

Capital structures in Europe, managerial insight and governance regimes¹.

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Abstract

We investigate the determinants of Capital Structure in Europe and we implement a novel approach focusing on the relevance of manager's knowledge and behaviors for leverage ratios *in aggregate*. We show that this relevance is moderated by the governance structure of firms. Specifically we show that firms with concentrated-ownership exhibit a negative relation between managerial *sentiment* and both measures of leverage (market and book leverages) while firms with dispersed ownership exhibit a positive relation to market leverage only (no relation is obtained on medium-range firms). We further show that other dimensions relating to transparency, size & prominence moderate the relationship.

Our contribution extends to debates on agency and corporate governance. We emphasize the practical importance between two dominant views of agency: managers vs. shareholders and control-holders vs. minority shareholders. While illustrating this relevance, we suggest that different governance structures, that is, different kinds of agency conflicts, lead to different managers' behaviors in aggregate and different market valuation of these behaviors. An implication is that a normative assessment of managerial action may depend on the underlying governance regime.

Key words: Agency Theory. International Capital Structure. Economic Sentiment. Corporate Governance. Dispersed & concentrated ownership.

EFM Classification Codes, primary:

140 - Capital Structure

150 - Corporate Governance

110 - Agency Theory and Contracting Problems

EFM Classification Codes , secondary:

120 - Behavioural Issues

180 - Earnings Management and Related Issues

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Capital structures in Europe: how do governance regimes change the valuation of managerial risk-taking by the market?

1. Introduction

The study of leverage has focused much of corporate finance attention over the last decades. Since the original irrelevance hypothesis in the 50's to trade-off theories over a variety of financing hierarchy theories, much has been said about capital structures. Myers (2003 [36]) recently concluded "*there is no universal theory of capital structure, and no reason to expect one. There are useful conditional theories, however ... each factor could be dominant for some firms or in some circumstances, yet unimportant elsewhere*".

The truth is that conditionality has been mostly understood in terms of varying financial or firm-specific conditions. Other dimensions such as varying institutional contexts or consequences of manager action in aggregate had not been considered closely until fairly recently. So for instance recent survey evidence suggests that managers may implement their financial policy from the same sets of tools and concepts, but with different mix depending on countries, institutional context, market access, size, etc. (Graham & Harvey, 1999 [25]; Bancel & Mitoo, 2004 [6]; Brounen, DeJong & Koedijk, 2006 [10]).

Further, one could wonder whether managers follow the same decision heuristics across countries, across sectors, or across other context-dimensions such as governance structures. If so, does managerial action have consistent and converging consequences in aggregate? Further, how should we understand these potential differences: if managers have different behaviors, should they? Or shouldn't they? Stated differently, how does the stock market value these differences? Is the type of agency conflict at play sufficiently profound to alter advisable behaviors?

In this paper we investigate the determinants of leverage in Europe on a broad sample of listed firms over the last two decades. This focus is relatively novel as we restrict our attention to listed, liquid firms, operating in countries with comparable economic development,

comparable accounting practices, near-equivalent quality of legal environment and enforcement... Most importantly, our sample exhibit contrasted governance structure: there is more than a third of firms exhibiting both concentrated and dispersed ownership structures in any of the 15 countries investigated here. This variation enables us to better capture the potential that varying governance structures may have on firms' financial policies. In short by using this sampling procedure, we investigate the leverage of listed firms, and, while we hold approximately constant legal, accounting and economic development, we maximize institutional variety and governance structures.

First, our preliminary results broadly confirm empirical regularities observed between firm-specific variables and leverage (market and book-leverage) in varying contexts: recently in the U.S. (Frank & Goyal, 2009 [20] & 2008 [19]), in small subsets of O.E.C.D. countries (Antoniou, Guney & Paudyal, 2008, [3]; Rajan & Zingales, 1995 [38]), on broad samples of mainly non-listed European firms (Giannetti, 2003 [23]), or still in broader international samples including both developed and developing countries (Fan, Titman & Twite, 2008 [17]; Gonzáles & Gonzáles, 2008 [24]; Booth, Aivazian, Demircuc-Kunt & Maksimovic, 2001 [9]).

Building on a base line model relating leverage ratios to firm-specific determinants, we focus on the relation between managers' economic knowledge, managers' behaviors and the stock market perception of these. Further, we investigate whether the governance structure of the firm, namely whether it is widely dispersed or closely held, mediates the relationship.

Let us expand briefly on two key variables. First, a key feature of our sample is that it exhibits significant proportions of firms with both concentrated and dispersed-ownership. This difference in governance structure is captured by a variable provided by Worldscope: the "public market capitalization" (the float) as compared to the total market capitalization. Roughly speaking, in our 15 countries-sample, a third of countries have median float around 33%, a third around 50% and a third around 66%. To that extend, our study follows Giannetti (2003 [23])'s effort to investigate institutional variety while focusing on broad European firm-samples. Yet, where she investigates mainly unlisted firms, our own emphasis is on listed firms only. Here, we set up a comprehensive database covering large European stock markets (i.e. any Stock Market with more than 25 stocks quoted continuously every year) over two decades.

Second, to capture “managerial insight” or the managers’ understanding of the economic context, we use an index that was established more than three decades ago by the European Commission, the ‘Economic Sentiment Indicator’ (E.S.I.). The E.S.I. is based on consistent monthly surveys administered to general managers across industries and countries. The managers’ survey consists of 7 questions dealing with their company’s business situation (input-demand, output-demand, employment, prices), based on 6-months time frames. We contend that this variable provides us with a *measured, logical* and *careful* assessment of the upcoming economic outlook by managers, with respect to their own business prospects. Hence we suggest that it represents a ‘managerial insight’, upon which managers act and modify their financial and business policies. So we depart from related literature in Behavioral Finance, which has investigated how *psychological biases* affect the capital structure of *some* firms: some managers, selectively prone to a certain psychological bias, act differently from the bulge of other managers. This affects the capital structure or investment policies in their firms, i.e. in a small subset of firms in the overall population. Instead we focus on managerial behaviors in aggregate and we split the overall population into a few comparable subgroups for which we intend to show how the context mediates manager’s behaviors collectively and rationally.

Overall, we analyze the marginal influence of economic sentiment on a combination of market and book-leverages. In this way, we control for the simultaneous effects of managers’ sentiment (economic insight) on managers’ behavior (book leverage) and its stock market valuation (market leverage).

In section 2, we provide a brief overview on three key dimensions of our analysis, first the relation between capital structure and managerial behavior, second the financial and economic literatures about economic sentiment and third the E.S.I. In the following section, we introduce our hypothesis. Section 4 describes our data, variables and methodology. Section 5 shows that our base-line model of leverage, featuring firm-specific determinants, is in line with previous theoretical predictions and empirical findings. Section 6 presents our main results while section 7 features a discussion. Section 8 concludes.

2. Literature reviews. Capital structure, economic sentiment and the E.S.I.

2.1 Capital Structures & manager's behaviors

The investigation of capital structure is one of the most comprehensively studied subjects in corporate finance. Reviews abound (most recently see Frank & Goyal, 2008 [19] or Barclay & Smith, 2005 [8]) and a consensual conclusion is that the “*capital structure puzzle*”² is not yet resolved. So, on the one hand, empirical observation has regained some favor. Frank & Goyal (2009 [20]) examine for example, in the U.S. and over decades, empirical regularities between firm-specific variables and measures of leverage. They identify 6 “*core factors*” that are robust across firm types, industries, financial contexts and time. On the other hand, support for various theories is mixed, even intertwined, and Antoniou, Guney & Paudyal (2008, [3]: p. 89) identify and list in appendix dozens of studies where correlation’s sign between leverage and about 10 firm-specific determinants and financial variables (including the 6 “*core factors*” just mentioned) is changing depending on sampling procedures.

Noteworthy is the fact, underlined by Antoniou & al. (ibid p. 60) that “*empirical studies generally concentrate on identifying the firm-specific factors while ignoring the possible implications of macroeconomic conditions that could affect the choice of the financing mix*”. So, if the literature has reached the conclusion that capital structures are conditioned by financial circumstances, research efforts have, only recently, started to focus on other context factors.

Further in relation to a range of “*financing hierarchy theories*”³, Frank & Goyal (2008 [19]: p. 21) note: “*no-one has tried to distinguish among alternative sources of pecking order behaviors (emphasis added)*”. This is surprising since the relative financing mix that managers can choose from, is the chief concern of much of previous literature. So while attention is on

² Allusion to Myers’ well-known presidential address at the American Finance Association, 1984

³ ...including pecking order, adverse selection and agency theories

managers' choice-variables, research eluded managers' behaviors per se. Is the process relating choice-variables, decision-making & behaviors straightforward & transparent?

Additionally, Frank & Goyal (ibid, p. 21) remind us that adverse selection and agency theories are based on the idea that “*the owner manager of the firm knows the true value of the firm's assets and growth opportunities. Outside investors can only guess these values*”. If managers have a relatively precise understanding of the business situation that firms face, this could be of value information-wise. Is it integrated to the stock market price discovery process, i.e. does it have some influence on stock market valuation, controlling for other factors? ... So we wish to investigate whether managers' *economic sentiment* has an effect on leverage measures, through a connection from insight to decision-making, to action (e.g. a change in the financing mix or risk-taking) and to communication with board members, analysts, shareholders, etc.

A crucial element is the nature of the agency conflict that managers are facing because it may potentially influence the way they decide and communicate. Since the seminal paper by La Porta, Lopez de Silanes & Shleifer (1999 [27]), an important dichotomy has attracted increasing attention: agency opposing shareholders vs. managers on the one hand and control-holders vs. minority shareholders on the other. Recently Mahrt-Smith (2005; [31]) proposed a model designed to capture the trade-off between managerial discipline and managerial initiative. His model is designed to show how ownership structures and the choice of debt and equity interact systemically. The breadth of manager's initiative on the one hand and the need to exert control over his behavior on the other, depend both on the ownership structure (i.e. the type of agency conflict). Theoretically Mahrt-Smith captured in a model the combined interaction between these two elements and capital structures. To the best of our knowledge our paper is the first to investigate that kind of issue empirically.

2.2 Sentiment in financial research, from investor's sentiment to managers' sentiment.

There is now a relatively broad literature in finance dealing with *sentiment*. Mostly, past studies deal with “*investor sentiment*” and they can be identified in relation with the closed-end fund puzzle, with IPOs, with financial bubbles, with the cross-section of stock returns, with co-movements across classes of shares, within or across specific markets, or in reaction to news. Most of these studies define sentiment, as the *aggregate expression* of some norm common to various stock market actors. So they propose to calibrate models relating some aggregate measure of investors' sentiment to the financial phenomena just mentioned. So for instance the literature on IPOs routinely proposes sentiment indices based on successive bear or bull markets (Lgundqvist & Nanda & Singh, 2005 [29]; Derrien, 2007 [15]; Dorn, 2009 [16]). Literature dealing with investors' sentiment does not generally delve into the specifics of individual behaviors, which is the focus of another stream of literature (the one pursuing the identification and assessment of *psychological biases* and their consequences).

Some studies consider wider conceptual range for sentiment, rather than just an “*investors' sentiment*”: so two studies deal with price fluctuations on stock markets being affected by a *country-specific sentiment* (Chan, Hameed & Lau, 2003 [11]; Froot & Dabora, 1999 [11, 21]). These studies identify that the norm relevant is specific the country's population beyond sole investor's or sole stock market actors.

