National culture as a fundamental determinant of management's decisions leading to overinvestment in capital expenditures

Zoltan Horvath

UNIVERSITE DE NICE-SOPHIA ANTIPOLIS

INSTITUT D'ADMINISTRATION DES ENTREPRISES

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Laboratoire: GRM (EA 4711)

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Zoltan HORVATH

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JURY

DIRECTEUR DE RECHERCHE :	Eric MOLAY
	Maître de Conférences à l'Université de Nice-Sophia Antipolis
RAPPORTEURS :	Bassem KAMAR
	Professeur HDR à International University of Monaco
	Eric SEVERIN
	Professeur des Universités à Université de Lille 1
SUFFRAGANTE :	Damyana BAKARDZHIEVA
	Professeur assistant à International University of Monaco
	Istvan MAGAS
	Professeur à Université Corvinus de Budapest
	Bernard OLIVERO
	Professeur des Universités à l'Université de Nice-Sophia Antipolis

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Chapter I.

Introduction

1.1 Research question

Jensen (1986) defines overinvestment as growing a business past its optimal size. Overinvestment can be understood as investing in, or stay invested in, value destroying projects. Empirical research on overinvestment focused on the verification of the existence of the phenomenon, on the presence or absence of certain corporate financial characteristics (such as high cash-flow and low investment opportunities), or various national institutions and corporate finance policies explaining the extent of the problem.

In our view, the above factors determine _the opportunity_ to overinvest, _but_ do _not explain why management decides_ to take advantage of that opportunity and engages in the act of overinvestment. The link is only automatic if management always takes every opportunity that presents itself to act opportunistically, which assumption is widespread in the field of agency theory. Literature identifies two behavior-related motivations driving overinvestment: agency conflict (Jensen, 1986) and overconfidence (Heaton, 2002). While overconfidence is extensively studied in literature, the underlying factors of human motivation inciting management to engage in agency motivated overinvestment have been largely ignored. We contribute to literature by seeking to better understand what induces management to take advantage of the opportunity and to commit resources to value-destroying investments.

This dissertation investigates whether national culture influences management's tendency to engage in overinvestment in capital expenditures. Based on literature we can establish that culture influences the opportunity to overinvest through the institutional environment in which the company operates, and the cultural influence on some of the techniques used to

mitigate overinvestment at the company level, such as corporate governance, leverage, cash holdings, and payment of dividends. Our research question is the following: *is national cultural a fundamental determinant of management's investment decisions resulting in overinvestment beyond culture's impact on the opportunity for overinvestment?*

1.2 Theories and hypotheses

1.2.1   Motivation for overinvestment

As we are investigating the cultural determinants of overinvestment in capital expenditures, an explanation related to human behavior, it is necessary to briefly discuss the underlying motivations of overinvestment. The majority of researchers view overinvestment as an agency problem driven by the divergence of interest and asymmetric information between shareholders and management. The conflict of interest arises as management may obtain private benefits from the resources under their control (Jensen, 1986). Such benefits may include elevated reputation (Avery et al., 1998) from being a manager of a larger company, and increased monetary and non-monetary compensation (Stulz, 1990). Investments resulting in diversification may also serve the managers by increasing the stability of cash flows, therefore decreasing the likelihood of bankruptcy, thus loss of employment (Amihud and Lev, 1981), and by safeguarding the independence of the firm (Harford, 1999). There is a vast empirical literature confirming overinvestment from the perspective of agency theory (see for example: Hwang and Kim, 2012)

Another phenomenon that may lead to overinvestment is management overconfidence. Underlying reasons for managerial optimism, such as the better-than-average effect, the self-attribution bias, and illusion of control are embedded in human psychology (Malmendier and Tate, 2005). Overconfidence may induce management to underestimate the risks, and to overestimate the cash flows and/or its own ability to unlock value that is associated with

investments (Heaton, 2002). These factors then may prompt management to undertake investments, which are, in reality, value destroying. The link between overconfidence and overinvestment has been empirically supported in the literature (see for example Ferris et al., 2013). Management can pursue such overinvestment fully intending to maximize shareholder value. In such cases, management, contrary to the agency problem motivation, does not make a conscious decision to overinvest, but miscalculates.

Analyzing mergers and acquisitions of US companies, Malmendier and Tate (2008) estimate that overconfident managers are responsible for 44% of the value destruction as measured by the negative announcement effect. There are no similar calculations we know of neither for investment in capital expenditure, nor for countries other than the United States. Literature shows overconfidence to be related positively to the Individualism (Ferris et al., 2013; Chui et al., 2010), and negatively to the Long-Term Orientation (Ferris et al., 2013) cultural value dimensions of Hofstede. The US scores the highest among all countries on Individualism and in the lowest quartile on Long-Term Orientation. Therefore, it is expected, and empirically shown for optimism by Graham et al., (2013), that overconfidence is substantially stronger in the US compared to the an international sample. This leads us to expect, assuming the estimate is materially applicable to capital expenditures as well, that the proportion of value destroyed by overconfidence-driven overinvestment is probably significant, but substantially lower in an international sample than that motivated by agency problems.

1.2.2 Culture and financial decision making

1.2.2.1 Culture's influence on behavior - mechanism

House et al. (2004) define culture as: "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House et al., 2004, p. 15).

Culture is a complex phenomenon, and it influences economic behavior through multiple channels. Williamson (2000) differentiates four social levels with higher levels affecting and constraining lower ones. Culture, in level one, influences the structure and functioning of other institutions of society such as the formal institutional environment, governance, and resource allocation, which are located at lower levels. Influential cross-cultural authors including Hofstede and Schwartz posit that the fundamental components of culture are values. Based on arguments put forth by Schwartz, Licht (2001), and Licht et al., (2007) describe the mechanism through which values exert a direct influence on behavior. They explain that cultural values determine what is seen as good, bad, acceptable or unacceptable in a society. Values not only influence people's perceptions and desires; thus, their goals and preferences, but also what they are willing to do to achieve them. Through shaping norms, perceptions, desires, and evaluations, values shape the decisions people make, and the actions they take. This model is similar to the Values, Attitudes, Behavior Hierarchy model developed by Homer and Kahle (1988) stating that values influence attitudes, which in turn influence behavior.

1.2.2.2 Culture's influence on overinvestment-related financial decision-making – empirical evidence

Researchers found empirical support that culture plays a role in several areas of financial decision- making including asset management, corporate governance, and corporate finance. Techniques to mitigate overinvestment aim either to improve control of managerial decision making or to limit resources available to management to "waste" (Jensen, 1986). Therefore, we focus on evidence related to such techniques. Control of managerial decision making is generally achieved through national-, and company-level corporate governance, and the market for corporate control. New Institutional Economics posits (eg: North, 1990; Williamson, 2000), that national legal-, economic-, and financial institutions are embedded in

culture within a society. This is confirmed by empirical research showing that both national corporate governance regimes (Licht, 2001, Licht et al., 2005, 2007), the occurrence of corporate takeovers (Licht, 2001), and company-level arrangements, such as board structure (Li and Harrsion, 2008) are influenced by national culture. It has been also established that national culture contributes to the determination of corporate financial policies that can be applied to limit resources available to management. Such relationships has been shown between national culture and capital structure (eg: Wang and Esqueda 2014; Zheng et al., 2012), dividend payments (eg: Breuer et al., 2014; Fidrmuc and Jacob, 2010), and cash holdings (Chang and Noorbakhsh, 2009; Ramirez and Tadesse, 2009).

1.2.3   Culture's dual influence on overinvestment

Culture's exerts a dual influence on overinvestment. Potential overinvestor companies share certain characteristics, such as low-quality investment opportunities, and access to resources to invest. This is because when management has value-increasing projects to pursue, it likely chooses those over value-decreasing ones, and when it does not have access to resources to commit, it cannot overinvest. The aforementioned financial characteristics, and the presence or absence of control mechanisms together shape whether management has the opportunity to overinvest. As we have discussed, national legal, economic, and financial institutions are embedded in culture within a society. It has been also demonstrated in literature that each major mechanism at the company level applied to mitigate overinvestment is related to culture. Taken together, the evidence leads to the conclusion that the opportunity for management to overinvest is clearly influenced by culture.

With a notable exception of overconfidence related overinvestment, extant literature tends to study financial characteristics and control mechanisms to explain overinvestment. However such factors influence the act of overinvestment only indirectly through affecting the

opportunity to overinvest. The majority of empirical research could be viewed as directly studying the phenomenon of overinvestment exclusively, if one assumed management always overinvests if there is an opportunity to do so. We hypothesize that this is not the case. We posit that culture exerts a more direct influence on overinvestment in affecting management's decisions to move from the opportunity to the act of overinvestment.

Similar to Jensen (1986), the majority of researchers view overinvestment as an agency problem. In traditional agency literature the agent is assumed to act opportunistically to maximize its own utility capitalizing on information asymmetries. Several studies criticize the underlying assumption prevalent in agency theory concerning unconditionally opportunistic behavior without taking into account any environmental effects (eg: Lubatkin et al., 2007; Ekanayeke, 2004; Johnson and Droege, 2004). Licht et al., (2007) posit that while it is asymmetric information and incomplete contracting that give power to parties to a contract to further their own interests at the expense of one another, societal norms regarding the use of power determine whether, or the extent to which, they take advantage of it. Following the mechanism describing how values impact behavior briefly explained in the previous section, it seems important to take into account the cultural environment when examining management's decision to engage in overinvestment.

Besides agency problems, managerial overconfidence may also lead to overinvestment. Literature showed that there are international variations in people's tendency to be overconfident, and have demonstrated that at least some of this variation can be attributed to national culture (Ferris et al., 2013; Chui et al., 2010). Putting it all together, an influence of culture on managerial decisions leading to overinvestment, thorough overconfidence, has been established. However, culture's influence on managerial opportunism driven overinvestment has never been studied. As the underlying values leading to managerial overconfidence and opportunism are very different from one another, we argue that in order to

better understand the overall link between culture and overinvestment, it is important to study the combined effects of both motivations. Based on the above arguments, we hypothesize that through underlying societal values influencing norms, perceptions, evaluations and desires, national culture is a fundamental determinant in management's decision to take advantage of opportunities to overinvest.

1.2.4   Quantifying culture

Culture is an abstract phenomenon, which cannot be directly observed. Therefore, to be able to empirically test our theory presented above, we need a quantitative indicator for culture. Three models providing quantified indicators for national culture dominate cross-cultural finance literature. These were developed by Hofstede, Schwartz, and the GLOBE project. Each of these three models is designed to quantitatively approximate national culture. They argue that all societies face similar basic challenges, but their response varies with fundamental values shared by their members (House et al., 2004; Hofstede, 2001; Schwartz, 1994). All three models identify, measure, and group values, and compare them between cultures. Based on extensive international surveys, they aggregate their data at the national level and extract a set of cultural value dimensions representing societal stances (House et al., 2004; Hofstede, 2010; Schwartz, 1994). National cultures are described by the combination of the dimensions of the given cultural model. To approximate national culture, similar to the approach taken by for example Lievenbruck and Schmid (2014) and Wang and Esqueda (2014), we have decided to employ Hofstede's cultural value dimensions, as these are the most widely used in literature. However, to better capture diverse aspects of culture, which are represented differently by each cultural model, relevant dimensions of the most recent dimensionalist model, that of GLOBE, will also be applied as a test of robustness of our results. Simultaneous use of the most applied and most recent cultural models offers an opportunity to study the problem from a richer perspective and ensure that our results are not

biased by the specificities of any single cultural model. It is important to note, that while the validity of the dimensionalist framework may be debated by some, the underlying proposition of this dissertation, that culture directly influences the decision of management leading to overinvestment is independent of the framework used.

1.2.5   Hypotheses

Based on literature from the field of cross-cultural psychology documenting a relationship between culture and economic behavior, we have developed testable hypotheses for four of the six Hofstede dimensions. We have not formulated hypotheses neither for the Long Term Orientation nor for the Indulgence Versus Restraint dimensions. We believe the theoretical direction of the relationship between Long Term Orientation and overinvestment is unclear. For Indulgence Versus Restraint, we found no direct theoretical link between the values characterizing this dimension and overinvestment.

High Masculinity is associated with assertiveness, competitiveness, valuing wealth and recognition, and preference for larger organizations. In our opinion these values are highly consistent with management's tendency to act opportunistically. Masculinity has also been associated to higher overconfidence in literature (Barber and Odean, 2001). Overall, we believe that Masculinity is positively related to both opportunism and overconfidence.

Hypothesis 1: High Masculinity leads to more overinvestment

High Power Distance is associated with highly valuing power and status as well as with a belief that those in power are entitled to privileges. Those with power are expected to use it to increase their wealth and status. This cultural orientation could encourage opportunistic behavior. We expect it to also positively contribute to overconfidence, as individuals have a tendency to believe themselves superior if treated as such by others.

Hypothesis 2: High Power Distance leads to more overinvestment.

In individualistic cultures, members tend to focus more on self-interest, enter into "calculative" relationships, and aggressiveness is perceived as a positive trait. Several authors examining the relationship between national culture and agency problems argue that high Individualism is in line with the underlying assumptions about self-serving agent behavior of agency theory (eg: Fridrmuc and Jacob, 2010). Individualism is also positively related to overconfidence, while its opposite pole, Collectivism, is theorized to lower agency problems (Chui et al., 2010; Ferris et al. 2013), which could mitigate overinvestment.

Hypothesis 3: High Individualism leads to more overinvestment.

Members of high Uncertainty Avoidance cultures tend to prefer stable, large organizations. Potential motivations for overinvestment are related to avoiding management's loss of employment (Amihud and le problème d'agence Lev, 1981; Harford, 1999). Such motivation should be viewed as a form of opportunism. We expect societies putting emphasis on values related to avoiding ambiguity to exhibit less overconfidence, as the better-than-average effect, illusion of control and the undervaluation of risk are all connected to the willingness to confront ambiguity. As we see opportunism as accounting for a larger portion of overinvestment than overconfidence, we predict an overall positive relationship between Uncertainty Avoidance and overinvestment.

Hypothesis 4: High Uncertainty Avoidance leads to more overinvestment.

1.3 Data and methodology

1.3.1   Research philosophy and approach

Overall, our position of reality not being knowable with absolute certainty, accepting unobservable phenomena as real, viewing research as value-bound, and focusing on the need to study phenomena in context places us firmly in the post-positivist tradition. According to Bisman (2010), post-positivism offers a position, which "retains elements of scientific rigour, and yet acknowledge the value of richness and context, as well as the importance of generalisability" (Bisman 2010, p. 7). Bisman (2010) actually writes about Critical Realism, but based on our review of the literature the statement quoted is consistent with the underlying assumptions of the other post-positivist paradigm discussed above, Scientific Realism, as well. We believe the philosophical assumptions underlying our work are represented by those of the Scientific Realist epistemological paradigm.

We have followed a research approach that is specifically referred to as hypothetico-deductive (see for example Godfrey-Smith, 2003). We have started from the existing theories of Agency Theory, and postulations of Cross-Cultural Philosophy also supported by New Institutional Economics, and combining them we have developed a theoretical argument that national culture influences management's propensity to make decisions leading to overinvestment. This step was followed by the formulation of testable hypotheses, which in turn were tested on empirical data.

1.3.2   Initial sample

Firm-level data was collected from the Factset database for all quoted firms for the period between 2001 and 2011 from countries for which the cultural dimension scores of Hofstede are available. Following the literature, companies in the financial sector, and those with missing values of basic financial data such as missing, zero or negative total assets and

revenues-, and with missing cash and short term investments, net property plant and equipment, long-term debt, total equity, common equity, net income, EBITDA, dividends, operating cash flow, and Capital expenditures, were excluded from the sample. Firms from countries with a resulting initial sample of less than twenty companies were also dropped. The resulting initial sample includes 7,338 firms from 36 countries.

1.3.3 Detecting potential overinvestors

As overinvestment is not directly observable, it is necessary to use an indicator to detect it. The task of constructing an indicator is further complicated by the fact that several countries included in the sample have less than ideal disclosure regimes, and excluding those countries would materially reduce the cultural diversity that is the subject of the analysis. Thus, any indicator used must rely only on basic accounting information. Based on this requirement and on the fact that it is extensively used in the literature (eg.: Francis et al., 2013; Xu, 2013), we employ investment - cash flow sensitivity for firms with high cash flow and poor-quality investment opportunity sets as indicator for overinvestment.

The argument underlying this method is based on the original proposition of Modigliani and Miller (1958), according to which the investment and financing decisions are separate. Jensen (1986) notes that when investments are self-serving, it is easier for management to finance them from internal funds than from capital markets. Thus, investments of overinvestor firms are expected to be sensitive to their internal resources approximated by their cash flow. Theories of underinvestment make the same prediction (Stein, 2003). Vogt (1994) established theoretically and showed empirically that both over- and underinvestment are occurring, but at different firms. Therefore, both behaviors contribute to overall investment - cash flow sensitivity that is documented in the literature. However, under- and overinvestor firms have very different characteristics. According to Vogt (1994), one can differentiate between the

two sets of firms based on their investment opportunities and amount of free cash flow, an approach that is widely followed in literature. The quality of the investment opportunity set of a firm, however, is not observable. The most widespread indicator used in corporate investment literature is Tobin's Q, often further approximated by the company's Market to Book ratio. The assumption behind using Q as an indicator for the quality of investment opportunities is that the stock market appropriately values the future prospects of the given firm. A similar approach was followed by Wang and Esqueda (2014) and Xu (2013).

1.3.4   Base model

Adapted from the model used by Attig et al., (2012), who studied the influence of investment horizon on investment-cash flow sensitivity using an interaction term as main variable of interest, the following reduced form Q investment model with an interaction term was applied:

$$(I/K)_{i,t} = \beta_0 + \beta_1(MB_{i,t-1}) + \beta_2(CF/K)_{i,t} + \beta_3(CF/K_{i,t} * CVD) + \beta_4(X_{i,t}) + \varepsilon$$

where I stands for capital expenditures, K for capital approximated by Total Assets, MB for Market to Book ratio, CF for Free Cash Flow, CVD is the cultural value dimension variable, X stands for control variables, and ε is the error term. As we are using Market to Book ratio lagged one year in our model, the effective period for the sample is 2002 to 2011. To accommodate our aim of studying the effect of time-invariant culture on time-variant investment – cash flow sensitivity, the dynamic nature of several of our variables, and likely endogeneity problems, we have applied a one-step system General Method of Moments dynamic panel data estimator (Arellano and Bond, 1991).

Based on literature, we have included a number of firm-level control variables, which are expected to influence the level of overinvestment. These are:

- FIRM SIZE is often associated with a higher level of agency costs (see for example: Kadapakkam et al., 1998); thus, it can be expected that investment - cash flow sensitivity increases with firm size.

- LEVERAGE is viewed as a mechanism to control agency costs of free cash flow (see for example: Stulz, 1990); therefore, we expect that investment - cash flow sensitivity decreases with leverage.

- DIVIDENDS are also regarded as a tool to decrease the agency cost of free cash flow (see for example: Easterbrook, 1984). As such, investment - cash flow sensitivity is expected to decrease with dividends.

- CASH LEVEL is positively related to the agency cost of free cash flow (see for example: Kalcheva and Lins, 2007). However, management can engage in overinvestment spending cash already held by the firm, which, in turn, should lower the dependence on cash flow for financing value- destroying investments. Overall, we expect investment - cash flow sensitivity to decrease with cash held by the firm.

- PRIMARY ACTIVITY of each firm is included to account for potentially differing opportunities and control of overinvestment by sector.

To better isolate national culture's effect from that of other country level differences in the sample we have included the following country-level control variables:

- ANTI-SELF-DEALING INDEX is widely used in the literature to indicate the quality of the country- level corporate governance regime (eg.: Breuer et al., 2014; Wang and Esquada, 2014). Efficient corporate governance lowers agency costs arising from management opportunism (see for example: Hart, 1995); thus, we anticipate a negative relationship between the Anti-Self-Dealing Index and investment - cash flow sensitivity.

- SIZE OF STOCK MARKET and AVAILABLE CREDIT are employed as indicators for financial constraints, which can be related to underinvestment driven investment - cash flow sensitivity (see for example Stein, 2003). If easier access to financing increases (reduces) investment - cash flow sensitivity, it could be interpreted as a signal that overinvestment (underinvestment) is the dominant underlying cause of that sensitivity in the sample.

- GDP was included in the model to control for any possible systematic differences that may arise due to the wealth of the countries.

1.3.5   Limitations

Our results need to be interpreted by taking note of the following limitations. (i) We were obliged to use indicators to identify overinvestment and to quantify national culture that are less than perfect measures of these directly unobservable phenomena. Our methodology follows prior literature both in the construction of the indicators and in robustness tests in order to address this problem and minimize its effect. (ii) A further limitation is imposed by the lack of firm-level corporate governance control variables. As literature indicates firm-level corporate governance can substitute for country-level governance systems in case the latter is of lower quality (see for example Francis et al., 2013), it would be informative to control for firm-level corporate governance. However, we were unable to find such data for the sample period without needing to significantly lower the number of countries in our sample, which, in turn, would have diminished the cultural variation that is needed for a meaningful analysis of national cultural effects. (iii) Our assumption that the location of a company's headquarters determines its nationality is a potential oversimplification, as decision makers may not be of the same nationality; thus, they may be influenced by different cultural values, and some investment decisions may be decided by local management. Such simplification is necessary when conducting large-scale empirical analysis and is dominantly

used in the literature (see for example Lievenbruck and Schmid, 2014; Wang and Esqueda, 2014), and both Hofstede (2010) and House et al. (2004) identify several forces that result in significant influence of headquarters in corporate investment behavior. (iv) It is possible that some firms in our sample have a particularly strong organizational culture that may influence the propensity of management to engage in overinvestment in a direction markedly different from the influence of national culture. We believe this not to be a significant problem following the arguments of Hofstede (2010), House et al. (2004), and Adler (1997) emphasizing that organizational culture itself is influenced and dominated by national culture.

1.4 Results

1.4.1 Descriptive statistics

As a first step of the analysis we have constructed our final sample of potential overinvestor firms following the process outlined above. Of the overall sample, there are 1,550 companies falling into the Low Market to Book and High Free Cash Flow to Total Assets quadrant of companies resulting in 17,050 firm-year observations, with companies from all 36 countries of the original sample.

With regards to the geographical constitution of our sample, we notice that while all continents are represented, the majority of companies are from Asia (47%), North America (27%), and Europe (18%). In our final sample, the country with most companies is the United States with 24% of firms with developing countries accounting for only 17%. This distortion is a consequence of the differing degree to which the quoted company as an institution is established in various regions and of the quality of data available for such companies.

The makeup of the initial and final samples are very similar. As the final sample includes firms exclusively with average sample period cash flows above, and at the same time, average

period Market to Book values below the median in their countries, these are companies where the market assigns a relatively low valuation to the company's assets despite relatively strong cash flows. Assuming that companies with these characteristics are indeed potential overinvestors, the similar makeup shows that such companies are present to a comparable extent across regions in our sample.

It is notable that the median Market to Book value is only slightly less than 1. According to the theoretical arguments put forward by Lang and Litzenberger (1989), a Tobin's Q of less than 1 signals overinvestment. While this raises the question whether sensitivity of investment to cash flow in our sample is driven by underinvestment to a large degree, multivariate results from an alternative specification strongly suggest that the dominant source is indeed overinvestment.

1.4.2 Multivariate analysis

1.4.2.1 Base model

We analyze five base models, where in the first four we apply separately the Hofstede dimensions with a hypothesized relationship to overinvestment, and the fifth model includes all the cultural dimensions of Hofstede in one regression. It is important to note that the dependent variable is the amount invested in capital investments divided by total assets, and not our indicator of overinvestment. Therefore, the coefficients show the effects of the regressors directly on capital expenditure, and not on overinvestment. Overinvestment is captured by the sensitivity of investment to cash flow. A statistically significant coefficient of the interaction variable between the cultural value dimension and cash-flow indicates whether national culture influences this sensitivity, thus overinvestment. These interaction terms are the main variables of interest in the models as they directly address our hypotheses.

Our base results confirm Hypotheses 1 and 4 showing a positive and statistically highly significant relationship between the Masculinity and Uncertainty Avoidance dimensions of Hofstede and investment - cash flow sensitivity. With regards to Power Distance and Individualism, our Hypotheses 2 and 3 were not supported. Models where these variables were included separately, showed statistically insignificant negative coefficients for the interaction term. In the model combining all of Hofstede's dimensions, while the coefficient is similar for Power Distance, it is negative and weakly significant for Individualism. The latter is somewhat disturbing, as this cultural dimension has been widely associated with both opportunistic behavior and overconfidence in the literature. This result, along with those relating to the other models, are further verified through a series of robustness checks we carried out.

1.4.2.2 Robustness tests

It could be raised as a concern concerning our interpretation of the results that the direction of causality is difficult to clearly establish. However, as similarly argued throughout the culture and finance literature, we draw attention to the fact that culture changes very slowly with estimations reaching several decades or even centuries (eg.: Inglehart and Baker, 2000). It is very difficult to contend that a relatively small group's (management) very specific behavior (overinvestment) would feed back into cultural transmission through family and educational institutions in society fundamentally altering cultural values. While our statistical analysis does not empirically prove causality, theoretical arguments strongly suggest it.

   a.   Cultural constructs

An important question regarding the validity of our results is if they are primarily driven by our choice of model to quantify culture. To address the above concern we apply the GLOBE dimensionalist model as an alternative specification. With regards to Hofstede's Masculinity

dimension, the values driving our hypothesized relationship to overinvestment are grouped in the Assertiveness dimension by GLOBE; therefore, we tested our hypothesis replacing Masculinity by Assertiveness. GLOBE separated Hofstede's Individualism/Collectivism dimension into two related dimensions: Institutional Collectivism, and In-group Collectivism. We included both in separate models. Overall, we analyzed five new regressions where Hofstede's dimensions were replaced with those conceptually most related by GLOBE.

The results corroborate our earlier finding lending strong support to our Hypothesis 1 that higher Masculinity (Assertiveness) leads to more overinvestment. Similar to results obtained using the Hofstede framework, our Hypothesis 2 on the positive relationship between Power Distance and overinvestment is not confirmed.

Results using the GLOBE dimensions are not consistent with those applying the Hofstede scores for Individualism. As we pointed out above, the sign of the coefficient of interest was negative, the opposite we predicted, for the Hofstede dimension, while coefficients for the two related GLOBE dimensions both show the expected sign and are highly significant. The complete opposing and significant results between the Hofstede and the related GLOBE dimensions leads us to tentatively hypothesize that the driver or drivers of the influence of this cultural attribute on overinvestment are likely to be captured differently in the two frameworks, leaving us unable to confirm our Hypothesis 3.

With regards to Uncertainty Avoidance, while the sign of the coefficient of the interaction variable is the same as the Hofstede dimension, it is not statistically significant. This disparity is most likely driven by the different conceptualization, sample, and methodology of Hofstede and the GLOBE project.

b. Interaction models

Our underlying assumption in our empiric analysis is that the investment - cash flow sensitivity in our final sample is an appropriate indicator of overinvestment. To verify this assumption we have run extended regressions with additional interaction variables between free cash flow and the control variables representing overinvestment mitigating characteristics. Specifically, the interaction between cash flow and the following variables have been added: (i) firm size, (ii) leverage, (iii) dividends, (iv) cash level, (v) Anti-Self-Dealing Index, (vi) size of the stock market to GDP, and (vii) available credit to GDP. The coefficients of these interaction variables show the effect of these variables on cash flow sensitivity; thus, on our indicator of overinvestment. Results with regards to the quality of corporate governance and availability of financing, strongly support that investment - cash flow sensitivity is dominantly motivated by over-, and not underinvestment in our sample. Cash flow interactions of control variables with statistical significance show the expected signs. More specifically, where firm size enters with significance, it is with positive coefficients, and cash held is negative and highly significant in all regressions. Coefficients for leverage and dividends paid are not significant in any of the models.

Looking at the interaction variables between cash flow and the cultural dimensions, coefficients are materially similar for Masculinity/Assertiveness, and both Hofstede's and GLOBE's Uncertainty Avoidance constructs confirming hypotheses 1 and lending support to 4, and also for GLOBE's Collectivism dimensions. However, the coefficients are inconsistent with the base model with changing signs and/or significance for Power Distance (both constructs) and Individualism. Consequently, with regards to Power Distance (Hypothesis 2), and Individualism (Hypothesis 3) we are unable to conclude whether there is a direct influence on overinvestment beyond those captured by our control variables.

c. Further robustness tests

To further confirm that investment-cash flow sensitivity in our sample is an appropriate indicator of overinvestment and does not reflect information about future cash flows as proposed by Cleary (2006), we included the volatility of cash flow over the entire sample period for each firm as an additional control variable. We also verified whether our choice of the indicator for the quality of national corporate governance has a material impact on our conclusions. To this end we replaced our indicator in the base model, Anti Self-Dealing Index (Djankov et al., 2008), with Concentration of Ownership (Djankov et al., 2008), Rule of Law (World Bank), and Common Law Origin (La Porta et al., 1998) in separate regressions. In order to ensure that results are not driven by specific sample characteristics, further tests included the eliminations of 2008 and 2009 from the period to account for potential distortion of the financial crisis, excluding US companies from the sample, and separately eliminating outliers based on firm size, free cash flow, and capital expenditures. None of the robustness tests significantly affected our results concerning the confirmation of Hypotheses 1 and strong support for Hypothesis 4.

1.5 Implications

We believe that our results offer value to academia, policy makers, managers and investors. Extending the analysis of overinvestment by adding previously ignored determinants of management's tendency to make decisions leading to overinvestment contributes to the theoretical foundations of the phenomenon. This allows researchers to improve the specification of their models in international samples, as well as increases our overall understanding of culture's impact on corporate finance. Furthermore, our results also lend some support to those who question the cross-cultural transferability of Agency Theory. Better understanding the cultural foundations of overinvestment will aid policy makers in

projects requiring international cooperation, and also assist them at national level to avoid the adaptation of international governance rules and regulations destined to mitigate overinvestment that may prove inefficient in the local cultural context. Our findings are also relevant for practicing managers, as it helps them to achieve better results leading culturally diverse workforce, as well as in various cross-border activities. Furthermore, our conclusions highlight the need for investors to consider the adaptation of specific mechanisms for international companies intending to control such behavior at their foreign operations when selecting or monitoring their portfolios.

1.6 Structure of the dissertation

The dissertation is organized into seven sections: Chapter 1 is a summary. Chapter 2 briefly describes literature relating to cross-cultural psychology with an emphasis on the relationship between culture and management, institutions and corporate finance, and literature on overinvestment including its human motivations, and mechanisms to mitigate it. Chapter 3 describes the dimensionalist approach to quantifying culture. In Chapter 4 we present our theoretical reasoning behind our assertion that national culture influences management's tendency to make decisions leading to overinvestment, and develop empirically testable hypotheses. Chapter 5 explains our research philosophy and empirical methodology. We present and discuss our empirical results in Chapter 6. In Chapter 7 we briefly review the implications of our results including some promising areas of future research.

Chapter II.

Review of Culture and Overinvestment Literature

Our research question exploring national culture's influence on overinvestment requires a review including contributions from the literature in cross-cultural psychology, New Institutional Economics, Agency Theory, and corporate finance. For the clarity of our arguments, we do not intend to provide an exhaustive review of literature of these areas of research; rather we concentrate on the theoretical foundations and empirical results most relevant to our research question, to our theoretical argumentation, and to the empirical method we apply.

This chapter is divided into two main sections. In the first, we aim to specify a definition of culture suitable for our research question, and to briefly introduce the foundations of cross-cultural psychology, a field in which our arguments presented in chapter IV are rooted. We link culture to decision making relevant to the overinvestment problem, namely to management, economic performance, institutions, and corporate finance. The strong theoretical and empirical support for culture's influence in these areas provides a compelling rationale for pursuing the research question of our dissertation. While dimensionalism is part of cross-cultural psychology, due to its central position in our argumentation and methodology, it will be reviewed in a separate chapter.

In the second section we introduce the overinvestment problem separately discussing its two fundamental motivations: agency conflict and overconfidence. We present basic theoretical models and empirical analysis to conclude that overinvestment is an existing problem destroying value, which provides strong motivation for this dissertation aimed to advance our understanding of its fundamental determinants. In this section we also discuss mechanisms identified in literature to mitigate overinvestment, such as leverage, disbursements to

shareholders, the market for corporate control, and corporate governance. We link each of these proposed control mechanisms to culture establishing an indirect link between culture and overinvestment in chapter IV.

2.1 Culture

2.1.1   Definition of culture

There is no consensus on a single definition of culture widely applied in literature. Culture is a very complex, multi-faceted phenomenon affecting a lot of, if not most, aspects of human lives. Culture operates at several levels further complicating attempts to find a comprehensive definition. Throughout the cross-cultural literature cultural effects are hypothesized at both the individual level and at group levels, where group can refer to a vast variety of set of individuals including people sharing common characteristics based on, among others, professions, demographics, socio-economics, belonging to a common society, or citizenship.

Reflecting this complexity, the seminal work of Kroeber and Kluckhohn (1952) includes 251 different definitions of culture. Additionally, in a more recent review of the literature of culture's influence in finance, Reuter (2011) lists 35 different contemporary definitions from the disciplines of economics, finance, international management, cross-cultural psychology, political sciences and sociology. Kroeber and Kluckhohn (1952) divide the definitions in six categories whether they focus on (1) the facets of life influenced by culture, (2) longevity of culture through intergenerational transmission, (3) norms, (4) psychological traits, (5) the systemic nature of culture, and (6) its origin. Reuter (2011) identifies the reference to longevity/stability of culture, to culture as separating groups from one another, and a focus on values as fundamental in motivation as frequent elements in definitions. Underlying all the definitions, and the very concept of culture, is the sharedness aspect. While culture is argued to influence individual as well as group behavior, Berry et al. (1992) explicitly notes, that

"cultural phenomena are collective phenomena … it is carried by the collectivity" (Berry et al., 1992, p. 167). Another distinctive feature of culture is that it is an entirely human made phenomenon (Hofstede, 2010).

Reuter (2011) claims that the use of a multitude of different definitions, even within the same disciplines, is the result of scholars looking for definitions to fit their objectives. In his opinion, culture is too complex for any single definition, thus any definition applied should "emerge" from the phenomenon being studied to better focus on the theoretical link between the object of the research and relevant aspects of culture.

In our empirical approach we follow the dimensionalist method as operationalization of culture. Dimensionalism will be briefly introduced separately in chapter III. This approach fits our research question as its various frameworks rest upon the Value-Belief Theory of culture which also underlies our own theoretical reasoning, and it quantifies certain aspects of culture facilitating large scale cross-cultural empirical studies. Therefore, we have decided to adopt the definition developed as part of the most recent dimensionalist model, that of the GLOBE project. In this study, we define culture as: "shared motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House et al., 2004, p. 15).

2.1.2   Objective of cross-cultural psychology

Many sciences study culture, with each focusing on a slightly different aspect aiming to understand culture and its place in science through its own set of tools and epistemological lenses. The field with particular relevance to our research question is cross-cultural psychology. Berry et al. (1992) defines cross-cultural psychology as "the scientific study of human behavior and its transmission, taking into account the ways in which behaviors are shaped and influenced by social and cultural forces" (Berry et al., 1992, p.1), and later adding

that it is "the study of similarities and differences in individual psychological functioning in various cultural and ethnic groups; of the relationships between psychological variables and sociocultural, ecological, and biological variables; and of current changes in these variables" (Berry et al., 1992, p.2).

Cross-cultural psychology is related to, and has its roots in, several other disciplines, such as ecology, anthropology, sociology, linguistics, biology, and psychology. The subject of cross-cultural psychology is how "social context" influences certain characteristics and the behavior of the "population", which, according to Berry et al. 1992, positions it between psychology studying the individual and anthropology studying the "social context" (Berry et al., 1992, p. 191).

At the center of the discipline of cross-culture psychology, and illustrated as the square shape to the extreme right in Figure 2.1., is the notion that culture influences social behavior. Berry et al. (1992) states that "the field of cross-cultural psychology has established fairly solid linkages between how individuals act (including thoughts, feelings, and motives) and the culture that nurtured them" (Berry et al., 1992, p. 281). This assertion translates to the proposition that a better understanding of the influence of culture on behavior could lead to a better explanation of human behavior in many areas. Understanding which cultural aspects influence what type of behavior through which mechanisms are areas of interests in cross-cultural psychology. Our dissertation corresponds to this line of inquiry as we attempt to address whether national culture influences management's tendency to make decisions leading to overinvestment in capital expenditures.

Hofstede (2001) places culture between human nature, which is common to all people to one extreme, and personality, which is unique to the individual on the other. Kluckhohn and Murray (1948) remarked that "Every man is in certain respects: (a) like all other men; (b) like

some other men; (c) like no other man" (Kluckhohn and Murray, 1948, p. 35). Positioning cross-cultural psychology in this sentence, Berry et al. (1992) point out that the discipline studies shared characteristics of members of a culture differentiating them from other groups of people (point b from the quote), while attempting to uncover "cultural universals" (Berry et al., 1992, p. 170), characteristics and/or behaviors that are shared across cultures (point a). The very assumption of the existence of such "universals", along with a focus on empirical testing, places the discipline epistemologically towards positivism. At the same time, it explicitly recognizes that most facets of life, and indeed of social science, are culture bound; that is its validity or its applicability is influenced by the cultural environment. Echoing this argument, House et al. (2004) also differentiates "culturally generalizable" and "culture specific" elements of culture (House et al., 2004, p. 19), with the former referring to the "universals" of Berry et al. (1992), and the latter to those unique to some cultures.

Figure 2.1. Flow of causality from environment to social behavior
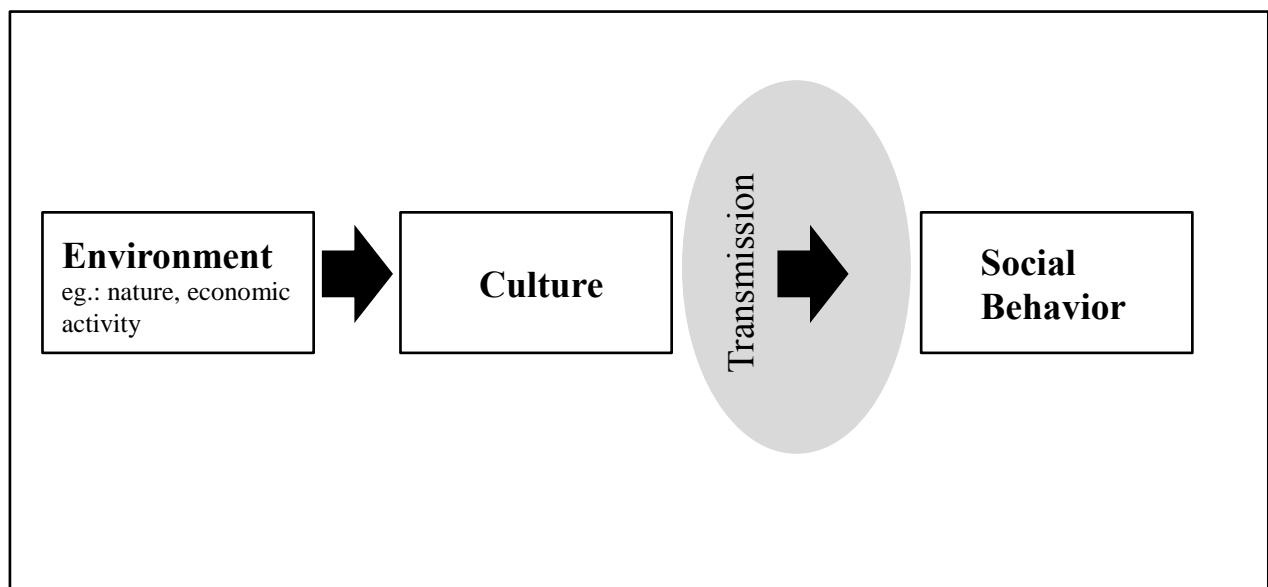
Source: adapted from Berry et al. 1992, figure 1-3 p. 12.

As we pointed out above, cultural stability is one of the overarching themes in the definitions of culture. Consequently, cross-cultural psychology also studies the longevity of culture, and the mechanism by which culture perpetuates itself. As illustrated in Figure 2.1., Berry et al.

(1992) specifies the flow of causality originating from environmental context affecting culture, which through inter-generational transmission influences the social behavior of members of the given culture extending it across generations. Culture is transferred from one generation to the next and to other new members (eg.: migrants) via transmission (illustrated by the shaded area on Figure 2.1.). The mechanism of transmission is cultural absorption by the new members, which may originate from members of previous generations (eg: family), peers (eg: friends, classmates, colleagues), and institutions (eg: school, workplace). Such transmission, termed socialization by Hofstede (2001), is only partly conscious, partly it happens subconsciously simply by being immersed in the culture. Cross-cultural psychology posits that cultural transmission explains the development and persistence of intra-cultural similarities and inter-cultural differences of behavior (Berry et al., 1992).

Hofstede (2001) describes in detail the process by which culture stays stable over extremely long periods of time. Social institutions, such as the family and education, play a dominant role in socialization. The overwhelming majority of new members in a culture are the children born in it. They acquire their culture, in other words they are being socialized in their culture, through social institutions such as their families and the education system. Such institutions are deeply rooted in the culture of the society of which they are part of; therefore, the knowledge, values, and norms they transmit reflect that culture. Socialization happens early in people's lives, when it becomes deeply ingrained and forms a foundation and a point of view for all other knowledge and experiences that accumulate during their lives. As adults, members of the culture operate the same social institutions responsible for the socialization of the then new members in the culture. Culture perpetuates itself. Scholars such as Inglehart and Baker (2000) stated that transmission is never full, cultures do change. While the exact speed of change rests indeterminable, thus debatable, barring major external shocks, among others

Inglehart and Baker (2000), Hofstede (2001) and Williamson (2000) argue that meaningful cultural change takes centuries if not millennia.

2.1.3   Relationship between culture and management

Examining the relationship between culture and management is important to address our research question. If culture can be accepted to influence managerial decision making, it provides reasonable grounds to presume such a relationship extends to other if not all, areas of economic behavior and organizational life. Moreover, corporate financial policy, of which investment in capital expenditures is a part of, is itself a form of managerial decision making.

Theories differ in their views as to the impact of national culture on management, and how this relationship is likely to change in the future. An influential theory is the Universality Hypothesis, which is based on the work of Mintzberg (1973), who observed the work of managers in private and public organizations in the US, and integrated his findings with other studies carried out on the work of managers in some Western European countries. His analysis led him to conclude that all managerial work can be classified into three categories (interpersonal, informational, decisional) indifferent of the context (Mintzberg, 1973). Accordingly, the Universality hypothesis states that management theories are generally valid, and neither industry, sector, nor culture influences practice. Such an approach is termed "Culture Free" approach to management (House et al., 2004).

Al-Yahya (2009) describes two empirical studies sponsored by international organizations carried out in ten African countries to assess management work with the ultimate aim to aid training and development. These studies largely confirmed the Universality Hypothesis. Lubatkin et al. (1997) analyzed the work of managers in Hungary and Senegal and compared their results with data from the above mentioned African studies. Similarly, they find evidence supporting the Universality hypothesis.

Part of the Universality research strand, Convergence Theory argues that the impact of culture on the nature of managerial work is a function of economic development. As economic development occurs, culture's impact diminishes; thus, the nature of managerial work converges (Al-Yahya, 2009; Lubatkin et al., 1997). Ronen (1986) posits that optimal management practices are related to the economic, technological, and political environment of the organization. According to him, adaptation of a given technology will have the same structural consequences in all national settings. With regards to convergence, Berry et al. (1992) expresses a view that "while convergence may occur at the organizational structure and technology (macro-level variables), individual attitudes and values (micro-level variables) will remain culturally distinct." (Berry et al., 1992, p. 320)

Related to the notion of convergence is another sub-theory of the Universality Hypothesis called the Situational Theory. It argues that in addition to the differing level of economic development between countries, the nature of managerial work within a given country is influenced by other factors such as the sector, size, technology, resources, and the position of the manager within the corporate hierarchy. Different management theories yield optimal behavior in each situation defined by such situational variables (Lubatkin et al., 1997).

Both the Convergence- and Situational theories are compatible with the Universality Hypothesis with regards to culture as in that the former predicts cultural differences to diminish and ultimately vanish in the fullness of time, and the latter believes optimal management theories and practice are determined by the given situation and are applicable across cultures. These theories deny lasting cultural influence.

We would like to note that the situational theory can only be seen as completely "culture-free" if one assumes the economic and institutional environment within a country is itself culture free. We shall see in the following subsections and in the chapter on dimensionalism that

there are strong arguments and empirical support that refutes that assumption. Consequently, even loyal supporters of the situational theory should accept that at least in an indirect manner, culture influences management and leadership.

