent) achieved a return on equity higher than 10 percent in 1913.

TABLE 2
Return on Equity, Weighted Averages, Selected Sectors, 1913 and 2000

	1913		2000	
Sector name	ROE (%)	#	ROE (%)	#
Basic and fabricated metals	15.63	14		
Banks and banking	10.27	27	14.48	20
Chemicals and pharmaceuticals*			19.47	12
Commercial activities			10.34	10
Commercial activities	8.73	9		
Construction	-4.07	5	5.72	13
Electrical engineering	11.67	11	14.16	13
Food, drink, and tobacco products	8.67	23	10.47	10
Freestanding companies	16.56	10		
Insurance			13.19	12
Land transport	3.90	25		
Leisure and tourist			12.77	7
Mechanical engineering	13.83	10	16.44	8
Media			18.07	11
Oil, rubber, and other non-metallic	14.17	16	19.89	17
Old industries			3.59	11
Post and telecoms			19.25	12
Primary sector	16.46	13		
Property companies			9.78	4
Public admin/Health			-3.20	4
Services to business			16.82	10
Textiles and leather goods	12.65	12	9.88	7
Transport equipment	10.37	16	14.50	11
Transports			6.07	10
Utilities; Electricity, gas, and water supply	8.94	12	16.09	12
Water transport	7.72	9		
Wood and paper products	10.11	12		

Comparing how sectors performed in 1913 and 2000 (Table 2) is more difficult given the economic changes that took place during the twentieth century. A distinctive feature of the early twentieth century is the strong performance of the primary sector (including the foreign

subsidiaries of mining multinationals) and the freestanding companies (half of which were mining companies). However, these two sectors had lost any significance by the end of the century. Basic and fabricated metals, another major and successful sector in 1913, no longer appears as such in 2000 but rather as part of the "old industries," the last but one in that year's performance ranking with a mere 3.59 percent. On the other hand, newcomers such as telecoms, media, and services to business achieved rates of return approaching 20 percent.

Two sectors remained at or near the top: "Oil, rubber, chemicals and other non-metallic products" (divided into two sectors in 2000), and "Mechanical engineering"; while several others, including "Electrical engineering," "Transport equipment," "Banks and banking," "Food, drink and tobacco products," and "Commercial activities," more or less maintained their position. As can be seen on Table 2, there is a striking similarity in the sectors' ranking, the only noticeable differences being "Textile and leather products" (lower in 2000 than in 1913) and "Utilities" (higher).

The performance of sectors obviously varied among countries. In 1913, the primary sector was especially strong in Spain (32.39, for reasons already discussed) as well as in Germany (10.23, with powerful and profitable mining concerns such as Harpener Bergbau or Gelsenkirchener Bergwerks) and freestanding companies in France (33.10) and Britain (24.77). The sector "oil, rubber, chemicals, and other non metallic products" achieved the highest return (23.3) in Germany, thanks to the three chemical companies (BASF, Bayer, and Hoechst), well ahead of Britain (12.2) where it was more diversified with oil (Shell, Burmah Oil), rubber (Dunlop) and chemical products (Brunner Mond, Lever Brothers, Nobel Explosives, and United Alkali). Mechanical engineering did best in Sweden (21.12), though with a single firm; electrical engineering in Germany (13.26), followed by Italy (9.40), and banks and banking in the United Kingdom (14.84). In 2000, chemicals and pharmaceuticals were particularly profitable in Britain (39.15); telecoms in Spain (33.30); media in France (22.52); electrical engineering in Germany (30.82), closely followed by Spain (29.45); banks and banking, as well as insurance in Spain (22.31 and 25.10, respectively). The distribution was more even in several other sectors, in particular commercial activities, food, drink and tobacco, leisure and tourism, and construction.