Few studies explicitly consider *managers' sentiment*. This is surprising as most behavioral finance reviews distinguish primarily between investors' and manager's behavioral biases, structuring the field accordingly (Baker, Ruback & Wurgler, 2005 [5]; Shefrin, 1999 [39]). In a separate research-stream within Behavioral Finance, a number of researchers focus on managers' *over-confidence* and its potential relation to investment choices⁴. Two recent working papers suggest combining the literature on *over-confidence* to that on *economic*

⁴ This “*over-confidence literature*” relies on the identification of specific individual traits derived from the scrutinization of managers, for instance from personalized description of managers in the press (Malmendier & Tate, 2005 [33]) or from individual stock option exercising by managers (Malmendier & Tate, 2005 [32]). These traits characterize the actions of ‘less rational’ or biased managers. They distinguish them from more ‘mainstream’ managers. These research pieces aim at measuring the consequences of these ‘biased’ or ‘deviant’ behaviors from mainstream or more rational ones.

sentiment (Oliver (2005, [37]; Meftteh & Oliver (2007, [35]) but we do not subscribe to this suggestion for the following reasons: in our view, sentiment is a description of an informed and articulate⁵ know-how detained by managers *collectively*. It may be rational and in particular its association to bear or bull markets (and beyond to bubbles) is not important as in the case of investor's sentiment. It is *not* the primary characterization of a behavioral or psychological bias distinguishing some of these managers from the others. So studies on over-confidence (for instance Malmendier & Tate, 2005 [32, 33]) aim at measuring the importance of this *over-confidence* bias selectively, showing how certain managers are affected by this bias and modify their investment behaviors. In contrast the other managers are immune to it and they behave investment-wise more effectively. In their working papers Oliver and Meftteh & Oliver (ibid) use aggregate measures of managers and suggest it proxies for a collective and aggregate *overconfidence* bias leading to ineffective investment. But they do not explain why or how all managers are characterized by the bias, nor how the individual existence of over-confidence results in its prevalence in aggregate⁶, nor how the potential rationality of a business insight may be transformed into behavioral irrationality. So we depart from this association and we focus on managerial sentiment in a way more akin to that of investors' sentiment than to over-confidence.

To summarize, we propose a relatively novel approach that has some affinity with *corporate behavioral finance* in its focus (the behavior of managers), while it rests on different foundations. We extend previous financial research on sentiment to a domain where it was not usually applied (managers). We implement a robust index of sentiment that was initially developed by the European Union more than three decades ago (the E.S.I.), and that is widely used in policymaking and in the business press, as emphasized next.

⁵ We would describe the sentiment as *articulate* if a manager has a sufficiently clear-minded and organized understanding of what the upcoming business situation will mean for his firm, as to communicate it in an *articulate way* to board-members, analysts and shareholders. In the way of doing so, he risks communicating it to competitors as well.

⁶ Are all executive managers and directors affected similarly? Are their communications completely aligned to the cognitive and behavioral bias? Do exchanges or debates within executive teams or within boards moderate or eliminate individual irrationality?...

2.3 The European Economic Sentiment Indicator (ESI).

In this study we use the Economic Sentiment Indicator (ESI) developed by the European Commission. It is available for most European countries and was developed 3 decades ago, with robust sampling and measure over the period⁷. This index comes in different versions: managers' surveys, consumers' surveys and capacity utilization. It is executed on a monthly basis and aggregated over industries, over countries or for Europe as a whole with varying perimeters (e.g. 12, 13, 15, 16, 25 or 27 countries). There are 7 survey-questions for managers' surveys⁸ and 12 questions for consumers' surveys (with some more questions in quarterly and annual surveys for both). The managers' surveys deal with company's business situation, its demand for inputs, employment, upstream and downstream prices. The consumer surveys deal with both household-specific issues (wages, employment, prices) and general assessment of their country's economic situation.

Generally, the E.S.I. and economic sentiment indices in general are widely used in practice. Policy makers in the E.U. and in member countries routinely use the E.S.I. The E.S.I. and other economic sentiment indices (such as the ones produced by the O.E.C.D., by Datastream, by Dow-Jones, by Michigan University,...) are commonly used by stock market actors (high citation frequency of "economic sentiment" on Reuters News, Dow-Jones News, PR Newswire...). This cite-frequency in specific stock market information sources is a tangible sign that economic sentiment are integrated into mechanisms of price-discovery on stock markets. Additionally, such indices are often cited in the business press (Business Week, Financial Times, New-York Times...), and so they are likely to be used by business decision makers as well.

⁷ The index is available for download from the European Commission's website and the survey methodology is explained in the related *User Guide* (2007 [1]). In particular the section 3.1 of this user guide provides details on the sampling methodology.

⁸ Industries based on the NACE classification were originally sampled from three broad categories: retail, construction and manufacturing. 'Services' were added in the early 90s and the related survey included 6 questions instead of 7 questions. Financial services were then added very recently. The 7 survey-questions for industry-managers are: *Q1 How has your production developed* : + = - *Q2 Do you consider your current overall order books to be...?* : + = - *Q3 Do you consider your current export order books* : + = - *Q4 Do you consider your current stock of finished products to be...?* : + = - *Q5 How do you expect your production to develop* : + = - *Q6 How do you expect your selling prices to change* : + = - *Q7 How do you expect your firm's total employment to* : + = -

The E.S.I. has been used in research across human sciences, in particular in political sciences and in economics. In economics, it has been shown to associate to accurate economic forecasting, to stock market activity, to GDP growth or to household spending.

In Financial research, it has been used in two recent studies dealing with the antecedents of government yield spreads in the EMU. Geyer & al. (2004 [22]) show that the E.S.I. marginally accounts for government yield spreads; long-term corporate bonds and swaps being primary drivers⁹. Ferreira & al. (2008 [18]) show that the ESI can be used instead of past ex-post data on output and consumption to predict economic growth, hence replacing yield spreads. They conclude that *“this ability of yield spreads to capture economic agents expectations may be the actual reason for the predictive power of yield spreads about future business cycles”*.

3. Hypothesis development: capital structure, economic sentiment and governance

A schematic overview of our hypotheses is presented in table format in the third appendix. Building on our literature review, we expect that managers will act upon their business insights (i.e. sentiment, see H1a), while the stock market may incorporate their reaction into the stock price (H1b). So while the former controls for financial policy, the latter provides information on the stock market reaction, *ceteris paribus*¹⁰:

H1a. Sentiment has significant effect on book-leverage

H1b. Sentiment has significant effect on market-leverage

⁹ The ESI is indeed based on a short-term assessment, so it should not come as a surprise that *“long spread models”* explain most of the variation in yield spreads, and that ESI are a complementary source of explaining power.

¹⁰ We need to show that this holds after controlling for other economic and market indicators, such as inflation, interest rate, broad stock-market indices and particularly with consumer sentiment: the relation between market-leverage and managerial sentiment (H1b) should reflect market actors' assessment of the marginal value of managerial insight, independently on additional micro-economic information about the proximate economic growth. In particular the consumers' sentiment provides the demand-side aspect of micro-economic growth prospect, a piece of information that should be, *ceteris paribus*, incorporated both in the stock-market performance and in managerial sentiment.

If H1a is not confirmed (no effect on book leverage is observed), managers will not engage in any significant accommodation of their financial constraint, so no specific behavior is discernable, and hence we do not expect any market reaction:

H4: if H1a is disconfirmed, H1b should be disconfirmed

The general mechanism ‘*managerial insight- managerial decision-market reaction*’ leads us to start by considering our hypothesis on book-leverage first (is there a relation between insight and behavior in aggregate?)

3.1 Managerial insight and managerial behavior. Hypothesis on book-leverage.

Regarding book-leverage and upon a positive managerial sentiment, we expect managers to prepare for better times. Relating to financial policy we expect that managers may take advantage of positive prospects to reduce their financial constraint. Hence they would reduce their relative debt-level (a decrease in book-leverage). Business-wise, we expect that managers may want to increase stock levels (an increase in assets, a decrease in book-leverage, consistent with the previous effect). Potentially we expect them to engage in investment but the issue then, is how this investment is financed. If it is financed pro-format¹¹, it will be neutral for book-leverage. If it is not, the change will represent a combination of financial and investment policies: new investment is in fact an opportunity to change the financial structure as well. So the financial policy is really the focus of this empirical investigation¹². Hence:

H2a: a negative relation between managerial sentiment and book-leverage is obtained, evidencing an occasional or frequent policy of decreasing financial constraint when the business environment improves.

The reverse situation where there is a systematic over-investment policy under increased financial risk would correspond to a general bias toward over-investment by the manager. As underlined earlier, previous literature has evidenced that managerial over-confidence may lead to debt-financed over-investment (theoretically Hackbarth, 2008 [26]; empirically

¹¹ The status quo: “no significant change in book-leverage” is not obtained with no additional debt, but with an addition in debt, that is ‘pro-format’: retained earnings increase the capital base and they must be matched by an equivalent proportion of additional debt to keep the book leverage ratio stable

¹² Note that taking advantage of new and significant investment for a marginal adjustment of the financial structure does not need to be systematic. For instance, if managers engage upon their economic sentiment, into a financial policy of ‘a’ only occasionally, i.e. every other ‘x’ time, then an average change of a/x should be statistically observed. The limit case being that of adjustments systematically compensating one-another or too rare, that is no real change in financial policy.

Malmendier, Tate & Yan, 2007 [34]; Malmendier & Tate, 2005 a & b [32, 33]). We doubt that this effect could be consistently obtained in aggregate and in time: we doubt that all managers are over-confident and over-investing over longer time periods, systematically and significantly. Stated otherwise, we doubt that overinvestment by managers and by *executive teams*, is significantly and persistently out of control for boards, market-actors and hence observable over our comprehensive sample and over 20 years.... Hence we expect disconfirmation of H3a:

H3a: a positive relation between managerial sentiment and book-leverage is obtained: managers acting upon a positive insight systematically (over)-invest, financing investment through a disproportionate use of debt, in particular in comparison of available ‘internal equity’, i.e. retained earnings.

3.2 Stock price reaction. Hypothesis on market-leverage.

Relating to market leverage, its analysis should be carried out in concert with that of book leverage. It is indeed important to test the influence of managerial insight on market leverage while controlling for managerial behavior.

In the general situation described under H2a, the financial constraint is relaxed upon a positive insight, or accommodated upon a negative insight. This managerial behavior leads to decreased relative debt level upon a positive sentiment. *Ceteris paribus* (no value-creation), the market-leverage should follow the change in book leverage (plus if plus, minus if minus) and be lower in absolute value (higher negative effect and lower positive effect if the company is profitable). So the baseline effect is a change in market leverage that is parallel to that of the book-leverage with markedly smaller absolute value. Any difference between this baseline effect and the observed one will correspond to net value creation, due to the market perception of either firm’s financial or investment policy. Under H2a, we propose two competing hypothesis and we suggest later that the governance structure will moderate the observed relationship, hence conditioning the statistical validation of H2b vs. H2c.

H2b. The market reacts negatively to managers accommodating the financial policy. Specifically sentiment is positively related to book-leverage and not related to market-leverage.

H2c. The market reacts positively to managers accommodating the financial policy depending on their business perspectives. Specifically, the coefficient for market leverage is much higher than that for book-leverage.

In the general situation where there is overinvestment financed through systematic additional debt (H3a), we expect a negative reaction from the market, i.e. a proportionally higher influence on market leverage; as numerator increases and the denominator decreases.

H3b a positive relation is observed between sentiment and market leverage provided H3a is confirmed: the market does not react or reacts negatively to overinvestment with increased financial risk.

3.3 Governance structures.

The traditional agency conflict featuring a strong manager taking advantage of his or her position to build an empire or extract perks will lead to a greater tendency toward overinvestment. This may arise either as a bias related to over-confidence or as a personal strategy to extract perks and power through empire building. In any case, it should prompt careful shareholders to try to limit the manager's freedom through stronger control ex-ante, limiting his or her ability to engage in financial policy smoothing. So we would expect limited influence of sentiment on book-leverage. If a significant proportion of managers do engage in earnings management because of lack of ex-ante control, then we would expect negative ex-post market reactions. So we expect either H4 (no influence) or combination of H3a & b if the proportion of firms with lax ex-ante control is significant enough to drive the sample results.

In contrast a situation where a strong manager can be kept in check by strong control-holders, potentially at the expense of minority shareholders, we expect that some inter-temporal smoothing may occur because a better ability for control-holders to discipline the manager ex-post. So we would expect a combination of H1a & H2a and we leave the normative assessment of this policy up for empirical investigation, i.e. our analysis should provide us with a sense of how the market reacts to this policy. Hence:

H5: Dispersed-ownership should lead to either H4 or a combination of H3a & b while concentrated ownership should lead to H1a & H2a while the market reaction is left for empirical investigation (H2b vs. H2c).