A theory predicting the moderation but not the disappearance of cultural differences is the Crossvergence Theory as described by Ralston et al. (1997). The theory states that both national culture and economic ideology influence individual's values. Therefore, as cultures adopt economic models their values change to resemble those of other countries following the same economic ideology. Nevertheless, as the original culture also influences the new values, cultures will never be identical. Each country will adapt the ideology and create its own version. The authors highlight that even if convergence is indeed occurring, such process will take decades or even longer, and while the process is under way, the state of the world is described by crossvergence (Ralston et al., 1997).

The Crossvergence Theory could be applied to, for example, the adoption of capitalism, which, with the fall of the Soviet type socialist economic model has been spreading in the world. At the same time, it is difficult to argue with the assertion that most recently transformed economies developed numerous variations of the capitalist system across the world. Moreover, even in countries where the process of adopting capitalism has started much earlier, for example Continental Western-Europe, there are notable differences how those principles are applied. The fundamental difference between convergence and crossvergence is that the former assumes that all cultural differences will disappear in the fullness of time, while the latter only predicts universal economic models nevertheless shaded by lasting cultural differences.

On the other end of the spectrum regarding the impact of culture on management from the Universality Hypothesis is the Divergence Theory (see Figure 2.2.), which is specified by Al-

Yahya (2009) as "Culture Specific Theory of Management". Addressing the question whether globalization and modernization will lead to a global convergence of management and leadership, House et al. (2004) advance that while some convergence in management is inevitable, the stability of the cultural context makes the extent of such a process limited.

Figure 2.2. Comparing the influence of culture on management under major theories
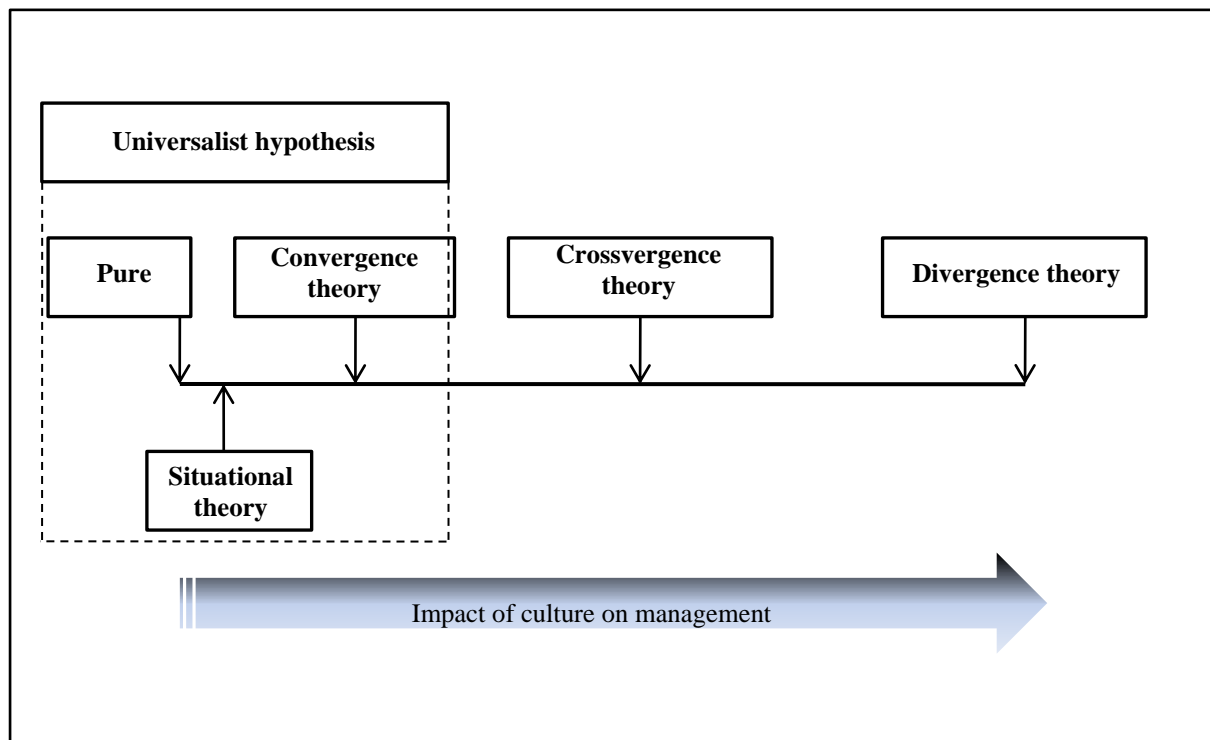
Possibly the most well-known advocate of Divergence Theory is Hofstede, who claims that each person is guided by his/her "mental programming". He argues that organizational behavior; thus management and leadership as well, is informed by basic assumptions and underlying values; therefore, it cannot be assumed universal (Hofsete, 1980). This is true for managers and subordinates, influencing management practice, as well as for scholars in turn influencing the theories they develop. He notes that management as a discipline is dominated by theories of US and, to a much smaller extent, other Western scholars, who in turn influenced by their own "mental programming". He explains that the US culture values

promoting individual interests over those of the group, encourages assertiveness and achievement and discourages shying away from uncertainty. Such characteristics are consistent with the popularity of achievement as a major motivational tool. However, other cultures, for example those more focused on relationship and nurturing and/or less willing to embrace uncertainty, would not likely to be overly concerned with achievement, rather with "quality of life plus security" (Hofstede, 1980 p. 54.). In such cultures, he asserts, policies overly focused on achievement may be counterproductive. Thus, as a motivational tool, achievement and meritocracy are not equally applicable in different cultural settings. Hofstede's arguments form one of the key theoretical foundation of this dissertation, and his model is used extensively in our empirical analysis. His work, along with two other influential dimensionalist frameworks, will be discussed in more detail in the separate chapter on dimensionalism.

House et al. (2004) point out that there is a wide variation of effective leadership across countries. While this does not mean that all facets of management and leadership are culture specific, enough is leading them to argue that management practice should be adapted to reflect these differences. Culture specific aspects of management include "privileges, power, and influence granted to leaders", "degree to which leadership roles are filled by ascription or achievement", "modal leader behavior patterns", "preferences for and expectations of leaders", "dominant norms [of leadership]" (House et al., 2004, p. 66). Based on literature and their own empirical findings, they posit that culture affects, among others, leader behavior, organizational structure and behavior, societal behavior, economic success, and individual well-being. While stating forcefully that culture matters for management, they emphasize that "[w]e are just beginning to understand how culture influences leadership and organizational processes" (House et al., 2004, p. 9).

Having established logically and empirically that culture matters for management, based on existing theoretical frameworks, House et al. (2004) propose four theoretical foundations with the following explanations for the phenomenon.

    a.   Cultural immersion theory

As entrepreneurs, shareholders, managers, and employees are all socialized in the culture of the particular society, the organizations they create will "reflect" the fundamental values of that culture. Such values will influence, among others, what is accepted or not tolerated, viewed as good or bad, and individuals' objectives. This influence is often at the subconscious level creating strong barriers against change (House et al., 2004).

    b.   Social network theory

"Organizations are influenced by the social networks in which they are embedded" (House et al., 2004, p. 79). Thus, existing institutions and other organizations in a society, themselves influenced by and part of the culture of that society, influence how an organization is structured or functions. This influence is exerted through the interaction within the network through collective pressure (House et al., 2004).

    c.   Resource dependency theory

This theory implies that organizations will obey local norms in order to get or keep access to the resources they need to survive and prosper. While this explanation may seem more fitted for manufacturing firms this is not the case. The term "resources" can be applied to human resources or even to access to market (customers). Thus, the theory implies that in order to keep access to resources, an organization need to keep its "legitimacy" in society. One important factor to do so is not to violate its fundamental cultural norms (House et al., 2004).

   d.   Institutional theory

House at al. (2004) point out that organizations need to be able to function within their institutional environment without extensive friction. This argument is very similar to that of resource dependence, in that it suggests that organizations need legitimacy in order to survive and prosper. House et al. (2004) argues that institutions affect behavior both through informal pressure and formal rules. They explain that besides forcing compliance, institutions may also influence through providing model behavior which others willingly copy as "best practice" or simply the "right thing to do". Cultural values and norms acquired by individuals, who then become shareholders, managers and employees, through their socialization are also a form of institutional influence. House et al. (2004) clarify that the sources of cultural influence as described by these four theories should not be viewed as competing hypotheses, rather taken together to describe how culture impacts organizational behavior, management and leadership. This is reflected by the advances of scholars such as North (1990), Williamson (2000), and Roland (2004) of New Institutional Economics. Elements of each of these theories can be found in the concept of systemic consistency of New Institutional Economics emphasizing the need for social institutions and organizations to be coherent as not to cause friction that can harm society (House et al., 2004).

An influential empirical study in support of divergence theory and reaching the same conclusion as House et al. (2004) several years preceding it, is that of Newman and Nollen (1996). They analyzed units of a multinational company in Europe and Asia, finding that management practices that fit the national culture of the given country were positively related to performance, thus rejecting the Universalist Hypothesis. According to Newman and Nollen (1996), forming policies and making decisions that take national culture into account yield economic benefit. Their argument is similar to that of Hofstede (1980b, 2001) and House et al. (2004) in stating that national culture affects people's expectations of-, and attitudes to

work; therefore, it affects their work behavior. This is true for workers and managers alike. Practices that are conflicting with these expectations and attitudes create friction, thereby they lower performance. Therefore, there is no universal best management theory or practice as claimed by the Universalist Hypothesis, rather management and leadership need to fit-, or be adapted to the prevailing culture (Newman and Nollen, 1996).

Further empirical support for divergence theory is extensive in the literature. Some of the empirical research on the relationship between national culture and economic development, corporate governance, and corporate finance most relevant to our own work, will be discussed in the following subsections. As we argue for a relationship between culture and corporate investment policy, our stance is based on the divergence theory.

2.1.4 Relationship between national culture and economic performance, relevant institutions, and corporate finance

2.1.4.1 Economic performance and culture

A critical factor in determining overall economic behavior, strategy and other corporate decisions are the goals of the individual making those decisions. Hofstede et al. (2002) surveyed 1,800 MBA students in fifteen different countries collecting data on their perception of the goals successful business people pursue in their own countries. The authors found that students' scores were more related to their nationality than to the university they attended, indicating the strength of national culture's influence. Based on the responses, countries could be classified into seven clusters yielding seven types of leaders. For example the US type leader was perceived to believe in values such as getting bigger is getting better, one must focus on bottom line, and that wealth is a prime measure of human worth, while leaders in Continental Europe were characterized more by values such as social responsibility, and focus on continuity. Clusters identified were significantly correlated with country's value

orientations as measured by Hofstede's dimensions of national culture. The most relevant values related to societal values emphasizing the individual versus the collective, acceptance of power inequality, and focus on the long-term versus the short-term. (Hofstede et al., 2002)

Guiso et al. (2006) advises studying culture to advance the explanation of the behavior of economic agents. They point out that culture having an effect on economic outcomes is not a recent concept, as it was already formulated and applied by economists such as Adam Smith and John Stuart Mill.

Franke et al. (1991) argue that economic organization and behavior are fundamentally determined by national culture; thus culture has a significant impact on economic growth. In their opinion culture is a fundamental origin of nations' competitive advantages. Studying the economic performance and national culture of twenty countries, they find empirical evidence that cultural values are systematically related to economic performance.

Knack and Keefer (1997) find that determinants of social capital such as trust and cooperation are related to economic success. The authors also state that "Economic activities that require some agents to rely on future actions of others are accomplished at lower cost in higher trust environments" (Knack and Keefer, 1997, p. 1252.). Their argument suggests that certain cultural values can lower certain agency costs, most likely such as the costs associated with monitoring and enforcement. Studying regions of Europe, Tabellini (2010) also concludes that aspects of culture such as trust and respect are positively correlated to economic development in the long-term.

Johnson and Lenartowicz (1998) also conjuncture that national culture influences a country's economic system. The authors use the dimensionalist frameworks of both Hofstede and Schwartz to better explain and describe the mechanisms how culture affects economic growth. They found a strong relationship between economic growth and the willingness to assume

uncertainty, and values putting the interests of the individual in front of those of the collective (Johnson and Lenartowicz, 1998).

2.1.4.2 Institutions and culture

In New Institutional Economics, Williamson (2000) in his discussion of social institutions differentiates four social levels with higher levels affecting and constraining lower ones. He identifies level one (highest), as "embeddedness […] where the norms, customs, mores, traditions, etc. are located" (Williamson, 2000, p. 596), and levels two, three and four as the formal institutional environment, governance, and resource allocation respectively. Roland (2004) notes that to be able to serve their purpose, social institutions must have "systemic consistency", that is they must be "compatible" and "complementary", emphasizing Williamson's model. Culture, in level one, influences the structure and functioning of other institutions of society located at lower levels. Williamson's model is illustrated on Figure 2.3. The direction of the main influence is shown by the large empty arrows, while the thinner black arrow on the right represents the lower levels asserting a significantly smaller influence on the higher ones similar to a feedback loop. While this effect establishes a two-way causal direction between culture and institutions, Williamson (2000) hypothesized that any meaningful cultural change takes centuries or more making the causal direction flowing from culture to institutions for any practical consideration. Combining the insights of New Institutional Economics with those of cross-cultural psychology, researchers found empirical support for culture influencing formal institutions.

The relationship between culture and institutions is described by Hofstede et al. (2002) as: "The unique traditions of each country have been maintained in their institutions like families, schools and forms of government". Later they add: "Institutions are the crystallizations of

culture, and culture is the substratum of institutional arrangements" (Hofstede et al., 2002 p. 800.). One cannot understand local institutions and behavior through one's own rationality.

Figure 2.3. Williamson's model
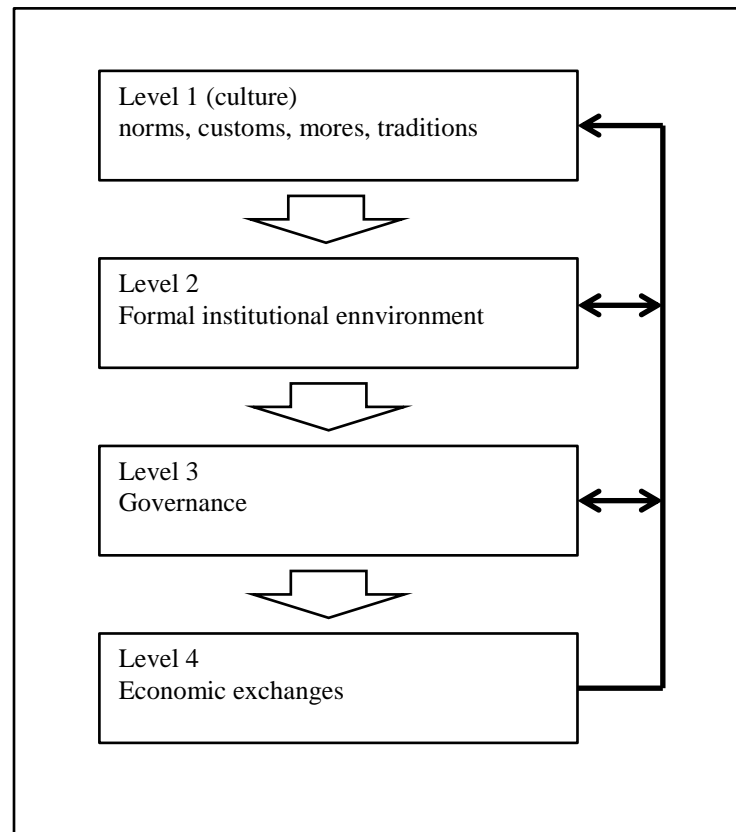
Source: adapted from Williamson (2000), figure 1, p. 597

2.1.4.2.1   Economic development as context for institutional development

As we have seen in the previous subsection Tabellini (2010), Johnson and Lenartowicz (1998), Knack and Keefer, 1997, and Franke et al. (1991) found that culture is related to economic development. The level of economic development is an important determinant of the institutional environment. Consequently, culture's indirect influence on the latter can be logically inferred.

2.1.4.2.2 Financial system

In a recent article, Aggarwal and Goodell (2014) studied cross-country disparities in access to financing. They found that that values consistent with minimizing uncertainty and holding accomplishment and assertiveness in high esteem is negatively correlated with access to capital. Researchers have attempted to identify causes of long-term differences among the development of stock markets-, and the orientation towards bank- or market-based capital market in various countries. Controlling for several economic and financial factors, Aggarwal and Goodell (2009), Breuer and Salzman (2009), Kwok and Tadesse (2006), and De Jong and Semenov (2002) find that aspects of national culture are important in explaining these financial institutions.

2.1.4.2.3 Corporate governance

Licht et al. (2005) analyze the relationship between shareholder and creditor rights in 49 countries and national culture applying both Hofstede's and Schwartz's dimensionalist frameworks. The authors claim that laws reflect underlying values, norms, and symbols of society, thus they reflect culture, which provides motivation, justification as well as constraints for formal institutions, and for behavior. These findings indicate that legal institutions in a country are rooted in the culture of that society. It has been long argued by the Law and Finance research strand initiated by La Porta et al. (1998) that the given corporate governance regime and its effectiveness is strongly influenced by the legal environment. Adding their own findings to this argument Licht et al. (2005) conclude that culture, through its influence on legal environment, is a major determinant of the corporate governance institutions of a given country. They claim that legal reforms do not eliminate differences arising from culture, demonstrating that the success of reform depends on its compatibility with culture. As an example they point to East-Asian countries, where common law was

introduced during colonial rule, effectively imposed on society from the outside. The authors propose that common law in those countries does not provide the same effective protection as common law where it naturally evolved. The difference, they argue, may be explained by the fit of the legal system with national culture: "In the long-term formal institutions should be consistent with the informal cultural environment" (Licht et al., 2005, p. 250.)

Coffee (2001) also draws attention to the limitation of relying solely on the Law and Finance approach to explain efficiency of the legal institutions of a country. Coffee (2001) notes that while private benefits of control are statistically related to legal families of countries as shown by Nenova (2003), significant similarities across-, and differences within legal families exist. To explain the latter, he advances the same argument as Licht et al. (2005) explaining that while South Korea adopted the legal framework from Germany, thus they both fall in the same legal family, such a framework operates markedly differently in the very different cultural background in Korea.

Licht (2001) cites several documents from institutions such as the OECD, IMF, the World Bank, and the Securities and Exchange Commission of the Unites States of America explicitly stating that while establishing a high standard of corporate governance is important for economic development, what these standards are, and their implementation, is influenced by the cultural within the given countries (for quotes and references see Licht, 2001. p. 154-157). He views culture as a source of path dependency that has a fundamental influence on the development and functioning of institutions such as corporate governance, and theoretically establishes a link between cultural value orientations and ownership structure, regulation on self-dealing, on insider trading, and on disclosure, executive compensation, and the market for corporate control.

In a related article, Licht et al. 2007 finds evidence that aspects of national culture, such as values related to defining self as an individual or based on group membership, are systematically related to "social norms of governance" (Licht et al., 2007, p. 659.) of rule of law, corruption, and democratic accountability, all indicators chosen by the authors as they are connected to exercising power (Licht et al., 2007). This finding supports the views of Williamson (2000) in highlighting how higher level institutions affect lower level ones: culture provides both motivation and it also constrains what is valued and accepted behavior in a society. Breuer and Salzman, (2009) conclude that as generally there are lower costs associated with of establishing and operating governance systems compatible with the cultural orientation of society, meaningful worldwide convergence of corporate governance is unlikely due to persisting cultural differences.

Analyzing data from 27 countries, Chakrabarty (2009) found significant relationship between the extent of family ownership among large public companies, the dominance of such companies of the local stock markets, and aspects of national culture, as measured by Hofstede's cultural value dimensions reflecting cultural orientation towards status, hierarchy and privileges, and society's cultural stance towards the individual versus the collective. While this relationship is moderated by institutional voids in a way that the existence and extent of institutional voids (agency contracting, credit availability) intensify cultural effects, the existence of these institutions does not cancel the relationship.

Based on a study encompassing fifteen countries, Li and Harrison (2008) showed that national culture influences corporate board structures, as defined by percentage of outside directors and the separation of CEO and Chairman roles. The authors point out to Shleifer and Vishny (1997), who put forward that prevailing ownership structure in a given country tends to impact board structures in a way that if ownership is concentrated, non-executive directors tend to be representatives of large owners and stakeholders, if it is broad-based, they tend to

be more independent with minimal interest in corporation and its activities. Li and Harrison (2008) were attempting to find evidence whether national cultural norms also influence such structures. As corporation exists within society, societal norms affect its organization and functioning. Therefore, they posit, the organizational structures of institutions tend to reflect national culture. Li and Harrison (2008) claims that "[i]nstitutional logic extends the extant of corporate governance research, and challenges the predominant agency theory logic for corporate governance." (Li and Harrison, 2008, p. 381.) While we agree with the cross-cultural and institutional logic underlying their arguments, we disagree with the very last point. We posit that the agency logic of corporate governance is only challenged by their findings if one assumes that agency problems are to the large extent uniform across cultures. We believe what needs to be studied and better understood, is how national culture as a context influences the principal-agent relationship. In other words, how agency is moderated by national culture. As we discuss in chapter IV of this dissertation, several scholars (see for example: Lubatkin et al. (2007), Ekanayake (2004), Johnson and Droege (2004), proposed that agency theory is not fully culturally transferable, that is agency theory is not a cultural universal. Our hypotheses and empirical findings, lend some support to this assertion.

2.1.4.3 Corporate finance and culture

2.1.4.3.1   Capital structure

Applying the dimensionalist model of Schwarz and analyzing data from 5,591 firms from 22 countries for 1996, Chui et al. (2002) find a statistically significant relationship between the use of debt and cultural values associated with a focus on the individual alone versus embededness and with the importance attached to hierarchy. The result remained robust after controlling for the level of economic and financial institution development, legal environment and firm level determinants of capital structure. They posit "Culture does matter because

culture affects management's perception of the cost and risk related to debt finance, and agency problems in each country". (Chui et al., 2002 p. 100)

Wang and Esqueda (2014) analyze the capital structure of American Depository Receipts of emerging market companies and find that cultural orientations as indicated by the cultural value dimensions of Hofstede influence leverage decisions in their sample. They find significant relationship between leverage and each of the six value dimensions of the Hofstede framework. The direction of the relationships, for the dimensions shared by both studies, confirms the results of Chui et al. 2002.

Antonczyk and Salzmann (2014) is on the other hand studies the effect of a specific behavioral bias, overconfidence, which has been linked to national culture in literature (see more on overconfidence in section 2.3 of this review). Based on this link, they use the cultural value dimension of House et al. (2004) related to society's stance on individualism versus collectivism as the indicator of overconfidence at the societal level. Their results show that values consistent with a focus on the individual ahead of the collective tend to induce managers to use higher leverage in corporate capital structures. While the authors interpret this result as supporting their hypothesis on the effect of overconfidence on leverage, we would like to draw attention to the fact that their proxy for overconfidence is a value dimension, which has been shown to be related to a wide range of behaviors. Indeed, according to Kirkman et al. (2006) it is the most studied and applied value dimension of all. Consequently, we read their analysis as further support for the proposition that culture influences capital structure, with one facet of the very complex mechanism at play potentially being overconfidence.

Zheng, et al. (2012) confirm that leverage and cultural value orientations are related. Going further they also show that debt maturity is negatively related to the same value dimensions,

as well as to society's reluctance to embrace uncertainty and its acceptance of unequal distribution of power. Studying the same question, Chang et al. (2012) arrives to a similar conclusion in that cross-country variation in debt maturity can partially be explained by national cultural differences. More specifically they link debt maturity to a society's aversion towards uncertainty, to values connected to assertiveness, and an orientation to the long-term, all with a negative sign. The first two sets of values match the result of Zheng et al. (2012), while the last cultural aspect is in addition to their findings.

2.1.4.3.2   Corporate cash holdings

Chang and Noorbakhsh (2009), applying Hofstede's cultural dimensions and using a similar argument to Chui et al. (2002) documents that national culture influences corporate cash holdings beyond the influence of corporate governance regime and financial institutional environment. Dittmar and Mahrt-Smith (2007) showed that internationally the level of cash holding is negatively related to the level of shareholder protection, concluding that prevailing corporate governance and legal systems in a country influence cash holdings. Chang and Noorbakhsh (2009) argues that national culture in turn influences these institutions. Their logic mirrors the argument put forward by Licht et al. (2005) we introduced above. Chang and Noorbakhsh (2009) further advances that national culture affects the perceptions of management and shareholders on the agency costs of holding cash relative to the benefit of added financial flexibility, and of the risks associated with leverage. They find that a cultural orientation toward avoiding uncertainty, favoring assertiveness and achievement, and toward the long-term are associated with higher cash holdings.

Assembling a very large database covering 49 countries for the period of 1990-2004 resulting in over 120,000 firm-years, Ramirez and Tadesse (2009) study the influence of national culture on cash holding while expressly examining whether the effect of cultural orientation is

different for local and multinational firms. For the cultural variables, their results show a similar relationship between uncertainty avoidance and cash holdings. They find that the cultural effects are lower, but still present for multinational firms.

In a very recent paper examining corporate cash holdings, Chen et al. (2015) also confirms the positive relationship to the societal desire to minimizing uncertainty and cash holdings. Furthermore, in addition to the link with uncertainty avoidance, their results indicate a negative relationship with cultural values placing the individual ahead of the collective.

2.1.4.3.3   Disbursements to shareholders

Four recent empirical studies demonstrated that cultural values contribute to cross-country variance in dividend policies. Fidrmuc and Jacob (2010) find that values promoting individual interests over those of the group are positively-, while acceptance of power inequality and shying away from uncertainty are negatively related to dividends. Shao et al. (2010) show that dividends are negatively related to values of control and assertiveness, and positively to those of individuals' embeddedness within groups. This later finding contradicts the positive relationship between dividends and emphasis of individual interests of Fidrmuc and Jacob (2010). Explaining this inconsistency, Fidrmuc and Jacob (2010) posit that it is due to their larger sample, 41 countries opposed to 21 in the other paper, more effectively capturing cultural variation. Nevertheless, the disagreement highlights that some ambiguity remain with regards to culture's connection with dividend payments.

None of the two later studies, that of Bae et al. (2012) and Breuer et al. (2014) test the relationship between individualism and dividend policy; therefore, this debate rests unresolved for the time being. Bae et al. (2012) hypothesize and empirically confirm the finding of Saho et al. (2010) that dividend policy is negatively related to the value orientation favoring assertiveness and achievement, and further show that cultural values associated with

uncertainty avoidance and long-term orientation also influence it. In a different approach, Breuer et al. (2014) examines the behavioral foundations of dividend policy. The authors obtain national behavioral pattern information from the International Test of Risk Attitudes Survey collected from university students in 46 countries, and find loss aversion, ambiguity aversion, and patience to be significant determinants.

2.1.4.3.4   Other

There are numerous other studies available on the relationship between national culture and different aspects of corporate finance behavior ranging from hedging (Lievenbruck and Schmid, 2014), to IPO underpricing (eg.: Costa et al., 2013), international mergers and acquisitions and overconfidence (Ferris et al., 2013), joint ventures (eg.: see for example Kogut and Singh, 1988, and Barkema and Vermeulen, 1997) and earnings management (Han et al., 2010). However, extending the review to those areas would not add further value to this dissertation, as the topics covered are less related to overinvestment. Furthermore, we firmly believe that the literature described above already strongly established that there is a relationship between national culture and certain aspects of economic behavior with a direct bearing on overinvestment, such as corporate governance and corporate finance.

Based on our review we can summarize the underlying reasons for culture's influence as proposed in literature along three broad arguments. First, there is widespread agreement in the applicability of the arguments on systemic consistency from New Institutional Economics (North, 1990; Williamson, 2000; Roland, 2004). Second, culture affects investors' perceptions of the gravity of agency problems, thus affecting the response of employing mechanisms to mitigate it (eg: Shao, et al., 2010). Third, cultural values actually influence the gravity of agency problems (eg: Fidrmuc and Jacob, 2010). Several articles apply more than one of these simultaneously. In our view all three are valid arguments and contribute to understanding of

cross-country differences in financial policies. In this dissertation, similar to Bae et al. (2012) we lean on all three in our argumentation. In the next section we move to describe the overinvestment problem through a brief review of related literature.

2.2 Overinvestment

2.2.1   Agency conflicts distorting corporate investment

Modigliani and Miller (1958) show theoretically that assuming perfect capital markets, corporate investment policy is determined solely based on investment opportunities independent of financing and dividend policies. Since the publication of their seminal article, a burgeoning literature has both theoretically established and empirically showed that there are numerous imperfections that distort corporate investment behavior. Reviewing related literature in-depth, Stein (2003) concludes that asymmetric information and related agency problems between principal actors are identified as primary factors behind such distortions (Stein, 2003). Resulting agency conflicts may results in sub-optimal investment.

There are several types of agency conflicts potentially affecting investment decisions as illustrated in Figure 2.4. The fact that upside profit potential beyond a cap is captured by equity holders while losses are shared with creditors creates a conflict of interest between the two classes of investors. This conflict of interest coupled with the lack of information of creditors with regards to investment opportunities leads to agency problems between shareholders and creditors. Agency problems potentially leading to underinvestment include asset substitution (Jensen and Meckling, 1976), moral hazard (Myers, 1977) and adverse selection (Stiglitz and Weiss, 1981). As creditors are aware of this problem they raise the cost of debt capital or ration credit, both of which can result in less than optimal level of investment. The agency conflict between current-, and potential shareholders can also lead to inefficient investment through adverse selection, as outside investors lack information to

differentiate between good and bad firms raising the cost of equity capital (Myers and Majluf, 1984). What is common in both of these types of agency conflicts is that they lead to lower levels of corporate investment than optimal. This agency problem is called underinvestment, and it occurs when value creating investment projects are not undertaken by firms. For examples of theoretical and empirical research regarding the problem of underinvestment among others see Bebchuk and Stole (1993), Klock and Thies (1995), Morgado and Pindado (2003), Myers (1977), Myers and Majluf (1984), Stein (2003), Stiglitz and Weiss (1981), and Stulz (1990).

Figure 2.4. Agency problems affecting corporate investment
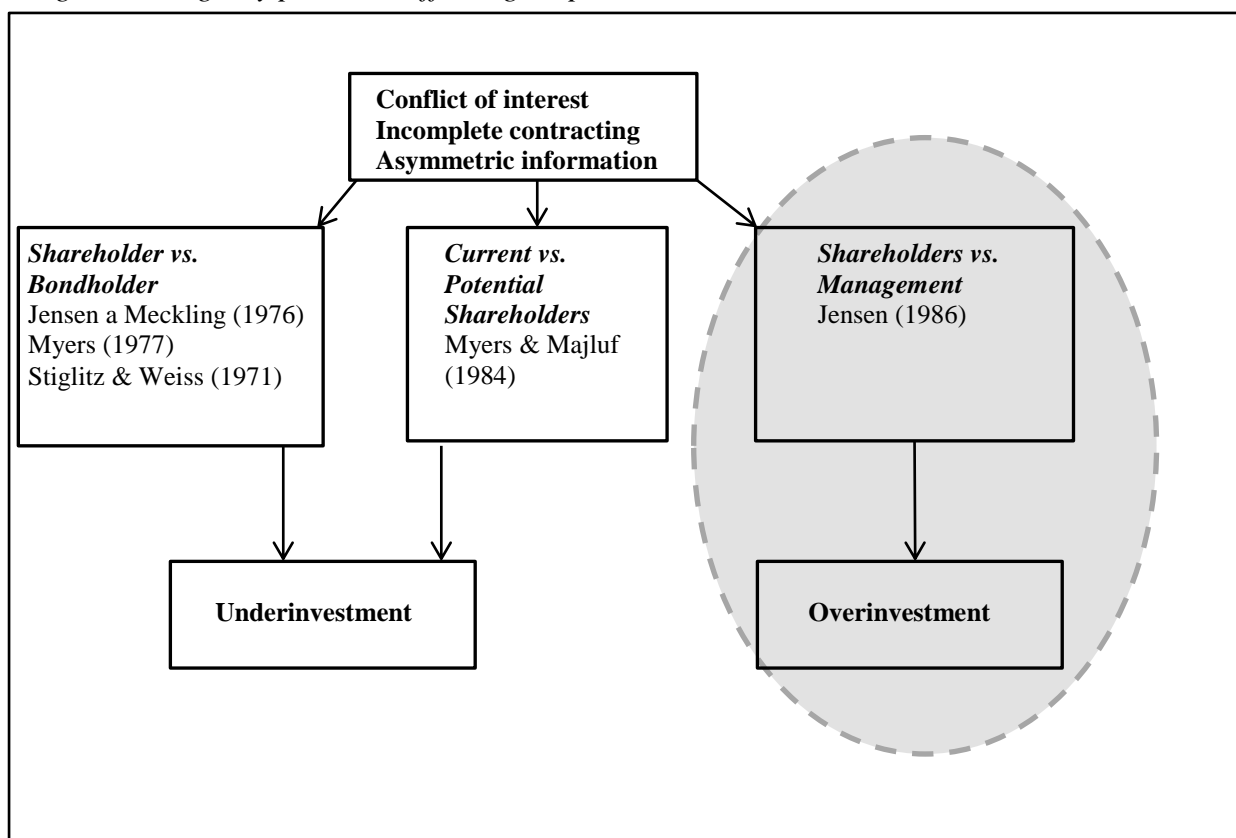
Source: Morgado and Pindado, 2005, p. 165

2.2.2 Agency cost of free cash flow

2.2.2.1 Agency cost of free cash flow models, organic investment

In addition to the above agency problems, Jensen and Meckling (1976) draws attention to the agency conflict between shareholders and management arising from the separation of ownership and control. This conflict is highlighted by the shaded oval on Figure 2.4. Jensen (1986) argues that managers receive private benefits from the resources under their control; therefore, it is in their interest to grow such resources even when it does not serve the interest of shareholders to do so leading to overinvestment. Jensen (1986) in his influential article defines overinvestment as growing a business past its optimal size. Overinvestment can be understood as investing in, or stay invested in, value destroying projects.

Overinvestment can take many forms. Management may pursue self-serving investment in capital expenditures, carrying out value-destroying acquisitions, or engaging in diversification. There is a rich literature analyzing each type of overinvestment. Overinvestment through acquisition and diversification, while theoretically could be considered separately (e.g. it is possible and firms do diversify through organic growth) is often discussed together. Studies among others include Hwang and Kim (2012) for capital expenditures, Harford et al. (2008) for acquisitions, Aggarwal and Samwick (2003) for diversification, and Morck et al. (1990) for diversifying acquisitions.

The literature identifies diverse private benefits management obtains from the resources under their control. These range from elevated reputation (Avery et al., 1998) from being a manager of a larger company, to increased monetary and non-monetary compensation (Stulz, 1990), as compensation is often tied to some performance measure contingent on growth. Investments resulting in diversification may also serve the managers by increasing the stability of cash flows, therefore decreasing the likelihood of bankruptcy, thus loss of employment (Amihud

and Lev, 1981), and by safeguarding the independence of the firm (Harford, 1999). Management may use corporate investments to improve their job security by making manager specific investments, where the manager's personal skills or capabilities make him or her more valuable for shareholders (Shleifer and Vishny, 1989).

When investments are self-serving, that is they do not increase the value of the firm, it is easier for management to finance them from internal funds than from capital markets (Jensen, 1986). This is because, he argues, capital markets perform a valuable monitoring function that may deny funding, or send other signals that draw attention to the self-dealing nature of the proposed transaction. Free cash flow, defined by Jensen as cash flow after all value increasing projects have been funded, creates an agency problem, as managers have an interest to spend it on private benefit generating investments even if they are value destroying. Jensen (1986) predicts that the higher the free cash flow generated by the company, and the lower quality is its investment opportunity set, the stronger the agency problem is. Jensen's proposition is called the Free Cash Flow Hypothesis.

Stulz (1990) constructed a theoretical model allowing both under-, and overinvestment assuming dispersed ownership and information asymmetries, whereby free cash flow and investments are unobservable by shareholders. Similar to Jensen, Stulz also argued that management enjoyed private benefits from investments; therefore, it is in management's best interest to maximize investment. Stulz posits that shareholders are aware of managements desire to maximize resources for overinvestments. Therefore, management cannot credibly claim that more cash is needed for value increasing (positive net present value) projects. Where cash flow is not sufficient to fund all such projects, this will lead to underinvestment, while if there are surplus resources management will overinvest (Stulz, 1990). Miguel and Pindado (2001) adopt the Stulz model hypothesizing that investment is linked to companies' cash flow and leverage.

The theoretical model of Bebchuk and Stole (1993) demonstrates that short-term management incentives and information asymmetry may indeed lead to a non-optimal level of investment. They show that when the level of investment in long-term projects is unobservable by the market (hidden action), managers tend to underinvest; whereas when the productivity of long-term investment is unknown (hidden information), they tend to overinvest. Their argument is that management signals to the market the financial position and strong future outlook of the firm through high level of long-term investment, which the market perceives, regardless of the predicted productivity of such projects, which the market cannot observe. This may lead to underinvestment in unobservable assets such as research, human resources, and to shirking (as Investment of time and effort is unobservable), and to overinvestment in observable assets such as sales and capital assets both organically and through acquisitions (Bebchuk and Stole, 1993).

In an empirical study analyzing information pertaining to 135 Spanish companies for 1990 to 1999, Morgado and Pindado (2003) show that relationship between firm value and investment is positive (underinvestment occurs) up to an optimal level of investment, and turns negative (overinvestment occurs) thereafter. This finding supports Jensen's Agency Cost of Free Cash Flow Hypothesis. They also conclude that the optimal level of investment is positively related to Tobin's Q, which they employ to indicate corporate investment opportunities. In separate influential studies, among others, Bates (2005), Hennessy and Levy (2002), Hwang and Kim (2012), Richardson (2006) found support for the Free Cash Flow Hypothesis and the existence of overinvestment as an agency problem.

2.2.2.2 Not abandoning value destroying projects and escalation

A form of agency induced overinvestment arises from management's reluctance to abandon projects or shrink the company (Jensen, 1986) when it would be optimal to do so, or even

escalate investment in the hope that capital infusion can save ailing projects (McDaniel, 1995). In such a situation overinvestment may occur without positive net investment in a given year or for a period of time. Non-abandonment and escalation should be classified as overinvestment, as their effect is staying invested in or sinking further funds in value destroying projects.

McDaniel (1995) found four main reasons behind non-abandonment and escalation. The first reason is managers' motivation, which include (i) human psychology: it is human nature not liking to accept that the endeavor undertaken failed, and also a tendency to overestimate extent of control over events leading to a belief that the investment can still be turned around, (ii) incentives that may penalize project failure while still yielding monetary rewards based on size or accounting measures unrelated to long-term value creation, and (iii) consideration for others who may face large costs if investment abandoned (e.g. employees who would lose their jobs). Secondly, McDaniel (1995) point out, managers face corporate social pressures, which also include (i) psychological factors, such as a desire to be admired by colleagues, and (ii) the general tendency of corporate culture that respects perseverance in the face of difficulty. The third factor he identifies is the possible presence of organizational rigidities, processes that make it easier to continue with the project, or even to commit further capital, than to get approval for abandoning it. Finally, he concludes, the project itself may have characteristics that make the decision to abandon difficult.

McDaniel (1995) also emphasized the role of lack of information for those responsible for monitoring. The necessary information may not be available due to inappropriate information systems, it may be concealed deliberately by management, or management, due to its non-objectivity, may inadvertently filter the information (McDaniel, 1995). This factor deepens to information asymmetry between managers and shareholders, which, along with conflict of interest and incomplete contracting are responsible for the agency problem.

Kanodia, et al. (1989) presents the escalation problem as a manager receiving the private benefit of protecting his or her reputation by not abandoning. His formulation of the agency conflict was supported by the findings of experiments conducted by Harrison and Harrell (1993) and Harrell and Harrison (1994) among students from the United States of America.

2.2.2.3 External growth: investment in acquisitions, diversification discount

Among others, Berger and Ofek (1995) identify the main benefits of diversification as potential operating synergies, larger debt capacity, potential tax savings through profits in one business being offset by losses in another, and an internal capital market, which does not suffer from the asymmetric information that characterizes external capital markets. The latter argument supporting the efficiency of the internal capital market was proposed by, among others, Stein (1997). Taking another approach, Stulz (1990) points to another possible advantage of careful diversification. In his model diversification that decreases the variability of cash flow decreases both the under- and overinvestment problems. Stable cash flow allows better targeting of cash left under the discretion of management through debt service allowing optimal investment. He argues that with stable cash flows higher leverage can be supported by the company with increased debt service requirements imposing a discipline, thereby controlling management's propensity to overinvest. Thus in Stulz's model, diversification, insofar as it results in more stable cash flow, may increase shareholder value. Although not stated, this benefit of diversification arising from more stable cash flows may be offset by the costs associated with diversification.

Berger and Ofek (1995) also discuss potential costs of diversification. First, they claim, diversification gives management access to more capital (e.g. through increased debt capacity) to undertake value destroying investments. Second, it may enable cross-subsidization, which occurs when poorly performing businesses (or ones with a lower quality

investment opportunity set) are allocated resources at the expense of better performing ones via the internal capital market. Scharfstein and Stein (2000) characterizes cross-subsidization of the poor performer by draining resources from surplus generating segments as a form of "socialism". Berger and Ofek (1995) point out that cross-subsidization is contradictory to the efficient internal markets argument. Due to cross-subsidization, a segment that would go bankrupt (thus having zero value) as a stand-alone entity, may actually have a negative value for the diversified firm if it is kept in business by subsidies through the internal capital market. Third, management may not have the experience or skills necessary to manage the portfolio of unrelated businesses (Berger and Ofek, 1995), which may exasperate agency problems as an additional source of asymmetric information. (Scharfstein and Stein (2000) add that diversification also introduces another layer of agency problems between top- and business segment management.

Jensen (1986) believes diversifying acquisitions are generally driven by the agency problem and result in overinvestment and shareholder value destruction. Morck et al. (1990) agree that, in line with predictions of agency theory, certain types of acquisitions are pursued by management to gain personal benefits as opposed to value maximization. Based on a sample of 326 acquisitions announced between 1975 and 1987, they identify those aimed at diversification and acquiring growth as generally value destructive (thus following Jensen's definition of overinvestment). Morck et al. (1990) argue that this can be explained by private benefits to management. Similar to diversification, acquisitions of growth may also be driven by private benefits such as managerial incentives rewarding growth and/or size, prestige, and added possibilities to reward preferred subordinate managers with promotions as growth creates managerial positions. With regards to diversifying acquisitions, besides obtaining the same advantages related to size, management may acquire unrelated businesses to benefit from greater diversification of its human capital, thus to decrease personal risk. Managers

whose performance is weak may also choose to diversify into other lines of businesses in the hope that, personally, they can perform better in the new business (Morck et al., 1990).

In an empirical study on efficiency of the internal capital markets as a potential source of the diversification discount, Shin and Stulz (1998) showed that the level of segment investment was positively correlated with the cash flows of other segments of diversified companies, and less so with their own cash flows than in single-segment entities. Furthermore, there was no evidence that the rank order of the quality of the investment opportunity set of a given segment within a diversified firm influenced this sensitivity. This finding points to cross-subsidization, and suggests that internal capital markets are inefficient (Shin and Stulz, 1998). In further support of the inefficient market hypothesis, Lamont and Polk (2001) found data confirming that investment across business segments within a diversified firm is "smoothed" when compared to stand-alone focused companies.

Other influential studies attempting to explain the documented inefficiency of internal capital markets, among others, include Rajan et al. (2000), and Scharfstein and Stein (2000). The former attributes inefficiency to cross-subsidization incentivizing divisional management not to generate surplus resources, which would be used to subsidize deficit generating segments. Therefore, according to Rajan et al. (2000) investment inefficiency of a diversified firm is positively related to the diversity of the resources and the investment opportunity sets of its segments. An interesting interpretation of the proposition of Rajan et al. (2000) is that cross-subsidization may lead to overinvestment in the inefficient business segments while at the same time underinvestment in the efficient ones. Scharfstein and Stein (2000) argues that inefficiency is driven by the combined agency problems between top management and investors (which exists for focused firms as well) and between top management and segment management (result of diversification), where top management may find it advantageous to

pay compensation to segment management in the form of allocating additional resources to their businesses (Scharfstein and Stein 2000).

If diversification destroys value, capital markets should realize this and reflect it in the valuation of diversified firms. There are several studies attempting to find such an effect and to quantify it. Lang and Stulz (1994), examining diversification and firm value document a significant negative relationship. In their seminal article, Berger and Ofek (1995) also found that the market value of diversified firms are significantly under to firm value estimated through a sum-of-the-parts valuation based on segment data. The sum-of-the-parts valuation methodology attempts to value the segments of a company as stand-alone entities, and adding these values it derives an estimate of the value for the total firm. If such estimate is below the observed market value of the firm one could deduce the presence of synergies or other operational, strategic or financial benefits arising from the portfolio of businesses or its management. If the estimated value is above the market valuation of the company, it gives a strong signal for the presence of a diversification discount. They estimated the diversification discount to be in the range of 13-15%. Similar conclusion is reached by Comment and Jarrell (1994), who find evidence that share performance declines as a result of diversification. Berger and Ofek (1995) also showed that the magnitude of the discount is positively related to the "unrelatedness", as diversification into businesses within the same two-digit SIC code as the firm does not trigger a significant discount, and to the number of business segments. Aggarwal and Samwick (2003), examining diversification decisions, conclude that such are mainly driven by managerial private benefits. Similar to Berger and Ofek (1995), the authors also find evidence for the diversification discount as in their sample the number of segments is negatively related to Tobin's Q.