Given the small number of companies per sector and per country (sometimes only one), these national trends are highly dependent on the performance of individual firms. It is impossible to look at each of them within the framework of this paper. However, there is one observation we can make concerning the relationship between performance and the size of the firm. One of the most striking contrasts between the two ends of the twentieth century is the increasing proportion of smaller firms amongst the most profitable ones. In 1913, only 20 percent of the most profitable companies (first quartile, with ROE higher than 14 percent) had less than

$9 million in total assets (fourth quartile). By 2000, the proportion had risen to 38 percent (that is, companies with ROE higher than 20 percent and turnover lower than $3 billion). It might be facile to contrast the second and third industrial revolutions, but the difference is significant. Still, the most profitable company in 1913 was the *S.A. du Petit Parisien*, a French newspaper whose circulation was a million in 1902 and 1.45 million by 1913. A family-owned company with total assets of just about $2 million (the last by one in the sample), it achieved a return on equity of more 68 percent in 1913, ahead of the giant firms of the day including BASF (Badische Anilin und Soda Fabrik), Bayer, Hoechst, Krupp, Phoenix, British-American Tobacco, De Beers, Rio Tinto, Shell, J. & P. Coats, all of which had total assets greater than $30 million with return on equity above 15 percent.

TABLE 3
Holding Return for Selected Firms, National Weighted Averages, 1913 and 2000

	1913		2000	
Country	HR (%)	#	HR (%)	#
Belgium	n.a		n.a	
France	-2.15	28	-10.78	21
Germany	0.97	32	-6.00	30
Italy	(13.22)	(20)	(33.98)	(20)
Spain	5.98	8	-12.13	10
Sweden	-9.2	9	n.a	
United Kingdom	8.24	35	0.04	43
Europe (total)	3.78	132	-6.26	106

Less surprisingly, the most profitable company in 2000 was Telefonica Moviles España (tele-movile), one of the smaller telecom companies with a turnover of $4.5 billion (the largest, Deutsche Telekom had $34.8 billion) and return on equity of 138.5 percent (as against 14.1 percent for Deutsche Telekom). However, very few of the most profitable small companies were found in the information technology industries (ARM [Advanced RISC Machines] Holdings and Logica in the United Kingdom were the exception). Some were in new businesses, such as services to business (Hays in Britain, Berge y compaña in Spain, Atos Origin in France) and public administration and health (Amersham and Smith & Nephew in Britain, Rhön-Klinikum in Germany). Most were in renewed traditional fields including textiles and leather goods (Hugo Boss, Hermes, Benetton, Inditex in Spain), transportation (the Spanish company Dads), the media (Gruner & Jahr in Germany, Mediaset in Italy), mining (Lonmin in the United Kingdom), and mechanical engineering and transportation equipment (Smiths and BBA Group in Britain). Only a handful of giant companies achieved a rate of return greater than 20

percent, among them Glaxo Smithkline, ENI (Ente Nazionale Idrocarburi), TotalElfFina, and BMW (Bavarian Motor Works).

At the bottom of the rankings, one cannot help noticing with some amusement that in both 1913 and 2000, the worst performing firm was a German construction company, the Berliner Terrain und Bau AG in 1913, with losses amounting to 92 percent of shareholders' equity, and Philipp Holzmann in 2000, which did nearly as poorly with 72 percent.

Looking at performance from the investor's point of view provides an entirely different picture. Both 1913 and 2000 proved to be bad years, the latter, with a negative holding return of 6.26 percent for Europe taken as a whole, even worse than the former, when a meager 3.86 percent was achieved.[52] The sharp stock market downturn of spring 2000 is still fresh, while a glance at the December 1913 issue of the *Investors Monthly Manual* reminds us that "the position in which the Stock Exchange and financiers of Europe and America find themselves at the present is decidedly anxious and unpleasant."[53] Countries differed, of course (Table 3), despite a parallelism between 1913 and 2000, including Britain's top position in both years and as the only country without a negative return in 2000.

There were clearer differences between sectors, with some remaining highly profitable amidst the general gloom (see Table 4). A comparison between return on equity (Table 2) and holding return (Table 4) reveals that while there was a certain homogeneity between the two rates in a few sectors (free standing companies, primary sectors, banks and banking, food, drink, and tobacco, and land transport in 1913; transports and, to a much lesser extent mechanical and electrical engineering, and oil, rubber and other non metallic products in 2000), wide discrepancies occurred for most sectors, as can be seen in Figures 1 and 2.