4. Data, model and methodology

Provided the limited number of similar pan-European studies, we intend to provide a database as comprehensive and as complete as possible. One advantage of our sampling procedure, in line with traditional sampling procedures for qualitative studies, is that we limit variation on a number of dimensions to maximize observable effects on another. So, here we sample European listed companies over the last two decades, which enables us to investigate the determinants of leverage in listed and liquid firms in a context where the large qualitative institutional variation is amplified by a limited variation in economic, legal or accounting development. To rephrase, while this provides us with *relatively converging quality standards* in judicial, accounting, or democratic terms, including for instance the existence of a free and lively business press in most countries, this allows for a large range of *rules*, in particular legal origin, protection of creditors and investors... Most importantly, this provides us with firms operating under mixed governance regimes: a comparable number of firms is indeed closely held or has dispersed ownership in any of the 15 countries studied (details below).

4.1 Data

We provide in appendix 2 a more detailed description of our data collection effort. We collect data from Thomson-One Banker, who provides combined access to Worldscope and Datastream. We collect data for all Companies that have been or are listed on a stock exchange on the European soil (64 cities including stock exchanges) since 1990. First, from an exhaustive list of 10 633 identified company tickers, dead or alive, we eliminate firms with no financial data at all (34%), firms with sic codes 6*** or 9*** (16% of counts), firms with less than 5million Euros in sales (per year, on average, proxying for liquid firms with minimum public exposure: 11% of counts). Second, from a total of 4182 companies with exploitable data we clean our database, bringing the count down to 3434 firms (40 885 firm-years). We remove companies with less than 3 years of data, stock exchanges with less than 25 stocks a year, firms with missing data on endogeneous variables (i.e. market-cap, assets, debt), years with missing data when they are starting or terminating years. Third, we winsorize the data at 5 standard deviations removing further 129 firms-years (3 firms entirely). For the rest of the paper, we use this database removing American-registered companies and Swiss-listed firms for which we do not have sentiment data.

4.2 Variables

Details about the choices relating to the definitions of firm-specific variables, median industry leverages and “context” variables are provided in the first appendix. Table 1a provides definitions for all variable considered in the study and for the ratios we computed. Table 1b provides statistics about the main variables in our moels. For the most part, our definitions follow those from recent contributions by Antoniou, Guney & Paudyal (2008 [3]), Fan, Titman & Twite (2008 [17]) or Frank & Goyal (2009 [20]), who provide converging definitions. Whenever appropriate we test variables with different definition (see appendix 1).

Insert Table 1a&b about here.

We add variables describing the economic, financial and more general business environment that firms operate in. This includes the E.S.I. variables obtained from the European Commission and described earlier. Some variables are country specific, some are country-and-industry specific, some are aggregated at the European level. All variables are time varying and further details are, again, provided in appendix 1. Table 3b provides the overall pair-wise correlation for the *main* variables retained in our empirical tests.

Insert Table 3b about here.

Provided the relative importance of the context in our study and provided the systematic correlation of context variables (together, and to economic growth), we provide further details on the pair-wise correlation for all context variables in Table 3a.

Insert Table 3a about here.

4.3 Governance structures

A key item in our study is the governance regime that firms belong to. We identify the governance regime from the proportion of the float in the total stock market capitalization. The float is a variable provided by Datastream that quantifies the share of stocks that are traded publicly, provided the number of outstanding shares. Hence it proxies for the existence of blocks or long-term investors (families, sovereign investors, institutional investors such as insurers or pension funds...).

We compute the all-years average and the standard deviation of the float for each company. On both criteria, we separate our sample in three categories. For the average of the float over the listing period we distinguish companies that have a float lower than 33%, those that have a higher float than 66% and others (respectively 28%, 28% and 42% of firm-years). For the standard deviation of the float, we set the thresholds at 5% and 25%. Relating to the latter, we note that 2/3rd of the low volatility firms are low float firms. Otherwise, there seem to be no further overlap.

Overall, our sample exhibit contrasted governance structure: there are more than a third of firms exhibiting both concentrated and dispersed ownership structures in any of the 15 countries investigated here. More specifically and roughly speaking, a third of countries have a median float around 33%, a third around 50% and a third around 66%. Not surprisingly, the U.K. and Ireland have highest median float (more dispersed-ownership) while countries generally featured as bank-based financial systems (with universal banks, a larger proportion of banking assets as compared to total market capitalization, etc.) have lower median floats. Interestingly, there seems to be a slight upward trend in the median and average float for most countries, but the U.K. and Ireland, so that overall median differences have decreased over the last two decades. Median and averages by industry do not exhibit any noticeable pattern at first sight, but for the upward general trend just mentioned. Table 2 provides detail about this variable.

Insert Table 2 about here.

5. Method section & calibration of the base line model based on previous literature

5.1 Presentation of our model.

Following Frank & Goyal (2009 [20]), we include a lag of one year between our endogenous and exogenous variables. Our basic specification is:

$$\text{Leverage}_{i(t+1)} = \alpha + \beta \text{FS}_{it} + \gamma_1 \text{MIL}_{kt} + \gamma_2 \text{F}_{jt} + \delta \text{ESI}_{(?)t} + \mathbf{D}_{1t} + \mathbf{D}_{2kt} + \mathbf{D}_{3jt} + \varepsilon_{it}$$

Where Leverage stands for either Market or book leverage, i stands for firm i , t for year t , j for country j , k for industry k , \mathbf{D} for sets of dummies by year (1), industry (2) and country (3); FS is the set of firm-specific variables, including both the ‘core’ variables mentioned earlier and some additional variables, MIL the median industry leverage, F the set of financial or macro-economic variables. Due to the serial correlation of ESIs, we implement alternatively EA15, country-specific and industry specific sentiment indices so that (?) stands for either EA15, k or j . In this paper, our “*context*” variables include both F and ESI variables.

The residuals ε_{it} are serially correlated disturbance terms with mean zero and potentially heteroskedasticity across countries and industries. In fact preliminary pooled O.L.S. regression with residuals robust to heteroskedasticity shows that estimates are mostly not robust to either countries or industries. So the serial correlation requires a panel-specific regression analysis while the heteroskedasticity requires further testing.

5.2 Method-selection.

We implement on Stata a linear regression for panel data with fixed effect and random effects. A Breusch-Pagan test, with a P-value of 0,0007 for a Chi-square distribution with 2 degrees of freedom, confirms that we should use fixed effects rather than pooled OLS. Secondly, a Hausman test, with a P-value of 0,0000... for a Chi-square distribution with 2 degrees of freedom, shows that there is a systematic difference between the random effects and the fixed effects and confirms that we should use panel-data analysis with random effects.

Hence we subsequently use panel data analysis with random effects controlling further for year, industry and country effects by the inclusion of dummies in all regressions.

5.3 Check against “*empirical regularities*” and theoretical predictions

We calibrate our model with firm-specific variables and median industry leverages, and we compare it with empirical results as obtained in the U.S., in small subsets of O.E.C.D. countries or in broad international surveys (see above). Table 4 condenses our base-line results (below) as well as some context selection (next section: section 6.1)

Insert Table 4 about here.

The ‘core’ models for Book & Market leverages include common and specific variables, with similarity in sign and significance for all variables common to and significant in both specifications. They are generally consistent with previous literature.

First, a common determinant of market and book leverages is the median industry leverage under its varying specifications. The effect is positive and ranges from 30 to 40% (50% in some book-leverage specifications). This is expected, as an increase in median industry leverage is associated with increasing book and market leverage for specific firms, which belong to that industry. As underlined before, the precise nature of this association is not entirely clear and varying theories propose a large range of causes, technical, strategic, institutional, etc.

Second, firm-specific factors include profitability (-), tangibility (+), size (+), Tobin’s Q (-), and dividend payout (-). They are all significant and their value is fairly stable across specifications.

The negative effect of profitability on leverage is a debated issue in financial literature. Under standard pecking order theory, a negative effect is expected as firms retain earnings from profitability (the higher the profits, the easier it is to retain earnings, i.e. create internal equity, decreasing book and market leverages). This is due to the managerial preference for internal funding over debt. On the other hand the free cash flow theory suggests that debt may reduce agency costs, and besides debt is a positive signal to the market, so that a positive relation is expected. Antoniou, Guney & Paudyal (2008 [3]) note that family firms and firms in bank-based countries and firms that are closely held are more likely to experience a negative effect than a positive effect. Provided that *on the average* the countries sampled here belong rather

to the bank-based system, we interpret our negative result as a confirmation of AGP's suggestion.

The negative effect of Tobin's Q (growth opportunities) is conform to the financial literature under a range of theories. Trade-off theories predict that higher expected growth increase the cost of potential financial distress forcing managers to reduce their relative debt level. Besides, in the presence of information asymmetries, managers choose to issue equity instead of debt when overvaluation leads to higher expected growth.

The positive association between size and leverage can be explained in a variety of ways as size is an inverse proxy for the probability of bankruptcy, it is a proxy for transparency (lower agency costs, lower asymmetry of information), it is generally associated with greater market access and lower transaction costs to issue equity.

We find a positive association between tangibility and leverage, corresponding to the usual argument that tangible assets decrease the risk of lending.

The dividend payout ratio is negatively associated with both market and book-leverage and it is very small. It is in contrast to AGP's findings that dividend payouts are negative in the U.S. and insignificant in Europe, but our effect may be obtained from country-specific effects (U.K.?). The inverse relation between dividend and leverage supports the view that dividend-paying firms signal good future prospects, which implies a raising market capitalization and a decreased leverage. The negative relation for book leverage may be due to the fact that dividend payout is a proxy for profitability (increasing assets, decreasing leverage, *ceteris paribus*).

Third, in addition to median industry leverages and common firm-specific factors, two specific variables are included, one in each of the two core models (of market- and book-leverages). The variable net equity issue is negative and significant for market-leverage, which supports the view that retained earnings mechanically decrease market leverage. This relationship is straightforward, but will be of particular interest when we will our pool the data by governance structures. Relating to book-equity, the variable non-debt tax shield is positive and significant which is a standard result of the trade-off theory.

Fourth, we note that almost all dummies for years, industries and countries are significant in our regressions. The significance of dummies depends on the base line. For instance choosing 2007 removes significance for 1991 and choosing 2004 removes significance for 1997, 1995 & 1993. Similarly regressing against the U.K. provides maximum significance for country dummies, while regressing against France or Germany limits significance for most country dummies but the U.K. and previously non-significant dummies. Results are fairly similar when we include our context variables (below)

6. Capital structure, managerial behaviors and governance structures

Building on results broadly in line with capital structure theories, and consistent with previous empirical investigation (section 5.3), we progressively include our context variables to confirm H1a & H1b (section 6.1). Then, we proceed to the examination of our core results using the base-line model of section 6.1 to pool our regressions depending on governance structures. This enables us to test further our hypotheses H2 through H5 (section 6.2).

6.1 Relative effects of context variables and sentiment measures: context selection

Overall, our results here are consistent with our hypotheses H1 a & b, and managerial sentiment is negatively correlated with leverage whether based on country, industry- or EA15 indices. This result is obtained using varying perimeters for managerial sentiment indices, while controlling for other factors, including consumer sentiment, capacity utilization, interest rates, inflation rates, stock market indices.

Managerial sentiment results, whether based on country or industry aggregates, are robust to the addition of other context variables. Provided a moderate to high level of pair-wise correlation of the Economic Sentiment Indices and with other context variables (table 3a), we systematically compare “univariate” and “multivariate” results. Univariate results are results based on the model with firm-specific explanatory variables (plus dummies and median industry leverages of section 5) to which we include only one additional sentiment or context variable.

Aggregates of managerial sentiment based on Europe (EA15 or larger) are not always significant, and they are generally not consistent. Often they interact with other variables and in particular consumer sentiment at the European level. We suggest that this is due to their ability to proxy for micro-economic growth prospects as exemplified by the previous literature (see above) and we suggest that their aggregation to the European level makes them lose the specific bits of information that managerial or consumer sentiments may provide. Beside the mere existence of a pan-European consumer market or managerial sentiment is debatable. We remove European aggregates for the rest of the study.