Studying both tangible asset-, and goodwill write-offs in a sample of 16,195 firm years between 2001 and 2006, Sadka and Zhang (2009) conclude that there is a higher probability

that diversified firms overinvest than single segment companies. The finding that diversified firms have a higher probability of writing-off assets as well as writing-off higher amounts is an ex-post indicator of overinvestment that does not depend on efficient market reaction as opposed to studies measuring effects of diversification on Tobin's Q or on firm value. Their results indicate the existence of a diversification discount, which is related to future write-offs; thus, to inefficient investment. Sadka and Zhang (2009) conjecture that the diversification discount is explained by the market correctly anticipating larger future write-offs of diversified firms.

McCabe and Yook (1997) test the agency cost of Free Cash Flow Hypothesis regarding the impact of acquisitions financed by cash on the value of a firm with high cash flow, high cash flow reinvestment rate, and low quality investment opportunity set. As several other studies, many of which referenced in this dissertation, McCabe and Yook use Tobin's Q as the indicator for the quality of a firm's investment opportunity set. In line with the predictions of the Free Cash Flow Hypothesis, the authors find that such acquisitions create value in decreasing the cash under the discretion of management, an effect that may partially or fully offset any value destroyed as a result of the acquisition, while returns to other types of bidders are negative (McCabe and Yook, 1997). For further research finding empirical support for the existence of diversification discount please see for example Hoechle et al. (2009), and Yore (2007).

Harford (1999) examines acquisition behavior of cash-rich firms versus a general sample. A major difference between this study and that of McCabe and York (1997) is that Harford studies firms with a high cash balance regardless of cash flow. He finds that, as predicted by Jensen (1986) and others, such firms indeed are more likely to make acquisitions that have a negative impact on firm value.

Harford et al. (2008) study the relationship between cash holdings of a firm and the quality of its corporate governance in a sample of US firms. Their results show that the quality of corporate governance is positively related to the level of cash holdings. This suggests that companies with weaker governance invest free cash flow quickly in order to avoid high levels of cash. The authors explain this finding by the fact that large cash balances are observable by the market as opposed to the quality of investments, which normally becomes observable with a substantial time-lag. Therefore, high cash levels may invite disciplinary action from investors, while that risk is much lower for investments, even if they are value destroying. Harford et al., (2008) document that such companies spend their cash largely on acquisitions, which tend to lower firm value. The authors point out that their results contrast with international work on the relationship between cash levels and corporate governance (e.g. Pinkowitz et al., 2006). They argue that this is explained by the strong investor protection in the Unites States of America, which make investors less nervous about large cash holdings of well governed companies.

There are studies, who attempt to give alternative explanations to the diversification discount found by other researchers, arguing that it is not due to diversification per se. For example Graham et al., (2002) argue that it is lower quality firms who are acquired, while Chevalier (2004) posits that is the diversifiers who are weaker; thus, it is the value of the firms that make up the diversified company that are discounted, not diversification itself. Both studies are based on the argument that diversification is an endogenous decision; therefore, it is possible that companies with certain characteristics choose to diversify. Villalonga (2004) and Whited (2001) point to data and measurement errors that affect the calculations. They state that correcting for such errors the observable discount is reduced. While the debate is clearly still open, the majority of the literature finds both theoretical and empirical support for the

diversification discount, and most research challenging it contends that its effect is less significant than previously argued, not that it does not exist.

In an innovative study, Lamont and Polk (2002) solve the endogeneity problem by using the diversity of investment opportunities for business segments as the measure of firm diversity. They estimate investment opportunities by examining changes in the industry median Tobin's Q for each segment of the company based on data from matching focused firms. As the authors point out, such changes in the industry investment opportunity set are exogenous. Analyzing a sample of data pertaining to 1,987 companies for the period between 1980 and 1997, results show that decreasing (increasing) diversity of investment opportunity sets of business segment is positively (negatively) related to firm value, thus, documenting an exogenous diversity discount.

2.2.2.4 Mechanisms to mitigate the agency cost of overinvestment

Agency theory proposes two main approaches to lower agency costs: effective monitoring, and aligning the interests of principal and agent (Eisenhardt, 1989). With regards to overinvestment, monitoring is addressed both internally through firm-level corporate governance, which also serves to align interests between parties through for example managerial compensation, and externally through country-level corporate governance and the market for corporate control. Another method is to limit resources under the control of management decreasing its ability to engage in overinvestment. Such mechanisms include the use of leverage and cash disbursements to shareholders.

2.2.2.4.1   Leverage

Jensen (1986) proposes taking on leverage as a tool to mitigate the agency problem of free cash flow. By taking on debt, he points out management credibly commits to pay out future

cash flow as debt service, thereby limiting future resources under its control. Further, leverage puts pressure on the organization and its management to strive for efficiency as it increases the probability of bankruptcy. Bankruptcy, in turn, is very costly for management as it usually involves the loss of employment and reputation, thus having a significant negative impact on the value of their human capital. Jensen points to leveraged buyouts as transactions often targeting companies with an overinvestment problem, and employing high leverage to control such problems going forward.

The model of Stulz (1990) also proposes the use of debt as a form of pre-commitment of free cash flows to decrease overinvestment arising from management's discretion. He warns that while mitigating the cost of overinvestment, increasing debt may result in underinvestment, when the cash flow after debt service is not sufficient to cover all value increasing investments. According to Klock and Thies (1995), to pre-commit expected cash flow implies that it is unexpected cash flow that will exhibit the strongest correlation with investment. They posit that this effect should be more pronounced for firms with a lower value investment opportunity set, which the authors estimate as companies with low Tobin's Q. A major underlying assumption is that overall Q is a suitable proxy for marginal Q. This assumption is debated, as it was confirmed empirically by Gordon and Myers (1998) while challenged by Whited (2001). Despite this debate Tobin Q is widely used in the literature as an indicator for the market's valuation of a company's investment opportunities. Using panel data for ten periods covering between five and seven years between 1926 and 1983 for 37 to 100 firms per period, Klock and Thies (1995) confirm both predictions of Stulz's hypothesis. Stulz's model is also confirmed empirically by Berkovitch and Kim (1990), who found evidence that increasing debt seniority (thus stronger credibility of pre-commitment) is related negatively to overinvestment and positively to underinvestment.

The use of leverage, as proposed in many studies, to control and mitigate investment agency problems creates effectively an interaction between financing and investment decisions and points at the existence of an optimal capital structure. According to Jensen (1986), optimal leverage can be determined based on the trade-off between the costs of debt and its agency benefits. Stulz (1990) also proposes an optimal capital structure taking into account the company's probability distribution of future cash flow, its investment opportunity set and trades-off the cost of debt against the cost of underinvestment due to lack of funds (high debt service), and the cost of overinvestment due to excessive funds (low debt service).

Hart and Moore (1995) also developed a theoretical model describing how debt mitigates overinvestment. They argue that in the absence of agency problems, management should be allowed to issue "soft", that is subordinated, debt that can be rescheduled. This would allow the company to take advantage of the tax shield and would permit management to finance the investments it selects without additional bankruptcy risk. However, if one assumes management pursues private benefits of investment, they posit, the optimal solution is to issue long-term "hard", that is senior, debt. They argue that long-term hard debt decreases the cash flow under the control of management through debt service, but also through increasing the cost of raising additional debt in the future based on future cash flows, as new claims would have to be subordinated, thus, more costly. Senior debt is also superior to subordinated debt in that it motivates management to improve efficiency within the organization to avoid bankruptcy. Similar to Stulz's conclusion, they posit that an optimal capital structure trades-off controlling overinvestment and inducing underinvestment. Hart and Moore (1995) conclude that if less than optimal long-term debt is issued, management can issue further debt based on future cash flows resulting in overinvestment, whereas if more than optimal long-term debt issued, management will not be able to finance even value creating investments through the issuance of further debt leading to underinvestment. Finding it costly or

impossible to issue further that as a result of already high leverage is often referred to as "debt overhang" in the literature. Hart and Moore (1995) predict that the lower the profitability of its investment opportunity set, and the higher the profitability of its assets in place, the higher is a company's optimal long-term leverage.

Lang et al. (1996) using a sample of 640 firms confirmed empirically the role of debt for mitigating overinvestment for the period between 1970 and 1989. They analyzed the effect of the quality of the investment opportunity set, also using Tobin's Q as indicator, on the negative relationship between leverage and growth. They found that this relationship is negatively related to Tobin's Q. They concluded that while leverage indeed mitigates overinvestment, leverage induced underinvestment is not a serious problem for firms with valuable investment opportunities.

The disciplining power of debt is also empirically supported by D'Mello and Miranda (2010). They study the cash holding and investment behavior of 366 companies before-, and after they issued debt. All of these firms were unlevered before the transaction. They found that prior to issuing debt cash holding was significantly higher than industry average for such companies, decreasing to-, or below industry average following the transaction and improving market valuations. These effects were more significant for companies with lower industry adjusted Market to Book ratios (assumed to have lower quality investment opportunity set). The authors further found that where overinvestment in capital expenditures was a problem, debt had a mitigating effect, while the elimination of debt had the opposite consequence. Studying the relationship between capital structure and valuation, the results of Harvey et al. (2004) further support the role of leverage in controlling overinvestment. The authors showed that leverage has a more positive effect on the value of firms where agency costs are expected to be highest.

Zweibel (1996) highlights that in the models of Jensen (1986), Stulz (1990), and Hart and Moore (1995), debt is imposed on management ex-ante based on, among other, assumptions on future cash flows and investment opportunities, to constrain management's ex-post behavior. However, Zweibel argues, normally altering leverage is within management discretion. He posits that it is optimal for management themselves to issue debt credibly controlling overinvestment to avoid potential loss of employment through shareholder action or a takeover. This can be viewed as a classical Agency Theory argument, where such actions and associated costs are referred to as the agency costs of bonding (see for example Jensen and Meckling, 1976). In Zwzibel's model management dynamically adjust leverage and dividends to constrain overinvestment. Consequently underinvestment is not a problem, and the disciplining power is debt is only negated when bankruptcy or a takeover is imminent, thus it no longer is an outcome which could be avoided through self-constraining behavior by management (Zweibel, 1996). In a related article, Prezas (2009) proposes that investment in assets that generate cash flow only in the long-term, such as research and development, in combination with the use of debt reinforces the latter's use to control overinvestment.

2.2.2.4.2   Disbursements to shareholders

Dividends to shareholders also reduce resources under management's control alleviating related agency problems (Easterbrook, 1984). This role of dividends is widely studied in literature. In a seminal article, Lang and Litzenberger (1989) finds that markets react more positively to dividend increases by firms with poorer investment opportunities indicating that dividends are more valuable where there is more risk of overinvestment. While some later studies, such as Yoon and Starks (1995), found no such relationship, in a recent article Officer (2011) confirms the Lang and Litzenberger (1989) results for firms with simultaneously low quality investment opportunity sets and high levels of free cash flow, a category closely fitting types of firms identified by Jensen (1986). Both Jensen (1986) and Stulz (1990) contend that

dividends lack the credibility of leverage in mitigating the agency problem of free cash flow, as management has discretion over dividends, consequently, declaring dividends represent less of a commitment with regards to future cash flows than leverage. Other distributions, such as share buybacks, are viewed as even more discretionary, thus even less effective as control mechanism. This is indicated for example by Haw et al. (2011), who find that in countries with weak investor protection investors attach significantly less value to share repurchases than to dividends.

2.2.2.4.3 Market for corporate control

The market for corporate control is also a mechanism to mitigate overinvestment by representing a credible threat to management engaged in value destroying behavior. If agency costs exceed a threshold, the company may become a takeover target as a bidder could buy the company and create value by more effectively controlling agency costs. A bidder could buy the company and lower agency costs to create value. Jensen (1986) points to leveraged buyout transactions as falling into this category with high leverage mitigating overinvestment. This assessment is supported by Kaplan (1989), who, in a sample of 76 buyouts, finds that performance increases, while capital expenditure decreases following the transaction. Hendershott (1996) also finds evidence that takeovers are effective in mitigating overinvestment. Studying 231 takeover attempts (both successful and defeated) in the period between 1985 and 1990, he found that while targets' investment levels before the attempt exceed industry average, after the transaction was completed or the attempt defeated investment levels decrease. Further, the fall in investment was positively related to the excess investment prior to the attempt. In a recent study, using a quasi-natural experiment, Hwang and Kim (2012) find evidence suggesting overinvestment for companies adapting anti-takeover provisions in South-Korea.

2.2.2.4.4   Corporate governance

As Hart (1995) observes, the role of corporate governance is to restrain agency problems. There are various corporate governance measures that may have a direct impact on overinvestment. An aspect of corporate governance frequently included in corporate investment literature, and closely related to our discussion of the disciplining role of the market of corporate control, is the presence of various anti-takeover provisions. To facilitate empirical studies, anti-takeover provisions are often aggregated into indices, such as the G-index or the E-index. The G-index was developed by Gompers et al. (2003) and measures the presence of 24 anti-takeover provisions. The E-index is a simplified version of the G-index including six of the provisions deemed most influential (poison pills, golden parachutes, staggered boards, limits to shareholder bylaw amendments, supermajority requirements for merger transactions and for charter amendments). The E-index was created by Bebchuk et al. (2009). Further elements of corporate governance in investment related empirical studies are institutional block ownership, ownership concentration, insider ownership, sensitivity of management's compensation of company's performance, board composition (presence and proportion of independent directors on the board), board size, and separation of Chairman and CEO roles.

There are several studies demonstrating a link between corporate governance and firm value, investments, and mechanisms to control agency problems. For example, Chi and Lee (2010) find that corporate governance contributes significantly to the value of firms, but only to those with high levels of free cash flow. The authors interpret their result as investors assigning a higher value to corporate governance as a control mechanism when the potential to incur agency costs of overinvestment is higher. Billett et al. (2011) apply a hazard model and demonstrate that firms with weaker corporate governance are more prone to engage in overinvestment. Officer (2011) demonstrates that returns for dividend initiation

announcements are negatively related to the quality of their governance, suggesting that reducing resources under management's control is more beneficial for firms with weaker governance.

The literature, both theoretical (e.g. Jensen and Meckling, 1976; Jensen and Murphy, 1990) and empirical (see below), on the use of incentives to control agency problems is extremely rich. Aggarwal and Samwick (2002) argue that leverage and dividend policy, and even more so takeovers, are costly and cannot be continuously optimized. However, adjusting incentives is relatively easy and low cost, and incentives can be tailored to specific managers. Based on these attributes, the authors argue, establishing and adjusting appropriate incentives is the most efficient tool in controlling sub-optimal investment. Broussard et al. (2004) studied data for 382 non-manufacturing firms from 1993 to 1997, and showed that pay performance sensitivity, defined as change in top manager wealth per change in shareholder wealth by Jensen and Murphy (1990), is negatively related to the strength of the relationship between investment and cash flow for firms with low Tobin's Q (used to indicate low quality investment opportunity set). As theoretically investment should not be driven by availability of internal resources, but by the quality of the available investment opportunities, such lower sensitivity of investment to cash flow indicate lower agency cost of overinvestment. Agrawal and Mandelker (1987) empirically demonstrates a link between the use of stock options and equity ownership of management, and investments and financing of 209 acquiring and divesting companies demonstrating the beneficial effects of equity related incentives. Similar conclusion is reached by Hadlock (1998) concerning the relationship between incentives and investments, and Lewellen et al. (1985) with regards to management equity ownership and value destroying acquisitions.

In addition to the literature studying the impact of firm-level corporate governance, researchers, such as but not limited to scholars contributing to the Law and Finance research

strand following the influential work of La Porta et al. (1998), also noted a large variation among country-level corporate governance institutions. Elements of country-level corporate governance widely applied include legal origin, several indices such as the anti-self-dealing index, anti-director rights index, judiciary efficiency index, corruption index, and the development of capital markets. Recent empirical evidence includes for example the study of Haw et al. (2011), who indicate that in countries with weaker county-level corporate governance investors have a stronger preference for dividends over share repurchases, suggesting that country-level governance influences the effectiveness of other agency problem mitigating mechanisms.

Empirical research found that investors assign lower value to cash held by entrenched management in countries with weaker country-level governance (e.g: Kalcheva and Lins, 2007). This may indicate that as weaker regimes are generally less efficient in keeping down agency costs, investors see an elevated risk of cash being wasted in value destroying projects or being expropriated by management or controlling shareholders.

Studying the effect of weaker external governance regimes on the efficiency of investment in Central-Eastern Europe, Mueller and Peev (2007) conclude that they intensify both the under-, and overinvestment problems. Miguel et al. (2004), analyzing Spanish data, refer to country-level corporate governance environment in explaining contradictory results in literature as to the relationship between firm value and ownership structure; thus, linking the interaction of the two to explain their overall effect.

2.2.3   Optimism and overconfidence related overinvestment

While most researchers view overinvestment as an agency problem, there is a growing strand in the literature that looks for behavioral motivation other than self-interest that may cause

managers to overinvest. These scholars argue that besides self-interest, managerial optimism, or overconfidence, may also lead to overinvestment.

2.2.3.1 Definition – hubris, optimism, overconfidence

There are three related terms used in the literature to describe another, non-agency cost related, behavioral characteristic of management that is also an important driver of investment distortions: (1) hubris, (ii) optimism, and (iii) overconfidence. While their meaning is not identical, the literature tends to employ them to examine the same question: the link between management's excessive belief in its own abilities and/or in external positive outcomes, and their tendency to overvalue investment opportunities.

The seminal article of the literature on overconfidence and finance is that of Roll (1986), who advanced his "hubris hypothesis". By "hubris", he describes management's belief that their ability to value target companies is superior to that of financial markets. Building on and expanding Roll (1986)'s work, Heaton (2002) studied the effect of managerial optimism on corporate investment decisions. He defines managers as "optimistic, when they systematically overestimate the probability of good firm performance and underestimate the probability of bad firm performance" (Heaton, 2002, p. 33). Malmendier and Tate (2008) specifies the distinction between optimism and overconfidence as the former referring to "overestimation of exogenous outcomes" and the latter to overestimation of "own abilities" (Malmendier and Tate, 2008, p. 22). As they have the same effect on capital expenditure and financing decisions, we will discuss both optimism and overconfidence together as important mechanisms bridging the gap between an opportunity to overinvest and the act of overinvestment.

2.2.3.2 Roots of overconfidence

The underlying reasons for managerial optimism, such as a tendency to overestimate one's control and being more optimistic when dedicated to a task, are embedded in human psychology. Malmendier and Tate (2005) and Doukas and Petmezas (2007) relate overconfidence primarily to specific psychological biases: (1) the better-than-average effect, the (2) self-attribution bias, and (3) illusion of control. The better-than-average effect refers to people's tendencies to overvalue their own abilities and competencies. Discussing it, Lerwood and Whittaker (1977) point out the potential impact of overestimating one's own abilities on planning. In an experiment they find that both university students and company presidents rate their abilities and future personal expectations disproportionately highly, and that such tendencies are also affect their sales forecasts for a hypothetical business they were to manage. Better-than-average effect induced overconfidence is also demonstrated by the well documented fact, as shown by Svenson (1981), that the majority of drivers believe they are better skilled than the average, a result that is clearly impossible in reality. Swenson (1981) replicates this experiment using two separate samples: university students from the US, and from Sweden. While overconfidence is evident in both groups, it is interesting to see, that results are stronger for the US sample, which may be viewed as an indication supporting international differences in overconfidence.

The self-attribution bias, namely the tendency to believe that good results are due to one's own actions while bad ones are due to circumstances, are extensively discussed, and related psychology literature is reviewed, for example by Doukas and Petmezas (2007). Analyzing decision biases with regards to acquisitions, the authors explain the link between self-attribution and overconfidence as individuals prone to this bias take any positive result as encouragement for further investment, while disregarding any negative one dismissing it as due to external influences. Thus, over time even if negative results outweigh positive ones,

they gain in confidence that they are making the right decisions, and will keep committing the same errors. As the authors point out, the self-attribution bias is related to the better-than-average effect, since the higher individuals rate their own abilities, the more likely they see their successes as their own doing and their failures as not their fault. Both the better-than-average effect and the self-attribution bias are directly related to another behavioral bias, illusion of control. Illusion of control refers to the people's inclination of believing even chance outcomes are in fact influenced by their actions. In a much cited article Langer (1975) showed that people have a propensity to believe they have a higher chance of winning the lottery with numbers they choose than with random selected ones. Starting with Heaton (2002), the literature unequivocally links illusions of control to overconfidence.

All three biases are aggravated in situations where the individual is strongly committed to the outcome (Weinstein, 1980; Heaton, 2002; Malmendier and Tate, 2005). Related to overinvestment, Malmendier and Tate (2005) point out that these conditions apply to investment decisions, as firstly management is highly committed to the success of the firm as its reputation and compensation depends on it.

2.2.3.3 Overconfidence and overinvestment

Roll (1986) argued that acquirer companies overpay for their targets in transactions as their management is driven by their "hubris". Namely, such a manager "may convince himself" that he or she is better at valuing the target than financial markets are. The result is value destroyed, thus, overinvestment. He specifically distinguishes "hubris" from opportunistic managerial behavior specifying, that management may believe to fully serve the interests of shareholders will engage in value destroying acquisitions driven by their "hubris".

Heaton (2002) theoretically demonstrated that managerial optimism may result both in underinvestment and overinvestment depending on the investment opportunity set of the

company and availability of internal resources. Optimism may cause management to perceive that capital markets undervalue the firm and its securities, leading them to conclude that the cost of external capital too high. In that case, management may over rely on internal financing to fund investments deciding to forego value increasing investments, resulting in underinvestment. Optimism may also lead management to underestimate the risks, or to overestimate the cash flows or their ability to unlock vale associated with investments. This may induce management to undertake investments, which are, in reality, value destroying. From our own corporate finance professional experience valuing investment projects and companies, we saw how easy it is to fall into the trap of deciding to "adjust" the underlying assumptions or find additional real options to arrive to a positive net present value if the analyst (or management) believes in the project. The result of such behavior is overinvestment. Optimism related overinvestment, similar to empire building, is also positively related to the availability of free cash flow to "waste"; therefore, it may also be viewed as a cost of free cash flow. If internal resources exceed the level needed to finance truly value creating projects such sensitivity leads to overinvestment. If the resources needed to fund such projects are not available internally, the sensitivity results in underinvestment (Heaton, 2002).

In a related article Van den Steen (2004) explains that individuals who overrate their own abilities, tend to be also overly confident in their estimations. This is directly relevant to the argument of Heaton (2002) with regards to overconfidence induced overinvestment, as management's estimations of benefits and risks drive their overvaluation of projects. In so far as they feel self-assured about such estimations, they will be more confident that they are "right", and the market or other external individuals are "wrong" in the determination whether the project is likely to create or destroy value.

March and Shapira (1987) studied the perceptions of risk as it enters in managerial decision making. They find that risk is generally not treated mathematically and fully rationally by managers. Rather, (1) falling under the illusion of control, management acknowledges it as something they can avoid by action even when in reality it depends on factors external to their control, (2) may see it as immaterially small, or (3) acknowledging it with a "refusal to associate that reality with one's self" (March and Shapira, 1987, p. 1406). The latter is equivalent to seeing the risk, but believing that the "this will not happen to us". This form of overconfidence, again related to the proposition of Heaton (2002), may result in underestimating risks associated with an investment, which in turn leads to an overestimation of the project's value, thus to potential overinvestment. By claiming a link between estimated risk levels and value assigned to an investment opportunity, we assume that rational discounted cash flow or other models including the riskiness of the proposed project are employed when making the investment decision.

The theoretical predictions proposed by Heaton (2002) were empirically confirmed by establishing links between overconfidence and both underinvestment and overinvestment in the literature following his work. While some authors (for example Malmendier and Tate, 2008) note the difference, the empirical literature tends to use the term overconfidence with little distinction between optimism and overconfidence. As their effect on overinvestment is the same we will follow this practice. Researchers studying managerial overconfidence face the problem that the phenomenon is not directly observable. As interest in the subject increased, a number of methods to operationalize it were developed and applied in empirical studies. Table 2.1. below lists some examples.

Table 2.1. Operationalization of managerial optimism/overconfidence

Operationalization	Examples from literature
CEO ownerships of company options	Malmendier and Tate (2005, 2008)
Media coverage	Malmendier and Tate (2008), Jin and Kothari (2008), Ferris et al. (2013)
Forecast earnings bias	Lin et al. (2005), Huang et al. (2011), Li and Tang (2010)
Frequency of M&A initiated by CEO	Malmendier and Tate (2008), Doukas and Petmezas (2007)
CEO salary relative to management	Huang et al. (2011)
Individualism cultural dimension	Antonczyk and Salzmann (2014)

Source: Adapted from Huang et al. (2011) p. 263

Lin et al. (2005) empirically confirmed the theoretical prediction of Heaton (2002) that overconfident managers will tend to underinvest if they do not have access to sufficient internal resources. For firms quoted on the stock exchange in Taiwan between 1985 and 2002, they find that investment is more sensitive to cash flow for financially constrained firms with optimistic managers than for those whose managers do not fall in this category.

In a widely quoted article, Malmendier and Tate (2005) developed a mathematical model describing the mechanism through which overconfidence affects both underinvestment and overinvestment. They empirically confirmed the hypothesis of Heaton (2002) for capital expenditures in their sample of 477 US firms from the Forbes 500 list for the period between 1984 and 1994, showing overconfidence to be positively related to investment - cash flow sensitivity. As a separate finding they highlight that such sensitivity is strongest for firms who do not have enough cash on hand or debt capacity to fund investments. As the sensitivity of investment to cash flow is reduced by lower financial constraints as evidenced by its negative additional debt capacity, this result suggests that underinvestment is a key driver of such sensitivity in their sample (Malmendier and Tate, 2005).

Heaton (2002)'s proposition that optimism can lead to overinvestment are supported by a series of further studies, such as Malmendier and Tate (2008), Huang et al. (2011) and Ferris et al. (2013). Focusing on merger and acquisition activity, Malmendier and Tate (2008) hypothesize and empirically show for 394 quoted firms from the United States of America between 1980 and 1994 that overconfident managers have a higher probability to engage in mergers and acquisitions, to overpay for target companies, and to carry out diversifying acquisitions. As literature shows that diversifying mergers tend to be value destroying as briefly discussed in above, we interpret this result as already a strong indication of the positive link between overconfidence and overinvestment. Going further, Malmendier and Tate (2008) also empirically established that financial markets react significantly more negatively to transactions carried out by overconfident management than to those executed by management not qualified overconfident, suggesting that markets perceive the former as more value destroying.

Ferris et al. (2013) expand the United States of America based study of Malmendier and Tate (2008) analyzing whether overconfidence influences mergers and acquisition internationally as well. For non-financial Fortune 500 firms for the period of 2000 to 2006, their study confirmed that the findings of Malmendier and Tate (2008) are also valid internationally. This confirms the authors' hypothesis that overconfidence is an "international phenomenon".

Huang et al. (2011) also used a non-US sample, that of Taiwanese quoted companies, to study the relationship between overconfidence and investment in capital expenditures. According to the authors, monitoring is widely identified as a problem in companies with state-ownership, which also "often pursue politically motivated goals" (Huang et al., 2011 p. 262). These can be expected to contribute to less than efficient investment practices potentially leading to overinvestment. The authors contrast such practices to "market-oriented" non-state-owned listed companies. They point to the coexistence of these two types of quoted companies on

Chinese stock exchanges as a "natural experiment" to examine the combined effect of agency problems and overconfidence on corporate investment behavior. Using 2,234 firm-years of Chinese quoted companies from the period between 2002 and 2005, they find that overconfidence is positively related to investment - cash flow sensitivity, and that this relationship is not-significant for non-state-owned firms. As they show a negative relationship between the sensitivity of investment to cash flow and monitoring, they conclude that effective monitoring is mitigating both agency -, and overconfidence related overinvestment.

It may be worthwhile to note, that while overconfidence related overinvestment is not driven by opportunistic behavior, several of the mechanisms designed to control the latter will also lessen the former. More specifically, all mechanisms resulting in management to pre-commit or disgorge free cash flow will naturally lower the internal resources available for any kind of overinvestment. As Heaton (2002) and Malmendier and Tate (2008) pointed out, due to their tendency to overvalue their own firms, overconfident managers tend not to turn to financial markets for additional financing. Faced with insufficient internal resources such managers will choose not to invest. Therefore, tools lowering internal resources are effective in reducing overconfidence driven overinvestment (Malmendier and Tate, 2008). However, there is a danger in artificially introducing financial constraints, as if internal resources become insufficient to cover funding needs even for value creating projects, overconfident managers may start to underinvest. This is clearly not a significant danger for management who overinvest because of opportunistic motivations. Additionally, being submitted to the market for corporate control, as well as having an efficient board with independent board members allow people external to the management team to evaluate investment practices, and to potentially spot systematic overconfidence. The beneficial effect of monitoring to diminish overconfidence related overinvestment is empirically confirmed by the results of Huang et al. (2011).

Based on the still evolving theoretical and empirical literature on overconfidence induced investment inefficiencies, it is reasonable to assume that overconfidence is a significant driver of overinvestment. To better understand the underlying drivers of overinvestment, asking which, if any, of the agency-, or overconfidence behavioral motivations dominate is a pertinent question. Analyzing mergers and acquisitions of companies from the United States of America, Malmendier and Tate (2008) estimate that overconfident managers are responsible for 44% of the value destruction as measured by the negative announcement effect. There are no similar calculations we know of neither for investment in capital expenditure, nor for countries other than the United States. Since the authors use a US sample, their estimation is based on the effect of overconfidence in US firms. Literature showed that overconfidence to be positively related to Individualism (Ferris et al., 2013; and Chui et al., 2010), and negatively related to Long-Term Orientation (Ferris et al., 2013) cultural value dimensions of Hofstede. The US scores the highest on Individualism and in the lowest quartile on Long-Term Orientation. Therefore, it is expected, and empirically shown for optimism by Graham et al. (2013), that overconfidence is substantially stronger in the US compared to the rest of our sample. This leads us to posit, assuming the estimate is applicable to capital expenditures as well, that the proportion of value destroyed by overconfidence driven overinvestment is probably significant, but lower in our overall sample than the 44% estimated by Malmendier and Tate (2008).

2.2.3.4 Overconfidence and culture

There is strong support in the literature that at least certain dimensions of national culture influence people's tendencies to be overconfident. Ferris et al. (2013) find that among the CEOs of Fortune 500 companies overconfidence varies between countries. Further, they show that in addition to the individual-level characteristics of age, gender and education of CEOs, country-level variables contribute to explaining the fraction of overconfident CEOs in a given

country. Examining a variety of factors, such as legal system's origin, language, religion, and national culture, their results show that religion and national culture have a significant influence on the tendency of CEOs to be overconfident. CEOs of companies in countries where the principal religion is Catholic tend to be more overconfident. With regards to national culture, Ferris et al. (2013) applied Hofstede's dimensionalist model as indicator of national culture. They showed that overconfidence is positively related to cultural value orientations linked to placing the individual ahead the collective, and negatively related to having a long-term orientation.

Another study making a specific link between national culture and overconfidence is Chui et al. (2010). Based on psychology literature they argue, and empirically confirm, that individualism, as measured by Hofstede's cultural value dimension, is positively related to overconfidence, which in turn helps explaining international variation in the success of momentum investment strategies. They link individualism to overconfidence based on psychology literature and the work of, among others, Markus and Kitayama (1991) and Heine et al. (1999), who describe how individualistic cultures tend to encourage a strong belief in one's ability from early childhood, where children are encouraged to regard themselves as "winners" and "above average" (Chui et al., 2010, p. 364). This belief carries over to adulthood causing individuals to overrate their own abilities, and contributing to the development of self-attribution bias, both important origins of overconfidence. By contrast, they refer to Nurmi (1992) and Church et al. (2006), who found that collectivist cultures put emphasis on "self-monitoring", a trait that have a negative effect on overconfidence (Chui et al., 2010).

Chapter III.

Dimensionalism

Dimensionalism is an approach that quantifies aspects of culture to facilitate empirical studies researching the many ways culture influences various outcomes. It is based on the identifying, measuring, and grouping values to characterize cultures, and comparing them across nations. Literature on culture and finance is dominated by three models, that of Hofstede, Schwartz, and the GLOBE Project.

Reuter (2011) makes it very clear, that he views the study of culture's influence in finance an area with strong potential to become an established research field of its own in the future. To realize this potential, he calls for alternative operationalizations of culture, where he urges researchers to use other variables besides cultural value dimensions. Reviewing extant literature he highlights the successful use of trust, religious affiliation and religiosity as promising cultural indicators. In our opinion there is undoubtedly merit in Reuter (2011)'s call as it would allow a more multi-faceted examination of culture. Nevertheless, we believe, there is an advantage of dimensions over several of the examples cited by Reuter (2011). Namely, such indicators avoid some of the limitations coming from the artificial constructs used in the dimensionalist models, and they indeed confirm that culture matters; however, they do not shed light on how. Dimensionalist, through sorting fundamental characteristics of culture into the constructs they label cultural value dimensions advance our understanding of what aspects of culture influence most certain type of outcomes, and of the mechanisms at work.

Despite of his evident dislike of the dimensionalist approach, Reuter (2011) concedes that there is a place for dimensionalist research in finance on the condition that the mechanisms linking the dimensions included to the phenomenon studied are identified and supported. In

that he echoes the arguments of Kirkman et al. (2006) and Vas et al. (2010) for a focus on the mechanism through which culture exerts its influence, and for avoiding using culture as a "catch all" category to capture diverse effects without a theoretical understanding and justification.

In this chapter we briefly review the fundamental characteristics of dimensionalist approach in general and of the three models, followed by the most relevant criticisms of dimensionalism together with some proposed answers to these arguments. We conclude that while that dimensionalism has several limitations which have to be taken into account when interpreting result, there is strong conceptual and empirical support for its application.

3.1 The dimensionalist approach

Numerous scholars within cross-cultural psychology attempted to describe and quantitatively approximate culture allowing comparing the characteristics of one culture with another in a systematic manner, and facilitating studies researching the interaction between cultural variables and other outcomes. This approach is called dimensionalism.

Licht (2001) explained that creating a dimensionalist model generally involves three steps. The first step is to identify the fundamental aspects that can consistently represent cultures. Corresponding to this step, Vinken et al. (2004) summarized the objective of dimensionalism as identifying the "most meaningful basic set of axes, with which to explain the broad range of attitudes, beliefs, life styles and the diversity of practices among large populations" (Vinken et al., 2004, p. 8).

The primary assumption underlying dimensionalism first proposed by Kluckhohn and Strodtbeck (1961) is that all societies face similar basic challenges, but their response varies with fundamental values shared by their members. For example the most widely quoted

dimensionalist model, that of Hofstede, originally identified inequality, association between individual and group, gender differences, and uncertainty as fundamental problems confronted by each society (Hofstede, 2001). Hofstede repeatedly warned that dimensionalist models must focus on societal-level problems, which are challenges societies need to address and overcome (Hofstede, 2001, 2010). These, he emphasized, are conceptually different from the individual-level as the solutions serve the survival and prosperity of society not of any of its specific individual member.

The second step in developing a dimensionalist model is to categorize the types of responses given by societies to these problems (Licht, 2001). This step involves the creation of constructs called cultural dimensions, which represent the identified responses. Hofstede (2001) stressed that cultural dimensions are constructs. As such, he continued, they are consciously developed by scholars with the objective to summarize complex facets of culture. Necessarily, they provide a simplified description of culture, but nevertheless they are useful tools to break this immensely complex phenomenon down to its fundamental components. Cultural dimensions thus assist us to better understand culture as a whole, and the mechanisms through which it affects human behavior. Cultural dimensions represent how a given society deals with basic problems and creates cohesive societies from human beings; therefore such dimensions form the base on which society builds its institutions (Schwartz, 1994). As House et al. (2004) advanced the same notion: culture is what makes individuals into a society. Hofstede (2001) claims that dimensions allow the comparative study of culture as they represent strong tendencies within society while significantly differentiating cultures from one another. The difference between the problems identified in step one, and the types of societal solutions in step two, is that societal problems are cultural universals (shared across cultures), while responses are culturally specific (different across cultures).

The final, third, step listed by Licht (2001) is to create quantitative indicators of societal stances on each of the identified dimensions. This is done based on extensive international surveys on selected samples through self-response questionnaires, sometimes complemented by interviews. This approach to culture is based on Segall et al. (1998), who claim that to study culture, one must study how members of a culture interpret it. Individual data obtained thus is aggregated at the country level (House et al. 2004). The appropriateness of studying culture at the national level is debated by critiques of the dimensionalist approach. The arguments against and in favor will be discussed in the following sections of this chapter together with other criticisms leveled at dimensionalism in general, and the models of Hofstede and the GLOBE Project specifically.

To confirm the validity of the constructs empirical techniques are used to verify whether dimensions theorized during the second step are indeed corroborated by the data collected, and that they allow cultures to be systematically distinguished from one another. Based on the aggregated data scores are assigned for each dimension to all the cultures from the sample. In a dimensionalist framework each culture is then described by the combination of its scores on all the dimensions of the specific model (House et al., 2004; Hofstede, 2001).

Licht et al. (2007), discussing the Hofstede and Schwartz frameworks, advanced that the dimensional models map societal stances internally comprehensively, and consistently for each culture, and House et al. (2004) made a similar claim for the GLOBE Project. Consequently, each of these models can be viewed as a complete whole describing culture in a comprehensive manner. The resulting dimension scores can be used in empirical studies examining culture's behavior in various outcomes as cultural indicators. Hofstede (2001) warns however, that cultural dimension scores for a society should not be taken as absolute indication of how individual members of the given society behave. Such scores indicate societal preferences. He explains that there is always a wide range of goals, attitudes and

behaviors enacted by individuals within the same society. Whenever studying culture's effect on an outcome, it is essential to not lose sight that while culture may be a fundamental determinant, there are other influences as well which may moderate the outcome, or indeed it may culture which moderates the impact of other factors. He states, that dimensions express propensities not absolute laws (Hofstede, 2001).

3.2 Underlying cultural dimensions: values

Cultural values are defined by Kluckhohn (1951) as "a conception held by an individual, or collectively by members of a group, of that which is desirable and which influences the selection of both means and ends of action from among available alternatives" (Kluckhohn, 1951, p. 395). Berry et al. (1992) places values between attitudes and ideologies as being more general than attitudes but less general than ideologies. Focusing on similar characteristics of values but putting it more directly, for Hofstede (2010) "values are broad tendencies to prefer certain states of affair over others. Values are feelings with an added arrow indicating a plus or a minus side" (Hofstede, 2010, p. 9).

We have described that cultural dimensions are constructed from data collected from international surveys. To be more precise, cultural dimensions are based on identifying, measuring, and grouping values, and comparing them between cultures. This approach is common because, as researchers postulate, values are the basic components of culture through which it exerts influence over the behavior of members of a society, as well as over the structure and functioning of its institutions (House et al. 2004; Hofstede, 2001). House et al. (2004) refers to this view as Value-Belief Theory of culture, and is forcefully propagated by influential scholars of cross-cultural psychology such as Hofstede, Schwartz, and Triandis. This model can in fact be viewed as another formulation, or an explanation, of the Values, Attitudes,

Behavior Hierarchy model developed by Homer and Kahle (1988) stating that values influence attitudes, which in turn influence behavior.

Explaining the mechanism, through which values influence behavior, Licht (2001) describes the fundamental characteristics of values as follows: (i) "values refer to desirable goals", (ii) "and to the modes of conduct that promotes those goals", (iii) "they serve as standards to guide the selection and evaluation of behavior, people, and events", (iv) "values transcend specific actions and situations", and (v) "values are ordered by importance relative to one another" (Licht 2001, p. 151). Taken together characteristics (i) to (iv), they show that values are determinants of individuals' objectives, what actions are seen as acceptable to achieve these objectives, how is one's behavior to be viewed or judged by members of the same society or how one judges the behaviors of others, and that they are used as yardsticks applied to behavior in general regardless of the context. Referring the influence of values Hofstede (2010) writes "culture is heavy with values, and values imply judgment" (Hofstede, 2010, p. 158). The fifth characteristic identified by Licht (2001) makes the dimensionalist approach possible, as it is precisely this relative order that is identified and used to quantitatively characterize a culture through cultural dimension scores.

Another explanation of the central nature of values is the "onion" model of Hofstede shown in Figure 3.1. Hofstede (2010) describes culture comprising of cultural values and practices. Practices, which he categorizes into symbols, heroes, and rituals are observable manifestations of culture. He defines symbols as "words, gestures, pictures, or objects that carry a particular meaning that is recognized as such only by those who share the culture" (Hofstede, 2010, p. 8). Symbols change relatively easily and such change occurs frequently as symbols are transferred between cultures. He points to fashion or works of art as examples of such symbols. Heroes, an important element of cultural practices, "are persons, alive or dead, real or imaginary, who possess characteristics that are highly prized in a culture and thus

serve as models of behavior" (Hofstede, 2010, p. 8). Finally he describes rituals as "collective activities that are technically superfluous to reach desired ends but that, within a culture, are considered socially essential. " (Hofstede, 2010, p. 9). Rituals, he explains, are present in most aspects of life from private life, such as greetings and celebrations, to organizational life, where business meetings and certain elements of budgeting and accounting have such ritualistic elements. The common thread in rituals is that its purpose is to reaffirm membership in common culture and to provide psychological comfort. While cultural practices are observable, to comprehend their full meaning one must be a member, or have a deep understanding, of the given culture (Hofstede, 2010).

Observable cultural practices making up the outer layers of the "onion" are rooted in values, which are fundamental determinants of practices, located at the center (see Figure 3.1). Cultural values cannot be directly observed. Furthermore, Hofstede (2010) highlighted that while they influence behavior, they often are not consciously articulated by the people whose very actions they impact. As Hofstede (2010) explained practices are visible manifestations of values, thus these latter can be inferred from preferences and behavior of members of a society. Therefore to identify and categorize unobservable values, scholars analyze cultural practices.

The location of the layers also represents their speed and ease of change, with the outermost layer being the most superficial, thus, least stable (Hofstede, 2010). An explanation offered by Hofstede (2010) is that values are dominantly learned in childhood. He referred to psychological findings that such learning tends to be most intense up to twelve years of age, while practices are learned throughout one's life. Hofstede (2010) conjectures that aspects acquired earlier are more ingrained and more resistant to change than those learned later in life. The fact that cultural values are stable while practices change more frequently serves as another reason for scholars to focus on values if they wish to study culture (Hofstede, 2010).

Figure 3.1. Relationship between cultural values and practices
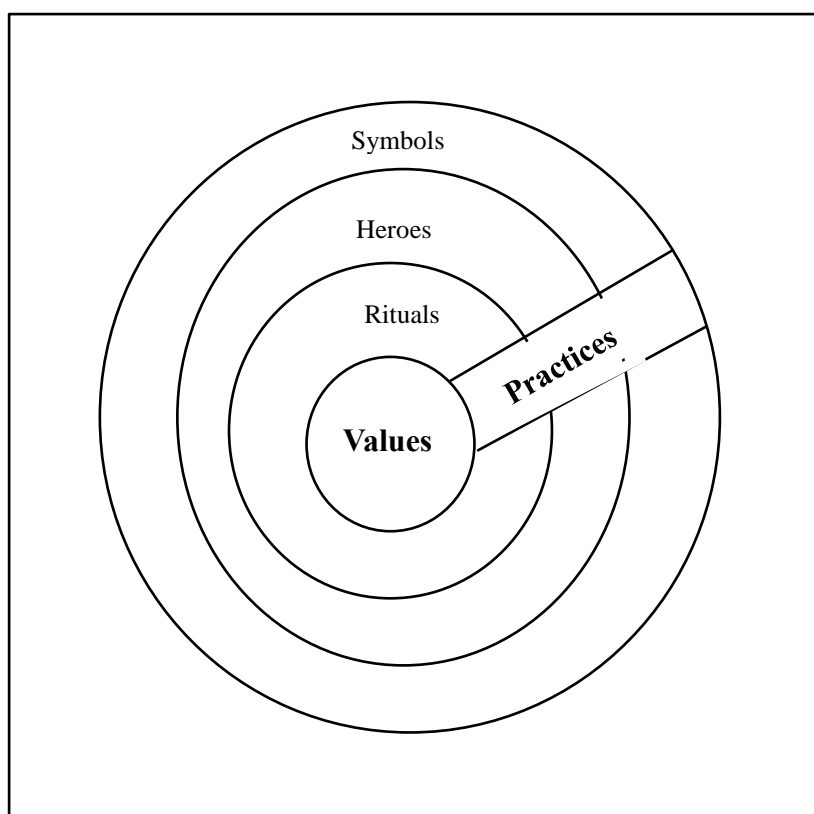
Source: Hofstede (2010), figure 1-2, p. 8.