This discrepancy must be properly explained and is no doubt a result of both general market conditions and the specificities of individual firms. The share of smaller companies (with total assets less than $9 million in 1913 and turnover less than $3 billion in 2000) amongst those with the highest holding return (more than 6 percent in 1913, more than 10 percent in 2000) was about the same, 33 to 34 percent, in both years. However, these percentages might be overestimated by the presence of Italian firms, whose share price is an average of the highest and the lowest in a given year, rather than the year's last trading day.[54]

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[52] This percentage excludes Italy, whose average of 34 percent is based on a different calculation and far higher than that that of any other European country.
[53] *Investors Monthly Manual* 43 (Dec. 1913): 673.
[54] In both 1913 and 2000 more than half of the best performing smaller firms were Italian; two thirds of the Italian firms included in the sample had total assets lower than $9 million in 1913, and half had a turnover lower than $3billion in 2000.

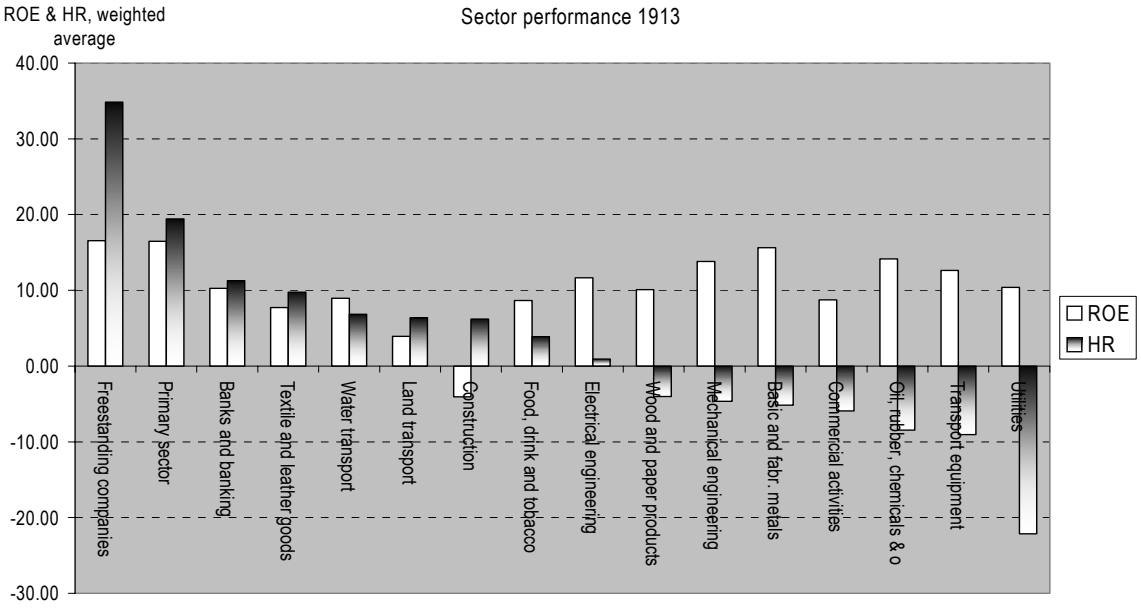
TABLE 4
Holding return, weighted averages, selected sectors, 1913 and 2000

	1913		2000	
Sector Name	HR (%)	#	HR (%)	#
Basic and fabricated metals	-5.16	13		
Banks and banking	11.27	25	8.10	14
Chemicals and pharmaceuticals			-9.23	7
Commercial activities	-5.92	9		
Construction	6.19	4	-37.62	9
Electrical engineering	0.92	10	39.02	9
Food, drink, and tobacco products	3.89	15	-0.75	8
Free standing	34.84	11		
Insurance			7.36	7
Land transport	6.35	16		
Leisure and tourism			-18.37	10
Mechanical engineering	-4.66	8	37.70	6
Oil, rubber, chemicals, and other non-metallic mineral products	-8.47	8	4.43	11
Old industries			-19.30	7
Post and telecoms			-26.36	6
Primary sector	19.43	7		
Property companies			14.21	2
Public admin/Health			4.79	4
Services to business			-18.23	6
Textile and leather goods	-9.03	8	60.54	5
Transport equipment	-22.14	10	-11.72	10
Utilities; Electricity, gas, and Water supply	6.83	11	16.37	11
Water transport	9.78	9		
Wood and paper products	-4.03	11		

Among the giant companies, the German chemical firms did fairly well given the stock market conditions (11.99 for BASF, 6.27 for Bayer, only 1.58 for Hoechst), as did the British free standing companies De Beers and BAT (respectively 215, the highest return, and 26), but Shell, J. & P. Coats and Phoenix, the German iron and steel concern, all had negative returns, as did their French counterparts, which had all achieved a high return on equity.