Financial context variables fare well across specifications (significance and stability-wise). The stock market indices are negatively related to market leverage, which is either a mechanical effect or supports the market-timing view. They are unrelated to the book-leverage. In our sample, the interest rate is positively related and inflation negatively related to both measures of leverage. These are surprising results¹³ but we suggest that heteroskedasticity (across countries) and time trends (general decreasing inflation in Europe across the sampling period) might drive these results.

Consumer confidence is not significant in any of the book-leverage specification (neither at the country nor at the EA15 level). Market-leverage regression display mixed results. While consumer sentiment is negative and low for EA15¹⁴ it is insignificant in univariate country specifications; when managerial sentiment is included, it turns positive and significant. Provided the fact that our country consumer confidence variable is highly correlated with country dummies, we suspect that these results may be due to country heteroskedasticity¹⁵. We leave this variable aside for the rest of the study.

Now, provided a robust base-line model incorporating firm-specific variables, median industry leverage, context variables and sentiment measures, we pool our data depending on governance structures, re-testing H1 and testing our main hypothesis H2 through H5.

¹³ On the one hand, financial theory would predict a positive relation between inflation and leverage: tax-deductions on debt are higher when inflation is high and manager would issue debt when expected inflation is relatively high (that is real interest rates relatively low). On the other hand, one would expect managers to borrow relatively more when money is cheaper (negative relationship). Provided that inflation and interest rates are highly positively correlated, as expected, we obtain a surprising result that is consistent (in line with the expected correlation between variables) but contrary to expected financial predictions in both cases.

¹⁴ What is an average European consumer?

¹⁵ Relative consumer confidence anchoring across countries for instance, or relative macro-economic sensitivity to macro-economic and financial shocks, for instance over the economic importance of the public or manufacturing sectors

6.2 Governance regimes mediate the relation between managerial insight, managerial behavior and market reaction.

Our results are non-ambiguous with firm-specific variables being generally of the same sign and significance than previously. Relating to sentiment and context variables, differences in sign and coefficients' values are marked. This is a tangible sign that the general '*un-pooled*' regression misses at least important information. Context-wise, it does more than just missing information, the general un-pooled regression blocks the understanding of theoretical mechanisms: overall results are entirely driven by a subsample based on companies with control-holders and these results are not applicable to the entire population of firms. This means that the general methodological challenges identified, and recently underlined with renewed emphasis (Antoniou, Guney & Paudyal, 2003 [2]; Barclay, Marx & Smith, 2003 [7]), are essential, in particular with regards to the economic, financial and institutional context.

Insert Table 5 about here.

6.2.a Companies with a medium float. Disconfirming H1a & b

First the results for companies with a median float confirm previous baseline results. All firm-specific coefficients are confirmed in size and value¹⁶; the median industry leverage is somewhat stronger in both regressions, possibly because of more limited influence of 'out-of-range' cases. Importantly, most of the contextual coefficients are not significant, but for two variables in the regression for market leverage determinants: managerial sentiment (t is significant only at the 10% level) and the broad stock market index (it may be independent of governance structures). In particular there is no significant effect of neither manager sentiment, nor other economic sentiment indices, nor inflation, nor interest rates.

This implies that we can reject our hypothesis H1a & H1b with confidence, based on the *mixed* subsample of our population. While we can confidently reject H1a & b for companies with an average float (one third to two third), we can't do so in the two other cases where we obtain opposite results....

¹⁶ ...with only the Tobin's Q coefficient for the book-leverage regression being halved.

6.2.b Low float (companies with block-holders): support for the ‘smoothing financial policy’ hypothesis with positive market reaction (H1, H5, H2a & H2c)

The results on low-float companies are similar to those for the non-pooled regression, but stronger, which is evidence that they erroneously drive results on the overall population.

Specifically the signs on managerial sentiment are negative and significant in both regressions. This confirms hypothesis H1 a&b, and validates the subsequent investigation of hypothesis H2&3. The negative coefficient provides support for H2a, the ‘*smoothing of financial constraint*’ hypothesis and disconfirmation for ‘*the over-investment*’ hypothesis.

These results hold with or without the inclusion of varying financial variables. Moreover, the inclusion of other European E.S.I. measures (i.e. consumer sentiment, capacity utilization) does not modify our results, and the significant effect of managerial sentiment is robust whether measured by industry or by country¹⁷. So we conclude that upon a positive sentiment, managers decrease their relative debt level, i.e. increase their relative debt capacity for more difficult time, and that the reverse hold for a negative economic expectation.

Marketwise, the correlation is negative as well, and the coefficient is three times larger. This provides confirmation of our hypothesis that there is a positive market reaction to the inter-temporal smoothing of financial policy (H2c). When managers decrease the debt level upon a positive sentiment, the decrease in market leverage is marginally three times higher in relation to the change in sentiment.

A number of additional results are of interest. Inflation is significant and two to three times higher for both market and book regressions. We take this as further indication that inter-temporal sensitivity and smoothing out is relatively more important in companies with blocks and long-standing shareholders.

¹⁷ As noted earlier, aggregates at the European level are either not significant, or not robust to varying perimeters, with signs changing when the coefficient happen to be significant.

Second the median industry leverage is not significant in the market leverage regression. This is surprising as the median-industry is considered a key element in analysis of leverage (Frank & Goyal, 2009 [20]). Provided our sampling scope (table 2b) we cannot associate this result to limited sample size per industry. Nor can we relate this to representativeness issues of low-float companies across industries: pair-wise correlation between average float and industry dummies always smaller than 5% and often not significant). We suggest that, instead, strategic or institutional (mimetism, anchoring...) arguments relating to the significance of industry leverage are dominant. Low-float companies exhibit more independence and more originality in the execution of their financial policy so that median industry leverages are not driving firm-specific financial policies as much. We interpret this result as a sign that the governance relationship on its two dominant dimensions, cognitive and disciplinary (Charreaux, 2009 [12]), is varying with the governance regime. So, relating to the relative freedom of action that managers may benefit, we suggest a refinement of the theoretical argument proposed by Mahrt-Smith (2005; [31]): as discipline might be exercised *ex-post* more easily in the control-holders regime, there is more freedom *ex-ante*. In contrast, the manager vs. shareholder regime might require more *ex-ante* control and so provides more *ex-post* freedom.

6.2.c High float companies: a more complicated picture.

There is no significant effect of managerial sentiment on book-leverage. This disconfirms H1a, unless the result in aggregate is a combination of contradictory behaviors: hypotheses H2 & H3 suggest indeed opposite effects of sentiment on book-leverage, so that they may be cancelling one-an-other in aggregate. Whether counterbalanced by over-investment, slightly, significantly or not at all, this is a sign that, in high-float companies, the smoothing of financial policy is either less marked, or just not considered. It could be that the smoothing only occurs in response to additional investment rather than as a stand-alone financial policy. So the effect is marginal and ranges from a zero-debt policy to slightly higher debt than the

pro-format increase. In any case this implies a non-significant and slight shift either upward or downward on book-leverage.

Contrary to expectations we find a significant effect of managerial sentiment on market-leverage. Moreover, this effect is positive rather than negative. Combined with a vanishing dividend payout effect and a negative and significant effect of net equity issue, we suggest that dispersed-ownership firms favor a smoothing of their financial constraint through market intervention rather than through debt and dividend policies. A share buy-back upon positive sentiment corresponds to a negative and significant coefficient between net equity issue and market leverage, moderated by the positive sentiment. It comes to replace the dividend policy (no significance either on book- nor on market leverage). Further inflation loses it significance in both regressions. Overall, we doubt that share buy back alone would explain the positive relation identified between sentiment and market leverage alone.

Alternatively we consider that the disconfirmation of H1a is a sign that the sample of high float companies comprises companies where sentiment has no effect on book leverage *along with* both over-investment and smoothing of financial policy depending on the quality of control and monitoring on these dispersed-ownership firms. The positive sign between market leverage and sentiment would then be due to a negative market reaction upon either over-investment alone, or a combination of negative market reactions upon both over-investment and financial policy smoothing.

Last, it is interesting to note that the market index, with still a negative and significant coefficient is 6 times higher for high-float companies than for both the mixed sub-sample and low-float companies.

7. Discussion

7.1 Governance structure & managerial insights: interpretation & directions

Overall we suggest that our findings are convergent with the two views of agency conflicts that have been dominant in financial research: one that features a natural alignment in interests between block-holders (whether family or else) and managers (potentially against the minority shareholders) and the other features the more classic dichotomy between managers and shareholders. In the former case, managers may have more latitude to act in an inter-temporal manner as trust is easier to create among individuals because ex-post control is always more easily feasible. In contrast dispersed ownership firms may be subject to stricter and less flexible rules (inter-temporally), because control is exercised rather ex-ante and because the manager has more ex-post license (no other control-holder to exercise judgment and monitoring about the interpretation of rules).

Further research may help here to clarify two connected issues. First, our results suggest a potential preference for equity-management among dispersed ownership firms and a potential preference for debt-management for firms with block- and long-term shareholders.

Second, we note that time-horizons may differ in the two governance regimes. This is hardly surprising and this is in line with traditional financial wisdom about family and dispersed-ownership firms. Yet what does this differing horizons imply for value-creation? Do firms with control-holders benefit from a more flexible inter-temporal horizon? Is long-term value privileged over short-term value? With what sort of net effect? If the net effect is positive, could minority shareholder benefit more from it (free-riding) than they suffer from potential expropriation by control-holders?

7.2 Float-volatility & further pooling (prominence, transparency...)

We test further the volatility of the float for robustness as we used the average float over the listing period. We set the thresholds at 5% and 25% (standard deviation of public float over the listing period). We note that 2 third of the low volatility firms are low float firms, which suggests that the result are somewhat overlapping with the results based on the sole average float. No further insight can be derived from this pooling, and we suggest that further test should focus on the minority of firms that shift from one float-category to another one over the listing period.

Further we pool our regression on alternative criteria including in particular dummies for whether the company is listed on a single stock-exchange or on several, whether it has business concentrated on one SIC-code or more, whether it is a higher or lower market capitalization¹⁸, whether it has a longer history of market listing (more than 8 years), what type of market cap growth it has experienced (on average: negative and categories ranging from 0 to 16%, 35% yearly and more).

Insert Table 6 about here.

First the pooling based on market capitalization (below or above average median market capitalization size) proves consistency with previous findings. Further both the manager sentiment index and dividend pay-pout ration loose significance in the two regressions of market- and book-leverage. This suggests that when the company is large enough our managerial insight hypothesis does not hold. This comes as a restriction to H2 & H4, but this seems relatively reasonable on two grounds. First Simon's limited rationality theory suggests that one man may not have sufficient insight to comprehend on his company's prospect better than the market does through price mechanisms. Second, these companies may benefit

¹⁸ ... split according to the average median market capitalization over the panel

sufficient collective attention and screening so that managerial opinion is screened, analyzed and transferred collectively by market intermediary into the price mechanism.

A second pooling is based on pooling by market capitalization growth. Again there is broad consistency in results with base-line models. We note here that enterprises that operate in unstable environments (negative or explosive growth) present a number of specificities, many of which would be provide an interesting ground for further analyzing. Related specifically to managerial insight (managerial sentiment), we note that these companies operating in unstable environment do validate our managerial insight hypothesis. Either the environment is too turbulent for managers to purposefully anticipate as described in hypotheses H1, 2 & 4, or the market price mechanism is too noisy. As results do hold neither for market nor for book-leverage, we suggest that turbulence in the environment is a second constraint on our managerial hypothesis.

Third pooling on multiple vs. single listings reveals that multiple listing limits managerial sentiment as measures by country-specific managerial economic sentiment, which is in fact warranted. Further testing based on EA15 or industry-specific sentiment indices are warranted, but the sample is of limited size, there is a chance that multiple-listed companies are not represented by EA15 indices, and it is likely that multiple-listing companies overlap with companies operating in a broad range of industries (at least in Europe). Last the listing-range does not mediate our hypotheses, but reveal that companies with a limited listing history exhibit very peculiar (with low predictability) patterns as related to book-leverage and no industry anchoring relating to median industry market leverage.