3.3 Dimensionalist models

Several dimensionalist models have been developed in the literature starting with the seminal work of Kluckhohn and Strodtbeck (1961). Table 3.1, adapted from Warner-Soderholm (2012), shows the publication of the most well-known models along with the dimensions of the particular frameworks. While a number of these have been applied alone or in combination, the literature on culture and finance, most relevant to our research question, is dominated by three dimensionalist models, that of Hofstede (1980a, 1988, 2010), Schwartz (1994), and House et al. (2004). There are several similarities between the three frameworks, but they differ in fundamental aspects and form theoretically and methodologically separate tools. In the following subsections we will briefly introduce these models.

As the use of dimensionalism expanded rapidly in numerous research fields since the publication of Hofstede's (1980a) framework, there were a number of criticisms levelled against this approach. Some of the critique targeted the work of Hofstede specifically, while others the dimensionalist method altogether. As many of the arguments pertain to each or most models, for better clarity, we will present the main critiques of the three frameworks and the authors' responses together in a separate subsection at the end of the chapter.

Table 3.1. Main dimensionalist models in literature

Study	Dimensions
Kluckhohn and Strodtbeck (1961)	1. Time orientation 2. Relationship to nature 3. Basic human nature 4. Activity orientation 5. Relationship to people
Hofstede (1980a, 1988, 2010)	1. Individualism 2. Power Distance 3. Masculinity/Femininity 4. Uncertainty Avoidance 5. Long-Term Orientation 6. Indulgence versus Restraint
Schwartz (1994)	1. Conservatism / Embededness 2. Intellectual Autonomy 3. Affective Autonomy 4. Egalitarian Commitment 5. Mastery 6. Hierarchy 7. Harmony

Trompenaars (1996)	1. Universalism versus Particularism
	2. Individualism versus Collectivism
	3. Neutral versus Emotional
	4. Inner-, versus Outer-directed
	5. Specific versus Diffuse
	6. Achievement-status versus Ascriptive-status
	7. Linear-, versus Cyclical attitude to time
Inglehart et al. (2004)	1. Traditional, secular-rational
	2. Survival-self expression
House et al. (2004)	1. Assertiveness*
	2. Gender Orientation*
	3. Institutional Collectivism*
	4. In-group Collectivism*
	5. Power Distance*
	6. Uncertainty Avoidance*
	7. Performance Orientation*
	8. Future Orientation*
	9. Humane Orientation*
	* Each dimension measured as cultural values and cultural practices both at the societal-, and organizational culture level.

Source: Warner-Soderholm, H. (2012), figure 1, p. 76-77.

3.3.1 Hofstede's model

Hofstede's study was conducted between 1967 and 1973. He collected 116,000 questionnaires across international subsidiaries of IBM in 40 countries as part of an internal corporate survey (Hosftede 1980a). He defined culture as "the collective mental programming of the mind that distinguishes the members of one group or category of people from the others" (Hofstede, 2010, p. 6), and described it as "patterns of thinking, feeling and potential acting" (Hofstede,

2010, p. 4). Mirroring the propositions of Berry et al. (1992), he postulated that culture is learned through socialization with much of the learning happening in early childhood. Throughout his work he explains the how culture influences social institutions, and how, in turn, such institutions as the family, education system, and workplace are engaged in the transmission of culture ensuring its long-term stability.

Cultural diversity is an irrefutable fact that can be observed in the world. Besides, similar to Berry et al. (1992), referring to the physical environment, such as climate and geography, and the basic economic orientation of a society to explain cultural diversity, Hofstede (2010) also points to the markedly different historical experiences of societies as underlying forces shaping culture. Hofstede (2010) argues that culture is a matter of survival for society: to survive, societies need to act in a cohesive manner. Those societies which failed to do so were typically not able to compete with those who could, and disappeared. For cohesion, societies need shared values. In his view, it is culture that makes a society out of individuals. He presents culture as a source of path dependency with roots centuries or millennia ago, an argument echoed by Licht (2001) going as far as calling it "the mother of all path dependencies". This path dependency, besides contributing to current cultural differences, implies that such diversity remains even in the long term supporting contentions of the divergence theory.

3.3.1.1 Dimensions

From the data obtained from the survey at IBM he developed four cultural dimensions: Individualism/Collectivism, Power Distance Index, Masculinity/Femininity, and Uncertainty Avoidance. The first three were created using factor analysis of 32 work-related questions from the survey, and Uncertainty Avoidance emerged from theoretical explanation of strong intro-cultural correlation to three questions relating to stress, rule abidance, and desire for

long-term job stability (Hofstede, 2001). The Power Distance Index and Individualism/Collectivism dimensions are significantly correlated. Hofstede decided to separate them into two dimensions because they relate to conceptually very different concepts: the individual's role and equality. Furthermore, Hofstede (2001) points out that once the effect of national wealth is controlled, the correlation substantially diminishes. The four dimensions thus established correspond to the four fundamental societal challenges identified by Hofstede: inequality, association between individual and group, gender differences, and uncertainty as fundamental problems as discussed above.

As the original study was conceived by a US multinational company, despite conscious efforts to achieve cultural neutrality through the involvement of local partners, it is conceivable that it was culturally biased towards Western values. To address this concern another instrument called the Chinese Value Survey, tailored towards oriental culture, was developed by oriental scholars coordinated by Bond, and a survey was carried out in the late 1980s in 23 Asian cultures. The data confirmed three out of the four original dimensions with Uncertainty Avoidance not found in this sample. Further, a new, fifth, dimension emerged from the survey reflecting an orientation toward the long-, versus the short-term (Hofstede and Bond, 1988). This dimension was labelled Long-Term Orientation.

Analyzing data from the periodic World Values Survey coordinated by Inglehart, Minkov (2007) identified three value dimensions, two of which related to Individualism/Collectivism and Long-Term Orientation. The third dimension however represented a value orientation both conceptually and empirically missing from the Hofstede framework. In Hofstede (2010) this dimension termed Indulgence versus Restraint was added to the Hofstede model arriving to the current six dimensions in the framework. The current model is illustrated in figure 3.2, followed by Hofstede's definitions of the dimensions.

Figure 3.2. Hofstede's model
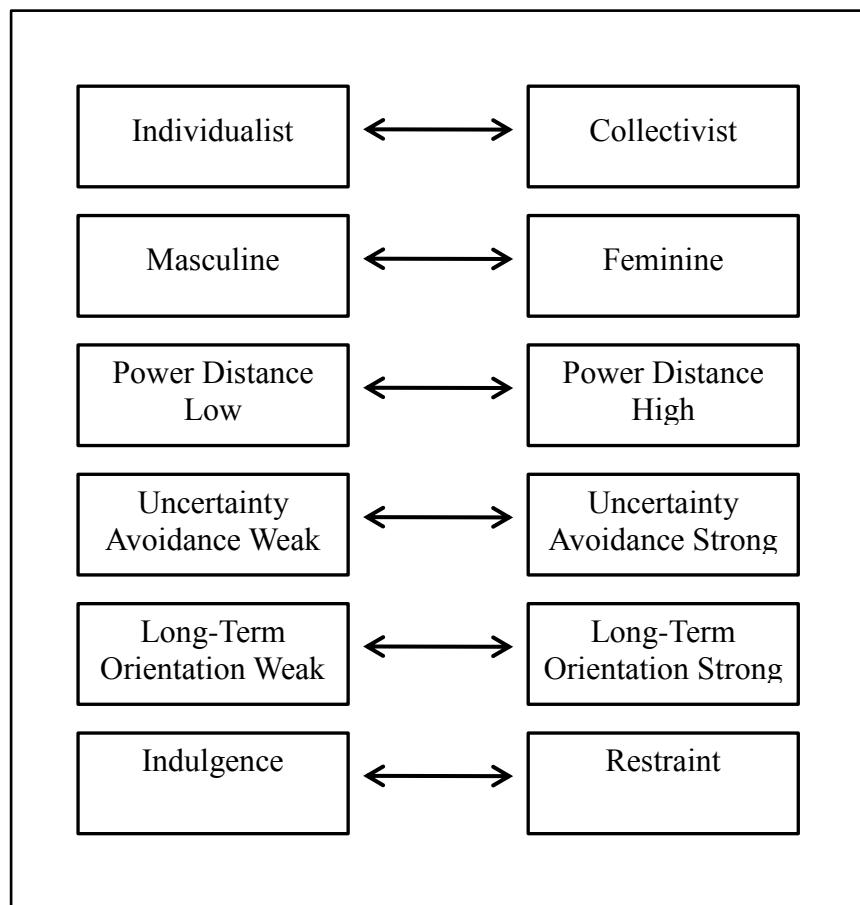
Source: Adapted from Hofstede (2010)

Individualism/Collectivism: "Individualism implies a loosely knit social framework in which people are supposed to take care of themselves and of their immediate families only, while collectivism is characterized by a tight social framework in which people distinguish between in-groups and out-groups; they expect the in-group […] to look after them, and in exchange for that they feel they owe absolute loyalty to it" (Hofstede, 1980, p. 45.)

Masculinity/Femininity: "the extent to which the dominant values in society are 'masculine' – that is assertiveness, the acquisition of money and things, and not caring for others, the quality of life or people" (Hofstede, 1980, p. 46.).

Power Distance Index: "indicates the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally" (Hofstede, 1980, p. 45.).

<u>Uncertainty Avoidance</u>: "indicates the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations by providing greater stability" (Hofstede, 1980, p. 45.).

<u>Long-Term Orientation</u>: "Long-term orientation stands for the fostering of virtues oriented toward future rewards – in particular, perseverance and thrift. Its opposite pole, short-term orientation, stands for the fostering of virtues related to the past and present – in particular, respect for tradition, preservation of 'face', and fulfilling social obligations" (Hofstede, 2010, p. 239.)

<u>Indulgence versus Restraint</u>: "tendency to allow relatively free gratification of basic and natural human desires related to enjoying life and having fun.", while Restraint refers to "a conviction that such gratification needs to be curbed and regulated by strict social norms" (Hofstede et al., 2010, p. 281).

Hofstede claims his dimension index scores reflect broad underlying dimensions of culture with values in cultural dimensions are continuous ranging approximately from 0 to 110 (Hofstede, 2010). National cultures are described by the combination of these dimensions (Hofstede 2001). He cautions that dimensions may moderate one another, with the given national culture determined by their interplay. Thus, different combinations may explain different results from countries with similar scores on some dimensions. Such explanation may remain undiscovered if a study does not cover all dimensions, a criticism of Kirkman et al. (2006) formulated about extant research. We will discuss values and behaviors associated with Hofstede's cultural dimensions relevant to overinvestment in chapter IV of this dissertation.

3.3.1.2 Validation

In terms of the shared fundamental societal challenges he empirically found emerging from the IBM data, Hofstede (2001) points to the work of Inkeles and Levinson (1969), who based on literature theoretically identified the same set of societal problems before his study. He views the fact that his empirical analysis revealed dimensions, which corroborate ex-post theoretical work preceding it, a very strong validation of his framework.

Hofstede's model is extensively further validated through replications and theoretically grounded correlations to independent variables by Hofstede himself and by other researchers relying on his dimensions in empirical studies. Hofstede (2010) lists six comprehensive replication studies with samples exceeding 10 countries each as shown in table 3.2.

Table 3.2. Major replications of Hofstede's cultural dimensions

Publication	Sample	Number of countries	Dimensions confirmed
Hoppe (1990)	Social elites	18	Power Distance Index Individualism/Collectivism Masculinity Uncertainty Avoidance
Shane (1995)	Employees of six multinational corporations	28	Power Distance Index Individualism/Collectivism Uncertainty Avoidance
Merritt (2000)	Commercial pilots	19	Power Distance Index Individualism/Collectivism Masculinity Uncertainty Avoidance
De Mooij (2004)	Consumers	15	Individualism/Collectivism Masculinity Uncertainty Avoidance

Mouritzen and Svara (2002)	Municipal employees	14	Power Distance Index Masculinity Uncertainty Avoidance
Van Nimwegen (2002)	Employees of one international banks	19	Power Distance Index Individualism/Collectivism Masculinity

Source: Adapted from Hofstede (2010), table 2.1, p. 35.

These studies provide compelling support for Hofstede's dimensions. First, two of the six studies confirmed each of the four original dimensions, while all the remaining four confirmed three out of four. Of the four dimensions studied, each has been confirmed in five of the six replications. Second, these results are even more convincing if one takes into account that the samples were very different from the original IBM study, and that the surveys were carried out between 20 to 30 years after Hofstede's. Taken together, this suggests Hofstede's results are valid across different samples and time periods (Hofstede, 2010). Based on 19 smaller scale replications, Sondergaard (1994) concluded that taken together they further corroborated the original four dimensions.

Another form of validation extensively referred to by Hofstede (2001, 2010) is correlating the dimensional scores to numerous independent variables, where such a relationship is theoretically warranted, from many different domains of human behavior across decades and different samples from several continents. Thus the hundreds of empirical studies showing evidence of hypothesized relationships between one or more of the Hofstede dimensions and independent variables from several disciplines and research fields provide further validation. Our dissertation can also be taken as one more such confirmation. Vas et al. (2010) perform a meta-analysis of 598 papers applying Hofstede's framework. Based on their results, while

they also recommend expanding empirical analysis besides dimensionalism, they find Hofstede's dimensions are still relevant and they recommend their use.

3.3.2   Schwartz's model

Schwartz's framework is more recent than that of Hofstede; therefore, built on, and expanded the cross-cultural paradigm started by the work of Hofstede. Schwartz, similar to Hofstede, looked at values to study the dimensions of culture. According to him values are "desirable goals, varying in importance, that serve as a guiding principle in people's lives". (Schwartz 1994, p. 88.) As Hofstede, Schwartz also focuses on countries as units of national culture. Schwartz surveyed middle school teachers between 1988 and 1992 in the countries included in his sample assuming such a group to be representative of cultural values, partly as the group is actively involved in the transmission of culture within society. Surveying a closely matched group allowed him to assume that value differences represented differences in national culture. According to Licht et al. (2007), Schwartz's framework is more advanced than that of Hofstede, as cross-cultural meaning equivalence of the survey used to measure values was deliberately assured, whereas in Hofstede's work there has been no attempt to ensure such equivalence. Schwartz identified six main value types at the cultural level, condensed into two overall dimensions (Licht et al., 2005). Figure 3.3. shows the value types defined by Schwartz as well as the relationship between them.

Figure 3.3. Schwartz's value types and dimensions
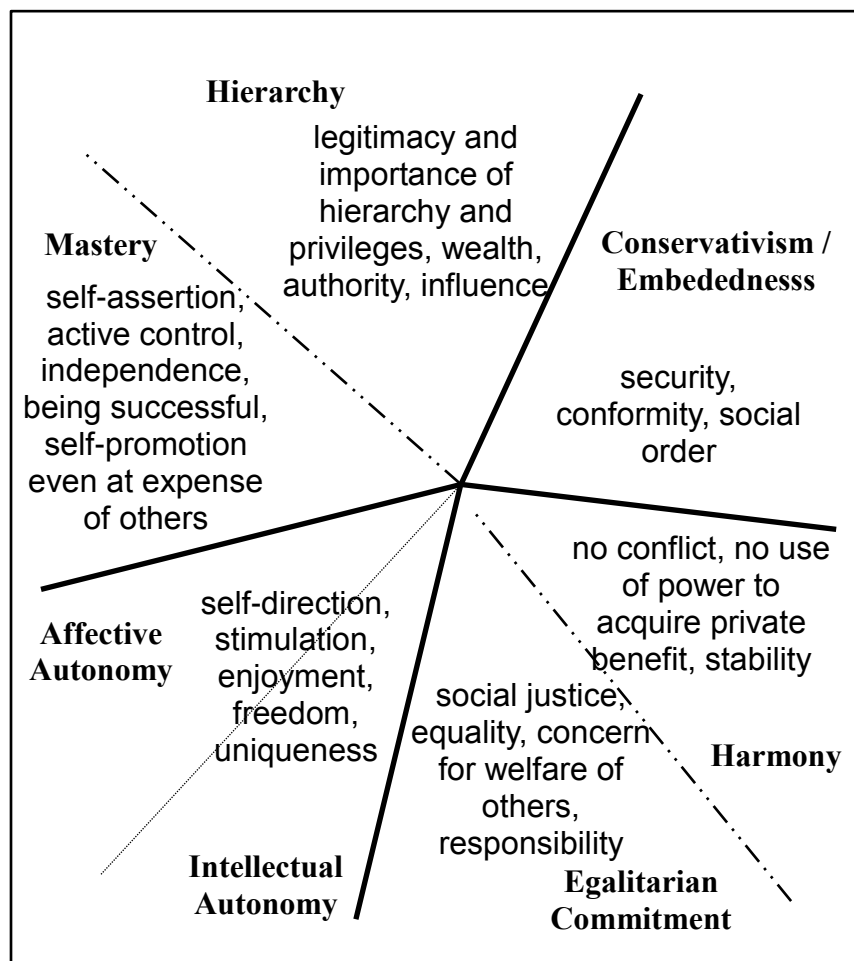
Schwartz's six value types are: Autonomy, Conservatism, Hierarchy, Egalitarian Commitment, Mastery, Harmony with Nature. He further divided the Autonomy value type into two subcategories, which are Intellectual Autonomy described by values such as "curious and creative" and Affective Autonomy which is related to "enjoying life". The value types are arranged along two dimensions representing opposing orientations: Autonomy opposes Conservatism and Hierarchy and Mastery opposed Egalitarian Commitment and Harmony (Schwartz, 1994, Johnson and Lenartowicz, 1998).

Some of the more relevant values associated with each dimension are the followings:

Embededness values: interests of individual are not seen as separate from interests of the group. Important values are: security, conformity, social order, respect for tradition. Membership is part of an individual's meaning (Chui et al. 2002; Licht et al., 2005,2007).

Harmony values: no conflict, no use of power to acquire private benefit, world of beauty, unity with nature, stability (Chui et al. 2002; Licht et al., 2005,2007)

Hierarchy values: legitimacy and importance of hierarchy and privileges, wealth, social power, authority, influence (Chui et al. 2002; Licht et al., 2005,2007)

Autonomy values: individual pursues his/her own interests. Important values are self-direction, stimulation, enjoyment, and freedom. (Chui et al. 2002; Licht et al., 2005,2007)

Egalitarian values: social justice, equality, concern for welfare of others, responsibility (Chui et al. 2002; Licht et al., 2005,2007)

Mastery values: self-assertion, active control, competition, independence, being successful, and legitimizes self-promotion even at expense of others (Chui et al. 2002; Licht et al., 2005,2007)

Autonomy and Conservatism are similar to Hofstede's Individualism and Collectivism, but while Hofstede determines his values based on individuals' goals, Schwartz emphasizes individuals' role in the society, and goals are included in the Mastery and Harmony pole (Licht et al., 2005, 2007). Hierarchy reflects the values "social power", "wealth" and "authority" and emphasizes the legitimacy of social roles and resource allocation; it differs from Conservatism in that it is concerned with the use of power to promote individual versus group interests. "Taken together as one pole on the culture-level dimension, Mastery and Hierarchy

reflect a concern for individual self-enhancement through the pursuit of individual goals. In contrast group goals are reflected by the Egalitarian Commitment and Harmony with Nature value types." (Johnson and Lenartowicz, 1998, p. 335-336.)

Schwartz's Autonomy and Egalitarianism (consequently the other poles, Conservatism, Hierarchy as well) value types and Hofstede's Individualism and Power Distance dimensions are correlated with coefficients between 0.38 and 0.63 (Johnson and Lenartowicz, 1998; Schwartz, 2006). According to Johnson and Lenartowicz (1998) Schwartz's values form a valid alternative approach to Hofstede's seminal work. They praise Schwartz for explicitly separating individuals' goals and role in society, which is bundled together in the single individualism and collectivism dimension of Hofstede.

3.3.3   The GLOBE Project

GLOBE is an acronym, which stands for "Global Leadership and Organizational Behavior Effectiveness Research Program" (House et al., 2004). House et al. (2004) stresses that culture exerts its influence both directly on several levels (eg: conscious, unconscious) on most human activities, and indirectly as a moderator of other relationships. Despite a long and a prolific research tradition, the authors claim "we are just beginning to understand how culture influences leadership and organizational processes" (House et al. 2004, p. 9.). The GLOBE study, defined as objective to further the understanding of how, and if at all, national culture, organizational culture, and leadership are interconnected (House et al., 2004).

The project started in 1991 and was designed in several phases. The two of the latest phases culminated in the publications of two volumes studying the overall interconnectedness of national culture, organizational culture, and leadership in 62 societies, and a detailed study and in-depth description of leadership in 25 societies: House et al. (2004), and Chokar et al. (2007) respectively. Final data was gathered in 1997, by a team of 172 researchers from a

sample of 17.300 middle managers working in 951 local companies in 62 societies (House et al. 2004). Both data collection and statistical analysis was theory driven, and similar to Schwartz, cross-cultural meaning equivalence was deliberately ensured, thus overcoming some of the shortcomings often cited against the Hofstede model. By using middle managers, the GLOBE study achieved closely matched samples across societies. As we have described above, Schwartz used middle school teachers to achieve the same objective, and Hofstede argued that his sample of IBM workers in each country also fulfills this criteria. While middle managers are arguably less representative members of societies than school teachers used by Schwartz, as we are attempting to understand culture's possible influence on managerial decision making, the sample seems relevant to our research question.

3.3.3.1 Contributions

GLOBE defined culture as "shared motives, values, believes, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations" (House et al., 2004, p. 15). The central elements of being shared, enduring nature, focus on values, believes and interpretations are similar to the definitions used by Hofstede and Schwartz. Despite this similarity, the contributions of GLOBE to existing literature are extensive. First, the project theoretically argued and empirically documented the relationship between national culture, organizational culture and leadership (House et al., 2004). House et al. (2004) eloquently states that "management is not "culture free", it is "culture specific", claiming that "leadership is culturally contingent" (House et al., 2004, p. 5). Second, they constructed a new comprehensive dimensionalist model with nine separate dimensions. Finally their dimensions are based on relatively recent survey data, especially compared to that of Hofstede.

3.3.3.2 Dimensions

The GLOBE team also created a new dimensional structure. A problem well-known in cross-cultural psychology about collecting data on cultural values is that individuals responding to surveys may communicate what they believe they should want or prefer, and not what they do want or prefer. This problem was also addressed by Hofstede (2001), who warns that survey instruments should be constructed and results interpreted by researchers to capture the "desired" and not the "desirable". House et al. (2004) intended to measure both, thus they developed two separate sets of dimensions it called Cultural Values and Cultural Practices. They explain Cultural Values as "What should be", and Cultural Practices as "What is" (House et al, 2004, p. 16). Furthermore, the GLOBE team designed their survey to directly examine the relationship between societal-, and organizational cultural values and practices. To collect the necessary data, they included each question in four versions separately referring to Cultural Values, Cultural Practices, Organizational Values, and Organizational Practices. Their empirical results confirmed the contention of Cross-Cultural Psychology and New Institutional Economics that organizational values and practices are nested in, and influenced by societal values and practices.

Based on their surveys, House et al. (2004) constructed a model consisting of nine dimensions each with separate Cultural Value and Cultural Practice scores. GLOBE based the theoretical foundations of its framework in existing cultural models. Several of its dimensions had their roots in, or were intended to replicate, Hofstede's work (House et al. 2004). House et al. (2004) separated Hofstede's Masculinity/Femininity and Individualism/Collectivism dimensions into Assertiveness and Gender Egalitarianism for the former, and Institutional-, and In-group Collectivism for the latter as he argued Hofstede's dimensions included theoretically separate concepts. Figure 3.4 shows the nine dimensions, and the theoretical, and originally envisaged, relationship between the GLOBE and Hofstede's dimensions.

A list of these dimensions and their brief definitions is the following:

1) Power distance – "degree to which members of a collective expect power to be distributed equally" (House et al., 2004, p. 30)

2) Uncertainty avoidance – "the extent to which a society, organization, or group relies on social norms, rules, and procedures to alleviate unpredictability of future events." (House et al., 2004, p. 30)

3) Humane Orientation – "is the degree to which a collective encourages and rewards individuals for being fair, altruistic, generous, caring, and kind to others" (House et al., 2004, p. 30)

4) Institutional collectivism – "degree to which organizational or societal institutional practices encourage and reward collective distribution of resources and collective action" (House et al., 2004, p. 30)

5) In-Group Collectivism – "the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families" (House et al., 2004, p. 30).

6) Assertiveness – "is the degree to which individuals are assertive, confrontational, and aggressive in their relationships with others" (House et al., 2004, p. 30)

7) Gender Egalitarianism – "is the degree to which a collective minimizes gender inequality". (House et al., 2004, p. 30)

8) Future Orientation – "the extent to which individuals engage in future-oriented behaviors such as delaying gratification, planning, and investing in the future." (House et al., 2004, p. 30)

9) Performance Orientation – "is the degree to which a collective encourages and rewards group members for performance improvement and excellence" (House et al., 2004, p. 30)

Figure 3.4. Theoretical relationship between the GLOBE and the Hofstede cultural dimensions

GLOBE dimensions	**Hofstede dimensions**
Assetiveness	Masculinity / Femininity
Gender Egalitariansim	
Collectivism I. (Institutional)	Individualism / Collectivism
Collectivism II. (In-group)	
Future Orientation	Long-Term Orientation
Power Distance	Power Distance
Uncertainty Avoidance	Uncertainty Avoidance
Humane Value Orientation	Indulgence versus Restraint
Performance Orientation	

Source: Adapted from House et al., 2004

An unexpected characteristic of the GLOBE dimensions is that there is a negative correlation between Cultural Values and Cultural Practices for seven out of the nine dimensions. Specifically, such negative correlation is observed for Power Distance, Uncertainty Avoidance, Humane Orientation, In-group Collectivism, Assertiveness, Future Orientation, and Performance Orientation.

Such a relationship is puzzling, and there are various attempts in the literature trying to explain it. Possible reasons advanced among others include the formulation of the questions not being appropriate to capture cultural values or practices (Hofstede et al. ,2006; Vas et al., 2010b), diminishing utility of practices implying that the more of a certain practice a society has, the less it values it on the margin (Maseland and von Hoorn, 2009), anchoring effect of posing questions of practices first followed by values (Vas et al., 2010b), or that people who actually want more of a given value perceive the related practices wanting and vice versa (Hofstede, 2006, 2010). This last argument was also proposed by House et al. (2004) themselves. To us, this explanations proposed by the GLOBE team weaken the applicability of their structure of the separation of values from practices. If they are right in assuming that those who want more of something perceive having less of it, it implies their results on cultural practices are subjective and contingent on the cultural value orientations. In other words, their measure of Cultural Practices do not indicate what actual practices are, rather how members of society view such practices compared to their Cultural Values. If that is true, in our opinion, starting from dimensions measuring cultural value orientations is more informative. Further, House et al. (2004) posits that "people may hold views on what should be based on what they observe in action" (House at al., 2004, p. 732). This can be interpreted as it is Cultural Practices which drive Cultural Values. Such a view presents a structure opposite to the predictions of the Value-Belief Theory underlying much of Cross-Cultural Psychology, also identified as one of the theories underlying the GLOBE Project itself, and supported by an extensive empirical literature. This aspect of GLOBE's results is one of the most questioned, and the related debate is still ongoing.

3.3.3.3 Validation

The primary validation to the GLOBE model is the fact that is based on extensive theoretical research. The instrument used for data collection and the constructs themselves are all

grounded in theory. In addition, House et al. (2004) refers to an extensive list of empirical correlation between GLOBE dimensions and numerous independent variables such as the United Nations' Human Development Index, Global Competitiveness Rankings, and data from the World Values Survey among other independent multi-national databases in ways that confirm theoretically established relationships. In an approach similar to that of Hofstede, GLOBE views this as external validation of their results. What makes the support provided by these results somewhat less strong is the fact that some of the correlations are established to Cultural Values, while others to Cultural Practices, and it is not always evident why one or the other should be related to the given variable. In empirical literature researching culture's influence on a wide range of outcomes, besides Hofstede's model, which is applied the most by far (Warner-Soderholm, 2012; Vas et al., 2010), the GLOBE dimensions represent the latest comprehensive dimenionsalist model, and are also used extensively (Dorfman, et al., 2012). Although House et al. (2004) referring to their theoretical foundations and statistical methods repeatedly claims that the GLOBE model is methodologically more advanced than that of Hofstede, Vas et al. (2010) claiming that both modes have their strengths and weaknesses, were not able to substantiate that claim.

3.4 Criticisms

While extensively applied in literature, several criticisms have been leveled against the approach in general, as well as the Hofstede and GLOBE models specifically. As dimensionalism is so much dominated by the Hofstede framework, much of the criticism aimed at Hofstede is actually targeting elements shared by the other models as well. Below we summarize the most relevant contentions raised as well as some related responses.

3.4.1   Criticisms of dimensionalism

Level of analysis: Among others McSwweney (2002) and Bakerswille (2003) contend that the nation is not an appropriate level of cultural analysis. Two fundamental arguments are presented against the concept of "national culture" (Reuter, 2011). First, culture is a societal phenomenon, and national borders often do not reflect societal ones. Second, cultures are not homogenous, and national-level aggregation ignores existing subcultures, or layers of culture. Reuter (2011) highlights that within-nation cultural variations could be substantial, which is completely ignored by "national culture". Hofstede (2010) himself accepts the existence of subcultures. He identifies regions, religions, and ethnicity as significant drivers of cultural differences within a nation. Reuter (2011) goes further proposing several other types of cultural layers related to activity, such as "corporate culture", "civil service culture", "public fund culture", "business culture", and "finance culture" (Reuter et al., 2011 p. 118-127).

Hofstede (2010) agrees that differences arising from subcultures should be studied and that they provide interesting venues for further research. However, most of the data required for validation of the results of large scale international studies is only available for nations, as many independent socio-, economic-, and demographic variables are aggregated at this level. Moreover, he points to national institutions such as "common language, mass media, educational system, army, political system, sports, national markets for certain products, services" as "forces for cultural integration" resulting in the emergence of a dominant culture within a country (Hofstede, 2010, p. 20).

Discussing intra-nation cultural variability, Smith and Schwartz (1997) point out that "within-nation" variability has been shown to be much lower than "between-nation" variability. Lawler et al. (2008) note that several layers of cultures co-exist. They specifically mention company-, organizational-, and professional cultures as examples, influencing behavior.

Nevertheless, they find national culture to be the most relevant layer to international human resource management. The extensive validation of the dimensionalist models through established relationship between existing national cultural value dimensions and independent variables provide further support for "national culture".

Dimensions are oversimplifications and overly broad constructs: McSweeney (2002) qualifies dimensionalism as oversimplification ignoring the multi-aspect nature of culture. Bakerswille (2003) adds that culture is a complex phenomenon, which should not be decomposed into its components questioning the feasibility of meaningfully quantifying culture. Another often repeated criticism is that cultural dimensions are formulated to reflect orientations much broader than could be justified by the survey items from which they were constructed (Reuter, 2011).

Breuer et al. (2014) also conjectures that cultural value dimensions are too broad to be useful as predictors of specific behavior. They call for researchers to narrow down the mechanisms through which culture exerts its influence, and to identify behavioral variables closely connected to those mechanisms. Studying the cultural influence on dividend policy, they successfully link it to the behavioral traits of loss aversion, ambiguity aversion and patience. When included in their model together with related cultural dimensions, their results show that the behavioral traits are more significantly related to dividend policy in their sample than the dimension scores. However, they note that cultural value dimensions still retain significance suggesting a relationship going beyond the traits identified by the authors.

Hofstede (2010) and House et al. (2004) rely on extensive references from literature providing strong theoretical and conceptual rationale behind dimensions. Further, explaining the constructs, Hofstede (2010) states that dimensions may combine values which are not logically related, but they "empirically found to occur in combination" (Hofstede, 2010, p.

31). Thus, dimensions group values which may be connected by the fact that societies showing preference (or dislike) for some have a strong tendency to do so for the others as well.

As we have already described in the preceding subsection, both Hofstede (2010) and House et al. (2004) refer to the several empirical studies successfully linking cultural dimensions to various variables as validation of the constructs. Kirkman et al. (2006) echoes this argument writing that Hofstede's dimensions "are related to the aggregate management practices and beliefs of nations" (Kirkman et al., 2006, p. 302). Examining the usefulness of Hofstede's dimensions based on a meta-analysis of 598 papers relying on his framework, Vas et al. (2010) find that while personality traits and some demographic variables are somewhat better predictors for certain behavioral outcomes than cultural value dimensions, overall they have comparable predictive power. They assert that cultural value dimensions are "most strongly related to emotions, followed by attitudes, then behaviors" (Vas et al., 2010, p. 405). In our opinion it is worth noting how this order is exactly the same as predicted by the Values, Attitudes, Behavior Hierarchy model of Homer and Kahle (1988), and closely related to the Value-Belief Theory underlying dimensionalism. For predicting behaviors, their results show that cultural value dimensions perform better than personality and demographic variables with only mental ability exceeding their predictive power. They conclude that values are fundamental elements of culture. Nevertheless, it is important to note, that both Vas et al. (2010) and Reuter (2011) believe that scholars should explore other aspects of culture as well.

Values do not always determine practices: Attempting to explain the negative correlation between GLOBE's Cultural Values and Cultural Practices, Vas et al. (2010b) argues that cultural values may not always determine cultural practices. They hypothesize that such is possible when cultural values are not yet "internalized" by individuals closely following "dramatic cultural shifts" (Vas et al., 2010b, p. 1333). Successfully questioning the Value-

Belief Theory would in effect weaken the dimensionalist approach considerably, as it is based on the identification and grouping of values with the assumption that they are the fundamental determinants of behavior. If that is not the case, conclusion drawn based on value differences would have to be questioned as well. However, in our view the proposition of Vas et al. (2010b) does not question the causal hierarchy proposed by the Value-Belief Theory as explained by Hofstede (2001) and House at. (2004). It merely presents a situation, which by virtue of the extreme stability of cultural values, is overwhelmingly the exception and not the rule.

Self-report surveys: McSweeney (2002) advanced that relying on self-report surveys may bias results. Such a bias could be introduced as answers respondents give on a survey may not be honest, or answers on a survey may fall closer to the "desirable" as respondents wish to give the "right" answers, while real-life actions will be guided by the "desired". As we have already described above, both Hofstede and the GLOBE team are aware of this problem, and they both addressed it in a different manner. GLOBE attempted to measure the "desirable" separate from the "desired" to identify Cultural Values and Practices respectively. Whether they succeeded is open to debate. Hofstede focuses on specifying the survey instrument to minimize such a bias although he warns that it cannot be completely removed. Accordingly, in his response to McSweeny, Hofstede (2002) points out that while self-response surveys are useful in collecting cultural data, culture should be studied applying other methods as well.

3.4.2   Criticisms of Hofstede's model

Old data: The data used for three cultural frameworks briefly introduced above were collected in subsequent time periods. Hofstede's data dates back over 40 years, and among others question whether the data is still valid (Kirkman et al., 2006). While to our knowledge this criticism has only been leveled at Hofstede, it will be clearly relevant for dimensionalism as

whole with the passage of time. The data of Schwartz is dated approximately 20-25 years, and the GLOBE data was collected 18 years ago.

According to Hofstede (2001) meaningful changes in culture occur in centuries. This is due to culture being shared by people in their "mental programming", and to its transmission across the generation through societal institutions, whereby societal institutions represent and protect societal values in which they are rooted. As proposed by for example Berry et al. 1992, national culture is so ingrained in the day to day lives of people, it is very resistant to change.

Williamson (2000) in his discussion of social institutions describes a model where culture influences all other aspects of society. This opinion is echoed as expressed by Hofstede et al. (2002) as quoted in the previous chapter of this dissertation. Williamson posits, that at the level of "embededness", that of culture, changes happen in every 100 to a 1000 years supporting Hofstede's position. Inglehart and Baker (2000) argue that changes in national cultures are path dependent and not guided by convergence. They claim that although scores of cultural dimensions may have changed since they were first identified, baring extreme events affecting certain societies, their positions relative to each other remain fairly stable. It is the relative cultural scores, as opposed to the absolute values, that are used in cross-cultural analysis (Hofstede, 2001; Inglehart and Baker, 2000). Licht et al. (2005) agrees with the path dependence view of culture proposed by Inglehart and Baker (2000).

Hofstede (2010) notes "there is no evidence that the values of present-day generations from different cultures are converging" (Hofstede, 2010, p. 19). The results of Schwartz et al. (2000) lend support to this argument. Studying cultural values in Eastern Europe following the fall of the Soviet bloc, the authors found no major cultural changes despite fundamental changes in political and economic system and the accompanying economic struggles.

One could argue that the influence of globalization could have affected countries to a different degree; thus, lowering the validity of Hofstede's country scores. Guillén (2001) defines globalization "as a process leading to greater interdependence and mutual awareness (reflexivity) among economic, political, and social units in the world, and among actors in general" (Guillén, 2001, p. 236.). Reviewing various strands of literature concerning the effects of globalization, Guillén (2001) finds that while the evidence supports the existence of globalization, national, political, cultural and organizational diversity is resilient to its effects. He adds that globalization may even push certain aspects of national cultures further apart in a response to perceived threat to national identity.

Through a review of hundreds of studies, specifically addressing whether Hofstede's cultural dimension scores should still be applied by researchers both Kirkman et al. (2006) and Vas et al. (2010), recommend their continued application. The continued validity of the dimensions is further supported by numerous recent empirical studies, some of which are extensively referenced in this dissertation, linking behavior from the years 2000s and 2010s to Hofstede's dimensional scores.

Wrong sample: Hofstede if often criticized (Reuter, 2011, McSweeney, 2002) for having collected his data from subsidiaries of one multinational company (IBM.) His critics claim that employees of IBM cannot be viewed as fully representative of their societies; thus, contrasting his sample with that of Schwartz (middle-school teachers across cultures), and that of the GLOBE Project (managers across over 900 local organizations), they conjecture that Hofstede's cultural dimensions may not be generalizable. Hofstede (2002, 2010) argues that his sample is ideally suited for measuring cultural differences. Surveying employees of the same organization working in similar professions creates a well-matched sample controlling for organizational-, industry-, and occupational differences, so more of the differences found in value orientation can be attributed to culture. He also points to the successful replications

of his dimensions discussed earlier this chapter, as well as the established empirical relationships to various outcomes as indications of the validity of his data (Hofstede, 2010).

Not enough cultural value dimensions: Critics, such as McSweeney (2002) assert that Hofstede's model is attempting to portray an overly simplistic view of culture distilling it down to a very restricted number of orientations. Schwartz (1994) also speculated that Hofstede may have not examined all the relevant aspects of culture. Hofstede (2001, 2010) does not claim with absolute certainty that his model can be regarded as a complete portrayal of culture. He specifies that any cultural dimensions added need to represent a fundamental societal challenge not included in the present model, thus it needs to be conceptually new, and it should be statistically independent of existing dimensions. For a new dimension to be added it also has to be useful for analysis (Hofstede, 2010). The fact that his original four dimension model from 1980 has been expanded to five in 1988 and to six in 2010 evidences his continued effort to improve the framework, while that it took 30 years to add two dimensions indicates the complexity of the endeavor.

As we have described in the corresponding section, the GLOBE model decomposes culture into nine dimensions all separately measured for Cultural Values and Cultural Practices resulting in 18 scores for each culture. Based on factor analysis of the resulting 18 dimensions, Hofstede identified five factors, all of which were either "significantly correlated" with one of his dimensions (Individualism/Collectivism, Power Distance, Uncertainty Avoidance, Long-Term Orientation), with national wealth, or related to elements of his Masculinity/Femininity dimension (Hofstede, 2010). Therefore, he claims, the GLOBE dimensions do not represent significantly new aspects of culture. Triandis (2004) lends support to Hofstede's model. He expresses an opinion that it is comprehensive in characterizing values, stating that "each of the important dimensions of cultural variables have been uncovered by Hofstede" (Triandis, 2004, p. 93). Such a statement is quite powerful after

the main results and 18 dimensions of the GLOBE Project have already been published. While we appreciate Hofstede's analysis of the relationship between his dimensions and those of GLOBE, in our opinion these results should not be interpreted as the GLOBE dimensions not contributing to a better understanding of culture. One must not forget that both models attempt to characterize the same phenomenon. It may just mean they describe the same culture along a different perspective, which may be useful to study relationships where culture's influence corresponds better to that structure.

Methodology: Hofstede's study was opportunistic in the sense that he took advantage of data available from an internal corporate survey. Hofstede's dimensions emerged from the data and not first theorized followed by empirical testing. MsCweeney (2002), House et al. (2004), and Javiadan et al. (2006) claim that neither the underlying constructs not the instrument used for data collection were not theory driven especially developed to study cultural differences. This is in sharp contrast with the Schwartz and GLBOE models, where the constructs were first identified based on theory, the instruments were specifically designed to verify those constructs. Undoubtedly, due to the opportunistic nature and the fact that it was breaking new ground, Hofstede's methodology is less sophisticated than that of Schwartz and GLOBE. Nevertheless, Kirkman et al. (2006) ask: "Perhaps the most pertinent question we should ask after conducting a comprehensive review is: should Hofstede's cultural values framework continue to be used for cross-cultural research in the 21st century?", and they conclude "overall, Hofstede's values are clearly relevant for additional cross-cultural research" (Kirkman et al, 2006, p. 307-308), a conclusion shared by Vas, et al (2010).

3.4.3   Criticisms of the GLOBE model

The GLOBE project is the most recent, and structurally the most complex of the dimensionalist models. As such, building on the major frameworks predating it, it is

theoretically well-founded and is applying sophisticated statistical techniques for empirical analysis (House et al. 2004). After the model's publication a major debate started between the GLOBE team and Hofstede with scholars supporting one or the other joining in. The debate, reviewed in a very concise manner by Shi and Wang (2011) and Warner-Soderholm (2012), is not closed yet although its intensity is much abated.

Too complex questions: Hofstede (2006) claims that the questions of the GLOBE survey were too complex, and too abstract. They often referred to complex and general concepts that possibly caused respondents to not fully understand what they were asked to evaluate. He argues that the questions reflected the GLOBE team's concepts and constructs and not those of the respondents. This, he continues, resulted in respondents' answers not being representative of their own value orientations biasing results. Smith (2006) also highlights that while Hofstede was asking respondents about themselves, the GLOBE team asked them about how they perceive practices and values of others. This assumes, agrees Vas et al. (2010), that they are well informed on the subject, and their answers may be biased by their individual motives and "subjective references".

Too complex model: As part of the debate between Hofstede and the GLOBE team, Smith (2006) argues that the GLOBE model with its 18 dimensions (including Cultural Practices and Values) is too complex to be useful. As a counterargument, partisans of the GLOBE framework claim that the Hofstede model is too simplistic to be useful. Hofstede (2010) emphasizes that dimensions are constructs with the objective of helping researchers and practitioners better grasp and study culture, which itself is immensely complicated and multifaceted. Thus, dimensions are there to simplify it. If a framework becomes too complex it loses usefulness. The arguments presented here are the same as we already discussed when reviewing the criticism of Hofstede for having too few dimensions. In a related subject, Hofstede also criticizes House at al. (2004) for using the same survey items to measure

societal culture and organizational culture. Referring to the findings of Hofstede et al. (1990), he states that organizational culture is a completely different phenomenon with unalike characteristics, which cannot be understood through the same model as societal culture.

US centered instrument: Hofstede (2010) criticize the GLOBE survey as being US centered. Graen (2006) also claims that the survey design, despite contrary claims of House et al. (2004) is not culturally decentered. It is worthwhile to note that the same criticism is also levelled at Hofstede's survey instrument by McSweeney (2002), who points to the fact that it was developed by IBM, a US multinational company. Both Hofstede and the GLOBE team strongly defend their own instruments claiming their methodology removed such cultural biases; nevertheless, one can safely conclude that it is impossible to fully remove cultural bias from surveys.

3.4.4 Criticisms - conclusion

Based on our brief review we can draw some general conclusions. First, dimensionalism has numerous limitations resulting from the basic assumptions and methods of the approach. These limitations have to be taken into account when interpreting dimensionalist results. Second, none of the models are without fault, and as Warner-Soderholm (2012) emphasizes the Hofstede/GLOBE debate highlighted that there is no clearly superior model of culture, each have their advantages and weaknesses. Relatedly, Minkov (2011) suggests none can be viewed as absolute measures of national culture. Third, whenever applying cultural value dimensions, it is important for the researchers to establish the theoretical relationships between specific   aspects of culture and the outcome studied including specific mechanisms at work. This is necessary to avoid simply finding possibly meaningless correlations, as Zingales (2015) warned against most recently. While dimensionalism should

not be the only operationalization of culture in future financial research, it is a valid approach that contributes to further understanding the influence of culture in financial decision making.

Chapter IV.