In 2000, the investors in the top performing smaller firms in terms of return on equity had mixed fortunes, from 169 percent at Hugo Boss, 65 percent at Rhön Klinikum, or even 14.5 percent at Hermes, to -54 percent

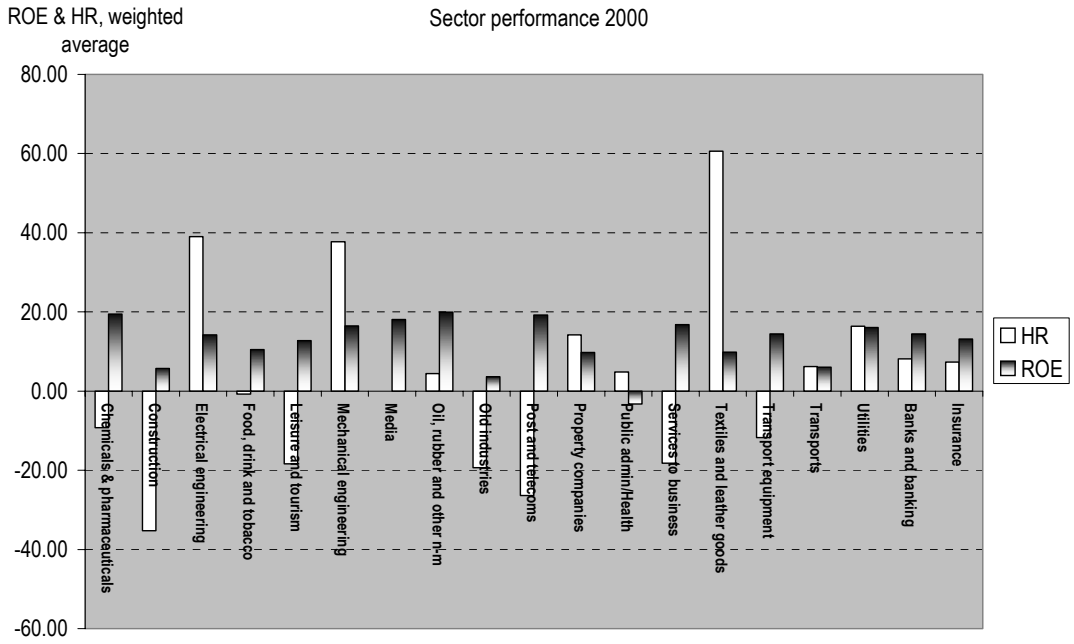
FIGURE 1
Sector Performance 1913, ROE and HR (Weighted Averages)



at Atos Origins. Most of them however, especially in the new technology industries, managed on either side of zero percent, with unfortunately no data available for Telefonica Moviles España, the best performing firm in terms of return on equity.

It would be premature to draw general conclusions from these very preliminary findings. Nevertheless, we can make a few observations. First, the results related to return on equity must be handled carefully. Some of the rates may be overestimated because of share capital (and therefore shareholders' equity as well) remaining at a low level due to factors such as high gearing or inflation. Second, although it does not affect the results for these two observation years, comparing rates of return in different countries in periods of volatile price movements and differences in productivity levels might be more challenging. Physical measures of performance could provide a useful complement to financial ones. Third, it appears that holding return, though more erratic, better enables the business historian to capture the busts and booms in the economy in general and the stock market in particular. Fourth, our results show that 1913 and 2000 were similar years. This is promising for continuing our inquiry as the first and last year seem to offer clear and comparable boundaries for the study of European business performance in the twentieth century. A fifth and final remark concerns the relationship

FIGURE 2
Sector performance 2000, ROE and HR (Weighted averages)



between general market conditions and the performance of individual enterprises. Market conditions offer opportunities and risks, which are met with uneven success by each actor. We believe that the ultimate explanation lies with specific conditions at the level of the firm, which can only be understood over the long-term. This requires a qualitative approach to the study of performance, which is an integral part of this project, but whose discussion and preliminary results will have to be left for another paper.