8. Conclusion

We investigate the determinants of leverage on a broad sample of listed firms operating across Europe (Western Europe and Poland). While limiting variance in terms of economic, judicial, accounting or institutional development, this sample magnifies qualitative differences in institutions. Moreover, our sample features a large number of companies operating in *mixed governance regimes*, that is the sample features significant proportions of both dispersed ownership and concentrated ownership firms in any of the 15 countries investigated here.

While we confirm previous empirical and theoretical predictions relating to the firm-specific determinants of leverage (based on a somewhat original sample), we implement a new approach focusing on managers' business insight. We define business insight as the manager's articulate understanding of the business prospects of his/her firm and we proxy it with a measure of *managerial economic sentiment*, derived from a long-range and robust European index. We contend that there is a relation between business insight, managers' decision making, managers' behavior and potential market reaction, relation that we intend to capture through adding sentiment measures to our base-line regressions for market- and book-leverages. Our results show that the managerial sentiment measure is negatively and significantly correlated to leverage in both regressions and we observe this result across a range of managerial sentiment-specifications (country-based, industry-based), while we control for *consumer sentiment*, stock market indices and other macro-financial variables such as inflation and interest rates.

Most importantly, we show that our general relation linking managers' sentiment to measures of leverage is entirely driven by a sub-sample of our population of firms based on governance structures: it is entirely driven by those firms that have control- or block-holders ("*low-float*" companies). When pooling our regression based on governance structures, we show that results are opposite for dispersed-ownership firms, who exhibit a positive correlation in the case of market-leverage, while medium range firms exhibit no significant relation at all. We suggest that these differences exemplify typical manager's behaviors and corresponding market reactions, mediated by governance structures.

While manager's behavior is a corner stone in many capital structure theories, little empirical attention had been paid to managers' behavior in aggregate, with an emphasis on collective (and potentially limited) rationality, rather than on individual psychological biases. Hence our results relating *managerial insight* to measures of book- and market-leverages are relatively novel. We suggest that a mechanism relating managerial insight, managerial behavior (financial policy & inter-temporal risk-shifting) & the market valuation of these behaviors is relevant for understanding leverage ratios. We show that this mechanism is mediated by the governance structure of the firm.

Overall we find evidence that an inter-temporal smoothing of the financial policy, through debt management, occurs with significant frequency in firms with block- & control holders. Moreover, we contend that the market values positively this accommodation of the financial constraint in these firms, based on a manager's license to act upon his/her business insight. The situation for firms with dispersed ownership is more ambiguous and may rather consist of a larger range of contradictory behaviors. Specifically, we believe that the lack of relation between managerial insight and managerial behavior (as exemplified by the results for book-leverage) expresses a mixture of "no smoothing policy" (no effect) with a combination of behaviors with opposite results in aggregate: some managers may indeed engage in some smoothing, favoring then potentially equity policies rather than debt policies, while other managers may engage in excess investment, financed through debt. While the effects of these two behaviors cancel one another in aggregate (book-leverage regression), the market reaction is overall negative. This negative reaction is either entirely driven by the traditional negative reaction to over-investment, or, it may be by a combined negative reaction to both excess investment and financial smoothing. The latter is more likely provided that we can't evidence excess investment financed through debt in aggregate. In addition, our results suggest that there is a marginal preference for debt- and dividend-policies among firms with block- and control-holders, while there is a preference for equity-policy in firms with dispersed ownership, a hardly surprising result.

Last, we show that the effect of managerial insight is limited by a mixture of complexity, size & transparency arguments; either the managerial insight is limited in too large or complex organizations (limited rationality arguments), or prominence, bringing more attention, analysis and screening from market participants, decreases the marginal quality of the managerial insight (that is the market-price effectively incorporates all available information, including most private information that managers do not disclose but act upon: their insights).

Our contribution is two-fold. On the one hand, we exemplify the methodological and conceptual specificity that the investigation of the institutional context carries for financial phenomena. Hence it should come as no surprise if the “country puzzle” is still prevalent in financial research (Stulz, 2005 [41]). If the institutional context conditions behaviors, then, significant but conflicting managers’ behaviors can become insignificant in aggregate. Qualitative research and case studies may be warranted to explore and evidence these micro-economic mechanisms. Additionally, general results based on mixed institutional contexts can be misleadingly, because they provide conclusions only robust for a sub-sample of the dominant institutional context. Frank & Goyal (2008 [19]) note that much of past empirical studies on capital structure has relied on the Compustat files and hence on U.S. listed firms. Hence, we contend that much is derived from a system with a dominant and homogeneous institutional context, exemplified by dispersed ownership, a rare occurrence world-wide (La Porta, Lopez de Silanes & Shleifer, 1999 [27]).

On the other hand, we suggest that managers may operate differently, with different time horizons and different kinds of monitoring relationships, depending on governance structures. Yet we stop short of assessing the relative efficiency of each alternative governance regime and we emphasize the complication brought about by inter-temporal trade-offs. Hence we echo the conclusion by Shleifer & Vishny (1997 [40]) that they “*do not believe that the available evidence tells us which one of the successful governance systems is the best*” and we depart from the idea, promoted by *law & finance*, that differences in governance structures are questions of degrees rather than kind, or, that the more flexible *common law governance approach* is intrinsically superior (La Porta, Lopez de Silanes, Pop-Echeles & Shleifer, 2003 [28]): here, the positive market reaction to manager’s behavior in the case of firms with control-holders turns negative in the case of firms with dispersed ownership. Further we evidence that both governance structures may coexist in given countries, with divergent underlying mechanisms, divergent behaviors and divergent market assessments of these behaviors. Eventually, we suggest that the label *governance regimes* might correspond better to the situation, because if *structure* is merely descriptive, *regime* suggests conditionality in what is appropriate and advisable.

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Appendix 1. Variable definitions and alternatives considered

For the most part, our definitions ensue from recent contributions by Antoniou, Guney & Paudyal (2008 [3], below AGP), Fan, Titman & Twite (2008 [17], below FTT) and Frank & Goyal (2009 [20], below F&G). They all provide relatively converging definitions. Whenever appropriate we test variables under different sets of definition.)

The exogenous variables are market leverage (M.L., i.e. total debt over the addition of total debt plus market capitalization) and book leverage (B.L., i.e. total debt over total assets). Alternatives may exclude short-term debt (Demirguc-Kunt & Maksimovic, 1999 [14]), may net with the cash, or include current liabilities (Chui, Lloyd & Kwok, 2002 [13]). We leave these alternative definitions for robustness tests.

For the main firm-specific endogenous variables, we use the ‘core variables’ mentioned earlier (FG). For profitability we retain EBITD (earnings before interest, taxes, amortization and depreciation) over total assets, for size we retain the logarithm of total assets, we include Tobin’s Q ¹⁹, and we use two versions for tangibility: Tangibles defined as in AGP or FTT by property, plant and equipment (net) over total assets and we define Intangibles as ‘Intangibles’ item from Worldscope over total assets. It is noteworthy that intangibles were dealt with quite differently across European countries before the adoption of the IFRS standards in 2005 and that the quality of the data collected across countries and years may be more subject to missing data or errors than for other items. We focus on tangibles in our study.

To these ‘core’ variables we add additional firm-specific variables: debt maturity, effective tax-rate, non-debt tax shield, pay-out ratio, a labor-intensity ratio (following MacKay & Phillips, 2005 [30]), a dividend dummy, a dummy that indicates whether a company operates in a given industry (all provided sic codes have the same 2 first digit), a dummy that indicates whether the company is listed on more than one stock market*, a dummy that indicates whether the company is present in our sample for more than 8 years* and a count of the number of listed years*.

Last we include a variable based on Baker & Wurgler (2002 [4]), which is net equity issue, computed as the change in book equity, minus the change in retained earnings over total assets.

¹⁹ Defined as quasi-market value over total assets; quasi-market value is Total Assets – “Total ShareholderEquity” item from Worldscope+ Market Capitalization. The pair-wise correlation of Tobin’s Q with Market to book ratio is 99% over the sample used.

* These dummies are time-invariant

A traditional key item to compute is the median industry leverage (M.I.L.): we operationalize the median industry leverage in two ways. First we use the SIC codes provided by Worldscope. Worldscope uses several sources and provides a time-invariant SIC code list based on consolidated data for the last available year. They provide as well Business Segment SIC codes for up to 10 business segments, this variable being time-varying (historical records are kept). So we operationalize the median industry leverage using both definitions based on 2 digit-sic-codes. It will turn out that no significant difference is obtained in subsequent regressions (if there may be some effect on averages, the effect on median value is obviously marginal but for the segments that feature less than 6 to 10 firms for a given year). Second we follow the European Community NACE categorization as organized in 5 sub-categories and organized around the industries that are used to sample the sentiment index by industry (industries are retail, construction, manufacturing, services and other industries, this last category not sampled for the sentiment index).

We add variables describing the economic, financial and more general business environment that firms operate in. Some variables are country specific, some are country-and-industry specific, some are aggregated at the European level. All variables are time varying.

Financial variables (F) are country-specific and include inflation, interest rate and a broad stock-market index. We use varying terms for interest rates, short, medium and long-term interest rates. As a first step we use the one-month, one-year and 10-years interest rates provided by the European Union (along side varying indicators including the ESI). The pair-wise correlation between the 1-year and 10-year interest rates is 0,99 so we use the 10-year interest rates because this source is more complete (over the range of countries and years). We include a broad market stock index, the Morgan Stanley MSCI indices for national stock exchanges (including all shares) and retain the closing index of each year (we implement the monthly-based median value as well, which correlation with the closing value is 0,98).

Eventually we include the ESI indices at three levels, industry sentiment, country-sentiment as well as the European aggregate (EA15, provided by the E.U. and overlapping our 15-countries sample). The industry sentiment encompasses 4 industries: the country sentiments features managerial sentiment (aggregate of these four industries), consumer sentiment and a proxy for nation-wide capacity utilization. The European aggregates include all three ESI as well, managers, consumers and capacity utilization. Table 3a provides pair-wise correlation for these background indices (financial, economic & managerial). We provide this specific table because a key dimension in our study is to provide some sense on the specific nature of managerial economic sentiment as compared to other context variables.

Appendix 2. Data collection

We collect data from Thomson-One Banker, who provides combined access to Worldscope and Datastream. We collect data on all Companies that have been or are listed on a stock exchange on the European soil (64 cities including stock exchanges) since 1990 (an initial total of 10 633 identified company tickers, dead or alive). Some firms have no financial data at all over any range of year (34% of total number of collected tickers, many firms in Eastern Europe). As usually done in these studies, we remove financial companies and administrations (sic codes 6*** and 9***, 16% of counts). Then to account for partially missing or discontinued stock-data and to limit sampling biases upfront, we decide to limit ourselves to liquid companies with a minimal exposure to public ownership. To proxy for this, we use sales data, the financial item with most availability and we retain companies with more than Euro: 5million in sales per year and on average over their listing period (11% of counts removed).

From a total of 4182 companies with exploitable data, we conduct a number of additional tests bringing the count down from 4182 to 3434 firms in total. These screens, comparable in size, include successively: removing companies with less than 3 years of data, removing companies from stock exchanges that have less than 25 stocks listed on average (e.g. Antwerpen, Bologna, Riga, Prague, etc.), removing companies with missing data on one of the endogenous variables (i.e. market-cap or asset data; we treat missing debt-data as a 0-value after successfully comparing shareholders' equity and total assets). We remove years with missing data when they are starting or terminating years. Last, we need to account for discontinued or missing data on some of the item that we need as explanatory variables. We apply three rules. First we remove companies with more than 25% of items missing (from the 20 items considered from the balance-sheet or income-statement). Second, we try to reconstitute remaining missing data through existing balance sheet or income statement information (for instance missing short term debt is often set to 0 because long-term debt is equal to total debt). Third we replace a missing value by using the average of proximate years, if the change between these years is comparable to other-years average.