Overinvestment and Culture

In chapter II, we have described the central view of cross-cultural psychology on values being the fundamental components of culture that determine human behavior. In this chapter we present how this is relevant to overinvestment, arguing that cultural values affect both human motivations: agency conflicts and overconfidence. First, we point out that as culture's influence on tools used to mitigate overinvestment has been already ascertained, an indirect influence, through affecting the opportunity for management to overinvest, on overinvestment can be established. Second, we identify a gap in literature, as it focuses on factors that determine the opportunity to engage in agency motivated overinvestment while not examining determinants of the managerial decision. Third, referring to the Value-Belief Theory, we explain how value orientations specifically determine management's decision leading to overinvestment. Finally, we propose empirically testable hypotheses relying on the dimensionalist framework we have introduced in chapter III, to verify our theoretical reasoning.

4.1 Culture influences opportunity to overinvest – indirect cultural influence of overinvestment

Culture's dual influence on overinvestment is illustrated in Figure 4.1. Potential overinvestor companies share certain characteristics, such as low-quality investment opportunities, and access to resources to invest. This is because when management has value-increasing projects to pursue it likely chooses those over value-decreasing ones, and when it does not have access to resources to commit it cannot overinvest. The aforementioned financial characteristics, together with the presence or absence of control mechanisms to mitigate overinvestment, shape whether management has the opportunity to overinvest. Control mechanisms include

the institutional environment in which companies operate in a given country (such as the legal system, market for corporate control, and corporate governance regime), and corporate financial policies determining a company's capital structure and disbursements to shareholders. As we have already shown in chapter II of this dissertation, national legal, economic, and financial institutions are embedded in culture within a society, and that there is strong evidence in literature that each of the company-level control mechanisms are influenced by culture. Table 4.1 shows some recent empirical papers demonstrating these relationships together with the cultural model used, and the cultural dimensions that were found to have a significant effect.

Table 4.1 Empirical literature supporting culture's influence on mechanisms used to mitigate overinvestment

Study	Cultural model	Area of financial decision making	Confirmed relationships
Aggarwal and Goodell (2014)	Hofstede	Capital markets - access to capital	UAI, MAS
Aggarwal and Goodell (2009)	Hofstede	Capital markets – stock vs. bank based financial system	UAI
Chakrabarty (2009)	Hofstede	Corporate governance - Ownership structure	IDV, PDI
Li and Harrison (2008)	Hofstede	Corporate governance - Structure of boards	IDV, PDI , UAI, MAS
Licht et al. (2005)	Hofstede, Schwartz	Corporate governance – investor protection	Mastery, IDV, UAI

Breuer et al. (2014)	Data from INTRA survey, GLOBE, Hofstede, Schwartz	Dividend policy	MAS, LTO Behavioral trait variables
Bae et al. (2012)	Hofstede	Dividend policy	UAI, MAS, LTO
Fidrmuc and Jacob (2010)	Hofstede, Schwartz	Dividend policy	IDV, PDI, UAI, Autonomy, Hierarchy
Shao et al. (2010)	Schwartz	Dividend policy	Conservatism, Mastery
Wang and Esqueda (2014)	Hofstede	Capital structure – leverage	IDV, PDI, UAI, MAS, LTO, IVR
Antonczyk and Salzmann (2014)	GLOBE	Capital structure – leverage	COL1
Zheng et al. (2012)	Hofstede, Schwartz	Capital structure – debt maturity	IDV, PDI, UAI, MAS, Conservatism, Hierarchy
Chang et al. (2012)	Hofstede	Capital structure – debt maturity	UAI, MAS, LTO
Chui et al. (2002)	Schwartz	Capital structure – leverage	Conservatism, Mastery
Chen, Y., et al. (2015)	Hofstede, GLOBE	Corporate cash holding	IDV, UAI, COL1, UAIN
Ramirez and Tadesse (2009)	Hofstede, GLOBE	Corporate cash holding	UAI

Chang and Noorbakhsh (2009)	Hofstede	Corporate cash holding	UAI, MAS, LTO
Ferris et al. (2013)	Hofstede	Overconfidence, Mergers & Acquisitions	IDV, LTO

UAI – Uncertainty Avoidance index (Hofstede), PDI – Power Distance (Hofstede), IDV – (Individualism/Collectivism (Hofstede), MAS – Masculinity/Femininity (Hofstede), LTO – Long-Term Orientation (Hofstede), COL1 – Institutional Collectivism (GLOBE), COL2 – In-group Collectivism (GLOBE)

Taken together, the evidence leads to the conclusion that the opportunity for management to overinvest is clearly influenced by culture. Thus we can infer that an indirect influence of culture on overinvestment can already be established. This link is illustrated by the oval shape in the top left corner of Figure 4.1.

Figure 4.1 Culture's influence on overinvestment
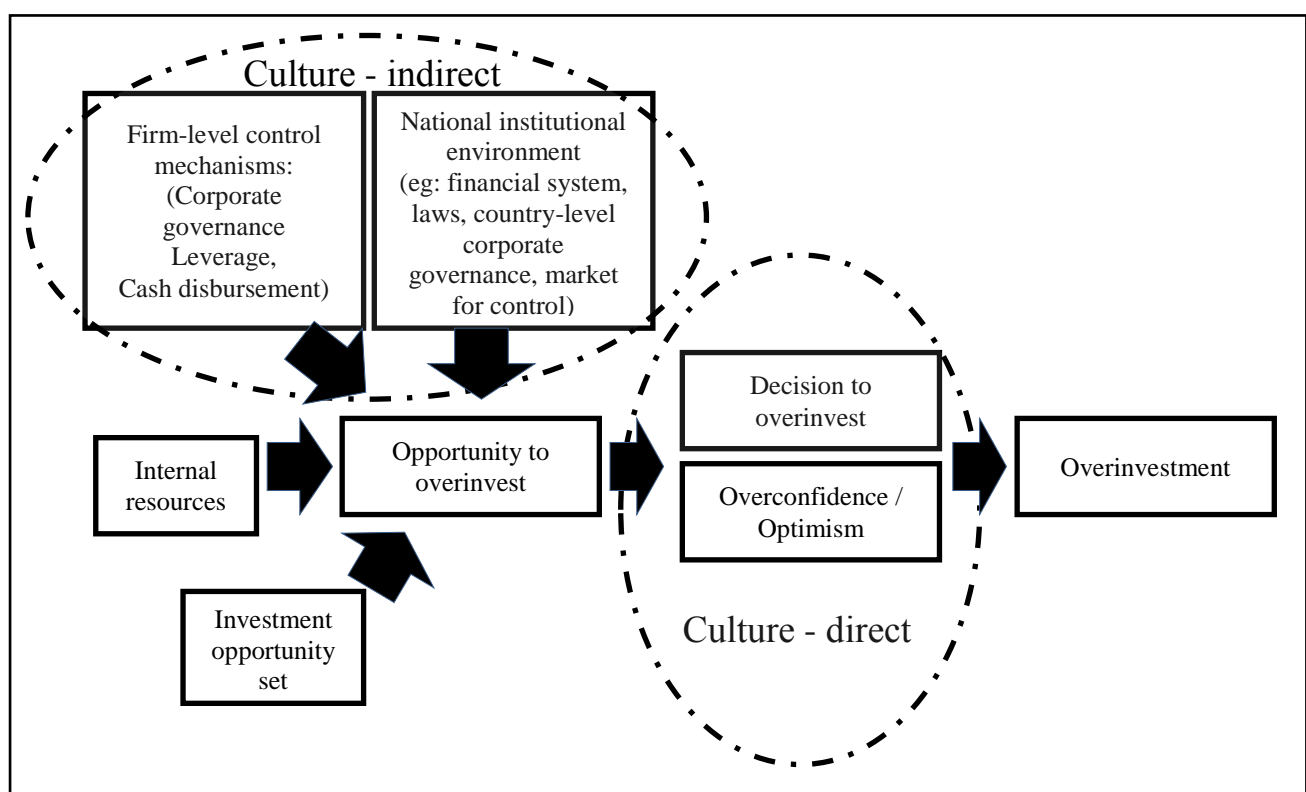
4.2 Culture influences decision leading to overinvestment – direct cultural influence on overinvestment

4.2.1   A gap in extant literature

Two behavioral motivations have been identified for overinvestment: agency conflict and overconfidence. While the literature on overconfidence and overinvestment studies one of these motivations, with regards to agency related overinvestment, extant literature tends to focus on financial characteristics and control mechanisms to explain the phenomenon. However, such factors influence the act of overinvestment only indirectly through affecting the opportunity to overinvest. The majority of empirical research could be viewed as directly studying the phenomenon of overinvestment exclusively, if one assumed management always overinvests if there is an opportunity to do so. We hypothesize that this is not the case. As suggested, among others, by Zheng et al. (2012), in addition to the indirect influence through molding the institutional environment, culture also has a direct impact on the behavior of economic actors. We posit that culture exerts a more direct influence on overinvestment in affecting management's decisions to move from the opportunity to the act of overinvestment. This is illustrated by the oval towards the middle in Figure 4.1.

4.2.2   The mechanism of cultural influence

Kirkman et al. (2006), Vas et al. (2010), and Reuter (2011) all call for any assertion of a relationship between culture and another phenomenon to identify and explain the theoretical rationale and mechanisms through which culture exercises the hypothesized influence. This dissertation relies on the Vale-Belief Theory, describing the impact of values on behavior, to posit a link between specific national cultural orientations and management's tendency to make decisions leading to overinvestment. As we have presented in chapter III,, Licht (2001) expresses the fundamental role played by values: values "are beliefs […] infused with

feelings", "refer to desirable goals […] and modes of conduct that promote these goals", "transcend specific actions and situations", "serve as standards to guide the selection or evaluation of behavior, people, events" (p. 168-169). Summarizing, Licht et al. (2005) state that cultural values determine what is seen as good, bad, acceptable or unacceptable in a society. Hofstede et al. (2002) claim in a similar argument, that ethics is a question of culture. These characteristics of cultural values directly apply to the management's decision leading to overinvest. Values determine, for example, whether management's personal and professional objectives are compatible with overinvestment, whether overinvesting is seen by others as a legitimate mean to pursue these objectives, the likely outcome if management is noted to engage in overinvestment, and whether management is willing to risk that outcome. Culture provides both motivation, and also constrains through what is respected and accepted behavior in a society.

Licht (2001, 2008) and Licht et al. (2005) describe the mechanism through which values exert a direct influence on behavior. Through shaping norms, perceptions, desires, and evaluations, values in effect shape the decisions people make; thus, eventually the actions they take. This hierarchy is depicted in Figure 4.2, from which we ascertain, that the cultural value orientation of a society influences management's decision leading to overinvestment, thus to engage in overinvestment if the opportunity exists. They have this effect through impacting the both tendency of management to act opportunistically as well as to be overconfident.

Figure 4.2. Value based mechanism of culture's direct influence on behavior
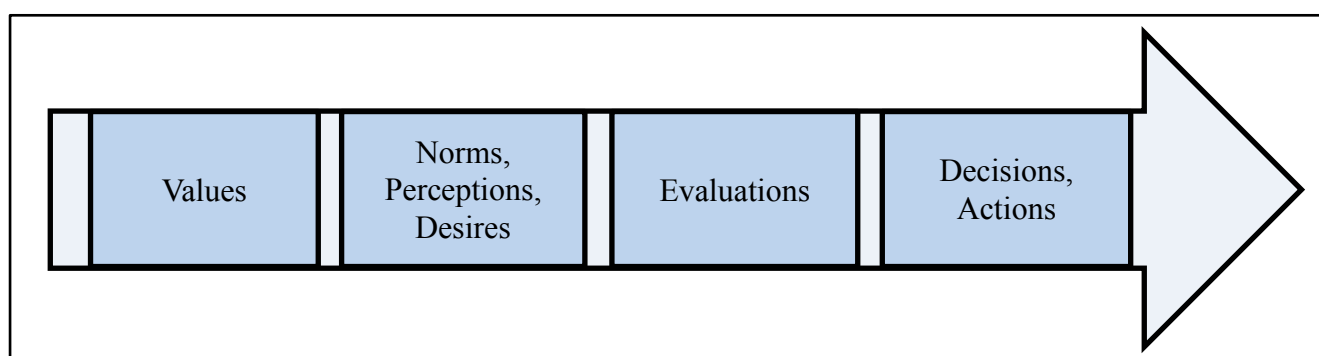
Source. Adapted from Licht et al. (2005)

As Figure 4.2 shows, norms, perceptions, and desires represent the first level of the hierarchy and are most directly influences by cultural values. Schwartz (1999) states that values are the foundations for norms. In agreement, Licht (2008) advances a theoretical argument resembling that of Williamson (2000), whereby cultural values are the foundations of social norms forming the base of the "pyramid" of social institutions with each level building on and having its roots in the ones located under it. He states that social norms are partially externally-, and internally enforced. The former refers to mechanisms whereby society enforces compliance through various forms of social pressure. For overinvestment the legal system and corporate governance fall into this category. More interesting for our argument that values influence the decision leading to overinvestment, is the internal reinforcement mechanism, where compliance is motivated by the conscience of the individual driven by "guilt, pride, esteem, and disapproval, and shame" (Licht, 2008). Logically follows from the fact that culture, by definition, is a social phenomenon, is that social norms are shared. Therefore, members of society sharing the same norms know how their behavior is viewed by other members of society. The way leaders are entitled to, what they are tolerated-, or even expected to do varies between cultures (House et al., 2004). Acting in accordance with one's underlying norms generate positive feelings, a type of reward in itself, while acting contrary engender negative feelings, a type of punishment (Licht, 2008). Coffee (2001), examining the

norm of law abidance, also draws attention to the power of non-legal sanctions for breaking social norms.

Besides several authors in cross-cultural psychology, the role of culture in acting as a lens through which information is received by people influencing how they perceive the external world, thereby affecting their behavior, is also conjectured in New Institutional Economics by North (1990). Once we accept that both norms and perceptions, thus individuals' evaluations and judgements, are influenced by cultural values it logically follows that they impact people's desires and objectives as well. This was empirically confirmed by Hofstede et al. (2002), who surveyed 1,800 MBA students from 15 countries in 1995 about business goals. His results showed that relative importance of business goals including growth, long-, versus short-term profits, and staying within the law, are related to national culture.

Licht (2001) claims that culture's impact on finance logically follows from behavioral finance, in that once we accept that psychological factors may systematically affect decision making, the pertinent question to pose is what affects behavior. He also argues that while departing from behavior predicted by the rationalist theories of Neo-Classical Economics is often viewed as irrational, it is not necessarily the case when studying cultural influences. He argues that culture, through desires and evaluations, influences one's personal utility curve. Hence, the actions of a rational individual aimed at maximizing his/her own utility would be influenced by culture. Please note, that the underlying assumption is still rationality, but a culturally-bounded rationality. As Hofstede et al. (2002) succinctly put: "nationality constraints rationality" (Hofstede et al., 2002 p. 800.). Licht (2001) conjecture that Individualism/Collectivism (eg.: leadership), Power Distance (eg.: hierarchy), and Uncertainty Avoidance (eg.: structure) are the most relevant dimensions for corporate decision making. We add Masculinity/Femininity to this list. Our addition is driven by Masculinity's conceptually strong relationship to motivation.

4.2.3   Culturally bounded Agency Theory

Similar to Jensen (1986), the majority of researchers view overinvestment as an agency problem caused by management's opportunistic behavior. Applying the logic of the Value-Belief Theory on Agency Theory we find support for culture's influence on the overinvestment agency problem. Several authors (eg: Lubatkin et al., 2007; Ekanayeke, 2004; Johnson and Droege, 2004) contend that Agency Theory is culturally contingent, as it was developed in the United States of America, and its underlying assumptions on human nature and behavior reflect US cultural values. Agency problems are caused by self-interested opportunistic behavior in the simultaneous presence of conflict of interest, asymmetric information and incomplete contracting. Of these, incomplete contracting and asymmetric information are organizational realities irrespective of culture, but both conflict of interest and opportunistic behavior can be influenced through the mechanism illustrated in Figure 4.2 (Johnson and Droege, 2004).

We have already showed that values influence desires and objectives. As such, they have an impact on the extent of any conflict of interests between, to name principals and agents relevant for overinvestment, shareholders and managers. The value orientation of Individualism/Collectivism has been identified both by Ekanayake (2004) and Johnson and Droege (2004) to affect such conflict of interest. The universal assumption of opportunistic behavior, unanimously criticized by all three of the above named authors, ignores the impact of social values and norms on behavior. Based on the Value-Belief Theory it is comprehensible that in certain cultures such behavior is more tolerated, accepted or even encouraged, while in others it is abhorred. Licht et al. (2007) posit that while it is asymmetric information and incomplete contracting that give power to parties to a contract to further their own interests at the expense of one another, societal norms regarding the use of power determine whether, or the extent to which, they take advantage of it. Thus, they conclude,

culture affects the severity of the agency problem. Referring to the same concept as the internally enforced norms of Licht (2008), Ekanayake (2004) speaks of "social control" as norms reinforcing, substituting, or weakening and supplanting formal control mechanisms. Such "social control" is determined by the cultural value orientations of the given society. This social context is ignored in traditional Agency Theory (Lubatkin et al., 2007) resulting in an "undersocialized view" of behavior.

Some authors such as Bae et al. 2012 and Zheng et al. 2012 explain some of their results by the fact that agency problems are perceived differently between cultures. Value-Belief Theory, and the authors referenced earlier in this subsection, go further in asserting that it is not only perceptions of the problems but their actual the nature and magnitude is culturally contingent. Hofstede (2010) posits that "agency theories are based on implicit assumptions about societal order, contractual relationships, and motivation. Such assumptions are bounded by national borders" (Hofstede, 2010, p. 327). If we accept that Agency Theory is indeed culture-bound, we can infer that management's decisions leading to overinvestment resulting from the agency cost of free cash flow as posited by Jensen (1986) is influenced by culture.

4.2.4   Culture and overconfidence induced overinvestment

The arguments of Roll (1986) and Heaton (2002) showing that besides, agency problems, managerial overconfidence may also lead to overinvestment have a profound impact on the theoretical model we develop in this dissertation. They identify another personal characteristic completely unrelated to managerial opportunism that may push management to overinvest. Optimism and overconfidence constitute another explanation to how management in circumstances where the opportunity for overinvestment exists based on a high level of internal resources, a lack of institutional and firm level mitigating tools, and a low quality investment opportunity set, actually engages in overinvestment. It is important to emphasize,

that management can pursue such overinvestment fully intending to maximize shareholder value. In such cases management does not make a conscious decision to overinvest, but rather makes a miscalculation that results in overinvestment. While the end-result is the same, the motivation; thus, culture's impact, is very different. Therefore, in addition to "decision to overinvest", or in other words a decision to act opportunistically, another link between the opportunity to overinvest and the actual act of overinvestment has been added to our theoretical model (see Figure 4.1) to reflect overconfidence/optimism.

As we have discussed in chapter II of this dissertation, literature showed that there are international variations in people's tendency to be overconfident, and have demonstrated that at least some of this variation can be attributed to national culture (Ferris et al., 2013; Chui et al., 2010). As culture has been shown to affect overconfidence, and overconfidence has been linked to overinvestment, a direct behavioral influence of culture on overinvestment has been established in the literature. However, culture's influence on managerial opportunism, thus agency conflict, driven overinvestment has never been studied. As the underlying values leading to managerial overconfidence and opportunism are very different from one another, we argue that in order to better understand the overall link between culture and overinvestment, it is important to study the combined effects of both motivations.

Based on the above arguments, we hypothesize that through underlying societal values influencing norms, perceptions, evaluations and desires, national culture is a fundamental determinant in management's decision, impacted both by opportunism and overconfidence, to take advantage of opportunities to overinvest. In the following section, we develop empirically testable hypotheses to confirm our conjecture. For the empirical tests we rely on the dimensionalist approach we briefly reviewed in chapter III. It is important to note, that while the validity of the dimensionalist framework may be debated by some, the underlying

proposition of this dissertation, that culture directly influences the decision of management leading to overinvestment is independent of the framework used

4.3 Hypotheses

Based on literature from the field of cross-cultural psychology documenting a relationship between culture and economic behavior, and descriptions of underlying values, norms, and associated behaviors, we have developed testable hypotheses for four of the six Hofstede dimensions. We have not formulated hypotheses neither for the Long-Term Orientation nor for the Indulgence Versus Restraint dimensions. While we believe there is a relationship between Long-Term Orientation and overinvestment, the theoretical direction is unclear. This is the case, because Long-Term Orientation is positively linked to overconfidence (Ferris et al., 2013) and it may instigate management to justify investments with elusive future benefits (both encourage overinvestment), but, thrift and the shunning of short-term benefits at the detriment of long-term value creation (both discourage overinvestment) are also central to this cultural dimension. For Indulgence Versus Restraint, we found no direct theoretical link between the values characterizing this dimension and overinvestment.

We propose the following hypotheses:

4.3.1   Masculinity

High Masculinity (MAS) is associated with assertiveness, competitiveness, valuing wealth and recognition, and preference for larger organizations. In our opinion these values are highly consistent with management's tendency to act opportunistically.

Barber and Odean (2001) show that men trade their stocks more in their portfolio realizing a lower return. Confirming the results of Lewellen et al. (1977) that men trade more, have a higher tendency to base their decisions on their own judgment disregarding external advice,

and view such investments as less risky, they interpret this result as supporting earlier assertions from the psychology literature that men are more overconfident than women. As Hofstede's Masculinity dimension captures the extent to which gender roles are polarized and magnified, we expect that in countries where masculine values are emphasized management will have a tendency to be more overconfident. This assertion is somewhat supported by the empirical finding of Ferris et al., (2013), who show a positive, albeit statistically insignificant, relationship between Hofstede's Masculinity cultural dimension and management overconfidence. Therefore, overall we expect that Masculinity is positively related to both opportunism and overconfidence making the expected positive relationship very strong.

Further indirect empirical support for our assertion that Masculinity is overall positively related to overinvestment comes from Zheng et al. (2012) and Chang and Noorbakhsh (2009). These articles lend only indirect support, as none of them relate national culture to a direct indicator of overinvestment, such as we do. Instead, Zheng et al. (2012) finds relationship between culture and debt maturity, and as capital structure can be used as a mitigating tool for overinvestment, they infer that such a relationship may be explained by differences in management's tendency to overinvest. Similarly, Chang and Noorbakhsh (2009) explain the relationship they find between culture and cash holdings by assuming it reflects an inclination to overinvest. Therefore, both articles presume that a connection between national culture and a financial variable that is shown to be connected to, among other things, overinvestment, may be viewed as an indication of a relationship between the two. None of the articles try neither to theoretically explain nor empirically confirm the relationship between national culture and overinvestment.

Hypothesis 1: Higher Masculinity leads to more overinvestment.

4.3.2 Power Distance

High PDI is associated with highly valuing power and status as well as with a belief that those in power are entitled to privileges. Those with power are expected to use it to increase their wealth and status. This cultural orientation could encourage opportunistic behavior. We expect this to also positively contribute to overconfidence, as individuals have a tendency to believe themselves superior if treated as such by others. Ferris et al., (2013) also show a positive, but statistically insignificant relationship between Hofstede's Power Distance Index in line with our expectation. As both opportunistic behavior and overconfidence is expected to be positively related to PDI, we predict a positive relationship between PDI and overinvestment.

Hypothesis 2: Higher Power Distance leads to more overinvestment.

4.3.3 Individualism

In individualistic cultures, members tend to focus more on self-interest, enter into "calculative" relationships, and aggressiveness is perceived as a positive trait. Several authors examining the relationship between national culture and agency problems argue that high IDV is in line with the underlying assumptions about self-serving agent behavior of agency theory (eg: Ekanayake, 2004; Johnos and Droege, 2004; Fidrmuc and Jacob, 2010). Johnson and Droege (2004) formulate this idea as "collectivism aligns the organizational and individual objectives and bases the employment relationship more upon social exchange than market exchange" (Johnson and Droege, 2004 p. 328). Therefore, they claim moral hazard in societies characterized by high collectivism is lower. The notion that collectivism reduces certain agency costs is also put forward by Chakrabarty (2009) and Knack et al. (1997).

Further, Chui et al., (2010), Markus and Kitayama (1991) and Heine et al., (1999) relates individualism to overconfidence by showing that individualism may be linked to a strong

belief in one's ability encouraged from early childhood, and relatedly a stronger tendency of the development of both better-than-average-, and self-attribution biases. By contrast, collectivist societies exhibit a disposition for "self-monitoring", which mitigates overinvestment (Chui et al., 2010). Ferris et al. (2013) empirically demonstrates this positive relationship.

Taken as a whole, as we expect individualism to be positively related to both opportunistic behavior and overconfidence, we expect a strong positive relationship between IDV and overinvestment.

Hypothesis 3: Higher Individualism leads to more overinvestment.

4.3.4   Uncertainty Avoidance

Members of high UAI cultures tend to prefer stable, large organizations. Potential motivations for overinvestment include decreasing the probability of bankruptcy and safeguarding the independence of the firm, both related to avoiding management's loss of employment (Amihud and Lev, 1981; Harford, 1999). Thus, it can be expected that management will have a tendency to engage in overinvestment to increase the firm's diversification and its size to lessen perceived risks of the company's future. Such motivation should be viewed as a form of opportunism, as such growth tends to be value destroying as indicated by the literature briefly reviewed in chapter II.

We expect societies putting emphasis on values related to avoiding ambiguity to exhibit less overconfidence, as drivers of overconfidence such as the better-than-average effect, illusion of control and somewhat related the undervaluation of risk are all consistent with a willingness to confront ambiguity. Ferris et al., (2013) lend weak support to this argument by showing a statistically insignificant but negative relationship between UAI and overconfidence.

Therefore, we expect UAI to be positively related to opportunism driven-, and negatively related to overconfidence induced overinvestment. Overall, as we see opportunism as accounting for a larger portion of overinvestment than overconfidence, as we posited in chapter II based on the empirical results of Malmendier and Tate (2008) and characteristics of their sample, we predict a weaker but positive relationship between UAI and overinvestment.

H4: Higher Uncertainty Avoidance leads to more overinvestment.

Chapter V.

Methodology

In this chapter first we present our research philosophical orientation. After reviewing the main epistemological paradigms and research approaches, we argue that our personal beliefs and views are closest to the post-positivist stance of Scientific Realism, and that our research has been carried out following a hypothetico-deductive approach. In the second section we describe our empirical methodology. We collect data resulting in an initial sample of 7,338 quoted non-financial firms from 36 countries for the period of 2001-2011. As we investigate the relationship between national culture and overinvestment, neither of which are directly observable, we employ indicators for both phenomena. For national culture, we use Hofstede's cultural value dimensions as our base specification. We apply investment - cash flow sensitivity as indicator of overinvestment. To identify firms who have the highest potential to overinvest in our initial sample, we assemble our final sample from firms with high free cash flow and low Market to Book value (used to indicate investment opportunities). We apply a reduced form Q investment equation using a one-step system General Method of Moments (system GMM) dynamic panel data estimator to analyze our data.

5.1 Research philosophical orientation

5.1.1   What is epistemological stance of research?

The objective of a dissertation in specific - and all research in general - is to produce new knowledge. While "produce" is an awkward word, possibly conjuring images of a factory-type automatized activity, we intentionally avoided using words such as "to create", "to construct", or "to discover", as they would already carry serious implications of our epistemological stance. To be able to produce new knowledge, one has to agree what constitutes acceptable knowledge, and how is it produced. However, to be able to answer

these fundamental questions we soon find it is necessary to look deeper, and confront our assumptions about reality itself. What is reality? What can be known? What is acceptable knowledge? How do we come to know? These are all fundamental questions researchers need to address, and they are important elements of the epistemological stance of their research.

Piaget (1967) defines epistemology as the study of the establishment of valid knowledge. For Plato, knowledge is "justified true belief" (Ryan et al. 2002, p. 11), a definition broadly relied upon in science (Ryan et al., 2002). Epistemology is a branch of philosophy with roots in antiquity and is sometimes also referred to as the philosophy of science (Gavard-Perret et al., 2012). To answer the questions posed in the paragraph above one needs to go beyond epistemology. When explaining the philosophical underpinnings of research, Saunders et al (2012) write about research philosophies, while other authors such as Gavard-Perret et al. (2012) refer to epistemological paradigms. They all point out, that to create a solid philosophical base for one's research, a complex philosophical stance need to be assumed. Thus, whether we call it our research philosophy or epistemological paradigm, we have to formulate our posture with foundations in ontology," the study of existence" (Ryan et al. 2002 p. 13) studying what is real, in epistemology, and in axiology, which studies "judgments about value" (Saunders et al 2012. p. 137). We have decided to apply the terminology of Gavard-Perret et al. (2012) in the present work referring to our philosophical background as epistemological paradigm. With regards to this terminology it is important to note that while they are called "epistemological", such paradigms also include well defined founding hypotheses specifying their ontological and axiological postures. Indeed when this is not the case, the very fact of not having a specific assumption is a characteristic stance differentiating certain paradigm from others.

In the present section we briefly discuss the role of epistemological paradigms in research, introduce the major paradigms, the posture and approach adopted by us, and our specific research design.

5.1.2   Role of epistemological stance in research

Epistemological stance affects both the acceptable object of research as well as applicable research methods to produce and justify knowledge (Gavard-Perret et al. 2012).   Every researcher has an epistemological stance. By the very act of doing research, he or she chooses a research question, adopts a methodology, and justifies his or her results. This stance is often not made explicit to the readers, which is problematic according to Gavard-Perret et al. 2012, and Ryan et al. 2002, as without laying out the underlying assumptions on what knowledge is, any attempt to justify it is questionable. Defining one's epistemological stance is critical. It must be emphasized: just because one does not specify the fundamental philosophical assumptions of research they are being made, often unconsciously, with very real consequences on the process and results of research. By not stating them explicitly, researchers expose themselves to the risk of relying on a set of inconsistent assumptions, significantly reducing or even invalidating the scientific value of their work (Gavard-Perret et al., 2012, Ryan et al,. 2002).

Understanding and stating the epistemological stance of a given research requires the researcher to study the main epistemological paradigms (if need be, also the numerous alternatives different from each other on one or more aspects nevertheless often characterized as falling into the same overall approach), to familiarize himself or herself with their "founding hypotheses" (Gavard-Perret et al. 2012), and more importantly with their implications as to, among others, what is knowable, how it is knowable, how it should be justified to be accepted as knowledge, and the relationship between researcher and subject

(Saunders et al. 2012). While at first glance this may appear a formal process, in our opinion it is a deeply personal choice, as it reflects the personal values held by the researcher, the "assumptions about the way you view the world" (Saunders et al. 2012. p. 128).

Bisman (2010) suggests that epistemological stance adopted by the researcher should be driven by the research question. Going further, Saunders et al. (2012) presents Pragmatism as a research philosophy, whereby ontological, epistemological and axiological assumptions can be independently made to suit the purpose of the research. We disagree with both assertions. We believe research philosophy reflects one's core individual beliefs among other things on reality and on one's own role in the research process. It is hard to imagine such fundamental beliefs of a person changing from one research project to another.

To illustrate that one's research philosophy has a critical effect on his or her research, it is enough to consider that the first step, defining one's research question, is already profoundly anchored in one's epistemological stance. What is real? What is knowable? What is worth knowing? These questions determine what is deemed as interesting and what can be pursued as valid research questions. This relationship also underlines one of the fundamental theoretical arguments on which this dissertation rests, namely that one's values affect one's perceptions and actions (here applied to values and world views influencing epistemological stance in turn affecting research question and process, elsewhere in the dissertation it is cultural values affecting corporate investment decision-making behavior).

5.1.3   Main epistemological paradigms

For Gavard-Perret et al. 2012 empirical paradigms are "concepts of knowledge shared by a community, based on a coherent system of founding hypotheses relative to the questions studied by epistemology" (our translation from Gavard-Perret et al. 2012. p. 23). They add that most paradigms also include ontological assumptions. (The authors highlight that there

are numerous epistemological paradigms established or debated in the literature. This is also apparent from the review of research philosophical postures in Saunders et al. (2012), and Ryan et al. (2002), especially taking into account the variations and different formulations of similar concepts. Saunders et al. (2012) also draws attention to the fact that such stances have axiological aspects as well.

According to a current philosophical view, "it is more appropriate for the researcher undertaking a particular study to think of the philosophy adopted as a multi-dimensional set of continua rather than set of provisions" (Saunders et al. 2012. p. 129). Such continua are:

- "What is the nature of reality?" with continuum from "reality is external to the individual" in one extreme to "reality is socially constructed" on the other, or alternatively with reality is "objective" in one end to it is "subjective" on the other (Saunders et al. 2012. p. 129).

- "What is considered acceptable knowledge?" with continua from "observable phenomena" to "subjective meanings", and from "law-like generalizations" to "details of specifics" (Saunders et al. 2012. p. 129).

- "What is the role of values?" with research being "value free" on one end of the continuum to it being "value bound" (Saunders et al. 2012. p. 129).

The above questions correspond to the researcher's views on Ontology, Epistemology, and Axiology, highlighting once again that epistemological paradigms are addressing questions going beyond epistemology and are multidimensional in nature.

While being able to pick and choose one's position along the above continua seems inherently tempting, researchers must be cognizant of the need for developing a research philosophy which is consistent in all its fundamental ontological, epistemological, and axiological assumptions. Defining such philosophical foundations is immensely complex, which is

demonstrated by the decades-long ongoing debate in the literature surrounding the appropriate formulation of certain epistemological paradigms. Taking into account the position of Sanders et al. (2012) about the less than rigid boundaries surrounding such philosophical stances, we nevertheless attempt to position our work in one of the more traditional, consistent, well-applied paradigms in the literature.

In the following paragraphs we will briefly present the epistemological paradigms Gavard-Perret et al. (2012) describe as most influential in management science: (i) Logical positivism, two forms of post-positivism: (ii) Scientific realism, (iii) Critical realism, (iv) Constructivism, and (v) Interpretivism. Gavard-Perret et al. (2012) describe two distinct forms of constructivism: (a) Pragmatic Constructivism, and (b) Constructivism following Guba and Lincoln. As the epistemological stance we adopt does not fall under the constructivist classification, we deliberately present only the main points of the two together without including much detail on the different sub-categories.

5.1.3.1 Logical Positivism (Gavard-Perret et al., 2012 p. 26-27)

Originating from the work of Comte, Gavard-Perret et al. (2012) summarizes the underlying assumptions of the positivist paradigm as follows:

- Objective reality exists independent of perceiver.

- Only what is observable is real. The source of knowledge is observation.

- Reality is knowable.

- The objective is to discover the cause of observable phenomena, to discover law-type generalizations describing the relationship between observations. It firmly rests on the assumption that everything has a cause and therefore can be explained.

- There is no interaction between the researcher and the subject of his study, the research is considered objective, value free. This implies that there is no interaction between the researcher and the subject of his or her study.

- It prefers to break down phenomena into building blocks, which are studied in separation without taking into account their context.

5.1.3.2 Post-Positivism (Gavard-Perret et al., 2012 p. 28-31)

Several Philosophers questioned the validity of the above assumptions, some rejecting positivism completely, while others elaborating related paradigms. Post-positivism arose from these criticisms addressing some, while keeping certain assumptions unchanged. Below we briefly turn to two strands of post-positivism: scientific realism and critical realism.

5.1.3.2.1 Scientific Realism (Gavard-Perret et al., 2012 p. 31-32)

Traced back to the writings of Hunt, the main assumptions of Scientific Realism are the followings:

- Reality exists independently of perception.

- The objective of science is to know reality. However, such knowledge can never be certain because perceptions may be inaccurate; thus, they may vary between perceivers. This contradicts the assumptions of logical positivism.

- Since knowledge is not certain, acquired knowledge should be constantly tested as new elements are discovered. Knowledge proven to inaccurate should be discarded. Bisman (2010) explains this view by asserting that "any single research method is equally limited" resulting in post-positivist position of apply research with the objective to "capturing as much of reality as possible" (Bisman, 2010, p. 12), but without being able to fully describe

it. Science progresses toward a better understanding of the world (although complete understanding will never be achieved).

- While knowledge should explain observable phenomena, such explanation may build on unobservable concepts. This would not be accepted under logical positivism.

- As an addition to the above assumptions listed by Gavard-Perret et al. (2012), Saunders et al. (2012) adds that Scientific Realism's axiological stance is that of "value laden" research. In other words research is not fully objective, the values of the researcher influences the process and results of the research. As previously described, this view is echoed by Hofstede (1980), and is widely accepted in the cross-cultural literature.

- Underlining the scientific realist position is that although theories can only be approximately true (see above), the fact that they have predictive power is evidence of them being approximately true (Leplin, 1984). Underlying this argument is the question: If theories would not be approximately true, how could they have predictive power?

5.1.3.2.2   Critical Realism (Gavard-Perret et al. 2012, p. 32-35)

Referring to Bhaskar as founder of this post-positivist paradigm, Gavard-Perret et al. (2012) defines the following founding hypotheses, different from those of Scientific Realism, of Critical Realism:

- Reality exists on three levels: empirical, actual, deep. The empirical level is that of phenomena as being observed distorted by the senses and other filters of the perceiver. What really happens (free of distortion) is at the actual level, and is driven, or caused, by what is called unobservable rules or laws making up the level of deep reality.

- The objective of science is to understand the rules and laws driving phenomena at the deep reality as much as possible.

As opposed to logical positivism, neither Scientific-, nor Critical Realism attempt to study the observations in isolation, rather they explicitly take into account context (Saunders et al., 2012).

5.1.3.3 Constructivism (Gavard-Perret et al. 2012, p. 35-37, 39-40)

Traced back to von Glasersveld (pragmatic constructivism), and Guba and Lincoln (constructivism following Guba and Lincoln), Gavard-Perret et al. (2012) highlights the following assumptions characteristic to constructivism:

- (a) While not denying the existence of objective reality, the only thing that is knowable is the human experience of the phenomena (pragmatic constructivism), or (b) There is no objective reality, as reality is "socially constructed" through experiences by participants (constructivism following Guba and Lincoln). In either formulations, there is no single knowable reality.

- The objective of science is to understand and to be able to affect the human experience related to the phenomena.

- Research is not objective, as the researcher influences the subject of his or her study. All research is "value laden".

5.1.3.4 Interpretivism (Gavard-Perret et al. 2012, p. 37-39)

With origins in the philosophy of Heidegger the following underlying postulations of interpretivism are discussed by Gavard-Perret et al. (2012):

- Only human experience of phenomena is knowable. What is real is the common experience of participants in a given phenomenon.

- Both the researcher and the specific situation have an impact on the results of research; thus, research is not objective.

- The objective of science is to understand how participants interpret a situation.

5.1.4   Research approaches

There are three fundamental research approaches: induction, deduction, abduction (Saunders et al., 2012). Figure 5.1. graphically present how these approaches relate observations and theory development.

- In applying an inductive approach, the researcher starts with observing the phenomena, and formulates theory based on his or her observations. This is illustrated by the right side of the figure.

- Following a deductive approach, the researcher takes a theory as a first step, which is followed by testing it using observations. This approach is illustrated by the right side of the figure.

- The abductive approach merges induction and deduction through a process of iteration, whereby the researcher could start with observation leading to theory development followed by additional testing to improve generalizability of the theory established. This process is represented by following the arrows around the full circle.

While certain epistemological paradigms favor the use of one over the other, Gavard-Perret et al. (2012) points out forcefully that it is a mistake to assume research philosophy automatically determines the methodology researchers are obliged to follow.

Figure 5.1 The wheel of science
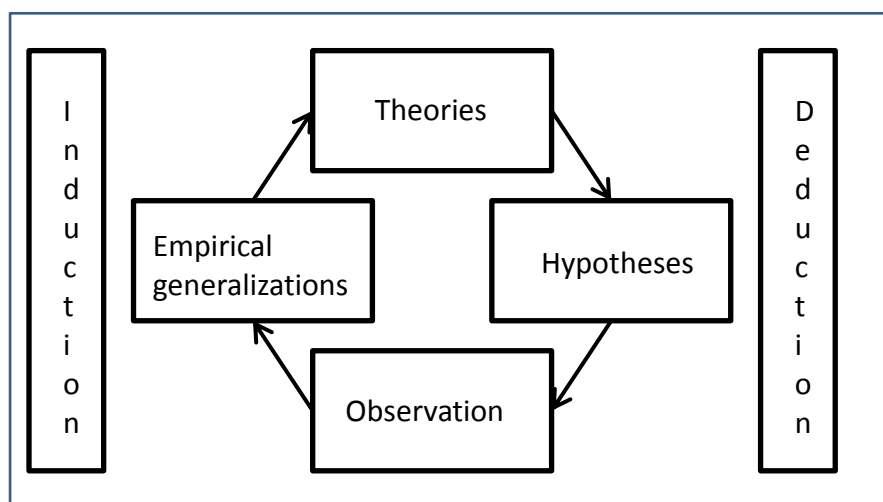
Source: Gavard-Perret et al., 2012, p. 73.

5.1.5   Epistemological paradigm and research approach adopted by Dissertation

5.1.5.1 Epistemological paradigm

Based on our personal values and view on the world, we reject Logical Positivism due to its denial of the reality of unobservable phenomenon, its focus on studying phenomena isolated from their context, as well as due to its assertion that research is value-free. The arguments proposed in this dissertations call attention to the importance of the social and cultural context of human behavior. As such, denying the reality of unobservable phenomena and the exclusion of context in the analysis contradict our position in this regard.

Constructivism and Interpretivism we also reject due to their denial of the existence of objective reality independent of the perceiver. We believe that while there is an objective reality, individuals may perceive it differently as their perception of it filters through their senses. It is the perception that is subjective, not reality itself. In addition to physical filters, we believe it is important not to overlook that there are psychological filters some of which are rooted in cultural values. Indeed, cultural values' acting as such filters is even a central argument this dissertation is built on.

Our proposition, which this dissertation explores, is that national culture effects management's propensity to make decisions leading to in overinvestment. We believe unobservable culture, and its effect on individuals, is real and objective. We view the multifaceted nature of culture and its influence on human action as immensely complex and prone to the moderating effect of countless other elements inherent in the context of the social arena where human behavior is enacted. Culture and its relation to human behavior is directly not observable, and measurement or study of such phenomena with absolute certainty as impossible. Nevertheless, we feel that our task as scientists is to advance knowledge to improve our understanding and ability to explain differences in behavior, as much as our observations and theoretical reasoning allows. Further, studying the influence of cultural values on behavior, we agree with Hofstede (1980) that the values of researchers affect their work from selecting the object, methodology, to interpreting the results.

Overall, our position of reality not being knowable with absolute certainty, accepting unobservable phenomena as real, viewing research as value-bound, and focusing on the need to study phenomena in context places us firmly in the post-positivist tradition. According to Bisman (2010), post-positivism offers a position, which "retains elements of scientific rigour, and yet acknowledge the value of richness and context, as well as the importance of generalisability" (Bisman 2010, p. 7). Bisman (2010) actually writes about critical realism, but based on our review of the literature the statement quoted is consistent with the underlying assumptions of the other post-positivist paradigm discussed above, Scientific Realism, as well. We believe the philosophical assumptions underlying our work are represented by those of Scientific Realist epistemological paradigm.

It needs to be emphasized that research philosophy is personal. We make no claim that our stance is "the" right stance, nor that it should be adopted by other researchers as well. All we claim is that it is consistent with our world view, and more importantly we argue that it is also

consistent with the subject of this research, namely the effect of unobservable (nevertheless in our opinion real) culture on corporate investment behavior.

5.1.5.2   Research approach

We have followed a research approach that is specifically referred to as hypothetico-deductive (see for example Godfrey-Smith, 2003). We have started from the existing theories of Agency Theory, and postulations of Cross-Cultural Philosophy also supported by New Institutional Economics, and combining them we have developed a theoretical argument that national culture influences management's propensity to make decisions leading to overinvestment. This step was followed by the formulation of testable hypotheses, which in turn were tested on empirical data. Our research approach is illustrated by Figure 5.2, where by placing research philosophy in the outside box we intended to emphasize our view that epistemological paradigm influences every step of the research process.