These 3434 firms provide us with a total of 40 885 firm-years that we check empirically (check of totals vs. additions of items, observation of pair-wise correlation) and that we check against previous capital structure studies (observed relation between leverage and exogenous variables). This check enables us to track down outliers and provides evidence that we need to winsorize out data as in some previous empirical studies (Antoniou, Guney & Paudyal, 2003 [2]; Frank & Goyal, 2009 [20]). We try to winsorize the data at 5 and at 3 standard deviations based on every Balance Sheet & Income Statement item considered. It turns out that winsorizing the data at 5 fixes issues while it removes only 129 firms-years and 3 firms entirely (for the most part, it removes the first or last year of quotation for given companies). For the rest of the paper, we use this database removing further the American-registered companies (77 Companies, 803 firm-years) and the Swiss-listed firms (131 firms, 1851 firm-years), for which we do not have sentiment data. For all other companies, but one, the place of primary listing is the one of registration. Our resulting database contains 3215 firms for 38102 firm-years.

Appendix. Summary of hypothesis

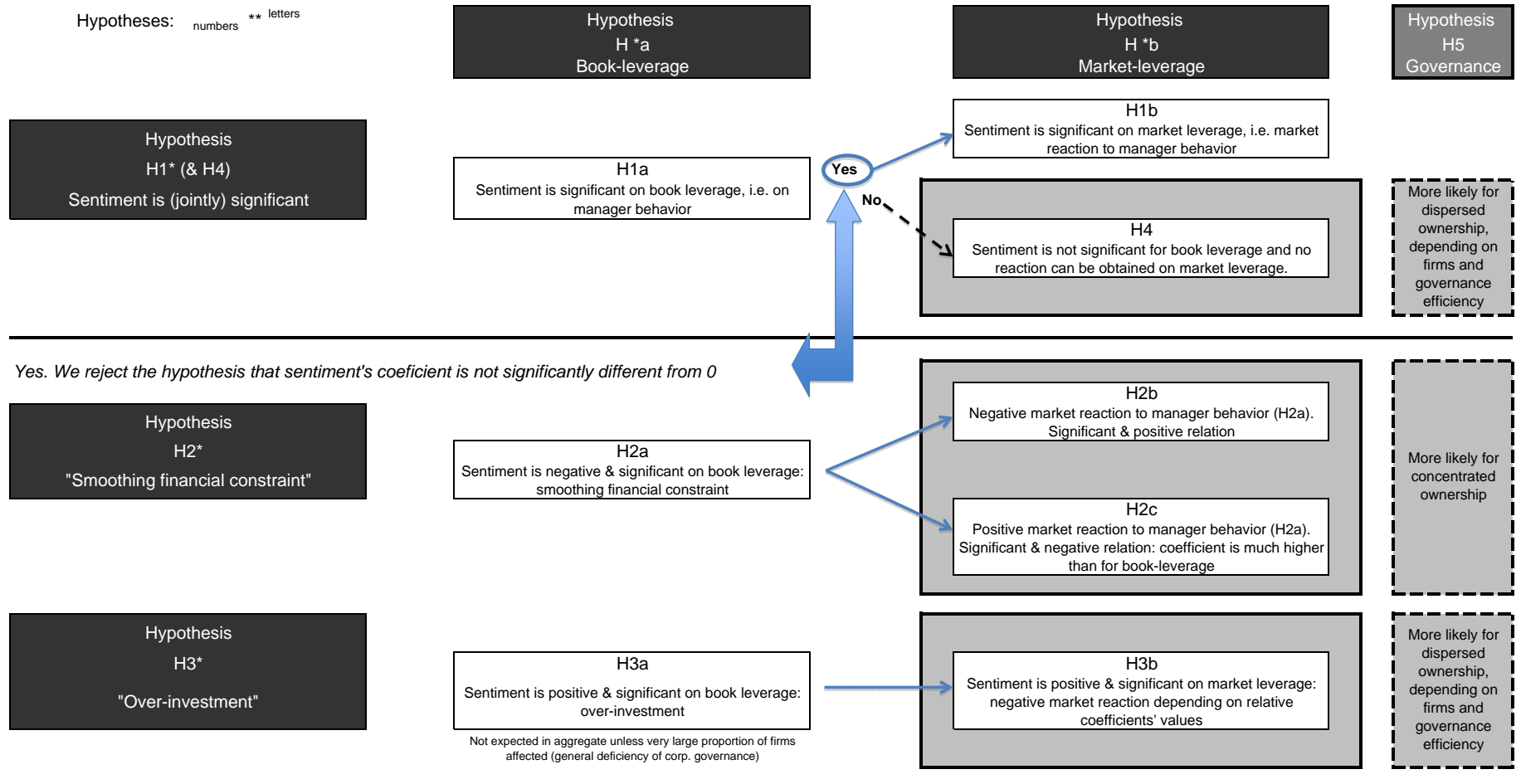


Table 1a. Variables: definitions

WORLDSCOPE ITEMS

Quotes in italic are definitions or specifications from Worldscope.

** at the end of a definition characterizes a time-invariant variable*

<u>Code</u>	<u>Item & definition</u>
EBITD	EBITD is earnings before interest, taxes, amortization and depreciation. <i>"EARNINGS BEFORE INTEREST, TAXES AND DEPRECIATION (EBITDA) represent the earnings of a company before interest expense, income taxes and depreciation. It is calculated by taking the pretax income and adding back interest expense on debt and depreciation, depletion and amortization and subtracting interest capitalized."</i>
DnA	Depreciation and Amortization
IncBT	Income before Taxes
Intangibles	'Intangibles' provided by Thomson with availability issues in early 90's in Europe and no availability prior to 1989. <i>"It includes: (1) Goodwill/Cost in excess of net assets purchased (2) Patents (3) Copyrights (4) Trademarks (5) Formulae (6) Franchises of no specific duration (7) Capitalized software development costs/Computer programs (8) Organizational costs (9) Customer lists (10) Licenses of no specific duration (11) Capitalized advertising cost (12) Mastheads (newspapers) (13) Capitalized servicing rights (14) Purchased servicing right"</i>
LTD	Long-Term Debt
MC	Year-end Market Capitalization (roughly the closing share price times the number of ordinary shares as a personal check indicates)
MC(pub)	The year-end public market capitalization is <i>"Market Price-Year End * (Common Shares Outstanding - Closely Held Shares)"</i>
PayOut	Pay-out ratio, <i>"Sum of the trailing twelve months dividends divided by sum of the trailing twelve months earnings"</i>
PPE(net)	Net Property Plant & Equipment
RE	Retained Earnings
STD	Short Term Debt; specifically, <i>"ST DEBT AND CUR PORT LT DEBT represents that portion of debt payable within one year including current portion of long term debt and sinking fund requirements of preferred stock or debentures"</i>
TA	Total Assets
Taxes	Income Tax
TD	Total Debt. Author have checked that $TD = STD + LTD$ did hold for the sample
TS	Total Sales
TSE	Total Shareholder Equity is computed in this way: <i>"Preferred Stock + Common Stock Net + Capital Surplus + Retained Earnings - Treasury Stock +/- Other Liabilities"</i>

VARIABLES

Exogenous variables

Market leverage $ML = TD / (TD + MC)$

Book leverage $BL = TD / TA$

Firm-specific variables * stands for a time-invariant data

Profitability $EBITD / TA$

Size $\ln(TA)$

Tobin's Q QMV / TA : Quasi-market value $(QMV) = TA - + MC$

Tangibles $PPE(net)$

Intangibles' $Intagibles/TA$

Net equity issue $(\Delta(TSE) - \Delta(RE)) / TA$

Debt maturity $(LTD+STD) / TA$

Effective tax-rate $Taxes / IncBT$

Non-debt tax shield DnA / TA

neteqissubv A ratio based on Baker & Wurgler, computed as

$= (\text{Change}(TSE) - \text{change}(RE)) / TA$

Labor-intensity ratio $Employees/TS$

NbYears Count of the number of listed years in the data base for each company*

pubcapav Average of $MC(pub)/MC$ over the sample period*

avmcsiz Average of MC over the sample period*

Firm-specific dummies

Dividend dummy Takes the value of one if dividends are paid out. 0 otherwise

Monoline dummy	Takes the value of one if a company's declared activity (SIC codes, 2 digits) is unique, 0 otherwise. This dummy is based on Industry(1) or Industry (2) having only 1 '2-digit SIC code'
Monoexchange dummy	Takes the value of one if a company is listed on only one stock market, 0 otherwise. This dummy is based on Worldscope variable 'EXCHANGE' that includes the range of exchanges the company may be listed on (up to 10 names in the list) *
OldCies dummy	a dummy that indicates whether the company is present in our sample for more than 8 years*
sortpmcap	Pooling of pubcapav into three categories; sortpmcap=0 if pubcapav<33%, =2 if pubcapav>66% and 1 otherwise*
sortgrowth	Pooling based on growth of MC over sample period. If overall MC-growth over the range of listed years is negative sortgrowth= 0; if between 0 & median sample growth, 16% sortgrowth=1; if between 16% & 35% sortgrowth=2 and above, sortgrowth = 3*

Median industry leverage

medblevind	Median book leverage per industry based on the E.U./ Nace categorization, ie. Industry(3) below.
medmlevind	Median market leverage per industry based on the E.U./ Nace categorization, ie. Industry(3) below.
indpanelmlev	Median market leverage per industry based on 2-digit SIC codes, ie. Industry(1) below.
indpanelblev	Median book leverage per industry based on 2-digit SIC codes, ie. Industry(1) below.
indinvarmlev	Median market leverage per industry based on 2-digit primary SIC codes, ie. Industry(2) below*
indinvarblev	Median book leverage per industry based on 2-digit primary SIC codes, ie. Industry(2) below*

Context variables & Economic Sentiment Indices

inflation	Inflation rates by country, source: European Union website
R10y	Long-term (10 years) interest rate by country, source: European Union Website
R1y	One-year interest rate by country, source: European Union Website
R1m	1-month interest rate by country, source: European Union Website
MSCI-clos	Morgan Stanley MSCI broad market-index by country, generally encompassing the CTRY-allshare index provided by MSCI. The closing value per year is retained, source: Datastream
MSCI-med	Same as preceding, the 12 values-median valuer based on monthly closing price price is retained
consopays	European ESI for consumer sentiment per country
caputpays	European capacity utilization index for all industries per country
sentpays	European ESI for managerial sentiment per country
sent4ind	European ESI for managerial sentiment aggregated over countries for each of the core industries surveyed
consoea15	European ESI for consumer sentiment for the whole of Europe
caputea15	European capacity utilization index for all industries for the whole of Europe
sentea15	European ESI for managerial sentiment aggregated over the sample

General Dummies

Year	Dummies for the years 1990-2007
Country	15 countries: aut, bel, deu, dnk, esp, fin, fra, gbr, grc, irl, ita, nld, pol, prt, swe*
Industry(1)	2 digit SIC code based on Worldscope time varying 'BusinessSegmentSICCode' variables (up to 8 variables).
Industry(2)	2 digit SIC code based on Worldscope time-invariant 'SICCodes' variable, a variable that includes up to 7 4-digit sic codes. The first four numbers of 'SICCodes' overlaps 100% with the 'PrimarySICCode' variable*
Industry(3)	Nace classification collapsed into 5 categories corresponding to the industries surveyed for the Economic Sentiment Indices: Manufacturing industries, Services, Construction & Retail trade industries and an 'other' category corresponding to industries not surveyed for the ESI.