Figure 5.2. Our research approach
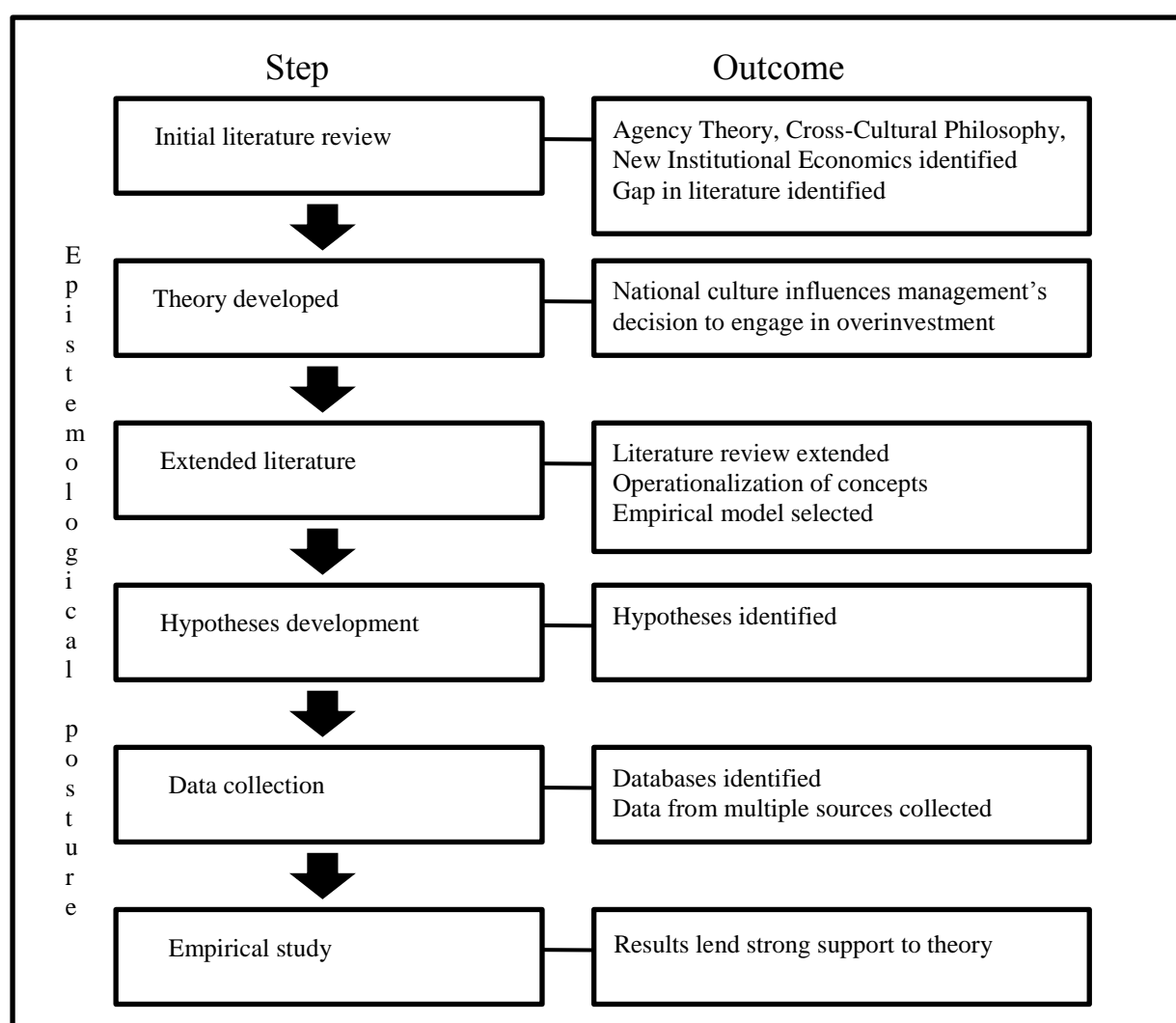
5.2 Empirical methodology

The dissertation examines whether national culture is related to management's tendency to make decisions leading to overinvestment in capital expenditures. To address the research question, it will be tested whether variables describing national culture have a significant impact on the investment - cash flow sensitivity of firms likely to be overinvestors. This method, and its underlying logic and assumptions, are described in detail in the following sections.

5.2.1   Sample

Firm level data was collected from the Factset database for all quoted firms for the period between 2001 and 2011 from countries for which the cultural dimension scores of Hofstede are available. Following the literature, companies in the financial sector, and those where basic financial data was not available were excluded. More specifically, companies with missing, zero or negative total assets and revenues-, and with missing cash and short term investments, net property plant and equipment, long-term debt, total equity, common equity, net income, earnings before interest taxes depreciation and amortization (EBITDA), dividends, operating cash flow, and capital expenditures (CAPEX) were excluded from the sample. Firms from countries with a resulting sample of less than twenty companies were also dropped. The resulting initial sample includes 7,338 firms from 36 countries. Hofstede (2001) calls on researchers applying his framework to base any empirical study on samples of least 10 cultures. Our sample largely exceeds this methodological requirement.

5.2.2   Empirical model

The dissertation proposes to relate national culture to overinvestment. As neither of these is directly observable, it is necessary to use indicators to estimate them.

5.2.2.1 Indicator for national culture

To approximate national culture, the dissertation applies the dimensionalist method. The base model will employ Hofstede's dimensions, as they are the most widely used the literature, and their interpretation is the most intuitive (Warner-Soderholm, 2012, Kirkman et al., 2006). The use of Hofstede's framework is further supported by the findings of both Kirkman et al. (2006) and Vas et al. (2010), who, studying extensively Hofstede's work and related empirical literature, conjectured that the other dimensionalist models are fundamentally very

close to Hofstede's. As we will describe more in detail in the following chapter on results and discussion, as a robustness check, we recalculate our basic models by replacing Hofstede's dimensions with the related GLOBE constructs to ensure our results are not primarily driven by any specificity of the cultural framework we apply.

We calculate separate models for the four dimensions (Masculinty/Femininity, Power Distance, Individualism/Collectivism, and Uncertainty Avoidance) for which we have advanced hypotheses is chapter IV. By analyzing models with all the dimensions that have a hypothesized effect and excluding those which have none, we follow the methodological advice of Kirkman et al. (2006) and Reuter (2011).

Triandis (1996) highlights the fact that culture's influence on behavior is complex. Values do not impact actors in a vacuum, but they are interrelated, and exert their influence on actors at the same time. He identifies cultural syndromes as "multifaceted patterns of shared values, beliefs, and attitudes around a particular theme" (Triandis, 1996, p. 407.) While this definition loosely fits the way both Hosftede's and the GLOBE's value dimensions are constructed, it can also be viewed as referring to the way actors are influenced by all the value dimensions at the same time. Looking at how each alone is related to behavior may not be representative of their impact on actual behavior. To address this concern, in addition to the four base models, another model including all six of Hofstede's value dimensions will be analyzed following Kirkman et al. (2006), who recommended including all dimensions simultaneously specifically for this effect. As this regression includes all the value effects captured by the cultural model, it allows for the interaction between and combined effect of cultural dimensions. This approach to separately test for individual dimension effects followed by a model including all dimensions using Hofstede's framework was also applied by Aggarwal and Goodell (2009).

5.2.2.2 Indicator for overinvestment

The task of constructing an indicator is further complicated by the fact that of the countries included in the sample, several have less than ideal disclosure regimes, and excluding those countries would materially reduce the cultural diversity that is the object of the analysis. Thus, any indicators used must rely only on basic accounting information.

5.2.2.2.1   Indicators in literature

Studies examining some aspect of overinvestment aim to identify some market reaction (firm valuation, event study) or the persistence of some corporate behavior (e.g: diversification, acquisitions, relationship between investment and cash flow) among a group of firms having some characteristics (e.g.: low q, high cash flow) in common. These studies examine whether the behavior or market valuation of a group of firms confirm the predictions of the Free Cash Flow Hypothesis of Jensen (1986).

Several approaches have been used to detect or infer overinvestment. Authors such as McCabe and Yook (1997), and Vogt (1997) apply some combination of cash flow, an indicator for the investment opportunity set of the firm, and a measure of discretionary investment to detect overinvestment. Among others Officer (2011) and Balachandran et al. (2009) used event studies analyzing changes in dividend payment. The underlying logic here is that dividends reduce resources under the control of management mitigating the agency problem of free cash flow; thus, reaction to dividend initiations or increases should be more favorable for overinvestor or potentially overinvestor firms. Others attempted to infer overinvestment by analyzing changes in investment behavior following significant changes in leverage (D'Mello and Miranda, 2010) or ownership structure (e.g.: Helay et al., 1992; Bhagat et al., 1990). Other notable indicators used to study overinvestment are studying write-

off behavior (Sadka and Zhang, 2009), and international expansion/changes in voluntary disclosure (Hope and Thomas, 2008).

Richardson (2006) developed a model estimating overinvestment based on an expectation model used to predict expected investment. If firm investment exceeds that predicted by his expectation model, he assumes the firm is overinvesting. His model uses firm financial information, market information, a discount rate and an earnings persistence rate to predict investment. The last two variables are assumed to be constant across all firms in his sample of over 58,053 firm years (all from the United States) for the period of $1988 - 2002$. Taking into account that his expectation model has an R^2 of approximately 33%, assuming that it indicates the optimal investment level and any variation from it is overinvestment (if negative: underinvestment) seems to result in a proxy not necessary more accurate than the ones used by other researchers.

Our review of the relevant literature have not yielded neither a dominant nor a clearly superior overinvestment indicator. Based on this fact and on the requirement of relying exclusively on basic accounting information arising from the international nature of our sample, and on its extensive use in the literature (see for example: Firth et al., 2012; Huang et al., 2011; and Crespi and Scellato, 2010), we have decided to apply investment - cash flow sensitivity for firms with poor quality investment sets as indicator for overinvestment.

5.2.2.2.2   Our indicator: Investment - cash flow sensitivity

The argument underlying this method is based on the original proposition of Modigliani and Miller (1958), namely that the investment and financing decisions are separate. In such a case the availability of cash flow should not have any impact on the level of investment carried out by a company. If its investment opportunities are good and cash flow is lacking, a firm could access external sources of capital to finance value creating (positive NPV) projects. On the

other hands, if available investment opportunities are bad a firm should not make the investments even if it has the cash flow to do so. In conclusion, if cash flow has a significant impact on investments, it is likely that the level of investment is not chosen by taking all value creating (positive NPV) projects and rejecting all value destroying (negative NPV) ones, but rather on the availability of internal financing, thus a departure from Modigiliani and Miller, (1958).

Jensen (1986) notes, that when investments are self-serving it is easier for management to finance them from internal funds than from capital markets. Thus, investments of overinvestor firms are expected to be sensitive to their internal resources, approximated by their cash flow. Theories of underinvestment make the same prediction (Stein, 2003). Consequently, sensitivity of investment to cash flow conforms with the predictions of two hypotheses related to agency theory: financial constraints related underinvestment (Myers and Majluf, 1984), and overinvestment (Jensen 1986). The former is based on information asymmetry between shareholders of the company and capital markets, whereby capital markets do not realize the full potential of the company, underpricing its securities making obtaining external financing too expensive. Thus, not all positive NPV projects are invested in. Whereas, overinvestment implies that even negative NPV projects are pursued for management's private benefits.

There is a vast literature relating to investment - cash flow sensitivity following the seminal work of Fazzari et al. (1988) who proposed investment - cash flow sensitivity as a measure of financial constraints (thus focusing on the underinvestment explanation of the behavior). As a consequence, a large part of the literature concentrates on the underinvestment explanation debating whether investment - cash flow sensitivity is a reliable measure of financial constraints or using it as such measure investigating the impact of other variables on financial constraints. Although the sensitivity is confirmed by the overwhelming majority of the literature using samples from various countries, the fact whether it is caused by managers'

behavior or is simply a result of methodological errors in the studies confirming it as advanced by Erisckson and Whited (2012) is also debated. While this debate is still open, researchers continue to successfully apply the methodology in empirical research studying corporate investment distortions, of which some recent examples include Francis et al. (2013), Xu (2013); Attig et al. (2012); and Firth et al. (2012).

Several authors investigated whether company's investment decision is effected by under-, or overinvestment. They attempted to find empirical evidence of one or the other effect dominating (eg.: Agca and Mozumdar 2008; Saiyid and Mozumdar, 2007; Hadlock, 1998). Vogt (1994) however established theoretically and showed empirically that both behaviors can be occurring at the same time by different firms. Therefore, both behaviors contribute to overall cash flow-investment sensitivity documented in the literature. Since then several other articles (eg.: Franzoni, 2009; Morgado and Pindado; 2003) confirmed the simultaneous existence of both behaviors. The theoretical work of Heaton (2002) also predicted, and following empirical analysis (eg.: Ferris et al., 2013.; Hunag et al., 2013; and Lin et al., 2005) confirmed that managerial overconfidence driven overinvestment and underinvestment both result in increased sensitivity of investment to cash flow. However, firms whose behavior can be explained by one of the above theories, have very different characteristics. According to Vogt (1994) one can differentiate between the two sets of firms based their investment opportunities and amount of free cash flow, an approach widely followed in the literature.

a. Quality of investment opportunities

As the quality of the investment opportunity set of the firm is not directly observable, an indicator has to be employed. The most widespread indicator used in the corporate investment literature is Tobin's Q, or the company's Market to Book ratio. Recent papers using Q as a proxy of investment opportunities include Francis et al. (2013) and Attig et al. (2012), while

for example Wang and Esqueda (2014) and Xu (2013) also applied the Q model of investment and relied on Market to Book ratio as a proxy of Q, used in turn as an indicator for investment opportunities. The main assumption behind using Q as a proxy for the quality of investment opportunities is that the stock market appropriately values the future prospects of the given firm. Q represents the relationship between the replacement value of a company's assets and its market value. If the market values a company's assets higher than the replacement value of its assets (Q>1), it implies that there is value generated by future growth, by its investment opportunities. If, on the other hand, the company's Q is below one, it implies the market judges the investment opportunity set of the company to be of very poor quality. Tobin's theory (Tobin, 1969) states that companies invest until the marginal value of the investment equals its replacement value. Until this point is reached, additional investment would increase the market value of the firm, beyond it, it would decrease it. If investment is not distorted, investment thus should be explained by the quality of investment opportunities (as proxied by Q or Market to Book ratio) and the relationship to internal resources such as cash flow, should not be significant. A point to note is that this theory uses marginal Q, while due to the difficulty of obtaining necessary data the literature overwhelmingly uses average Q. Average Q equals marginal Q only under very restrictive assumptions. This introduces a measurement error into the equation, a point of contention for those who believe the investment - cash flow relationship being a result from methodological and statistical errors and not a true phenomenon (Erickson and Whited, 2012).

b. Finding a sample of potential overinvestors

As it was noted above, higher investment - cash flow sensitivity can be explained by both under-, or overinvestors. Since this dissertation intends to study overinvestment, it is necessary to select a sample consisting of firms more likely to overinvest than to suffer from financial constraints. Applying the logic of Vogt (1994), the overall sample is split into

High/Low Investment Opportunity-, and High/Low Free Cash Flow firms. In effect, the sample is split into four quadrants: High Market to Book and High Free Cash Flow, High Market to Book and Low Free Cash Flow, Low Market to Book and Low Free Cash Flow, and Low Market to Book and High Free Cash Flow. It can be argued that Low Investment Opportunity / High Cash Flow firms correspond to the description of Jensen (1986): "....substantial free cash flow (low growth prospects and high potential for generating cash flows) - situations where agency costs of free cash flow are likely to be high" (Jensen, 1986, p. 325). Therefore, firms with low quality investment opportunities but disposing of high free cash flow are most prone to the overinvestment agency problem, as these firms have high free cash flow but have no valuable investment projects available to invest it.

Based on the above, we use Market to Book value to indicate the quality of the firm's investment opportunities, while Free Cash Flow is estimated as net cash flow from activities less income taxes and interest expense. Similar to Broussard et al. (2004), the average Market to Book and Free Cash Flow to Total Assets ratios of each firm over the sample period are calculated, and those firms with values above (below) the median period country sample average values are classified as high (low) in the respective categories. Executing the cutoff by country allows filtering out the effect of large differences in general valuation levels accorded to national capital markets. The final sample will include those firms, who fall into the Low Market to Book and High Free Cash Flow to Total Assets quadrant.

5.2.2.3 Regression Model

Following the burgeoning literature on investment - cash flow sensitivity started with the seminal work on financial constraints by Fazzari et al. (1988), the following reduced form Q investment model equation will be applied to the above described balanced panel data set:

$$(I/K)_{i,t} = \beta_0 + \beta_1(Q_{i,t-1}) + \beta_2(CF/K)_{i,t} + \beta_3(CF/K_{i,t} * CVD) + \beta_4(X_{i,t}) + \varepsilon$$

where I stands for capital expenditures, K for capital approximated by Total Assets, Q for Tobin's Q simplified by Market to Book ratio, CF is cash flow, CVD is the cultural value dimension variable, X stands for control variables, and ε is the error term.

The use of an interaction variable between cash flow and another independent variable is based on Attig et al. (2012), who study the impact of investment horizon of institutional shareholders on firms' investment - cash flow sensitivity. As our empirical test attempts to investigate the influence of aspects of culture on investment - cash flow sensitivity, we have replaced the institutional investment horizon variable in their model by the relevant cultural value dimension in the regression model.

5.2.2.3.1   Control variables

a. *Firm-level controls*

Based on literature, we have included a number of firm-level control variables, which are expected to influence the level of overinvestment. These are:

- FIRM SIZE is often associated with a higher level of agency costs (see for example: Kadapakkam et al., 1998); thus, it can be expected that investment - cash flow sensitivity increases with firm size. As the sample includes companies with very large differences in size, this variable controls for differences in investment pattern that may be related to size.

- LEVERAGE is viewed as a mechanism to control agency costs of free cash flow (see for example: Stulz, 1990); therefore, we expect that investment - cash flow sensitivity decreases with leverage.

- DIVIDENDS are also regarded as a tool to decrease the agency cost of free cash flow (see for example: Easterbrook, 1984). As such, investment - cash flow sensitivity is expected to decrease with dividends.

- CASH LEVEL is positively related to the agency cost of free cash flow (see for example: Kalcheva and Lins, 2007). However, management can engage in overinvestment spending cash already held by the firm, which, in turn, should lower the dependence on cash flow for financing value-destroying investments. Overall, we expect investment - cash flow sensitivity to decrease with cash held by the firm.

- PRIMARY ACTIVITY of each firm is included to account for industry-related differences in investment behavior and potentially differing opportunities and control of overinvestment by sector.

    b. Country-level controls

To better isolate national culture's effect from that of other country level differences in the sample we have included the following country-level control variables:

- ANTI-SELF-DEALING INDEX is widely used in the literature to indicate the quality of the country- level corporate governance regime (eg.: for example Breuer et al., 2014; Wang and Esquada, 2014). Efficient corporate governance lowers agency costs arising from management opportunism (eg.: Hart, 1995); thus, we anticipate a negative relationship between the Anti-Self-Dealing Index and investment - cash flow sensitivity.

- SIZE OF STOCK MARKET and AVAILABLE CREDIT are employed as indicators for financial constraints, which can be related to underinvestment driven investment - cash flow sensitivity (see for example Stein, 2003). If easier access to financing increases (reduces)

investment-cash flow sensitivity, it could be interpreted as a signal that overinvestment (underinvestment) is the dominant underlying cause of that sensitivity in the sample.

- GDP was included in the model to control for any possible systematic differences that may arise due to the wealth of the countries. Hofstede (2001) highlights the importance of always controlling for national wealth when studying national culture's influence on behavior.

The definition and source of the firm and country level financial and economic variables employed are shown in Table 5.1. Cultural variables are not included in Table 5.1, as they have been defined and briefly described in chapter III of this dissertation.

Table 5.1 Definition and source of variables in regression models

Variable	Definition	Source
Firm-level variables		
CAPEX_TA	Capital expenditures for purchasing Fixed assets divided by Total assets	Factset
MV_BV	Share price divided by Book value per share as of the last trading day of the period	Factset
FCF_TA	Free Cash Flow is approximated by Net cash flow from operating activities less Interest paid on debt less Total income taxes. To calculate the variable Free Cash Flow is divided by Total assets.	Factset
Ln_TA	Normal logarithm of Total assets	Factset
Leverage	Long-term debt (obligations with maturity exceeding one year) divided by Total Assets	Factset

DIV_FCF	Cash dividends paid to shareholders divided by Free Cash Flow	Factset
Cash_TA	Cash and short term investments held divided by Total Assets	Factset
SIC2	The first two digits of the four digit primary (largest portion of revenue earned) Standard Industrial Classification code of the company.	Factset
Country-level variables		
Log_GDP_Capita	Normal logarithm of annual GDP per capita	WDI data, World Bank
Credit_GDP	Domestic credit to private sector as a percentage of GDP	WDI data, World Bank
Stock_mkt_GDP	Market capitalization of listed companies as a percentage of GDP	WDI data, World Bank
Anti_Self_Dealing	The index is based on county-level data on aspects of both ex-ante-, and ex-post private control of self-dealing by controlling shareholders. Elements include disclosure, independent review, ease of proving wrongdoing, and public enforcement.	Djankov et al., (2008)

"_t1" at the end of the variable indicates it is as of the beginning of the period.

5.2.2.4 Statistical technique

The choice of statistical technique to be applied is driven by several factors. Firstly, our aim of studying the effect of time-invariant culture on time-variant investment - cash flow sensitivity necessitates the adoption of one of a few specific panel data methods. Secondly,

several of the variables used in the regression are dynamic in nature. Roodman (2009) defines dynamic variable as one which is "depending on its own past realizations" (Roodman, 2009 p. 86). This is true in fact for most variables in corporate finance, as, for example, it is hard to argue that actual values of capital expenditures, firm size, leverage, dividends, and cash level at the firm-level, or the quality of corporate governance system, GDP per capita, the size of credit or the stock market to GDP at the country-level are independent of their previous values. It is a well-known fact that most of these variables tend to be "sticky" in time. Thirdly, as it is often the case with any analysis in corporate finance, the underlying assumption of traditional panel data regressions that independent variables are exogenous is likely to be violated potentially introducing significant bias in traditional panel analysis. This inherent endogeneity problem is well recognized and discussed in the literature (see for example: Roberts and Whited, 2013).

To address the potential complications arising from the factors listed above, we have applied a one-step system General Method of Moments (system GMM) dynamic panel data estimator developed by Arellano and Bond (1991). It is the extension of a model that has fixed and random effects, and transforms independent variables through differencing, applying the GMM statistical technique rooted in the work of Hansen (1982). Such estimators are suited for statistical analysis when there are:

"(1) few time periods and many individuals;

(2) a linear functional relationship;

(3) one left-handed side relationship is dynamic; […]

(4) independent variables that are not strictly exogenous; […]

(5) fixed individual effects;

(6) heteroskedacity and autocorrelation within individuals but not across individuals"
(Roodman, 2009, p. 86).

According to Roodman (2009), the system GMM panel data estimator is useful in situations where it is not feasible to find true external instruments, as GMM generates valid instruments through differencing using lags of the variables. This is the case in our research. The use of GMM to address endogeneity is prevalent in the literature. Interested readers are referred to, among others, Crespi, F., Scellato, G., (2010), Firth et al. (2012), Pindado et al., (2011), and Roberts and Whited (2013) for a review of treating endogeneity on corporate finance empirical research.

We have also considered replacing the GMM dynamic panel data estimator by using Hierarchical Linear Modeling (HLM), a form of multi-level modeling. A multi-level approach seems warranted by the fact that the database uses variables from different levels of aggregation. Namely, the main variable of interest, investment-cash flow sensitivity, as well as several control variables, for example firm size, leverage, dividends, and so forth, are at the firm-level, while other variables, such as culture, corporate governance, economic development and financial development, are at the country-level. In such a situation, the firms can be viewed as being nested in the countries, where country-level variables influence all firms from the specific country. Snijders and Bosker (1999) warns against ignoring this effect and advise to apply HLM to analyze problems multi-level in nature. While it introduces an added level of complexity taking into account the interaction between the different levels, HLM is in essence a random effects panel data model. Applying it would allow us to better address the potential effects arising from the nestedness of countries; however, it would expose us to obtaining biased results due to the endogeneity of the regressors.

Endogeneity needs to be addressed not only due to the fact that corporate finance variables are likely endogenous, but also because our analysis includes culture, which has been showed in the literature to be related to several of our other variables such as leverage, cash level, dividends, and corporate governance (eg.: Breuer et al., 2014; Wang and Esqueda, 2014; Bae et al., 2012; Zheng et al., 2012; Fidrmuc and Jacob, 2010; Shao et al., 2010; Chang and Noorbakhsh, 2009; Ramirez and Tadesse, 2009; Li and Harrison, 2008; Licht et al., 2007; Licht, 2001). This is likely the reason why out of the various articles we have reviewed studying the relationship between culture and financial decision making only one, Griffin et al. (2012), make use of a multi-level model, while the others apply some form of GMM panel data analysis. Following literature and the reasoning briefly outlined above, we have chosen the GMM dynamic panel data estimator over a HLM model. Overall, we believe this technique fits well our sample allowing us to draw meaningful conclusions from our analysis.

5.2.2.5 Limitations

Our results need to be interpreted by taking note of the following limitations.

(i)   We were obliged to use indicators to identify overinvestment and to quantify national culture that are less than perfect measures of these directly unobservable phenomena. Our methodology follows prior literature both in the construction of the indicators and in robustness tests in order to address this problem and minimize its effect.

(ii)   A further limitation is imposed by the lack of firm-level corporate governance control variables. As literature indicates firm-level corporate governance can substitute for country-level governance systems in case the latter is of lower quality (see for example Francis et al., 2013), it would be informative to control for firm-level corporate governance. However, we were unable to find such data

for the sample period without needing to significantly lower the number of countries in our sample, which, in turn, would have diminished the cultural variation that is needed for a meaningful analysis of national cultural effects.

(iii)   Our assumption that the location of a company's headquarters determines its nationality is a potential oversimplification for multinational companies, as decision makers may not be of the same nationality; thus, they may be influenced by different cultural values. In addition, some investment decisions may be decided by local management. Such simplification is necessary when conducting large-scale empirical analysis and is dominantly used in the literature (see for example Lievenbruck and Schmid, 2014; Wang and Esqueda, 2014).

Furthermore, there are certain forces that result in significant influence of headquarters in corporate investment behavior. First, Hofstede (2010) point out that control and planning systems are heavily impacted by the nationality of corporate headquarters. This is due to legal and accounting reasons for consolidation among other things, but also as control and budgeting is an area of administration particularly open to cultural influence (Hofstede, 2010). Second, he also notes that "the basic values of multinational business organizations are determined by the nationality and personality of its founder(s) and later significant leaders … in multinational business organizations the values and beliefs of the home culture are taken for granted and serve as a frame of reference at the head office" (Hofstede, 2010, p. 402). House et al. (2004) explains as well that founders are influenced by their national culture to establish the acceptable management style and behavior at their organizations. As founders hire their successors, the same values tend to be propagated in a form of cultural transmission across

generations of top leaders. House et al. (2004) refers to this model of cultural transmission as Attraction-Selection-Attrition (House et al. 2004, p. 78).

(iv)   It is possible that some firms in our sample have a particularly strong organizational culture that may influence the propensity of management to engage in overinvestment in a direction markedly different from the influence of national culture. Should this be the case for a substantial portion of our sample firms, our results may be biased. We believe this not to be a significant problem for two reasons. First, both Hofstede (2010) and House et al. (2004) emphasize the nested nature of organizations within society contending that organizational culture itself is influenced by national culture. Thus, any such influence is likely to reinforce the cultural influence of the headquarters' nationality as explained above. Second, discussing the impact of organizational culture on behavior, Adler (1997) notes that corporate culture moderates but do not dominate the influence of national culture.

Chapter VI.

Results and Discussion

In chapter VI we present and interpret the results of our empirical analysis. Besides the models including the individual cultural dimensions of Hofstede identified in our hypotheses, we also analyze a model with all six Hofstede dimensions simultaneously included to investigate their combined influence on overinvestment. We confirm the robustness of our results carrying out numerous tests by replacing the cultural model used and the indicator of country-level corporate governance, by rejecting that our indicator of overinvestment is a reflection of cash flow volatility or that it is dominated by underinvestment in our sample, and by verifying that results are not primarily driven by specific characteristics of our sample. Overall we find that our proposition that national culture influences overinvestment beyond its indirect influence on the opportunity to overinvest is corroborated. More specifically we find strong support for Hypothesis 1 and moderate support for Hypothesis 4, namely that overinvestment is positively related to Masculinity and Uncertainty Avoidance respectively. Based on our results, we were unable to establish a consistent and significant relationship between the cultural dimensions of Individualism and Power Distance and overinvestment, thus failing to confirm our Hypotheses 2 and 3.

6.1 Descriptive statistics

As a first step of the analysis we have constructed our final sample of potential overinvestor firms following the process outlined in the previous chapter. Of the overall sample, there are 1,550 companies falling into the Low Market to Book and High Free Cash Flow to Total Assets quadrant companies resulting in 17,050 firm-year observations, with companies from all 36 countries of the original sample. The list of countries included in the sample and the corresponding number of companies are shown in Table 6.1.

Table 6.1. Initial and final sample firms by country

Country	Initial sample	Low M/B High CF/TA 01-11
Australia	217	52
Austria	26	6
Belgium	27	4
Brazil	61	13
Canada	195	44
Chile	59	11
China	54	16
Denmark	51	9
Finland	58	13
France	227	57
Germany	176	36
Hong kong	300	72
India	165	28
Indonesia	130	32
Ireland	20	7
Israel	33	4
Italy	63	16
Japan	1 857	356
Malaysia	302	79
Mexico	37	8
Netherlands	57	11
New Zealand	32	5
Norway	34	6
Peru	22	3
Philippines	55	9
Poland	22	6
Portugal	21	3
Singapore	157	35
South Africa	94	16
Spain	25	5

Sweden	75	15
Switzerland	90	16
Taiwan	356	61
Thailand	177	41
UK	387	75
US	1 676	380
TOTAL	**7 338**	**1 550**

Table 6.2 Breakdown of initial and final sample firms by geographical region and level of development

Region	Number of countries in sample	Initial sample: Number of firms	Initial sample: % of Total	Final sample: Number of firms	Final sample: % of Total
Africa and Middle East	2	127	2%	20	1%
Asia	10	3,553	48%	729	47%
Australia and New Zealand	2	249	3%	57	4%
Europe	16	1,359	19%	285	18%
North America	2	1,871	25%	424	27%
South- and Central America	4	179	2%	35	2%
Total	**36**	**7,338**	**100%**	**1,550**	**100%**
Classification[*]					
Developed	25	6,182	84%	1,294	83%
Developing	11	1,156	16%	256	17%
Total	**36**	**7,338**	**100%**	**1,550**	**100%**

* as classified by the OECD

Table 6.2 shows the geographical constitution of the initial and final samples. While all continents are represented in our final sample, the majority of companies are from Asia (47%), North America (27%), and Europe (18%), with only the remaining 7% representing Australia and New Zealand, Central-, and South America, and Africa and the Middle East. In our final sample, the country with most companies is the United States with 24% of firms with developing countries accounting for only 17%. Whereas this is bound to reduce the cultural richness of our sample potentially underrepresenting managerial behavior from those regions, it is a consequence of the differing degree to which the quoted company as an institution is established in various regions and of the quality of data available for such companies.

The makeup of the initial and final samples are very similar. As the final sample includes firms exclusively with average sample period Cash Flows to Total Assets above, and at the same time, average period Market to Book values below the median in their countries, these are companies where the market assigns a relatively low valuation to the company's assets despite relatively strong cash flows. Assuming that companies with these characteristics are indeed potential overinvestors, the similar makeup shows that such companies are present to a comparable extent across regions in our sample. This suggests that any variation we observe in overinvestment cannot be primarily attributed to differences in economic factors relating to companies having the opportunity to overinvest.

Table 6.3 shows the descriptive statistics of the variables in our final sample. It is notable that the median market to book value is only slightly less than 1. According to the theoretical arguments put forward by Lang and Litzenberger (1989) a Tobin's Q of less than 1 signals overinvestment. In our sample almost 50% of the companies have Market to Book values above unity. This raises the question whether we were successful in assembling a sample where sensitivity of investment to cash flow is driven by overinvestment, or underinvestment

is also a significant cause. As we later describe, multivariate results from an alternative specification strongly suggest that the dominant source of such sensitivity is indeed overinvestment.

Table 6.3 Descriptive statistics of variables in final sample

Variable	Mean	STD	Smallest	Median	Largest
CAPEX_TA	0.06	0.61	0	0.04	75.31
MV_BV_t1	1.15	0.72	0	0.96	6.74
FCF_TA	0.07	0.20	-0.45	0.06	23.17
Ln.TA	5.90	1.82	0.12	5.76	12.75
Leverage	0.12	0.12	0	0.08	0.89
DIV_FCF	0.38	20.09	-244.51	0.12	2,328.23
CASH_TA	0.13	0.12	0	0.09	0.94
Ln.GDP_Capita	10.12	0.75	7.51	10.35	10.89
Credit_GDP	150.24	48.52	15.21	171.64	234.54
Stock_mkt_GDP	113.94	83.54	13.97	103.60	606.00
Anti_Self_Dealing	0.63	0.20	0.18	0.65	1.00

"_t1" at the end of the variable indicates it is as of the beginning of the period.

6.2 Multivariate results

6.2.1 Initial results

Results from our base models are shown in Table 6.4. Models 1 to 4 apply separately the Hofstede dimensions with a hypothesized relationship to overinvestment. Model 5 includes all the cultural dimensions of Hofstede in one regression. For all models, including those that will be described later as robustness tests, we carried out a series of statistical tests to confirm the validity of the empirical technique we chose. For this reason we verified the Wald Chi

score for each regression for overall significance, the autocorrelation for first-, and second-order were tested to verify that the model fulfills the underlying assumptions of the system GMM technique, and we carried out the Sargan-Hansen tests of overidentification.

Table 6.4 Regression results – base models

	1. MAS	2. PDI	3. IDV	4. UAI	5. Hofstede6
CAPEX_TA_t1	0.00451**	0.00119	0.00122	0.00361	0.00466**
	(2.04)	(0.18)	(0.19)	(1.12)	(2.44)
MV_BV_t1	0.00823**	0.00780	0.00927	0.00679	0.0112***
	(2.36)	(0.75)	(0.89)	(1.32)	(3.63)
FCF_TA	-2.768***	1.332*	1.257***	-0.684***	-2.197***
	(-10.68)	(1.82)	(2.68)	(-3.23)	(-2.95)
Ln_TA_t1	-0.000305	0.00332	0.00480	-0.00102	-0.000654
	(-0.09)	(0.33)	(0.49)	(-0.20)	(-0.23)
Leverage	0.156***	0.195**	0.197**	0.220***	0.149***
	(4.74)	(1.99)	(2.06)	(4.58)	(5.38)
DIV_FCF	-0.0000494	0.0000481	0.000513	0.00000574	0.0000723
	(-0.07)	(0.03)	(0.28)	(0.01)	(0.23)
Cash_TA_t1	0.0979**	0.114	0.117	0.0992	0.0782**
	(2.32)	(0.91)	(0.95)	(1.60)	(2.34)
MAS	-0.00304***				-0.00224***
	(-11.21)				(-6.29)
PDI		0.00108			0.000250
		(1.27)			(0.60)
IDV			-0.000175		0.000337
			(-0.30)		(0.86)
UAI				-0.00123***	-0.000259
				(-4.46)	(-1.06)
LTO					-0.000490
					(-1.53)
IVR					-0.000473
					(-1.26)
MAS_FCF	0.0557***				0.0380***
	(15.08)				(7.68)
PDI_FCF		-0.00769			-0.00436
		(-0.60)			(-0.70)
IDV_FCF			-0.00624		-0.00926*
			(-0.84)		(-1.72)
UAI_FCF				0.0307***	0.00971***
				(9.03)	(3.35)
LTO_FCF					0.00901**
					(2.19)
IVR_FCF					0.00489
					(0.90)
Log_GDP_Capita	-0.0111***	-0.0104	-0.00553	-0.00687	-0.00185
	(-3.39)	(-1.03)	(-0.52)	(-1.43)	(-0.56)
Credit_GDP	0.00000414	0.000196	0.000201	0.0000707	0.0000830*
	(0.08)	(1.39)	(1.52)	(1.05)	(1.73)
Stock_mkt_GDP	0.00000852	0.0000208	-0.0000160	0.0000402	-0.0000317
	(0.33)	(0.27)	(-0.20)	(1.04)	(-1.10)
Anti_Self_Dealing	-0.0205*	-0.0290	-0.0101	0.0303	0.0134
	(-1.71)	(-0.82)	(-0.29)	(1.43)	(1.00)
_cons	0.289***	-0.0319	-0.0171	0.0683	0.156**
	(6.13)	(-0.21)	(-0.12)	(0.99)	(2.30)

Observations	13950	13950	13950	13950	13815

Each model is a one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. For the model including all six Hofstede cultural dimensions, Israel was excluded from the sample as its IVR score was not available. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

It is important to note that the dependent variable is the amount invested in capital investments divided by total assets and not our indicator of overinvestment. Therefore, the coefficients show the effects of the regressors directly on capital expenditure and not on overinvestment. Overinvestment is captured by the sensitivity of investment to cash flow. A statistically significant coefficient of the interaction variable between the cultural value dimension and cash-flow (MAS_FCF, PDI_FCF, IDV_FCF, UAI_FCF) indicates whether national culture influences this sensitivity, thus overinvestment. These interaction terms are the main variables of interest in the models as they directly address our hypotheses.

Looking at the interaction terms in models 1 to 4, we can see that Hypotheses 1 and 4 have been confirmed. Namely, results show a positive and statistically highly significant relationship between Masculinity and Uncertainty Avoidance dimensions of Hofstede and investment - cash flow sensitivity as predicted. Model 5, checking for the combined effect of cultural dimensions on individual behavior corresponding to the argument of Triandis (1996) described in chapter V, confirms both of these relationships.

With regards to Power Distance and Individualism, our Hypotheses 2 and 3 were not supported. Models 2 and 3, where these variables were included separately, showed negative coefficients for the interaction term, a direction opposite to that hypothesized, but both were statistically insignificant. In the model combining all of Hofstede's dimensions, while the coefficient is still negative and not significant for Power Distance, it turns weakly significant (at the 10% level) for Individualism. The statistical significance, albeit weak, of the negative

coefficient of Individualism is somewhat disturbing, as this cultural dimension has been widely associated with both opportunistic behavior and overconfidence in the literature. This result, along with those relating to the other models, will be further verified through a series of robustness checks we carried out.

Before discussing those tests and their results, it may be interesting to examine the coefficients for the interaction terms for the two cultural dimensions regarding which we have not advanced any hypotheses. Model 5 shows that, when the combined effect of all the cultural dimensions are considered, the interaction variable with Long-Term Orientation has a statistically significant and positive coefficient. This may be tentatively interpreted that the positive relationship with overconfidence and the values encouraging investing in projects with elusive future benefits outweigh those related to thrift. The insignificant coefficient of the interaction term of the Indulgence versus Restraint dimension reinforces our assertion of no theoretical relationship between this dimension and investment - cash flow sensitivity.

6.2.2   Robustness tests

We interpret our initial results as confirming our hypotheses that higher Masculinity and Uncertainty Avoidance lead to more overinvestment. It could be raised as a concern that the direction of causality is difficult to clearly establish. However, as similarly argued throughout the culture and finance literature, among many others recently by Lievenbruck and Schmid (2014), we draw attention to the fact that culture changes very slowly with estimations reaching several decades or even centuries (eg.: Inglehart and Baker, 2000, Williamson (2000). Hofstede (2001) illustrates how cultural values are propagated from generation to generation, to a large extent, through socialization in the family and at school. It is very difficult to contend that a relatively small group's (management) very specific behavior (overinvestment) would feed back into family and educational institutions in society,

fundamentally altering cultural values. While our statistical analysis does not empirically prove causality, theoretical arguments strongly suggest it. Therefore, we believe for interpreting our results reverse causality is not a theoretical concern.

6.2.2.1 Cultural constructs

An important question concerning the validity of our results is if they are primarily driven by our choice of model to quantify culture. To address some of the concerns raised by critics of Hofstede's model briefly explained in chapter III, and to test that our results are not driven by specificities of the Hofstede framework, we also applied the GLOBE dimensionalist model as an alternative specification. The constructs, data gathering and statistical analysis of the GLOBE project is well grounded in theory and build on the other dimensionalist models preceding it.

Hofstede's model is the most applied in literature (Warner-Soderholm, 2012), while that of GLOBE is the most recent. There are theoretically identifiable links between the two sets of dimensions (House et al., 2004); nevertheless, the GLOBE study uses a sample, time period, and statistical technique completely different from Hofstede's, and they develop substantially different constructs. Comparing the two models, Vas et al. (2010) concluded that none could be considered as superior in every aspect. Warner-Soderholm (2012) agrees and calls for future research to apply components of both models as best fitting the phenomenon researched. Besides heeding this advice, given that the two models capture diverse aspects of culture and represent them differently, we feel that using dimensions from both models offers an opportunity to study the problem from a richer perspective as well as avoid having results being biased by characteristics of any of the two frameworks.

In keeping with the Value - Belief theory focusing on values as fundamental drivers of attitudes, preferences and behavior underlying our work, we have applied GLOBE's Cultural

Value dimensions most related to the Hofstede dimensions for which we have advanced our hypotheses presented in chapter IV. As we have already noted, the dimensions do not always have their exact equivalent in both models (see Table 3.4). GLOBE argued that Hofstede's Masculinity/Femininity dimension includes diverse and unrelated values; therefore, they have created two separate dimensions: Assertiveness (ASSE), and Gender Egalitarianism. The values driving our hypothesized relationship between Masculinity and overinvestment are grouped in the Assertiveness dimension by GLOBE; therefore, we tested our hypothesis replacing Masculinity by Assertiveness not including Gender Egalitarianism in our analysis. GLOBE also separated Hofstede's Individualism/Collectivism dimension into two related dimensions: Institutional Collectivism (COL1), and In-group Collectivism (COL2). Thus, we analyzed five new regressions where Masculinity (MAS) was replaced by Assertiveness (ASSE), Power Distance (PDI) by GLOBE's Power Distance (PDIN), Individualism by Institutional Collectivism (COL1) and In-group Collectivism (COL2) in two separate regressions, and Uncertainty Avoidance (UAI) by GLOBE's Uncertainty Avoidance (UAIN).

We analyzed the GLOBE dimensions in regressions separate from those based on the Hofstede framework. We believe including dimensions from different cultural conceptual models in the same regression would be a mistake, as both Hofstede and the GLOBE study have developed their models to be conceptually whole and consistent capturing the underlying cultural values influencing outcomes in a society. Moreover, several of their dimensions, quite intentionally, overlap. Therefore, mixing dimensions from different cultural models in the same regressions would be both theoretically wrong and empirically difficult, if not impossible, to interpret.

The results of the regressions using the GLOBE dimensions, models 6 to 10, are shown in Table 6.5. The highly significant and positive coefficient of the Assertiveness interaction term in model 6 corroborates our earlier results lending strong support to our Hypothesis 1, namely

that higher Masculinity leads to more overinvestment. Similar to the results obtained using the Hofstede framework (model 2), Model 7 does not confirm our Hypothesis 2 on the positive relationship between Power Distance and overinvestment.

Results using the GLOBE dimensions are not consistent with those obtained from applying the Hofstede scores for Individualism. As we pointed out above, the sign of the coefficient of interest was negative, the opposite we predicted, for the Hofstede dimension, with statistical significance only in the model including all Hofstede dimensions simultaneously (model 5). Model 9 and 10, including Institutional Collectivism (COL1) and In-group Collectivism (COL2) respectively, both show the expected, statistically highly significant, positive coefficient for the interaction term. To interpret the GLOBE coefficients in models 7 and 8, one has to keep in mind that GLOBE measures collectivism, which is the opposite pole to individualism. Therefore, the negative coefficients of interaction variables COL1_FCF and COL2_FCF signify a positive relationship between individualism and investment - cash flow sensitivity. The complete opposing and significant results between the Hofstede and the related GLOBE dimensions leads us to tentatively hypothesize that the driver or drivers of the influence of this cultural attribute on overinvestment is more complex than the one incorporated by the cultural dimension constructs we have employed. The specific root or roots of this influence are likely to be captured differently in the two frameworks leaving us unable to confirm our Hypothesis 3.

With regards to Uncertainty Avoidance, while the sign of the coefficient of the interaction variable in model 8 is also positive, thus the same as for model 4 including Hofstede's dimension, it is not statistically significant when Hofstede's dimension (UAI) is replaced by the corresponding GLOBE dimension (UAIN). This disparity is most likely driven by the different conceptualization, sample, and methodology of Hofstede and the GLOBE project. Attempting to measure the same or related fundamental concepts, they capture somewhat

different aspects of the underlying phenomenon. Thus, while our Hypothesis 4 is supported by the Hofstede model, it is not corroborated by the GLOBE results.