Table 1b. Variables: statistics

Code	Number of var.	Average	Standard error	Minimum	Maximum
codenb	38102	1321	901	1	3214
year	38102	2001	5	1990	2008
mlevt1	34886	26%	23%	0%	99%
mlev	38102	26%	22%	0%	99%
blevt1	34886	0.22	0.18	0.00	5.21
blev	38102	0.22	0.18	0.00	5.21
maturity	35616	0.53	0.32	0.00	1.79
ebitdta	38102	0.11	0.18	-4.35	3.43
intangibles	38102	0.11	0.16	-0.17	2.08
tangibility	38102	0.28	0.21	0.00	2.56
lnasset	38102	5.23	2.00	-2.81	12.53
tobinsq	38102	1.69	1.53	0.02	41.03
salesemplo~s	38012	0.27	1.00	-4.03	62.11
nondebttax~d	38102	0.05	0.05	-0.42	1.93
inflat	36810	2.39	1.68	-0.70	17.90
r10ans	36783	5.67	2.30	3.33	24.01
msciclos	38102	684.67	806.85	8.49	5710.48
consoea15	38102	-10.43	6.45	-27.15	1.10
caputea15	38102	82.03	1.60	77.30	85.30
sentea15	38102	100.71	8.56	74.55	114.35
mlpays	38102	23%	10%	1%	73%
medblevind	29060	19%	5%	8%	27%
medmlevind	29060	20%	7%	4%	36%
medblevpays	36921	20%	5%	3%	47%
consopays	37320	-7.9042	12.3120	-45.5000	25.6500
caputpays	37581	81.9480	3.5863	66.5000	89.2500
sentpays	38102	101.3638	8.1609	76.4000	124.9000
sent4ind	28557	-1.3665	12.5833	-39.3583	31.4917
pubcap	31690	0.5321	0.3323	-5.8021	7.5680
pubcapav	38102	0.48	0.27	0	1
monoline	38102	0.40	0.49	0	1
monoexchange	38102	0.82	0.39	0	1
nbannees	38102	14.14	4.64	3	19
oldcies	38102	0.86	0.34	0	1
divpayout	38099	28.00	31.60	0	100
rerate	38099	72.00	31.60	0	100
divdum	38102	0.70	0.46	0	1
rechange	38102	20.6290	1321	-165226	159749
renetinc	38102	0.0853	126	-16081	16114
indpanelmlev	38102	0.2309	0.0953	0.0000	0.6922
neteqissubw	38102	0.0046	0.4362	-37.9917	6.4021
avmcsiz	38102	0.50	0.50	0	1
mgrowth	38102	0.38	0.49	0	1
hgrowth	38102	0.20	0.40	0	1
vhgrowth	38102	0.31	0.46	0	1
hpmcap	38102	0.29	0.45	0	1
lpmcap	38102	0.29	0.45	0	1
mpmcap	38102	0.43	0.49	0	1
lvolmcpz	38102	0.18	0.39	0	1
hvolmcap	38102	0.17	0.37	0	1
otherind	38102	0.21	0.41	0	1
sortpmcap	38102	1.00	0.76	0	2
sortgrowth	38102	1.71	1.02	0	3

Table 2. Sample characteristics: float and number of firm-years by industry & country

2a Median & average public market capitalization by country & industry																					
Country	Median float	Average float	Average yearly public market capitalization by country & industry																		
			1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AUT - Austria	40%	37%	33%	33%	34%	35%	35%	37%	35%	34%	34%	34%	37%	37%	37%	37%	38%	39%	38%	40%	
BEL - Belgium	40%	41%	46%	46%	46%	46%	46%	46%	45%	43%	42%	39%	38%	38%	38%	38%	38%	39%	40%	53%	
DEU - Germany	30%	36%	41%	40%	40%	39%	39%	39%	36%	36%	37%	35%	35%	34%	34%	35%	35%	35%	35%	43%	
DNK - Denmark	60%	56%	60%	60%	61%	61%	60%	60%	57%	55%	53%	53%	54%	54%	54%	54%	54%	54%	54%	56%	
ESP - Spain	50%	51%	59%	56%	55%	55%	55%	55%	53%	52%	51%	50%	50%	50%	50%	50%	50%	50%	50%	52%	
FIN - Finland	60%	57%	66%	65%	63%	63%	63%	62%	59%	58%	56%	57%	55%	55%	55%	55%	55%	55%	55%	58%	
FRA - France	30%	36%	45%	45%	44%	44%	43%	43%	39%	38%	36%	36%	34%	34%	34%	34%	34%	34%	35%	36%	
GBR - Great Britain	70%	69%	73%	74%	74%	74%	73%	73%	71%	70%	69%	69%	69%	68%	68%	68%	67%	67%	67%	68%	
GRC - Greece	20%	23%	27%	28%	31%	32%	33%	33%	30%	29%	28%	25%	21%	20%	20%	19%	20%	20%	20%	34%	
IRL Ireland	70%	66%	71%	71%	69%	70%	70%	70%	70%	70%	70%	65%	63%	62%	62%	62%	63%	63%	63%	66%	
ITA - Italy	40%	42%	46%	46%	46%	46%	47%	47%	47%	46%	44%	43%	42%	41%	41%	41%	40%	40%	40%	37%	
NLD - Netherlands	50%	50%	51%	51%	51%	53%	52%	52%	52%	53%	51%	50%	48%	48%	48%	49%	48%	49%	49%	54%	
POL - Poland	30%	35%				30%	45%	46%	47%	47%	45%	46%	42%	41%	37%	34%	33%	30%	30%	21%	
PRT - Portugal	30%	33%	36%	35%	33%	32%	34%	36%	30%	33%	34%	34%	33%	33%	34%	33%	33%	34%	34%	31%	
SWE - Sweden	50%	48%	65%	63%	60%	61%	61%	62%	59%	55%	50%	49%	45%	46%	45%	44%	43%	43%	44%	52%	
Retail trade	50%	52%	63%	63%	62%	61%	59%	60%	56%	54%	51%	48%	47%	47%	46%	47%	48%	47%	48%	56%	
Construction	50%	48%	63%	62%	60%	59%	58%	56%	54%	54%	53%	51%	50%	48%	48%	48%	48%	47%	48%	60%	
Manufacturing	50%	48%	57%	56%	55%	55%	54%	54%	52%	50%	48%	47%	46%	45%	45%	45%	45%	45%	45%	56%	
Services	50%	47%	61%	62%	61%	62%	61%	59%	55%	54%	50%	47%	45%	45%	46%	46%	46%	46%	47%	55%	
Other industries	50%	48%	54%	54%	53%	52%	52%	52%	49%	49%	48%	47%	45%	44%	44%	43%	43%	44%	45%	54%	
Total	50%	48%	57%	57%	56%	55%	55%	55%	52%	51%	49%	48%	46%	45%	45%	45%	45%	45%	46%	55%	
2b Addition: number of firms by year & by country or industry																					
AUT - Austria	779	17	19	22	25	27	31	34	38	42	47	53	55	55	56	59	60	58	25		
BEL - Belgium	939	27	28	28	29	29	29	31	41	53	63	67	68	68	70	72	77	75	7		
DEU - Germany	6329	155	164	178	193	205	217	249	270	318	398	489	492	486	472	473	479	464	148		
DNK - Denmark	1315	42	45	49	51	54	55	66	69	75	76	81	83	84	86	86	86	83	61		
ESP - Spain	1290	37	46	50	51	52	52	62	67	70	75	80	82	86	87	89	90	92	32		
FIN - Finland	1395	31	34	38	41	44	46	54	62	69	86	98	99	99	99	99	103	105	84		
FRA - France	5853	130	145	155	161	172	179	222	268	320	372	427	447	454	455	459	470	471	113		
GBR - Great Britain	10413	333	344	350	364	380	393	449	494	528	551	597	634	663	676	722	794	823	512		
GRC - Greece	2294	15	16	32	40	53	59	86	95	105	132	179	196	203	206	212	214	211	30		
IRL Ireland	450	17	18	20	21	21	22	22	25	25	26	28	26	26	26	30	31	31	9		
ITA - Italy	2000	47	47	49	49	52	59	66	75	87	103	139	155	160	165	173	182	183	29		
NLD - Netherlands	1478	48	53	55	57	60	64	69	77	86	91	97	97	97	97	99	101	100	33		
POL - Poland	888				1	6	20	22	25	33	40	49	52	64	81	101	126	128	15		
PRT - Portugal	504	8	10	11	13	16	20	25	27	28	33	38	38	37	38	38	38	37	12		
SWE - Sweden	2175	30	36	45	51	56	59	69	92	109	129	152	165	174	175	182	192	196	71		
Retail trade	2381	66	67	67	74	80	84	98	116	126	136	157	153	166	169	175	185	187	96		
Construction	1893	57	60	72	79	84	84	104	106	105	115	114	119	121	126	128	127	127	41		
Manufacturing	18242	533	573	615	641	693	738	828	909	1018	1106	1163	1212	1233	1233	1267	1338	1343	496		
Services	7457	87	94	100	107	115	120	165	223	298	417	585	636	654	668	689	737	754	280		
Other industries	8129	194	211	228	246	255	279	331	371	401	448	555	569	582	593	628	654	665	268		
Total	38102	937	1005	1082	1147	1227	1305	1526	1725	1948	2222	2574	2689	2756	2789	2887	3041	3076	1181		

Table 3a. CONTEXT . Pair-wise correlation of context-specific variables

Pair-wise correlation of the main variables used in the model

Data reported is significant at the 1%level. No significance level between 1 & 10%. Data below 10% is not reported (black boxes)

Shades of grey provides thresholds for pair-wise correlations every 25%

All data is year-varying

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1 Inflation	100%																			
2 Interest rate (1 month)	61%	100%																		
3 Interest rate (1 year)	53%	99%	100%																	
4 Interest rate (10 year)	59%	78%	78%	100%																
5 median leverage by industry (SIC, worldsci)	16%	12%	11%	17%	100%															
6 median leverage by industry (SIC, datastre)	17%	14%	13%	19%	94%	100%														
7 median leverage by industry (EU's definitio)	19%	14%	14%	20%	66%	69%	100%													
8 median leverage -all sample	26%	23%	25%	28%	43%	49%	57%	100%												
9 ESI consumers EA15	-26%	-15%	-14%	-18%	-16%	-18%	-20%	-34%	100%											
10 ESI capacity utilization EA15	-7%	-9%	-6%	-7%	-10%	-12%	-13%	-22%	74%	100%										
11 ESI managers EA15	-20%	-16%	-16%	-12%	-25%	-29%	-31%	-54%	89%	82%	100%									
12 Median leverage by country	33%	18%	22%	26%	31%	34%	36%	54%	-25%	-10%	-30%	100%								
13 ESI consumers by country	-35%	-16%	-14%	-26%	-17%	-18%	-18%	-25%	40%	28%	38%	-42%	100%							
14 ESI capacity utilization by country	-53%	-26%	-15%	-19%	-13%	-14%	-14%	-14%	26%	32%	31%	-19%	47%	100%						
15 ESI managers by country	-33%	-39%	-37%	-23%	-25%	-28%	-31%	-53%	63%	48%	72%	-46%	48%	34%	100%					
16 ESI managers by industry	-22%	-24%	-22%	-28%	-52%	-53%	-78%	-35%	52%	53%	58%	-28%	27%	23%	45%	100%				
17 ESI managers by country & industry	-25%	-38%	-37%	-26%	-42%	-44%	-63%	-33%	39%	34%	44%	-29%	35%	21%	60%	76%	100%			
18 Morgan Stanley'MSCI broad country indice	-8%	-38%	-41%	-23%	2%			-10%	26%	20%	19%	15%	-26%	-6%	26%	12%	24%	100%		
19 Morgan Stanley'MSCI broad country indice	-7%	-40%	-43%	-24%		-3%	-4%	-16%	25%	20%	21%	14%	-28%	-8%	27%	13%	25%	98%	100%	

Table 3b. DATABASE. Pearson's pairwise correlation for our main variables

Pair-wise correlation of the main variables used in the model

Data reported is significant at the 1%level. No significance level between 1 & 10%. Data below 10% is not reported