Table 6.5 Regression results – GLOBE cultural value dimension models

	6. ASSE	7. PDIN	8. COL1	9. COL2	10. UAIN
CAPEX_TA_t1	0.00430	0.00147	0.00307	0.00247	0.00136
	(1.64)	(0.22)	(0.72)	(0.54)	(0.20)
MV_BV_t1	0.0104**	0.00624	0.00783	0.0121	0.00722
	(2.40)	(0.57)	(1.15)	(1.62)	(0.66)
FCF_TA	-5.833***	2.950	12.26***	17.36***	-0.576
	(-10.36)	(0.85)	(6.39)	(5.40)	(-0.23)
Ln_TA_t1	-0.000619	0.00119	0.00226	0.000780	0.00262
	(-0.15)	(0.12)	(0.33)	(0.11)	(0.26)
Leverage	0.178***	0.205**	0.160**	0.174**	0.195*
	(4.48)	(2.03)	(2.44)	(2.50)	(1.93)
DIV_FCF	0.000615	0.000240	0.000216	0.000631	0.000161
	(0.75)	(0.12)	(0.17)	(0.46)	(0.08)
Cash_TA_t1	0.108**	0.112	0.114	0.0729	0.127
	(2.13)	(0.89)	(1.36)	(0.83)	(0.99)
ASSE	-0.0784***				
	(-9.20)				
PDIN		0.0759			
		(0.82)			
COL1			0.139***		
			(4.49)		
COL2				0.150***	
				(3.66)	
UAIN					-0.00166
					(-0.03)
ASSE_FCF	1.484***				
	(12.24)				
PDIN_FCF		-0.685			
		(-0.57)			
COL1_FCF			-2.619***		
			(-5.90)		
COL2_FCF				-2.976***	
				(-5.10)	
UAIN_FCF					0.358
					(0.63)
Log_GDP_Capita	-0.0130***	-0.0138	-0.0223***	-0.0116*	-0.00431
	(-3.32)	(-1.35)	(-3.28)	(-1.67)	(-0.29)
Credit_GDP	0.0000249	0.000102	0.0000233	0.000179*	0.000130
	(0.41)	(0.68)	(0.22)	(1.84)	(0.93)
Stock_mkt_GDP	0.0000212	0.0000228	0.0000389	-0.0000638	0.0000375
	(0.67)	(0.27)	(0.75)	(-1.00)	(0.46)
Anti_Self_Dealing	-0.0359**	-0.0323	-0.0226	0.0325	-0.0331
	(-2.38)	(-0.80)	(-0.91)	(1.05)	(-0.83)
_cons	0.483***	-0.117	-0.433**	-0.795***	0.000116
	(7.02)	(-0.39)	(-2.56)	(-3.22)	(0.00)
Observations	13059	13059	13059	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. The number of

observations reflect that fact that GLOBE cultural scores were unavailable for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

6.2.2.2 Underlying cause of investment - cash flow sensitivity - Interaction model

When interpreting our results, it is important to recall that investment - cash flow sensitivity can be driven by both over-, and underinvestment. As we intend to confirm our hypotheses linking cultural variables to overinvestment through an empirical relationship between these variables and cash - flow sensitivity, we need to first establish that such sensitivity in our sample is dominated by overinvestment. In other worlds, we need to confirm our underlying assumption of our empiric analysis that the investment - cash flow sensitivity is an appropriate indicator of overinvestment in our final sample. To verify this assumption we have run extended regressions for each of the 10 models discussed above with additional interaction variables between free cash flow and the control variables representing overinvestment mitigating characteristics. Specifically, the interaction between cash flow and the following variables have been added: (i) firm size, (ii) leverage, (iii) dividends, (iv) cash level, (v) Anti-Self-Dealing Index, (vi) size of the stock market to GDP, and (vii) available credit to GDP. The coefficients of these interaction variables show the effect of these variables on cash flow sensitivity; thus, on our indicator of overinvestment. Results with regards to the quality of corporate governance and availability of financing, shown in Table 6.6, strongly support that investment-cash flow sensitivity is dominantly motivated by over-, and not underinvestment in our sample. Below is a brief discussion of this assertion.

If sensitivity of investment to cash flow is driven by overinvestment, better controls on management through high quality corporate governance decreases it; thus, we expect a negative coefficient of the interaction term of cash flow and Anti-Self-Dealing Index. The prediction is just the opposite if the sensitivity signals underinvestment. The coefficient is

negative in each of the seven out of the ten models where it has statistical significance. The interaction coefficients of the Credit to GDP variable and cash flow also lend support to our argument that the investment-cash flow sensitivity indicates overinvestment in our sample. Table 6.6 reveals that when it enters with statistical significance, seven out of ten models, its coefficient is always positive. This result is not consistent with a situation where investment-cash flow sensitivity is caused by financial constraints, the alternative well-documented source of underinvestment. The Stock market to GDP interaction variable is only significant in one regression out of the ten, where its coefficient is negative. While this may be suggestive of financial constraints, the fact that it enters significantly in only one model, and that there is a possible link between stronger firm-level governance demanded by equity investors than by creditors, lower the weight of this result than that of the availability of credit in our opinion.

Cash flow interactions of control variables, where they enter with statistical significance, show the expected signs as described in the section on control variables in chapter V. More specifically, where firm size enters with significance, it is with positive coefficients, and cash held is negative and highly significant in all regressions. Coefficients for leverage and dividends paid are not significant in any of the models.

Looking at the interaction variables between cash flow and the cultural dimensions, we see in Table 6.6 that the basic results are materially similar for Masculinity (MAS), Assertiveness (ASSE), Uncertainty Avoidance (UAI and UAIN), further fully confirming Hypothesis 1 and partially supporting Hypothesis 4, and for the GLOBE dimensions corresponding to Individualism (COL1 and COL2). However, the coefficients are inconsistent with the base model with changing signs and/or significance for Power Distance (PDI, PDIN), and IDV. Thus, with regards to PDI (Hypothesis 2), based on our base- and interaction models, we are unable to say whether there is a direct influence on overinvestment beyond those captured by

our control variables. For IDV (Hypothesis 3), results for the interaction specification largely reflect those of the base model yielding opposite significant coefficients with opposing signs between the Hofstede (opposite to predicted) and GLOBE (as predicted) constructs, thus reinforcing our conclusion that Hypothesis 3 cannot be confirmed. It is also interesting to note that the relationship between Long-Term Orientation to cash-flow sensitivity, while still positive, lost its significance.

Table 6.6 Regression results – interaction specification models

	11. MAS	12. PDI	13. IDV	14. UAI	15. ASSE	16. PDIN	17. COL1	18. COL2	19. UAIN	20. Hofstede6
CAPEX_TA_t1	0.00439*	0.00336	0.00365	0.00362	0.00444*	0.00324	0.00358	0.00362	0.00309	0.00462**
	(1.75)	(0.85)	(1.07)	(1.08)	(1.70)	(0.75)	(0.92)	(1.03)	(0.69)	(2.33)
MV_BV_t1	0.00700*	0.00345	0.00767	0.00792	0.00655	0.00384	0.00396	0.00773	0.00424	0.0110***
	(1.77)	(0.55)	(1.37)	(1.48)	(1.52)	(0.54)	(0.64)	(1.33)	(0.58)	(3.38)
FCF_TA	-1.621***	-0.740	1.520**	-2.158**	-2.852***	-2.196	7.572***	12.36***	-0.375	-2.762***
	(-3.03)	(-0.76)	(2.54)	(-2.45)	(-4.33)	(-1.01)	(3.31)	(4.93)	(-0.22)	(-3.09)
Ln_TA_t1	-0.00598	-0.00376	-0.00187	-0.00764	-0.00212	-0.00185	-0.00477	0.00213	-0.00444	-0.00587*
	(-1.31)	(-0.52)	(-0.30)	(-1.24)	(-0.43)	(-0.23)	(-0.65)	(0.32)	(-0.53)	(-1.68)
Leverage	0.178***	0.236***	0.219***	0.171**	0.229***	0.252***	0.254***	0.192**	0.237**	0.141***
	(3.25)	(2.80)	(3.06)	(2.32)	(4.07)	(2.72)	(3.03)	(2.51)	(2.50)	(3.46)
DIV_FCF	0.000135	-0.00000895	0.0000546	0.000139	-0.0000369	0.0000928	0.0000262	0.000102	0.0000565	0.0000525
	(0.25)	(-0.01)	(0.08)	(0.19)	(-0.07)	(0.10)	(0.03)	(0.13)	(0.06)	(0.18)
Cash_TA_t1	0.158***	0.172**	0.123*	0.183***	0.151***	0.213**	0.215***	0.151**	0.213**	0.0891**
	(3.20)	(2.22)	(1.80)	(2.78)	(2.90)	(2.52)	(2.79)	(2.13)	(2.45)	(2.39)
MAS	-0.00212***									-0.00161***
	(-6.00)									(-4.65)
PDI		-0.00109**								-0.000116
		(-1.87)								(-0.29)
IDV			0.000793**							0.000533
			(2.49)							(1.39)
UAI				-0.00127***						-0.000338
				(-2.78)						(-1.12)
LTO										-0.000259
										(-0.86)
IVR										-0.000648
										(-1.53)
ASSE					-0.0422***					
					(-5.32)					
PDIN						-0.0626				
						(-0.96)				
COL1							0.0565*			
							(1.81)			
COL2								0.0925***		
								(2.88)		
UAIN									0.0124	
									(0.47)	
MAS_FCF	0.0426***									0.0294***
	(8.81)									(6.06)
PDI_FCF		0.0257***								0.00229
		(2.87)								(0.39)
IDV_FCF			-0.0216***							-0.0119**
			(-4.94)							(-2.27)
UAI_FCF				0.0306***						0.0108***
				(5.09)						(2.77)
LTO_FCF										0.00554
										(1.41)
IVR_FCF										0.00780
										(1.27)
ASSE_FCF					0.937***					
					(8.26)					
PDIN_FCF						1.398				
						(1.61)				
COL1_FCF							-1.325***			
							(-3.02)			
COL2_FCF								-2.105***		
								(-4.64)		
UAIN_FCF									0.278	

									(0.94)	
Size_FCF	0.0712*	0.0471	0.0485	0.0928	0.0292	0.0338	0.0605	-0.0149	0.0670	0.0618*
	(1.65)	(0.70)	(0.83)	(1.60)	(0.64)	(0.44)	(0.89)	(-0.24)	(0.86)	(1.90)
Leverage_FCF	-0.270	-0.745	-0.557	0.409	-0.815	-1.166	-1.184	-0.408	-0.850	0.205
	(-0.44)	(-0.78)	(-0.69)	(0.48)	(-1.26)	(-1.08)	(-1.23)	(-0.46)	(-0.77)	(0.44)
DIVfcf_FCF	0.253	0.257	0.216	0.213	0.242	0.280	0.222	0.296	0.292	0.182
	(1.54)	(0.98)	(0.96)	(0.96)	(1.40)	(0.97)	(0.85)	(1.26)	(0.98)	(1.49)
Cash_FCF	-1.565***	-1.607***	-0.983*	-1.931***	-1.253***	-2.325***	-2.243***	-1.703***	-2.372***	-0.720**
	(-3.99)	(-2.58)	(-1.75)	(-3.75)	(-3.01)	(-3.57)	(-3.81)	(-3.09)	(-3.55)	(-2.36)
Anti_FCF	-0.926**	-2.204***	-2.012***	0.608	-1.261***	-2.376***	-1.742***	-0.476	-1.790**	-0.212
	(-2.23)	(-3.58)	(-3.80)	(0.81)	(-2.90)	(-3.16)	(-2.80)	(-0.72)	(-2.50)	(-0.45)
Stock_FCF	0.000661	-0.000449	-0.00160	0.00124	-0.00104	-0.000370	0.000297	-0.00288**	0.000236	-0.000248
	(0.89)	(-0.36)	(-1.45)	(1.25)	(-1.26)	(-0.26)	(0.25)	(-2.22)	(0.18)	(-0.33)
Credit_FCF	-0.0000894	0.0112***	0.0129***	0.00265	0.00328**	0.00547**	0.00103	0.00733***	0.00755***	0.00517***
	(-0.06)	(4.05)	(5.81)	(1.40)	(2.21)	(2.21)	(0.36)	(3.81)	(3.01)	(3.64)
Log_GDP_Capita	-0.0105***	-0.00628	0.000454	-0.00719	-0.0102***	-0.0108	-0.0184***	-0.00968*	0.00471	-0.00123
	(-2.90)	(-1.05)	(0.08)	(-1.48)	(-2.63)	(-1.63)	(-3.02)	(-1.83)	(0.47)	(-0.36)
Credit_GDP	0.0000184	-0.00054***	-0.00066***	-0.0000926	-0.000208*	-0.000262	-0.0000368	-0.000337**	-0.000384*	-0.000267**
	(0.15)	(-2.63)	(-3.96)	(-0.60)	(-1.70)	(-1.29)	(-0.16)	(-2.16)	(-1.92)	(-2.41)
Stock_mkt_GDP	-0.0000288	0.0000295	0.0000718	-0.0000268	0.000268	0.0000830	0.0000100	0.000127	0.00000625	-0.00000266
	(-0.48)	(0.30)	(0.83)	(-0.33)	(1.27)	(0.35)	(0.11)	(1.26)	(0.06)	(-0.04)
Anti_Self_Dealing	0.0428	0.119**	0.117***	-0.0189	0.0501	0.120**	0.0923*	0.0563	0.0775	0.0243
	(1.32)	(2.46)	(2.83)	(-0.32)	(1.48)	(2.10)	(1.89)	(1.12)	(1.40)	(0.67)
_cons	0.212***	0.0994	-0.0698	0.185**	0.251***	0.201	-0.145	-0.479**	-0.120	0.194***
	(3.44)	(0.95)	(-0.87)	(1.99)	(3.53)	(1.05)	(-0.79)	(-2.49)	(-0.58)	(2.61)
Observations	13950	13950	13950	13950	13059	13059	13059	13059	13059	13815

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. The number of observations is lower for models applying GLOBE cultural dimensions, as cultural data was missing for Belgium, Chile, Norway, Peru, and the United Kingdom. For the model including all six Hofstede cultural dimensions, Israel was excluded from the sample as its IVR score was not available. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

6.2.2.3 Volatility of cash flow

Another concern about our use of investment - cash flow sensitivity as indicator of overinvestment is the argument presented by Cleary (2006). He found that investment is sensitive to cash flow not as a result of inefficient investment, but because the volatility of cash flow is informative about future cash flows. To examine whether this is the case in our sample, we reran each regression with the individual cultural dimensions; thus four models with the Hofstede-, and five models with the GLOBE scores, with the volatility of cash flow over the entire sample period for each firm included as an additional control variable. We report the result of this robustness test in the last column of Tables 6.7 to 6.15 separately for each cultural dimension. The tables show that the coefficients of this variable were not significant in any of the regressions. Further, the coefficients of the cash flow - cultural value

dimension interaction variables did not materially change. This suggests that information about cash-flow volatility is not the source of investment-cash flow sensitivity in our sample.

6.2.2.4 Corporate Governance

We verified whether our results were distorted by our choice of the indicator for the quality of the national corporate governance regime. We replaced our indicator in the base model, Anti Self-Dealing Index (Djankov et al., 2008), with Concentration of Ownership (Djankov et al., 2008), Rule of Law (World Bank), and Common Law Origin (La Porta et al., 1998) in separate regressions. These choices were motivated by the following considerations:

(i)   Ownership concentration may be viewed as a form of corporate governance system substituting efficient rule based governance (La Porta et al., 1998);

(ii)   Strong enforcement may have a significant effect on managerial opportunism improving corporate governance;

(iii)   Starting with La Porta et al.'s seminal "Law and Finance" article published in 1998, researchers found that common law origins tend to result in stronger protection for capital providers.

Results shown in the second, third and fourth columns of Tables 6.7 to 6.15 show that the application of each corporate governance indicator yielded materially the same results as the base models demonstrating that our results were not biased by the choice of the indicator for country-level corporate governance.

6.2.2.5 Sample characteristics

In order to ensure that results are not driven by specific sample characteristics, we carried out further tests of robustness. We eliminated the years 2008 and 2009 from the sample period to account for potential distortion of investment activity that may be caused by the financial

crisis. Following, Chen et al. (2015), we have eliminated the country with the largest number of firms (US with 24%) from our final sample. We have also separately eliminated outliers based on firm size, free cash flow, and capital expenditures. As indicated by results in columns five to six in Tables 6.7 to 6.15, none of these additional robustness tests significantly affected our results concerning the strong confirmation of Hypothesis 1 and the partial support of Hypothesis 4. The results for the GLOBE dimensions related to Individualism (COL1 and COL2) were also consistent in each test. With regards to Power Distance (PDI, PDIN) and Hofstede's Individualism (IDV), similar to the interaction model, and we believe for the same reasons, some of the robustness tests returned inconsistent results. As discussed above we are unable to support Hypotheses 2 and 3.

Table 6.7. Regression results – Masculinity (Hofstede) robustness checks

	(1) Base model	(21) Ownership Concentration	(22) Rule of Law	(23) Common Legal Origin	(24) ex USA	(25) ex Crisis	(26) Outliers - Size	(27) Outliers - Cash Flow	(28) Outliers - CAPEX	(29) Cash Flow Volatility
L.CAPEXF_TA	0.00451**	0.00451**	0.00451**	0.00448**	0.00468**	0.00443**	0.00454**	0.00586***	0.00603***	0.00513**
	(2.04)	(2.03)	(2.03)	(2.05)	(2.52)	(2.07)	(2.11)	(5.87)	(5.78)	(2.12)
MV_BV_t1	0.00823**	0.00835**	0.00846**	0.00857**	0.0102***	0.0144***	0.00852**	0.00818***	0.00745**	0.00824**
	(2.36)	(2.36)	(2.39)	(2.49)	(2.74)	(3.41)	(2.44)	(5.12)	(4.42)	(2.36)
FCF_TA	-2.768***	-2.767***	-2.758***	-2.766***	-2.782***	-2.930***	-2.748***	-3.426***	-3.604***	-2.769***
	(-10.68)	(-10.60)	(-10.57)	(-10.78)	(-14.37)	(-10.75)	(-11.08)	(-76.85)	(-39.07)	(-10.67)
L.Ln_TA	-0.000305	0.000871	0.00101	0.000377	-0.00214	0.000957	0.000445	-0.00388**	-0.00689***	-0.000352
	(-0.09)	(0.26)	(0.30)	(0.12)	(-0.60)	(0.26)	(0.12)	(-2.57)	(-4.32)	(-0.10)
Leverage	0.156***	0.154***	0.154***	0.158***	0.164***	0.143***	0.149***	0.181***	0.179***	0.156***
	(4.74)	(4.66)	(4.65)	(4.83)	(5.06)	(3.78)	(4.54)	(12.68)	(11.25)	(4.72)
DIV_FCF	-0.0000494	-0.0000123	-0.00000659	-0.0000532	-0.000277	0.000124	0.0000772	0.000140	-0.000116	-0.0000543
	(-0.07)	(-0.02)	(-0.01)	(-0.08)	(-0.51)	(0.19)	(0.12)	(0.47)	(-0.37)	(-0.08)
L.Cash_TA	0.0979**	0.102**	0.104**	0.0999**	0.0886**	0.0790*	0.0996**	0.0882***	0.0867***	0.0959**
	(2.32)	(2.40)	(2.46)	(2.40)	(2.39)	(1.69)	(2.35)	(4.55)	(4.38)	(2.26)
CF_Vol										-0.000891
										(-0.64)
MAS	-0.00304***	-0.00301***	-0.00299***	-0.00318***	-0.00340***	-0.00296***	-0.00304***	-0.00387***	-0.00409***	-0.00304***
	(-11.21)	(-11.08)	(-11.09)	(-11.73)	(-16.88)	(-10.87)	(-11.69)	(-65.49)	(-46.80)	(-11.19)
MAS_FCF	0.0557***	0.0557***	0.0556***	0.0558***	0.0584***	0.0587***	0.0558***	0.0693***	0.0723***	0.0558***
	(15.08)	(14.96)	(14.92)	(15.23)	(22.62)	(15.54)	(15.83)	(128.52)	(72.85)	(15.07)
Log_GDP_Capita	-0.0111***	-0.0103***	-0.00939*	-0.0105***	-0.00799***	-0.0121***	-0.0107***	-0.00886***	-0.00824***	-0.0111***
	(-3.39)	(-3.04)	(-1.93)	(-3.17)	(-2.87)	(-3.43)	(-3.38)	(-5.98)	(-5.31)	(-3.39)
Credit_GDP	0.00000414	-0.0000306	-0.0000181	0.0000489	0.000160***	-0.0000355	-0.0000105	-0.0000145	0.00000433	0.00000438
	(0.08)	(-0.62)	(-0.37)	(0.97)	(3.38)	(-0.66)	(-0.21)	(-0.63)	(0.18)	(0.09)
Stock_mkt_GDP	0.00000852	-0.00000923	-0.0000165	0.0000184	-0.0000154	0.0000207	0.00000389	6.31e-08	-0.00000113	0.00000884
	(0.33)	(-0.40)	(-0.75)	(0.78)	(-0.66)	(0.68)	(0.15)	(0.01)	(-0.09)	(0.34)
Anti_Self_Dealing	-0.0205*				-0.0210**	-0.0153	-0.0184	-0.0280***	-0.0390***	-0.0206*
	(-1.71)				(-1.87)	(-1.17)	(-1.55)	(-5.18)	(-6.81)	(-1.72)
concentration		-0.0108								
		(-0.91)								
rule_law			-0.000886							
			(-0.18)							
common_legal				-0.0179***						
				(-4.03)						
_cons	0.289***	0.265***	0.250***	0.279***	0.274***	0.289***	0.280***	0.352***	0.378***	0.290***
	(6.13)	(6.25)	(5.06)	(6.67)	(6.28)	(5.77)	(5.95)	(16.57)	(17.27)	(6.14)
_observations	13950	13950	13950	13950	10530	10850	13630	13668	13677	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding

coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.8. Regression results – Power Distance (Hofstede) robustness checks

	(2) Base model	(30) Ownership Concentration	(31) Rule of Law	(32) Common Legal Origin	(33) ex USA	(34) ex Crisis	(35) Outliers - Size	(36) Outliers - Cash Flow	(37) Outliers - CAPEX	(38) Cash Flow Volatility
L.CAPEXF_TA	0.00119	0.00119	0.00122	0.00111	0.00159	0.00108	0.00112	0.00380	0.00546**	0.00151
	(0.18)	(0.18)	(0.19)	(0.17)	(0.26)	(0.15)	(0.17)	(1.56)	(2.08)	(0.21)
MV_BV_t1	0.00780	0.00784	0.00725	0.00853	0.00832	0.0118	0.00762	-0.00666*	-0.0134***	0.00780
	(0.75)	(0.74)	(0.69)	(0.82)	(0.67)	(0.83)	(0.71)	(-1.70)	(-3.22)	(0.75)
FCF_TA	1.332*	1.358*	1.321*	1.328*	2.794***	1.711*	1.372*	7.958***	3.488***	1.332*
	(1.82)	(1.84)	(1.80)	(1.82)	(4.10)	(1.86)	(1.86)	(48.64)	(13.03)	(1.82)
L.Ln_TA	0.00332	0.00540	0.00519	0.00467	0.00306	0.00261	0.00540	-0.00908**	-0.0185***	0.00329
	(0.33)	(0.53)	(0.51)	(0.48)	(0.25)	(0.21)	(0.49)	(-2.47)	(-4.63)	(0.32)
Leverage	0.195**	0.191*	0.189*	0.197**	0.264**	0.224*	0.186*	0.407***	0.551***	0.195**
	(1.99)	(1.95)	(1.93)	(2.02)	(2.49)	(1.80)	(1.86)	(11.78)	(14.57)	(1.99)
DIV_FCF	0.0000481	0.0000816	0.0000891	0.0000539	-0.0000778	0.000212	0.000119	-0.000404	0.000714	0.0000463
	(0.03)	(0.06)	(0.06)	(0.04)	(-0.06)	(0.13)	(0.08)	(-0.76)	(1.25)	(0.03)
L.Cash_TA	0.114	0.122	0.123	0.116	0.0891	0.0882	0.127	0.178***	0.141***	0.113
	(0.91)	(0.97)	(0.98)	(0.93)	(0.74)	(0.57)	(0.98)	(3.80)	(2.86)	(0.90)
CF_Vol										-0.000463
										(-0.11)
PDI	0.00108	0.00119	0.000958	0.000992	0.00225***	0.00150	0.00110	0.00705***	0.00182***	0.00108
	(1.27)	(1.36)	(1.12)	(1.18)	(2.89)	(1.49)	(1.28)	(32.30)	(5.58)	(1.27)
PDI_FCF	-0.00769	-0.00826	-0.00760	-0.00747	-0.0256**	-0.0115	-0.00806	-0.0997***	-0.00788	-0.00770
	(-0.60)	(-0.63)	(-0.58)	(-0.58)	(-2.23)	(-0.72)	(-0.62)	(-36.89)	(-1.59)	(-0.60)
Log_GDP_Capita	-0.0104	-0.00958	-0.00651	-0.0105	-0.00755	-0.0104	-0.0105	0.00182	0.00454	-0.0104
	(-1.03)	(-0.92)	(-0.46)	(-1.03)	(-0.79)	(-0.86)	(-1.04)	(0.49)	(1.13)	(-1.03)
Credit_GDP	0.000196	0.000130	0.000167	0.000205	0.000337**	0.000243	0.000180	0.0000573	0.000288***	0.000196
	(1.39)	(0.91)	(1.23)	(1.48)	(2.29)	(1.48)	(1.25)	(1.10)	(5.09)	(1.40)
Stock_mkt_GDP	0.0000208	0.00000556	-0.0000109	0.0000356	-0.000000168	0.0000311	0.0000158	0.0000137	-0.0000135	0.0000209
	(0.27)	(0.08)	(-0.16)	(0.49)	(-0.00)	(0.31)	(0.20)	(0.47)	(-0.43)	(0.27)
Anti_Self_Dealing	-0.0290				-0.0225	-0.0370	-0.0258	-0.0703***	-0.0757***	-0.0291
	(-0.82)				(-0.58)	(-0.86)	(-0.71)	(-5.38)	(-5.31)	(-0.82)
concentration		-0.0387								
		(-1.07)								
rule_law			-0.00521							
			(-0.32)							
common_legal				-0.0202						
				(-1.57)						
_cons	-0.0319	-0.0632	-0.0859	-0.0412	-0.166	-0.0575	-0.0473	-0.470***	-0.155***	-0.0316
	(-0.21)	(-0.45)	(-0.56)	(-0.29)	(-1.10)	(-0.32)	(-0.31)	(-8.37)	(-2.60)	(-0.21)
number of observations	13950	13950	13950	13950	10530	10850	13680	13668	13677	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.9. Regression results – Individualism (Hofstede) robustness checks

	(3) Base model	(39) Ownership Concentration	(40) Rule of Law	(41) Common Legal Origin	(42) ex USA	(43) ex Crisis	(44) Outliers - Size	(45) Outliers - Cash Flow	(46) Outliers - CAPEX	(47) Cash Flow Volatility
L.CAPEXF_TA	0.00122	0.00120	0.00122	0.00122	0.00133	0.000975	0.00113	0.00300	0.00559**	0.00157
	(0.19)	(0.18)	(0.19)	(0.19)	(0.21)	(0.14)	(0.17)	(1.09)	(2.01)	(0.22)
MV_BV_t1	0.00927	0.00922	0.00889	0.00913	0.00688	0.0127	0.00923	-0.00800*	-0.00825*	0.00929
	(0.89)	(0.88)	(0.85)	(0.88)	(0.52)	(0.88)	(0.86)	(-1.78)	(-1.83)	(0.89)
FCF_TA	1.257***	1.239***	1.244***	1.257***	1.182***	1.340**	1.271***	0.316***	4.590***	1.256***
	(2.68)	(2.63)	(2.65)	(2.69)	(2.74)	(2.41)	(2.74)	(3.61)	(33.09)	(2.68)
L.Ln_TA	0.00480	0.00656	0.00683	0.00500	0.00362	0.00536	0.00678	-0.00494	-0.0150***	0.00476
	(0.49)	(0.67)	(0.71)	(0.50)	(0.29)	(0.44)	(0.63)	(-1.20)	(-3.59)	(0.48)
Leverage	0.197**	0.195**	0.193**	0.198**	0.274**	0.219*	0.188*	0.446***	0.516***	0.197**
	(2.06)	(2.04)	(2.02)	(2.07)	(2.45)	(1.77)	(1.92)	(11.42)	(12.97)	(2.06)
DIV_FCF	0.000513	0.000522	0.000524	0.000533	0.000523	0.000908	0.000596	0.000454	0.00229***	0.000509

	(0.28)	(0.28)	(0.28)	(0.29)	(0.30)	(0.44)	(0.32)	(0.59)	(2.98)	(0.27)
L.Cash_TA	0.117	0.123	0.129	0.119	0.106	0.0982	0.127	0.241***	0.132**	0.116
	(0.95)	(1.00)	(1.05)	(0.97)	(0.84)	(0.64)	(1.00)	(4.57)	(2.54)	(0.94)
CF_Vol										-0.000512
										(-0.12)
IDV	-0.000175	-0.000241	-0.000166	-0.0000762	-0.000539	-0.000407	-0.000189	-0.00358***	0.00137***	-0.000177
	(-0.30)	(-0.41)	(-0.29)	(-0.12)	(-0.83)	(-0.56)	(-0.32)	(-18.97)	(5.84)	(-0.31)
IDV_FCF	-0.00624	-0.00599	-0.00613	-0.00623	0.00254	-0.00529	-0.00615	0.0428***	-0.0325***	-0.00624
	(-0.84)	(-0.80)	(-0.82)	(-0.84)	(0.32)	(-0.56)	(-0.82)	(21.66)	(-11.23)	(-0.84)
Log_GDP_Capita	-0.00553	-0.00549	-0.000512	-0.00715	-0.00776	-0.00459	-0.00533	0.00791*	0.00371	-0.00551
	(-0.52)	(-0.51)	(-0.04)	(-0.66)	(-0.68)	(-0.36)	(-0.50)	(1.75)	(0.82)	(-0.52)
Credit_GDP	0.000201	0.000162	0.000194	0.000201	0.000296**	0.000234	0.000185	0.0000171	0.000290***	0.000201
	(1.52)	(1.18)	(1.49)	(1.54)	(2.05)	(1.48)	(1.37)	(0.30)	(5.08)	(1.53)
Stock_mkt_GDP	-0.0000160	-0.0000156	-0.0000286	-0.00000125	-0.0000147	-0.0000139	-0.0000220	-0.0000563	-0.0000432	-0.0000159
	(-0.20)	(-0.23)	(-0.45)	(-0.01)	(-0.18)	(-0.13)	(-0.27)	(-1.62)	(-1.24)	(-0.20)
Anti_Self_Dealing	-0.0101				-0.00488	-0.00943	-0.00678	-0.0269*	-0.0393***	-0.0102
	(-0.29)				(-0.12)	(-0.22)	(-0.19)	(-1.84)	(-2.64)	(-0.30)
Concentration		-0.0253								
		(-0.75)								
rule_law			-0.00777							
			(-0.55)							
common_legal				-0.00855						
				(-0.56)						
_cons	-0.0171	-0.0212	-0.0798	-0.00963	0.00814	-0.0250	-0.0328	0.0623	-0.122**	-0.0168
	(-0.12)	(-0.17)	(-0.57)	(-0.07)	(0.05)	(-0.15)	(-0.23)	(1.02)	(-2.06)	(-0.12)
_observations	13950	13950	13950	13950	10530	10850	13680	13668	13677	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.10. Regression results – Uncertainty Avoidance (Hofstede) robustness checks

	(4) Base model	(48) Ownership Concentration	(49) Rule of Law	(50) Common Legal Origin	(51) ex USA	(52) ex Crisis	(53) Outliers - Size	(54) Outliers - Cash Flow	(55) Outliers - CAPEX	(56) Cash Flow Volatility
L.CAPEXF_TA	0.00361	0.00362	0.00362	0.00362	0.00386	0.00354	0.00361	0.00569***	0.00583***	0.00424
	(1.12)	(1.11)	(1.11)	(1.11)	(1.37)	(1.08)	(1.13)	(4.63)	(4.66)	(1.20)
MV_BV_t1	0.00679	0.00587	0.00587	0.00565	0.00735	0.0115*	0.00725	0.00146	0.00285	0.00681
	(1.32)	(1.14)	(1.14)	(1.11)	(1.29)	(1.76)	(1.39)	(0.74)	(1.40)	(1.33)
FCF_TA	-0.684***	-0.681***	-0.684***	-0.681***	-0.645***	-0.635***	-0.678***	-0.486***	-1.275***	-0.685***
	(-3.23)	(-3.18)	(-3.20)	(-3.18)	(-3.73)	(-2.76)	(-3.24)	(-17.20)	(-16.38)	(-3.23)
L.Ln_TA	-0.00102	-0.00145	-0.00141	-0.00153	-0.00597	-0.0000320	-0.000640	-0.00708***	-0.0116***	-0.00108
	(-0.20)	(-0.30)	(-0.29)	(-0.31)	(-1.05)	(-0.01)	(-0.12)	(-3.72)	(-5.90)	(-0.21)
Leverage	0.220***	0.220***	0.221***	0.221***	0.270***	0.218***	0.216***	0.327***	0.291***	0.219***
	(4.58)	(4.55)	(4.57)	(4.55)	(5.54)	(3.78)	(4.46)	(18.63)	(15.64)	(4.56)
DIV_FCF	0.00000574	0.000000582	0.00000604	0.0000161	-0.000524	0.000217	0.0000526	0.000351	-0.0000377	3.55e-08
	(0.01)	(0.00)	(0.01)	(0.02)	(-0.65)	(0.22)	(0.06)	(0.99)	(-0.10)	(0.00)
L.Cash_TA	0.0992	0.102	0.105*	0.102	0.0776	0.0727	0.102	0.132***	0.0926***	0.0971
	(1.60)	(1.64)	(1.69)	(1.64)	(1.36)	(1.01)	(1.62)	(5.55)	(3.92)	(1.56)
CF_Vol										-0.000896
										(-0.44)
UAI	-0.00123***	-0.00135***	-0.00140***	-0.00148***	-0.00167***	-0.00109***	-0.00123***	-0.00171***	-0.00244***	-0.00123***
	(-4.46)	(-5.24)	(-5.49)	(-5.16)	(-7.47)	(-3.64)	(-4.55)	(-26.37)	(-29.43)	(-4.46)
UAI_FCF	0.0307***	0.0306***	0.0306***	0.0305***	0.0336***	0.0317***	0.0310***	0.0394***	0.0488***	0.0307***
	(9.03)	(8.87)	(8.91)	(8.86)	(13.47)	(8.90)	(9.32)	(102.47)	(59.31)	(9.03)
Log_GDP_Capita	-0.00687	-0.00828	-0.00277	-0.00872*	-0.00409	-0.00793	-0.00667	-0.00163	-0.000678	-0.00686
	(-1.43)	(-1.64)	(-0.39)	(-1.74)	(-0.96)	(-1.47)	(-1.42)	(-0.90)	(-0.37)	(-1.43)
Credit_GDP	0.0000707	0.000112	0.000104	0.000116*	0.000203***	0.0000634	0.0000615	0.0000374	0.0000881***	0.0000713
	(1.05)	(1.64)	(1.62)	(1.68)	(2.98)	(0.83)	(0.91)	(1.44)	(3.33)	(1.06)
Stock_mkt_GDP	0.0000402	0.0000535	0.0000560	0.0000601	0.0000213	0.0000579	0.0000383	0.0000290*	0.0000266	0.0000406
	(1.04)	(1.43)	(1.54)	(1.63)	(0.59)	(1.22)	(0.99)	(1.94)	(1.75)	(1.05)
Anti_Self_Dealing	0.0303				0.00957	0.0408*	0.0325	0.0216***	0.00508	0.0302
	(1.43)				(0.49)	(1.65)	(1.53)	(2.66)	(0.61)	(1.42)
concentration		0.0119								
		(0.68)								
rule_law			-0.00859							
			(-1.20)							
common_legal				-0.00665						
				(-0.78)						
_cons	0.0683	0.105	0.0654	0.125**	0.0984	0.0579	0.0625	0.0792***	0.143***	0.0688
	(0.99)	(1.81)	(0.95)	(2.08)	(1.48)	(0.74)	(0.90)	(2.92)	(5.28)	(1.00)
_observations	13950	13950	13950	13950	10530	10850	13680	13688	13677	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.11. Regression results – Assertiveness (GLOBE) robustness checks

	(6) Basic	(57) Concentration	(58) Rule of Law	(59) Common Legal Origin	(60) ex USA	(61) ex Crisis	(62) Outliers - Size	(63) Outliers - Cash Flow	(64) Outliers - CAPEX	(65) Cash Flow Volatility
L.CAPEXF_TA	0.00430	0.00432*	0.00433*	0.00429*	0.00440*	0.00443*	0.00428	0.00571***	0.00606***	0.00487*
	(1.64)	(1.64)	(1.65)	(1.66)	(1.86)	(1.85)	(1.64)	(4.49)	(4.74)	(1.70)
MV_BV_t1	0.0104**	0.0110**	0.0110**	0.0111**	0.0139***	0.0150***	0.0107**	0.0154***	0.00889***	0.0104**
	(2.40)	(2.49)	(2.50)	(2.60)	(2.71)	(3.03)	(2.40)	(7.24)	(4.12)	(2.40)
FCF_TA	-5.833***	-5.804***	-5.800***	-5.860***	-5.996***	-6.712***	-5.962***	-10.83***	-8.112***	-5.833***
	(-10.36)	(-10.28)	(-10.27)	(-10.56)	(-13.49)	(-11.58)	(-10.58)	(-82.77)	(-42.95)	(-10.35)
L.Ln_TA	-0.000619	0.000740	0.000944	0.000069	0.00302	-0.000793	0.000636	0.000670	-0.00761***	-0.000665
	(-0.15)	(0.18)	(0.23)	(0.02)	(0.65)	(-0.19)	(0.15)	(0.34)	(-3.83)	(-0.16)
Leverage	0.178***	0.175***	0.175***	0.178***	0.209***	0.173***	0.164***	0.109***	0.215***	0.177***
	(4.48)	(4.41)	(4.39)	(4.59)	(4.05)	(4.05)	(4.02)	(5.79)	(10.96)	(4.46)
DIV_FCF	0.000615	0.000616	0.000631	0.000626	0.000362	0.00101	0.000636	0.000888**	0.00119***	0.000608
	(0.75)	(0.75)	(0.77)	(0.78)	(0.52)	(1.31)	(0.79)	(2.28)	(3.07)	(0.74)
L.Cash_TA	0.108**	0.111**	0.116**	0.107**	0.113**	0.110**	0.110**	0.102***	0.107***	0.106**
	(2.13)	(2.17)	(2.27)	(2.15)	(2.34)	(2.08)	(2.11)	(4.08)	(4.37)	(2.08)
CF_Vol										-0.000825
										(-0.50)
ASSE	-0.0784***	-0.0780***	-0.0779***	-0.0823***	-0.0871***	-0.0854***	-0.0800***	-0.147***	-0.112***	-0.0783***
	(-9.20)	(-9.13)	(-9.03)	(-9.69)	(-12.82)	(-10.05)	(-9.42)	(-65.62)	(-39.34)	(-9.19)
ASSE_FCF	1.484***	1.478***	1.477***	1.491***	1.554***	1.677***	1.508***	2.505***	2.047***	1.484***
	(12.24)	(12.15)	(12.14)	(12.48)	(17.03)	(13.69)	(12.53)	(99.21)	(59.35)	(12.23)
Log_GDP_Capita	-0.0130***	-0.0109***	-0.0109*	-0.0120***	-0.0124***	-0.0137***	-0.0131***	-0.0148***	-0.0112***	-0.0130***
	(-3.32)	(-2.70)	(-1.88)	(-3.07)	(-3.42)	(-3.45)	(-3.35)	(-7.72)	(-5.80)	(-3.31)
Credit_GDP	0.0000249	0.0000020	0.0000045	0.0000614	0.000237***	0.0000081	0.0000172	0.0000685**	0.0000162	0.0000253
	(0.41)	(0.03)	(0.07)	(1.01)	(3.75)	(0.13)	(0.28)	(2.30)	(0.54)	(0.42)
Stock_mkt_GDP	0.0000212	-0.0000228	-0.0000256	-0.0000237	-0.0000277	0.0000394	0.0000159	0.0000123	0.0000141	0.0000214
	(0.67)	(-0.83)	(-1.02)	(0.84)	(-0.89)	(1.14)	(0.50)	(0.78)	(0.89)	(0.67)
Anti_Self_Dealing	-0.0359**				-0.00332	-0.0368**	-0.0324**	-0.0334***	-0.0569***	-0.0361**
	(-2.38)				(-0.20)	(-2.35)	(-2.14)	(-4.58)	(-7.64)	(-2.39)
concentration		-0.00299								
		(-0.21)								
rule_law			0.000130							
			(0.02)							
common_legal				-0.02032***						
				(-3.864)						
_cons	0.483***	0.430***	0.427***	0.47065***	0.444***	0.520***	0.483***	0.821***	0.675***	0.484***
	(7.02)	(6.84)	(6.26)	(7.41)	(6.85)	(7.54)	(6.95)	(27.62)	(22.09)	(7.02)
_observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.12. Regression results – Power Distance (GLOBE) robustness checks

	(7) Base model	(66) Ownership Concentration	(67) Rule of Law	(68) Common Legal Origin	(69) ex USA	(70) ex Crisis	(71) Outliers - Size	(72) Outliers - Cash Flow	(73) Outliers - CAPEX	(74) Cash Flow Volatility
L.CAPEXF_TA	0.00147	0.00150	0.00148	0.00140	0.00187	0.00140	0.00139	0.00376	0.00579**	0.00176
	(0.22)	(0.23)	(0.22)	(0.21)	(0.31)	(0.20)	(0.21)	(1.50)	(2.16)	(0.24)
MV_BV_t1	0.00624	0.00597	0.00582	0.00720	0.00654	0.00847	0.00583	-0.0117***	-0.0165***	0.00623
	(0.57)	(0.54)	(0.53)	(0.66)	(0.49)	(0.57)	(0.52)	(-2.81)	(-3.71)	(0.57)
FCF_TA	2.950	2.929	2.849	3.003	5.937**	4.665	3.302	31.31***	8.870***	2.954
	(0.85)	(0.84)	(0.82)	(0.87)	(2.09)	(1.09)	(0.95)	(37.61)	(6.59)	(0.85)
L.Ln_TA	0.00119	0.00221	0.00284	0.00241	-0.00214	-0.0000353	0.00253	-0.0191***	-0.0192***	0.00115
	(0.12)	(0.21)	(0.27)	(0.24)	(-0.17)	(-0.00)	(0.23)	(-5.05)	(-4.66)	(0.11)
Leverage	0.205**	0.200**	0.198**	0.207**	0.325***	0.247*	0.198*	0.502***	0.540***	0.204**
	(2.03)	(1.98)	(1.96)	(2.06)	(2.95)	(1.94)	(1.92)	(13.60)	(13.56)	(2.02)
DIV_FCF	0.000240	0.000241	0.000220	0.000230	-0.000181	0.000694	0.000351	0.000812	0.00179**	0.000237
	(0.12)	(0.12)	(0.11)	(0.11)	(-0.10)	(0.31)	(0.18)	(1.08)	(2.25)	(0.12)
L.Cash_TA	0.112	0.116	0.125	0.113	0.0799	0.101	0.124	0.173***	0.118**	0.111
	(0.89)	(0.91)	(0.99)	(0.90)	(0.65)	(0.65)	(0.95)	(3.59)	(2.35)	(0.87)
CF_Vol										-0.000412
										(-0.10)
PDIN	0.0759	0.0621	0.0624	0.0686	0.132*	0.123	0.0839	0.776***	0.225***	0.0761
	(0.82)	(0.68)	(0.69)	(0.76)	(1.67)	(1.10)	(0.91)	(31.10)	(6.20)	(0.82)
PDIN_FCF	-0.685	-0.679	-0.652	-0.701	-1.548	-1.223	-0.797	-10.05***	-2.027***	-0.687
	(-0.57)	(-0.57)	(-0.54)	(-0.59)	(-1.57)	(-0.83)	(-0.66)	(-35.19)	(-4.31)	(-0.57)
Log_GDP_Capita	-0.0138	-0.0134	-0.00212	-0.0135	-0.0102	-0.0151	-0.0137	0.00786**	-0.00143	-0.0138
	(-1.35)	(-1.28)	(-0.14)	(-1.30)	(-1.07)	(-1.23)	(-1.35)	(2.03)	(-0.34)	(-1.35)
Credit_GDP	0.000102	0.0000841	0.000111	0.000128	0.000290*	0.000119	0.0000900	-0.000109*	-0.00000028	0.000103
	(0.68)	(0.52)	(0.73)	(0.84)	(1.87)	(0.67)	(0.59)	(-1.90)	(-0.00)	(0.69)
Stock_mkt_GDP	0.0000228	0.00000560	-0.0000078	0.0000422	-0.0000184	0.0000247	0.0000176	-0.000109***	-0.0000328	0.0000230
	(0.27)	(0.07)	(-0.11)	(0.52)	(-0.23)	(0.23)	(0.21)	(-3.42)	(-0.96)	(0.27)
Anti_Self_Dealing	-0.0323				-0.00944	-0.0394	-0.0302	-0.0745***	-0.0824***	-0.0324
	(-0.80)				(-0.21)	(-0.80)	(-0.75)	(-4.88)	(-4.97)	(-0.80)
Concentration		-0.0156								
		(-0.44)								
rule_law			-0.0158							
			(-1.05)							
common_legal				-0.0223*						
				(-1.70)						
_cons	-0.117	-0.105	-0.214	-0.118	-0.338	-0.231	-0.151	-2.190***	-0.567***	-0.117
	(-0.39)	(-0.35)	(-0.66)	(-0.39)	(-1.31)	(-0.63)	(-0.50)	(-24.17)	(-4.75)	(-0.39)
_observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.13. Regression results – Institutional Collectivism (GLOBE) robustness checks