Shades of grey provides thresholds for pair-wise correlations every 25%

variables / variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1 Market leverage at (t+1)	100%																									
2 Market leverage at t	85%	100%																								
3 Book leverage	67%	76%	100%																							
4 Maturity	10%	10%	18%	100%																						
5 Profits	-10%	-14%	-9%	7%	100%																					
6 Intangibles		-2%	6%	12%	-8%	100%																				
7 Tangibles	21%	23%	25%	21%	11%	-36%	100%																			
8 size	21%	21%	19%	24%	14%	11%	19%	100%																		
9 tobin's q	-31%	-35%	-11%	-2%	6%	2%	-13%	-12%	100%																	
10 labor intensity (sales)			1%		1%		-4%	4%		100%																
11 labor intensity (assets)	3%	1%	3%	1%	-1%			4%	-2%	47%	100%															
12 effective tax rate								1%				100%														
13 Non debt tax shield	1%	4%	6%	3%	-6%	8%	16%	-8%		-2%	-4%		100%													
14 Inflation		3%		-4%	4%	-15%	15%		-5%	-1%	2%		-7%	100%												
15 Interest rate	2%	4%	-2%	-6%	7%	-25%	13%	-4%	-5%	-2%	3%		-4%	59%	100%											
16 median leverage by industry	19%	24%	12%		6%	-24%	18%	18%	-24%		-2%	1%	-6%	19%	20%	100%										
17 median leverage (overall)	8%	15%	4%		-8%	-5%	3%		-18%	-3%	-2%		11%	26%	28%	57%	100%									
18 ESI consumers EA15	5%	-6%	-2%	-1%		5%	-5%		11%				-2%	-26%	-18%	-20%	-34%	100%								
19 ESI capacity utilization EA15	5%	-4%		1%	2%	11%	-6%	3%	5%	1%	1%		-6%	-7%	-7%	-13%	-22%	74%	100%							
20 ESI managers EA15	1%	-9%	-3%		4%	4%	-4%	1%	11%				-6%	-20%	-12%	-31%	-54%	89%	82%	100%						
21 Median leverage by country	21%	26%	14%	-4%		-12%	7%	7%	-18%	2%			2%	33%	26%	36%	54%	-25%	-10%	-30%	100%					
22 ESI consumers by country	-7%	-12%	-5%	12%		8%	-3%	1%	10%	2%			2%	-35%	-26%	-18%	-25%	40%	28%	38%	-42%	100%				
23 ESI capacity utilization by country		-5%	-3%	9%	3%	9%	-15%	1%	5%	-2%			5%	-53%	-19%	-14%	-14%	26%	32%	31%	-19%	47%	100%			
24 ESI managers by industry	-14%	-20%	-8%		-6%	29%	-18%	-16%	22%	3%			6%	-22%	-28%	-78%	-35%	52%	53%	58%	-28%	27%	23%	100%		
25 ESI managers by country	-4%	-13%	-3%		4%	6%	-6%	1%	13%	-1%			-7%	-33%	-23%	-31%	-53%	63%	48%	72%	-46%	48%	34%	45%	100%	
26 Morgan Stanley'MSCI broad country indice	12%	8%	9%	-9%		-2%	-7%	2%		3%	1%	1%	-4%	-8%	-23%		-10%	26%	20%	19%	15%	-26%	-6%	12%	26%	100%

Table 5. Managerial insight: managerial sentiment and leverage.

The baseline model is provided along with regressions pooled on the average "float" over the listing period, i.e. the share of stocks being regularly traded on the market

Regression on panel data with Random Effects. The first set of regression is on market leverage and the second on book leverage. All exogenous variables are lagged one year

Baseline model is $Leverage_{i(t+1)} = \alpha + \beta FS_{it} + \gamma 1 MIL_{kt} + \gamma 2 F_{jt} + \delta ESI_{(t)} + D 1_t + D 2_{kt} + D 3_{jt} + \varepsilon_{it}$

Definitions are provided in table 1a, greek letters are coefficients to be estimated, FS are firm-specific variables, MIL are varying measures of median industry leverage,

F are financial variables and ESI are the different measures of economic sentiment from the European Commission. D stands for dummies:

all regressions include all types of dummies: year, country and industry dummies

Significance: *** for 1%, ** for 1 to 5%, * for 5 to 10%. Included coefficients that are not significant at the 10% level are in grey italic police.

	Baseline model	PMCap = 0 Low-float Cies	PMCap = 1 Medium-float Cies	PMCap = 2 High-float Cies
Regression on market leverage				
		Average public float is less than 33%	Average public float is between 33% and 66%	Average public float is more than 66%
inflat	-0.00334***	-0.00927***	-0.00153	0.00121
msciclos	-0.00002***	-0.00001***	-0.00001*	-0.00006***
sentpays	-0.00074***	-0.0028***	-0.0006*	0.00135***
medmlevind	0.36286***	0.09803	0.47968***	0.4182***
ebitda	-0.09408***	-0.11779***	-0.08723***	-0.09097***
tangibility	0.17271***	0.17468***	0.20816***	0.10127***
lnasset	0.04155***	0.0573***	0.04715***	0.03489***
tobinsq	-0.01511***	-0.01834***	-0.01477***	-0.01288***
divpayout	-0.00021***	-0.00029***	-0.00022***	-0.00008
neteqissubw	-0.00553**	-0.00185	-0.00643**	-0.01232**
Year Dummies	yes	yes	yes	yes
Country Dummies	yes	yes	yes	yes
Industry Dummies	yes	yes	yes	yes
Explained variance	46%	44%	45%	55%
Data count	26,463	7,299	11,140	8,024

Regression on book leverage

inflat	-0.00227***	-0.00387***	-0.00147	-0.00218
sentpays	-0.00046**	-0.00091**	-0.00029	0.00029
medblevind	0.37212***	0.36932***	0.52093***	0.1965*
ebitda	-0.05994***	-0.05799***	-0.06951***	-0.04695***
tangibility	0.14413***	0.15385***	0.17419***	0.09652***
lnasset	0.02553***	0.02972***	0.02655***	0.02454***
tobinsq	-0.00279***	-0.00569***	-0.00192**	-0.00192**
divpayout	-0.00013***	-0.00014***	-0.00017***	-0.00008
nondebttx-d	0.07952***	0.12484***	0.07766***	0.03009
Year Dummies	yes	yes	yes	yes
Country Dummies	yes	yes	yes	yes
Industry Dummies	yes	yes	yes	yes
Explained variance	48%	33%	41%	48%
Data count	26,463	7,299	11,140	8,024

Table 6. Transparency, size & prominence

Pooling of analyses based on volatility of market capitalization-float, average market capitalization size, average market capitalization growth, multiple listing, listing-length.

Regression on panel data with Random Effects. The first set of regression is on market leverage and the second on book leverage. All exogeneous variables are lagged one year

Baseline model is $Leverage_{i(t+1)} = \alpha + \beta FS_{it} + \gamma_1 MIL_{kt} + \gamma_2 F_{jt} + \delta ESI_{(t)jt} + D 1_t + D 2_{kt} + D 3_{jt} + \varepsilon_{it}$

Definitions are provided in table 1a, greek letters are coefficients to be estimated, FS are firm-specific variables, MIL are varying measures of median industry leverage,

F are financial variables and ESI are the different measures of economic sentiment from the European Commission. D stands for dummies:

all regressions include all types of dummies: year, country and industry dummies

Significance: * for 1%, ** for 1 to 5%, * for 5 to 10%. Included coefficients that are not significant at the 10% level are in grey italic police.**

	MARKET SIZE		GROWTH				MULTIPLE LISTING		LISTING RANGE	
	low	high	neg	low	high	very high	One listing only	Multiple listings	short-range	long-range
	<i>based on median size</i>		<i>negative</i>	<i>0 to 16%</i>	<i>16 to 35%</i>	<i>more than 35%</i>			<i>less than 7 years</i>	<i>more than 8 years</i>
Market leverage										
inflat	-0.003384***	-0.0029465**	-0.0137387***	<i>0.0012866</i>	-0.0049918**	<i>-0.0012604</i>	-0.0026871***	-0.0080124***	-0.0089587***	-0.0029315***
msciclos	-0.0000189***	-0.000021***	-0.0000227**	-0.0000434***	<i>-0.00000818</i>	-0.0000167***	-0.0000187***	-0.0000304**	-0.0000242***	-0.00002***
sentpays	-0.0014836***	<i>-0.0001</i>	<i>-0.001</i>	-0.0006472**	-0.0012679**	<i>0.000137</i>	-0.001103***	<i>0.0004</i>	-0.0029112***	-0.0005116**
medmlevind	0.4912067***	0.3409017***	<i>0.19201</i>	0.3796676***	0.2341443**	0.2455357***	0.3671187***	0.344503***	<i>0.177</i>	0.3422488***
ebitdta	-0.0857627***	-0.1433281***	-0.0729609***	-0.1265599***	-0.0393988***	-0.1498317***	-0.0938607***	-0.0959929***	-0.029581***	-0.115369***
tangibility	0.2082041***	0.1260815***	0.295271***	0.1535341***	0.1514972***	0.1518941***	0.1620115***	0.2355659***	0.2030022***	0.1692391***
lnasset	0.0776024***	0.055675***	0.0570642***	0.0511526***	0.0450278***	0.0488653***	0.044894***	0.0343548***	0.0339333***	0.0415947***
tobinsq	-0.0137409***	-0.0106453***	-0.004095**	-0.0197437***	-0.012629***	-0.0160231***	-0.0149218***	-0.014511***	-0.0092287***	-0.0163973***
divpayout	-0.0003839***	<i>0.0000</i>	-0.0004377***	-0.0000854*	-0.0002577**	-0.0001572**	-0.0002097***	-0.0002443***	-0.0002298***	-0.0002041***
neteqjssubw	-0.006623**	-0.013102***	-0.0137322**	-0.0169735**	<i>-0.0037961</i>	-0.0193713***	-0.0045185**	-0.0138002**	<i>0.001</i>	-0.0084629***
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Explained variance	51%	48%	37%	40%	61%	50%	47%	44%	39%	49%
Data count	13,405	13,058	3045	10184	5120	8114	21,547	4,916	3,241	23,222
<i>Data count, total</i>	<i>26,463</i>		<i>26,463</i>				<i>26,463</i>		<i>26,463</i>	
Book leverage										
inflat	-0.0028978***	-0.0017822*	<i>-0.0047523</i>	<i>-0.0019936</i>	-0.0044205**	<i>-0.0006764</i>	-0.0022765***	<i>-0.0013</i>	<i>-0.003</i>	-0.0020509***
sentpays	-0.000689**	<i>-0.0003</i>	<i>-0.0002256</i>	-0.0009957***	<i>-0.0002584</i>	<i>0.0002447</i>	-0.0005898***	<i>-0.0002</i>	-0.0016665***	-0.0003*
medblevind	0.6371147***	0.181549**	0.5575191**	0.3046913***	0.3638059**	0.330174***	0.3559813***	0.4665399***	<i>-0.055</i>	0.3820267***
ebitdta	-0.0575609***	-0.0708279***	<i>-0.0002734</i>	-0.0786146***	-0.0592103***	-0.0762222***	-0.0563352***	-0.0750152***	<i>-0.001</i>	-0.075903***
tangibility	0.1674927***	0.1117393***	0.283368***	0.0812725***	0.1270817***	0.1826761***	0.137519***	0.1946661***	0.2105472***	0.1396722***
lnasset	0.0292594***	0.0349328***	0.0192911***	0.0345229***	0.0250822***	0.029667***	0.0279214***	0.0163195***	0.0165074***	0.0250017***
tobinsq	-0.0034441***	<i>-0.001</i>	<i>0.0021156</i>	-0.0031016**	-0.0046141***	<i>-0.0000799</i>	-0.0021362***	-0.0050571***	<i>-0.001</i>	-0.0033489***
divpayout	-0.0002472***	<i>-0.00002</i>	-0.0001952**	<i>-0.0000675</i>	-0.0001678***	-0.0001589***	-0.0001633***	<i>0.0000</i>	<i>0.000</i>	-0.0001327***
nondebttax-d	0.0863488***	0.0757893**	<i>0.051453</i>	0.4360771***	<i>-0.0380336</i>	0.0809842**	<i>0.0389</i>	0.2354832***	<i>0.080</i>	0.0699024***
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Year Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry Dummies	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Explained variance	41%	37%	26%	38%	57%	44%	37%	44%	29%	45%
Data count	13,405	13,058	3045	10184	5120	8114	21,547	4,916	3,241	23,222
<i>Data count, total</i>	<i>26,463</i>		<i>26,463</i>				<i>26,463</i>		<i>26,463</i>	