	(8) Base model	(75) Ownership Concentration	(76) Rule of Law	(77) Common Legal Origin	(78) ex USA	(79) ex Crisis	(80) Outliers - Size	(81) Outliers - Cash Flow	(82) Outliers - CAPEX	(83) Cash Flow Volatility
L.CAPEXF_TA	0.00307	0.00310	0.00309	0.00300	0.00416	0.00322	0.00316	0.00552***	0.00604***	0.00352
	(0.72)	(0.73)	(0.73)	(0.71)	(1.51)	(0.78)	(0.77)	(3.58)	(3.76)	(0.75)
MV_BV_t1	0.00783	0.00807	0.00808	0.00868	0.0107*	0.0115	0.00762	0.00428*	0.00112	0.00782
	(1.15)	(1.17)	(1.17)	(1.27)	(1.81)	(1.38)	(1.12)	(1.72)	(0.43)	(1.14)
FCF_TA	12.26***	12.33***	12.27***	12.28***	16.21***	14.43***	12.66***	23.83***	21.38***	12.26***
	(6.39)	(6.42)	(6.41)	(6.45)	(15.65)	(6.74)	(6.89)	(85.49)	(47.77)	(6.39)
L.Ln_TA	0.00226	0.00331	0.00384	0.00336	0.00423	0.000759	0.00359	-0.000923	-0.00812***	0.00222
	(0.33)	(0.51)	(0.59)	(0.53)	(0.72)	(0.10)	(0.51)	(-0.38)	(-3.17)	(0.33)
Leverage	0.160**	0.156**	0.157**	0.161**	0.172***	0.173**	0.153**	0.173***	0.256***	0.159**
	(2.44)	(2.40)	(2.40)	(2.49)	(3.41)	(2.29)	(2.36)	(7.60)	(10.29)	(2.43)
DIV_FCF	0.000216	0.000208	0.000209	0.000212	-0.000205	0.000555	0.000324	0.000745*	0.000495	0.000212
	(0.17)	(0.16)	(0.16)	(0.17)	(-0.26)	(0.43)	(0.26)	(1.66)	(1.06)	(0.16)
L.Cash_TA	0.114	0.117	0.123	0.115	0.101*	0.0953	0.125	0.139***	0.0995***	0.113
	(1.36)	(1.40)	(1.48)	(1.38)	(1.74)	(1.02)	(1.50)	(4.53)	(3.20)	(1.34)
CF_Vol										-0.000635

									(-0.24)
COL1	0.139***	0.141***	0.137***	0.143***	0.199***	0.158***	0.143***	0.302***	0.261***	0.139***
	(4.49)	(4.50)	(4.46)	(4.65)	(11.32)	(4.75)	(4.83)	(49.24)	(30.07)	(4.49)
COL1_FCF	-2.619***	-2.635***	-2.621***	-2.621***	-3.432***	-3.102***	-2.702***	-5.212***	-4.553***	-2.619***
	(-5.90)	(-5.93)	(-5.92)	(-5.95)	(-14.26)	(-6.23)	(-6.36)	(-78.36)	(-40.90)	(-5.90)
Log_GDP_Capita	-0.0223***	-0.0215***	-0.0145	-0.0210***	-0.0180***	-0.0247***	-0.0227***	-0.0226***	-0.0195***	-0.0223***
	(-3.28)	(-3.11)	(-1.52)	(-3.06)	(-4.07)	(-3.34)	(-3.48)	(-9.09)	(-7.53)	(-3.28)
Credit_GDP	0.0000233	-0.0000165	0.0000066	0.0000537	0.000261***	0.0000269	0.00000968	0.00000623	0.0000247	0.0000238
	(0.22)	(-0.16)	(0.06)	(0.51)	(3.28)	(0.23)	(0.09)	(0.16)	(0.61)	(0.22)
Stock_mkt_GDP	0.0000389	0.0000247	0.0000106	0.0000572	-0.0000280	0.0000558	0.0000350	0.0000252	0.0000303	0.0000392
	(0.75)	(0.56)	(0.26)	(1.25)	(-0.76)	(0.93)	(0.69)	(1.32)	(1.52)	(0.75)
Anti_Self_Dealing	-0.0226				0.00877	-0.0274	-0.0202	-0.0283***	-0.0478***	-0.0227
	(-0.91)				(0.44)	(-0.99)	(-0.83)	(-3.15)	(-5.03)	(-0.91)
concentration		-0.0220								
		(-0.92)								
rule_law			-0.0103							
			(-1.07)							
common_legal				-0.0209**						
				(-2.42)						
_cons	-0.433**	-0.463***	-0.517***	-0.476***	-0.818***	-0.478***	-0.458***	-1.136***	-0.943***	-0.432**
	(-2.56)	(-2.77)	(-3.04)	(-2.88)	(-7.50)	(-2.62)	(-2.77)	(-24.32)	(-17.34)	(-2.55)
_observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.14. Regression results – In-group Collectivism (GLOBE) robustness checks

	(9) Base model	(84) Ownership Concentration	(85) Rule of Law	(86) Common Legal Origin	(87) ex USA	(88) ex Crisis	(89) Outliers - Size	(90) Outliers - Cash Flow	(91) Outliers - CAPEX	(92) Cash Flow Volatility
L.CAPEXF_TA	0.00247	0.00245	0.00246	0.00246	0.00257	0.00238	0.00245	0.00485***	0.00535***	0.00309
	(0.54)	(0.53)	(0.54)	(0.53)	(0.61)	(0.50)	(0.54)	(2.69)	(3.04)	(0.62)
MV_BV_t1	0.0121	0.0112	0.0112	0.0110	0.0153*	0.0191*	0.0123	0.0192***	0.00809***	0.0121
	(1.62)	(1.50)	(1.50)	(1.47)	(1.69)	(1.93)	(1.59)	(6.43)	(2.74)	(1.61)
FCF_TA	17.36***	17.25***	17.30***	17.24***	21.73***	19.87***	18.00***	47.03***	34.18***	17.37***
	(5.40)	(5.34)	(5.37)	(5.33)	(7.54)	(5.31)	(5.50)	(63.52)	(41.46)	(5.40)
L.Ln_TA	0.000780	-0.0000351	0.000538	0.000421	0.000883	0.00134	0.00292	-0.00396	-0.0104***	0.000724
	(0.11)	(-0.01)	(0.08)	(0.06)	(0.16)	(0.16)	(0.38)	(-1.44)	(-3.81)	(0.10)
Leverage	0.174**	0.176**	0.175**	0.175**	0.226***	0.179**	0.158**	0.0973***	0.278***	0.173**
	(2.50)	(2.52)	(2.51)	(2.49)	(2.92)	(2.11)	(2.19)	(3.66)	(10.35)	(2.49)
DIV_FCF	0.000631	0.000639	0.000619	0.000672	0.000150	0.00115	0.000661	0.000380	0.00140***	0.000629
	(0.46)	(0.46)	(0.45)	(0.48)	(0.13)	(0.78)	(0.49)	(0.73)	(2.74)	(0.46)
L.Cash_TA	0.0729	0.0735	0.0797	0.0782	0.0815	0.0572	0.0824	0.0438	0.0615*	0.0709
	(0.83)	(0.83)	(0.91)	(0.88)	(0.95)	(0.55)	(0.91)	(1.24)	(1.84)	(0.80)
CF_Vol										-0.000894
										(-0.31)
COL2	0.150***	0.159***	0.158***	0.170***	0.231***	0.162***	0.156***	0.502***	0.326***	0.150***
	(3.66)	(3.87)	(3.85)	(4.02)	(5.72)	(3.47)	(3.74)	(44.71)	(26.66)	(3.65)
COL2_FCF	-2.976***	-2.957***	-2.966***	-2.957***	-3.740***	-3.422***	-3.094***	-8.397***	-5.886***	-2.978***
	(-5.10)	(-5.05)	(-5.08)	(-5.04)	(-7.04)	(-5.01)	(-5.20)	(-60.79)	(-37.74)	(-5.10)
Log_GDP_Capita	-0.0116*	-0.0144**	-0.00167	-0.0141**	-0.0114*	-0.0130	-0.0113	-0.00629**	-0.00553**	-0.0116*
	(-1.67)	(-2.04)	(-0.17)	(-2.01)	(-1.72)	(-1.62)	(-1.64)	(-2.29)	(-2.06)	(-1.67)
Credit_GDP	0.000179*	0.000168	0.000204**	0.000209**	0.000416***	0.000209*	0.000162	0.000260***	0.000228***	0.000179*
	(1.84)	(1.62)	(2.13)	(2.12)	(3.84)	(1.88)	(1.62)	(6.70)	(6.04)	(1.84)
Stock_mkt_GDP	-0.0000638	-0.0000033	-0.0000186	0.00000822	-0.0000588	-0.0000649	-0.0000762	0.000111***	0.000126***	-0.0000639
	(-1.00)	(-0.07)	(-0.42)	(0.13)	(-0.98)	(-0.83)	(-1.18)	(-4.36)	(-5.05)	(-1.00)
Anti_Self_Dealing	0.0325				0.0334	0.0414	0.0389	0.0518***	0.0381***	0.0326
	(1.05)				(1.11)	(1.13)	(1.24)	(4.25)	(3.14)	(1.05)
concentration		-0.0198								
		(-0.78)								
rule_law			-0.0179*							
			(-1.69)							
common_legal				-0.00928						
				(-0.74)						
_cons	-0.795***	-0.786***	-0.900***	-0.859***	-1.293***	-0.866***	-0.848***	-2.796***	-1.797***	-0.794***
	(-3.22)	(-3.18)	(-3.62)	(-3.41)	(-5.04)	(-3.06)	(-3.36)	(-39.20)	(-23.82)	(-3.21)
_observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table 6.15. Regression results – Uncertainty Avoidance (GLOBE) robustness checks

	(10) Base model	(93) Ownership Concentration	(94) Rule of Law	(95) Common Legal Origin	(96) ex USA	(97) ex Crisis	(98) Outliers - Size	(99) Outliers - Cash Flow	(100) Outliers - CAPEX	(101) Cash Flow Volatility
L.CAPEXF_TA	0.00136	0.00139	0.00140	0.00133	0.00169	0.00132	0.00133	0.00413	0.00559**	0.00161
	(0.20)	(0.21)	(0.21)	(0.20)	(0.27)	(0.18)	(0.20)	(1.34)	(2.01)	(0.22)
MV_BV_t1	0.00722	0.00691	0.00651	0.00812	0.00853	0.00952	0.00732	0.00345	-0.0151***	0.00722
	(0.66)	(0.62)	(0.59)	(0.74)	(0.64)	(0.64)	(0.65)	(0.68)	(-3.31)	(0.66)
FCF_TA	-0.576	-0.471	-0.522	-0.674	1.948	-1.414	-0.546	-12.14***	-0.967	-0.574
	(-0.23)	(-0.19)	(-0.21)	(-0.28)	(0.88)	(-0.44)	(-0.22)	(-12.43)	(-1.02)	(-0.23)
L.Ln_TA	0.00262	0.00470	0.00457	0.00377	0.00261	0.00236	0.00407	-0.00984**	-0.0179***	0.00259
	(0.26)	(0.46)	(0.45)	(0.38)	(0.21)	(0.19)	(0.37)	(-2.16)	(-4.28)	(0.25)
Leverage	0.195*	0.189*	0.189*	0.198**	0.289***	0.236*	0.187*	0.380***	0.533***	0.195*
	(1.93)	(1.86)	(1.86)	(1.97)	(2.58)	(1.85)	(1.81)	(8.51)	(13.09)	(1.93)
DIV_FCF	0.000161	0.000173	0.000178	0.000149	0.0000270	0.000555	0.000261	0.000612	0.00145*	0.000158
	(0.08)	(0.09)	(0.09)	(0.07)	(0.02)	(0.25)	(0.13)	(0.68)	(1.80)	(0.08)
L.Cash_TA	0.127	0.134	0.136	0.128	0.0970	0.128	0.134	0.198***	0.131**	0.126
	(0.99)	(1.04)	(1.06)	(1.01)	(0.77)	(0.81)	(1.02)	(3.36)	(2.52)	(0.98)
CF_Vol										-0.000349
										(-0.08)
UAIN	-0.00166	-0.00346	-0.0120	-0.0115	0.0325	-0.00905	-0.00194	-0.220***	-0.0260	-0.00157
	(-0.03)	(-0.07)	(-0.23)	(-0.24)	(0.72)	(-0.15)	(-0.04)	(-11.06)	(-1.35)	(-0.03)
UAIN_FCF	0.358	0.332	0.344	0.383	-0.111	0.593	0.358	3.300***	0.933***	0.357
	(0.63)	(0.58)	(0.60)	(0.67)	(-0.22)	(0.80)	(0.63)	(14.54)	(4.26)	(0.63)
Log_GDP_Capita	-0.00431	-0.00518	-0.00223	-0.00779	-0.000626	-0.00382	-0.00447	-0.00738	0.0107*	-0.00428
	(-0.29)	(-0.35)	(-0.14)	(-0.53)	(-0.04)	(-0.22)	(-0.30)	(-1.08)	(1.72)	(-0.29)
Credit_GDP	0.000130	0.0000877	0.000126	0.000130	0.000317**	0.000162	0.000117	0.0000905	0.000112*	0.000130
	(0.93)	(0.58)	(0.90)	(1.06)	(2.14)	(0.99)	(0.82)	(1.40)	(1.92)	(0.93)
Stock_mkt_GDP	0.0000375	0.0000102	0.00000478	0.0000537	-0.0000101	0.0000686	0.0000335	0.0000853**	0.0000335	0.0000376
	(0.46)	(0.15)	(0.07)	(0.72)	(-0.12)	(0.66)	(0.41)	(2.26)	(0.99)	(0.47)
Anti_Self_Dealing	-0.0331				-0.00398	-0.0425	-0.0305	-0.0627***	-0.0759***	-0.0332
	(-0.83)				(-0.09)	(-0.87)	(-0.76)	(-3.43)	(-4.54)	(-0.83)
concentration		-0.0182								
		(-0.49)								
rule_law			-0.00984							
			(-0.58)							
common_legal				-0.0217						
				(-1.62)						
_cons	0.000116	-0.0102	-0.000346	0.0598	-0.237	0.0235	-0.00822	1.084***	0.0416	-0.000209
	(0.00)	(-0.03)	(-0.00)	(0.18)	(-0.79)	(0.06)	(-0.03)	(7.74)	(0.32)	(-0.00)
_observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. While corresponding coefficients are not reported, we have included firm two-digit SIC codes, and variables representing the year in each regression. Full regression results are attached in the appendix. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

6.3 Conclusion: results

In chapter IV we proposed national culture as a fundamental determinant in management's decision to take advantage of opportunities to overinvest and move to the act of engaging in value destroying capital expenditures. Our empirical test employed the sensitivity of investment to cash flow and cultural dimensions of Hofstede and GLOBE as indicators for overinvestment and national culture respectively. Following the description of Jensen (1986) for firms most exposed to the overinvestment agency problem, from an initial sample of 7,338 non-financial quoted companies for the period of 2001-2011, we have selected companies with investment opportunities below-, and at the same time free cash flow above the median from their respective countries resulting in a final sample of 1,550 companies from 36 countries.

Confirming our theoretical proposition, we found compelling empirical evidence that culture influences overinvestment beyond its impact on the opportunity to overinvest. More specifically, our results show that more Masculinity (MAS) and Uncertainty Avoidance (UAI) in a culture leads to more overinvestment even when controlling for the effect of financial characteristics, corporate financial policies and country-level institutions with a documented impact on the opportunity to overinvest. Despite our theoretical arguments, we detected no consistent influence on overinvestment by power distance (PDI). Furthermore, contradictory results for individualism (IDV) between regressions applying Hofstede's cultural value dimension (IDV) and the GLOBE study's related constructs, institutional-, and in-group collectivism (COL1, COL2) make us unable to verify its overall impact on overinvestment.

We confirmed our results through several tests of robustness including verifying whether they are primarily driven by the framework chosen to quantify culture, by the information content of the volatility of cash flow invalidating the sensitivity of investment to cash flow as indicator of overinvestment, by the indicator of country-level corporate governance regime

applied, or by specific sample characteristics. We have also found strong indication that the underlying cause of investment - cash flow sensitivity in our sample is dominated by over-, and not underinvestment, thus, supporting our choice of indicator for overinvestment and of our final sample selection.

Chapter VII.

Conclusion

Overinvestment results in value destruction. Research undertaken to better understand it therefore offers value to academia, policy makers and practicing managers and investors.

7.1 Note on ethics

Before any of the implications of our result can be discussed we feel it is very important to emphasize the ethical dimension of our work. A danger of reflecting on cultural differences is that the author may make value judgment viewing certain cultures or cultural characteristics as inherently superior to others. Both Berry et al. (1992) and Hofstede (2001) repeatedly warn against such an ethnocentric approach. We recognize this ethical issue in our work, and we consciously strive to avoid such judgments. We have no intention, and our work should not be read nor presented in any such way, to portray any culture or cultural characteristic as inferior or superior to another. We seek to explore how certain aspects of national culture affect management's tendency to make decisions leading to overinvestment in capital expenditures to further our understanding of overinvestment's fundamental drivers, and potentially aid in the efforts to mitigate it.

7.2 Advancing theoretical understanding

7.2.1   Better understanding, better models

This dissertation furthers the understanding of culture's impact on finance and corporate governance. Our results confirm that national culture is a fundamental determinant of management's tendency to make decisions leading to overinvestment. Extending the analysis of overinvestment by adding previously ignored factors that may influence management's

relevant decisions advances the theoretical foundations of the phenomenon. Failure to include cultural effects in an analysis of economic behavior, where such relationship exists, may bias the results, and misleadingly attribute some of the explanatory value of culture to other variables (Chang and Noorbakhsh, 2009). The confirmed link between national culture and management's tendency to make decisions leading to overinvestment; thus, will allow researchers studying overinvestment to better specify their models.

7.2.2   Some support for culturally-contingent view of Agency Theory

As we have described, authors have questioned the full cultural transferability of Agency Theory (Lubatkin, 2007; Ekanayake, 2004, Johnson and Droege, 2004). Such scholars argue that its fundamental assumptions of conflict of interest between agents and principal and always opportunistic agent behavior are culturally contingent.

Our theory laid out in chapter IV concurs with the culturally contingent view of Agency Theory, and we adopted such a position for the development of our hypotheses in chapter V. However, it is important to note that while we see our results as supportive of that assertion, they cannot be regarded as fully confirming it. This is because we cannot empirically separate overinvestment caused by opportunistic management behavior from overinvestment due to management being overconfident. Thus, theoretically, it is imaginable that the relationship we found are due to culture's influence through overconfidence alone, and that opportunistic behavior, thus agency problem related, overinvestment is completely independent of national culture. While this cannot be theoretically rejected, it is highly unlikely for two reasons. First, as we have indicated in chapter II, we expect agency problems to weigh significantly more as a source of overinvestment in our sample than overconfidence. Second, while individualism has been both conceptually and empirically positively related to overconfidence throughout the literature (see chapter II), our results finding a statistically significant and consistent

relationship between individualism and overinvestment in our sample have been unsuccessful. Consequently, overall we interpret our results to lend some support to the view that Agency Theory is not fully cross-culturally transferable.

7.3 Assisting policy makers to mitigate overinvestment

7.3.1   Better cross-cultural cooperation

Both House et al. (2004) and Hofstede (2010) point out increasing cross-cultural interaction brought about by globalization as a source of not only substantial benefits but also unavoidable conflict. Studying how culture influences behavior is beneficial, as a greater understanding may reinforce the first while minimize the latter. Hofstede (2010) cites a host of urgent and imminent problems such as climate change and epidemics (it is enough to think of the ebola outbreak of 2014/2015) that require international collaboration. The economic crises of 2008/2009 and the European sovereign debt crisis also necessitate that policy makers work together on a continental, or even on a global-level. One can argue that the fundamentally different approach taken by the Nordic countries and the southern member states of the Eurozone to the Euro-crisis also highlights cultural differences on what social and economic behavior is appropriate and "responsible". In economic cooperation, for example in the designation and monitoring of the European Union structural funds, but also for any joint economic programs or international aid, an appreciation of the cultural determinants of overinvestment can serve to better anticipate and mitigate related problems.

7.3.2   Better country-level policies

Besides cooperation, creating effective and efficient country-level policies also requires an understanding of the cultural environment. Based on the arguments put forward in the field of New Institutional Economics, among others by North (1990), Williamson (2000), and Roland

(2004), operating formal institutions not compatible with informal institutions will create friction resulting in higher social costs, and may prove to be inefficient in performing their function. Lubatkin et al. (2007) posits that informal institutions can have a stronger effect influencing behavior than formal ones, which becomes evident when the two are in conflict. In such situations, while formal institutions may be in place and in effect, but they may not be applied, or applied in a way that is different from the intentions of the policy makers. Relatedly, both Licht (2008) and Coffee (2001) highlight that social norms, such as law abidance, have a significant influence on the effectiveness of the laws and the legal system.

In a similar vein, as cultural values are fundamental parts of informal institutions, Licht et al. (2005, 2007) emphasize that writing and adopting corporate governance codes and laws to protect investor rights is not sufficient to guarantee effective governance protection. They point to the legal system imposed in East-Asian common law countries during colonial rule failing to provide the same effective protection as common law where it naturally evolved. Another example of ineffective formal institutions cited by Licht (2001) and Coffee (2001) is Eastern Europe, where after the fall of the communist political regimes laws and regulations were imported from the western market economies, but they failed to provide the full benefit expected due to their local application.

Therefore, at the country-level, better understanding the cultural foundations of overinvestment will allow policy makers to avoid the adaptation of international governance rules aimed to mitigate overinvestment fit for a different cultural context with regards to cultural characteristics most relevant for overinvestment (masculinity/assertiveness and avoidance of uncertainty). Following the arguments discussed above such regulations without appropriate adaptation may prove inefficient in the local cultural environment.

7.4 Assisting practicing managers and investors

Management and leadership is an international, consequently inter-cultural, activity as empirically demonstrated by the results of the GLOBE project. In multinational organizations, but increasingly even in local ones, it is the norm and not the exception for managers to be responsible for a culturally diverse workforce. In such situations, according to the view of Divergence Theory on management (see chapter II), appreciating and being sensitive to cultural influences on behavior improves performance. House et al. (2004) and Hofstede (2010) highlight the importance of cross-border business activity in today's globalizing world. Obvious areas where a deeper understanding of cultural motivations for overinvestment is useful at the firm-level for practicing managers are cross-border negotiations, mergers and acquisitions, joint ventures, or investment projects. Findings of this dissertation may also be relevant to mechanisms applied by management and boards of multinational companies intending to control overinvestment behavior at their foreign operations.

It is also advantageous for investors to be aware which aspects of national culture are most related to overinvestment in two ways. First, they can use this information to better screen for such value destroying corporate governance problem in their investment selection process. Second, they can apply this data to identify among their existing investments potential candidates for added monitoring.

7.5 Future research

With regards to the GLOBE project House et al. (2004) notes: "We are just beginning to understand how culture influences leadership and organizational processes" (House et al., 2004, p. 9). We believe our dissertation adds a tiny piece to this puzzle advancing our knowledge with regards to the impact of culture on management in general, and corporate investment policy in specific. However, we do not provide all the answers with regards to the

relationship between culture and overinvestment. We have theorized, and empirically demonstrated, a link between certain aspects of national culture (masculinity/assertiveness and avoidance of uncertainty) and overinvestment, and contributed to the debate on the cross-cultural transferability of Agency Theory.

There is much work remaining for future research to better understand this relationship. Remaining with the conceptualization of culture at the national level, researchers could use other aspects of culture identified by different cultural models, such as those of Trompenaars and Inglehart and Baker, to uncover additional potentially useful cultural motivators which are not separately identified in the Hofstsde /GLOBE dimensional frameworks. A promising research project could involve examining whether this relationship exists for layers of culture other than national culture, or whether it is moderated by the influence of such layers. Further examples of related areas of future research include separately examining cultural effects on overconfidence and agency motivated overinvestment, and extending the analysis to mergers and acquisitions as well.

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Appendix

Full regression table

Table A.1. Regression results - Masculinity dimension (Hofstede)

	(1) Base model	(21) Ownership Concentration	(22) Rule of Law	(23) Common Legal Origin	(24) ex USA	(25) ex Crisis	(26) Outliers - Size	(27) Outliers - Cash Flow	(28) Outliers - CAPEX	(29) Cash Flow Volatility	(11) Interaction
L.CAPEXF_TA	0.00451**	0.00451**	0.00451**	0.00448**	0.00468**	0.00443**	0.00454**	0.00586***	0.00603***	0.00513**	0.00439*
	(2.04)	(2.03)	(2.03)	(2.05)	(2.52)	(2.07)	(2.11)	(5.87)	(5.78)	(2.12)	(1.75)
MV_BV_t1	0.00823**	0.00835**	0.00846**	0.00857**	0.0102***	0.0144***	0.00852**	0.00818***	0.00745***	0.00824**	0.00700*
	(2.36)	(2.36)	(2.39)	(2.49)	(2.74)	(3.41)	(2.44)	(5.12)	(4.42)	(2.36)	(1.77)
FCF_TA	-2.768***	-2.767***	-2.758***	-2.766***	-2.782***	-2.930***	-2.748***	-3.426***	-3.604***	-2.769***	-1.621***
	(-10.68)	(-10.60)	(-10.57)	(-10.78)	(-14.37)	(-10.75)	(-11.08)	(-76.85)	(-39.07)	(-10.67)	(-3.03)
L.Ln_TA	-0.000305	0.000871	0.00101	0.000377	-0.00214	0.000957	0.000445	-0.00388**	-0.00689***	-0.000352	-0.00598
	(-0.09)	(0.26)	(0.30)	(0.12)	(-0.60)	(0.26)	(0.12)	(-2.57)	(-4.32)	(-0.10)	(-1.31)
Leverage	0.156***	0.154***	0.154***	0.158***	0.164***	0.143***	0.149***	0.181***	0.179***	0.156***	0.178***
	(4.74)	(4.66)	(4.65)	(4.83)	(5.06)	(3.78)	(4.54)	(12.68)	(11.25)	(4.72)	(3.25)
DIV_FCF	-0.0000494	-0.0000123	-0.00000659	-0.0000532	-0.000277	0.000124	0.0000772	0.000140	-0.000116	-0.0000543	0.000135
	(-0.07)	(-0.02)	(-0.01)	(-0.08)	(-0.51)	(0.19)	(0.12)	(0.47)	(-0.37)	(-0.08)	(0.25)
L.Cash_TA	0.0979**	0.102**	0.104**	0.0999**	0.0886**	0.0790*	0.0996**	0.0882***	0.0867***	0.0959**	0.158***
	(2.32)	(2.40)	(2.46)	(2.40)	(2.39)	(1.69)	(2.35)	(4.55)	(4.38)	(2.26)	(3.20)
CF_Vol										-0.000891	
										(-0.64)	
MAS	-0.00304***	-0.00301***	-0.00299***	-0.00318***	-0.00340***	-0.00296***	-0.00304***	-0.00387***	-0.00409***	-0.00304***	-0.00212***
	(-11.21)	(-11.08)	(-11.09)	(-11.73)	(-16.88)	(-10.87)	(-11.69)	(-65.49)	(-46.80)	(-11.19)	(-6.00)
MAS_FCF	0.0557***	0.0557***	0.0556***	0.0558***	0.0584***	0.0587***	0.0558***	0.0693***	0.0723***	0.0558***	0.0426***
	(15.08)	(14.96)	(14.92)	(15.23)	(22.62)	(15.54)	(15.83)	(128.52)	(72.85)	(15.07)	(8.81)
Size_FCF											0.0712*
											(1.65)
Leverage_FCF											-0.270
											(-0.44)
DIVfcf_FCF											0.253
											(1.54)
Cash_FCF											-1.565***
											(-3.99)
Anti_FCF											-0.926**
											(-2.23)
Stock_FCF											0.000661
											(0.89)
Credit_FCF											-0.0000894
											(-0.06)
Log_GDP_Capita	-0.0111***	-0.0103***	-0.00939*	-0.0105***	-0.00799***	-0.0121***	-0.0107***	-0.00886***	-0.00824***	-0.0111***	-0.0105***
	(-3.39)	(-3.04)	(-1.93)	(-3.17)	(-2.87)	(-3.43)	(-3.38)	(-5.98)	(-5.31)	(-3.39)	(-2.90)
Credit_GDP	0.00000414	-0.0000306	-0.0000181	0.0000489	0.000160***	-0.0000355	-0.0000105	-0.0000145	0.00000433	0.00000438	0.0000184
	(0.08)	(-0.62)	(-0.37)	(0.97)	(3.38)	(-0.66)	(-0.21)	(-0.63)	(0.18)	(0.09)	(0.15)
Stock_mkt_GDP	0.00000852	-0.00000923	-0.0000165	0.0000184	-0.0000154	0.0000207	0.00000389	6.31e-08	-0.00000113	0.00000884	-0.0000288
	(0.33)	(-0.40)	(-0.75)	(0.78)	(-0.66)	(0.68)	(0.15)	(0.01)	(-0.09)	(0.34)	(-0.48)
Anti_Self_Dealing	-0.0205*				-0.0210**	-0.0153	-0.0184	-0.0280***	-0.0390***	-0.0206*	0.0428
	(-1.71)				(-1.87)	(-1.17)	(-1.55)	(-5.18)	(-6.81)	(-1.72)	(1.32)
concentration		-0.0108									
		(-0.91)									
rule_law			-0.000886								
			(-0.18)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
common_legal				-0.0179***							
				(-4.03)							
2.SIC2	-0.00855	-0.00261	-0.00353	-0.0102	0.00571	-0.0130	-0.00819	-0.0178	-0.0127	-0.00849	-0.0104
	(-0.23)	(-0.07)	(-0.09)	(-0.28)	(0.15)	(-0.32)	(-0.22)	(-0.98)	(-0.71)	(-0.23)	(-0.25)
8.SIC2	0.0114	0.0158	0.0148	0.00740	-0.00446	-0.00112	0.0123	-0.00303	0.00185	0.0114	0.00591
	(0.31)	(0.42)	(0.39)	(0.20)	(-0.13)	(-0.03)	(0.34)	(-0.17)	(0.10)	(0.30)	(0.14)
10.SIC2	0.0131	0.0137	0.0153	0.0148	0.0103	-0.000522	0.00954	-0.00168	0.00504	0.0131	0.0133
	(0.41)	(0.42)	(0.47)	(0.47)	(0.33)	(-0.01)	(0.30)	(-0.11)	(0.33)	(0.41)	(0.37)
12.SIC2	0.0493	0.0536	0.0529	0.0473	0.0289	0.0481	0.0506	0.0234	0.0290	0.0493	0.0410
	(1.23)	(1.34)	(1.32)	(1.19)	(0.74)	(1.10)	(1.29)	(1.22)	(1.51)	(1.23)	(0.91)
13.SIC2	0.0574*	0.0599**	0.0605**	0.0576**	0.0514*	0.0503	0.0604**	0.0383***	0.0312**	0.0573*	0.0555*
	(1.94)	(2.03)	(2.04)	(1.97)	(1.72)	(1.56)	(2.10)	(2.62)	(2.22)	(1.94)	(1.67)
14.SIC2	0.00546	0.00827	0.00919	0.00253	-0.00629	0.0114	0.00611	-0.00320	0.00408	0.00535	-0.00293
	(0.14)	(0.21)	(0.23)	(0.07)	(-0.17)	(0.27)	(0.16)	(-0.17)	(0.22)	(0.14)	(-0.07)
15.SIC2	-0.0200	-0.0173	-0.0172	-0.0266	-0.0311	-0.0138	-0.0199	-0.0206	-0.0126	-0.0200	-0.0225
	(-0.62)	(-0.54)	(-0.53)	(-0.83)	(-1.03)	(-0.39)	(-0.64)	(-1.28)	(-0.79)	(-0.62)	(-0.62)
16.SIC2	0.00301	0.00814	0.00768	-0.00169	-0.00910	0.000774	0.00416	-0.00534	0.00374	0.00299	0.000358
	(0.09)	(0.25)	(0.24)	(-0.05)	(-0.29)	(0.02)	(0.13)	(-0.33)	(0.24)	(0.09)	(0.01)
17.SIC2	0.0123	0.0156	0.0161	0.0105	0.00731	0.0109	0.0197	0.00543	0.00963	0.0123	0.00393
	(0.37)	(0.46)	(0.48)	(0.31)	(0.20)	(0.30)	(0.59)	(0.33)	(0.60)	(0.37)	(0.10)
20.SIC2	0.0129	0.0177	0.0175	0.00882	0.00120	0.00714	0.0133	0.00105	0.00774	0.0128	0.00895
	(0.45)	(0.62)	(0.61)	(0.31)	(0.04)	(0.23)	(0.47)	(0.07)	(0.57)	(0.44)	(0.28)
22.SIC2	0.00574	0.0119	0.0118	0.000279	-0.000543	0.000604	0.00692	-0.00625	-0.00119	0.00563	0.00453
	(0.19)	(0.41)	(0.40)	(0.01)	(-0.02)	(0.02)	(0.24)	(-0.42)	(-0.09)	(0.19)	(0.14)
23.SIC2	-0.00924	-0.00432	-0.00511	-0.0109	-0.0119	-0.0117	-0.00844	-0.0215	-0.0185	-0.00930	-0.00906
	(-0.30)	(-0.14)	(-0.17)	(-0.36)	(-0.39)	(-0.35)	(-0.28)	(-1.39)	(-1.25)	(-0.30)	(-0.26)
24.SIC2	0.00275	0.00601	0.00573	0.000743	0.000526	-0.000487	0.00236	-0.00885	-0.00741	0.00271	-0.00116
	(0.09)	(0.19)	(0.18)	(0.02)	(0.02)	(-0.01)	(0.08)	(-0.57)	(-0.49)	(0.09)	(-0.03)
25.SIC2	-0.0165	-0.0123	-0.0123	-0.0190	-0.0177	-0.0230	-0.0155	-0.0340**	-0.0242	-0.0165	-0.0204
	(-0.53)	(-0.39)	(-0.39)	(-0.61)	(-0.57)	(-0.67)	(-0.51)	(-2.18)	(-1.62)	(-0.53)	(-0.58)
26.SIC2	0.00407	0.00932	0.00897	-0.00214	-0.00486	-0.00256	0.00500	-0.00781	-0.00263	0.00400	0.00217
	(0.14)	(0.32)	(0.31)	(-0.07)	(-0.17)	(-0.08)	(0.18)	(-0.54)	(-0.19)	(0.14)	(0.07)
27.SIC2	-0.00103	0.00302	0.00308	-0.00468	-0.00102	-0.00793	-0.000447	-0.0106	-0.00393	-0.00111	-0.00692
	(-0.03)	(0.10)	(0.10)	(-0.16)	(-0.04)	(-0.24)	(-0.02)	(-0.72)	(-0.28)	(-0.04)	(-0.21)
28.SIC2	0.000101	0.00548	0.00540	-0.00359	-0.00414	-0.00250	0.000623	-0.0101	-0.00398	0.0000390	-0.00292
	(0.00)	(0.19)	(0.19)	(-0.13)	(-0.15)	(-0.08)	(0.02)	(-0.71)	(-0.29)	(0.00)	(-0.09)
29.SIC2	0.0269	0.0265	0.0263	0.0235	0.0113	0.00702	0.0182	0.0227	0.0399**	0.0269	0.0269
	(0.83)	(0.81)	(0.80)	(0.73)	(0.33)	(0.20)	(0.56)	(1.42)	(2.58)	(0.83)	(0.73)
30.SIC2	0.0140	0.0190	0.0187	0.00938	0.0104	0.0107	0.0148	0.00170	0.00712	0.0139	0.00918
	(0.48)	(0.65)	(0.64)	(0.32)	(0.37)	(0.34)	(0.52)	(0.12)	(0.51)	(0.48)	(0.28)
31.SIC2	-0.0105	-0.00993	-0.00864	-0.00887	-0.0242	-0.0103	-0.0104	-0.0271	-0.0234	-0.0107	-0.0151
	(-0.22)	(-0.21)	(-0.18)	(-0.19)	(-0.57)	(-0.20)	(-0.22)	(-1.20)	(-1.03)	(-0.22)	(-0.28)
32.SIC2	0.00679	0.0118	0.0111	0.00244	-0.00185	0.00102	0.00709	-0.00495	0.00192	0.00676	0.000775
	(0.23)	(0.41)	(0.38)	(0.09)	(-0.07)	(0.03)	(0.25)	(-0.34)	(0.14)	(0.23)	(0.02)
33.SIC2	-0.00544	-0.000978	-0.00118	-0.00952	-0.0111	-0.0114	-0.00517	-0.0151	-0.00900	-0.00551	-0.00817
	(-0.19)	(-0.03)	(-0.04)	(-0.33)	(-0.40)	(-0.36)	(-0.18)	(-1.04)	(-0.66)	(-0.19)	(-0.25)
34.SIC2	0.00139	0.00667	0.00659	-0.00340	-0.00794	-0.00254	0.00208	-0.00906	-0.00561	0.00132	-0.00301
	(0.05)	(0.23)	(0.23)	(-0.12)	(-0.28)	(-0.08)	(0.07)	(-0.62)	(-0.40)	(0.05)	(-0.09)
35.SIC2	0.0255	0.0307	0.0306	0.0215	0.0210	0.0240	0.0260	-0.0129	-0.00612	0.0260	0.0275
	(0.87)	(1.06)	(1.05)	(0.74)	(0.74)	(0.75)	(0.91)	(-0.89)	(-0.45)	(0.89)	(0.84)
36.SIC2	-0.00385	0.000802	0.000738	-0.00752	-0.000963	-0.00705	-0.00242	-0.0142	-0.00988	-0.00379	-0.00495
	(-0.14)	(0.03)	(0.03)	(-0.27)	(-0.03)	(-0.23)	(-0.09)	(-0.99)	(-0.73)	(-0.13)	(-0.15)
37.SIC2	-0.00246	0.00210	0.00186	-0.00775	-0.0133	-0.00949	-0.00221	-0.0153	-0.00919	-0.00250	-0.00313
	(-0.09)	(0.07)	(0.07)	(-0.27)	(-0.48)	(-0.30)	(-0.08)	(-1.07)	(-0.68)	(-0.09)	(-0.10)

38.SIC2	-0.00902	-0.00394	-0.00388	-0.0112	-0.00988	-0.0164	-0.00559	-0.0210	-0.0191	-0.00903	-0.0131
	(-0.30)	(-0.13)	(-0.13)	(-0.38)	(-0.33)	(-0.50)	(-0.19)	(-1.39)	(-1.33)	(-0.30)	(-0.39)
39.SIC2	-0.0174	-0.0124	-0.0126	-0.0192	-0.0152	-0.0224	-0.0169	-0.0346**	-0.0277*	-0.0173	-0.0210
	(-0.55)	(-0.39)	(-0.40)	(-0.62)	(-0.47)	(-0.64)	(-0.55)	(-2.21)	(-1.84)	(-0.55)	(-0.59)
40.SIC2	0.0622	0.0662	0.0631	0.0525	0.0587	-0.000613	0.0610	0.0557**	0.0216	0.0621	0.0670
	(1.30)	(1.38)	(1.31)	(1.11)	(1.39)	(-0.01)	(1.31)	(2.47)	(0.92)	(1.30)	(1.24)
41.SIC2	0.0274	0.0339	0.0332	0.0197	0.0171	0.0259	0.0287	0.0129	0.0170	0.0273	0.0243
	(0.81)	(1.01)	(0.98)	(0.59)	(0.54)	(0.70)	(0.87)	(0.78)	(1.05)	(0.81)	(0.64)
42.SIC2	0.0510*	0.0561*	0.0563*	0.0471	0.0185	0.0475	0.0545*	0.0391***	0.0401***	0.0508*	0.0417
	(1.71)	(1.89)	(1.89)	(1.60)	(0.64)	(1.45)	(1.86)	(2.63)	(2.82)	(1.70)	(1.24)
44.SIC2	0.0280	0.0327	0.0325	0.0245	0.0200	0.0198	0.0290	0.0133	0.0139	0.0281	0.0254
	(0.94)	(1.09)	(1.08)	(0.83)	(0.68)	(0.60)	(0.99)	(0.90)	(0.98)	(0.94)	(0.76)
45.SIC2	0.0115	0.0123	0.0117	0.00828	-0.00204	0.00285	0.0108	-0.00000143	0.0107	0.0117	0.0159
	(0.35)	(0.38)	(0.36)	(0.26)	(-0.06)	(0.08)	(0.34)	(-0.00)	(0.69)	(0.36)	(0.43)
47.SIC2	0.0287	0.0319	0.0321	0.0228	-0.0291	0.0165	-0.00648	0.00738	-0.0245	0.0287	0.0358
	(0.90)	(1.00)	(1.01)	(0.72)	(-0.95)	(0.47)	(-0.21)	(0.47)	(-1.60)	(0.90)	(1.00)
48.SIC2	0.00434	0.00747	0.00845	0.00171	0.00797	-0.00255	0.00699	-0.00604	0.00214	0.00433	-0.00801
	(0.15)	(0.25)	(0.28)	(0.06)	(0.28)	(-0.08)	(0.24)	(-0.41)	(0.15)	(0.15)	(-0.24)
49.SIC2	-0.0137	-0.0104	-0.00978	-0.0173	-0.0294	-0.0231	-0.0134	-0.0298**	-0.0219	-0.0137	-0.0151
	(-0.47)	(-0.36)	(-0.33)	(-0.60)	(-1.04)	(-0.72)	(-0.47)	(-2.04)	(-1.58)	(-0.47)	(-0.46)
50.SIC2	-0.00254	0.00200	0.00203	-0.00683	-0.0103	-0.00568	-0.00155	-0.0108	-0.00748	-0.00256	-0.00749
	(-0.09)	(0.07)	(0.07)	(-0.24)	(-0.37)	(-0.18)	(-0.06)	(-0.75)	(-0.55)	(-0.09)	(-0.23)
51.SIC2	0.00384	0.00822	0.00803	-0.00100	-0.000465	-0.00137	0.00457	-0.00569	-0.0000576	0.00380	0.000899
	(0.13)	(0.28)	(0.27)	(-0.03)	(-0.02)	(-0.04)	(0.16)	(-0.39)	(-0.00)	(0.13)	(0.03)
52.SIC2	-0.0215	-0.0276	-0.0290	-0.0235	-0.00160	-0.0602	-0.0375	-0.0528	-0.00943	-0.0208	-0.0533
	(-0.21)	(-0.27)	(-0.29)	(-0.24)	(-0.02)	(-0.49)	(-0.39)	(-1.18)	(-0.20)	(-0.21)	(-0.60)
53.SIC2	-0.00942	-0.00685	-0.00734	-0.0140	-0.0137	-0.0110	-0.00945	-0.0174	-0.00758	-0.00943	-0.0104
	(-0.29)	(-0.21)	(-0.22)	(-0.43)	(-0.42)	(-0.31)	(-0.30)	(-1.08)	(-0.49)	(-0.29)	(-0.28)
54.SIC2	0.0202	0.0242	0.0241	0.0151	0.0145	0.0100	0.0210	0.00783	0.0235	0.0202	0.0117
	(0.66)	(0.79)	(0.78)	(0.50)	(0.49)	(0.30)	(0.70)	(0.51)	(1.61)	(0.66)	(0.34)
55.SIC2	0.00103	0.00514	0.00546	-0.00533	-0.0140	-0.0116	0.00124	-0.00892	0.00416	0.000963	0.00128
	(0.03)	(0.15)	(0.16)	(-0.16)	(-0.43)	(-0.31)	(0.04)	(-0.53)	(0.25)	(0.03)	(0.03)
56.SIC2	0.00111	0.00608	0.00583	-0.00214	-0.0111	-0.00560	0.00131	-0.0123	-0.00716	0.00111	0.00113
	(0.04)	(0.20)	(0.19)	(-0.07)	(-0.37)	(-0.17)	(0.04)	(-0.82)	(-0.50)	(0.04)	(0.03)
57.SIC2	-0.0133	-0.00966	-0.00937	-0.0147	-0.0299	-0.0148	-0.0130	-0.0311*	-0.0284	-0.0132	-0.00585
	(-0.37)	(-0.27)	(-0.26)	(-0.41)	(-0.76)	(-0.37)	(-0.37)	(-1.75)	(-1.64)	(-0.37)	(-0.14)
58.SIC2	-0.000620	0.00568	0.00543	-0.00189	-0.00864	-0.00993	0.000330	-0.0218	-0.0196	-0.000716	-0.00183
	(-0.02)	(0.18)	(0.17)	(-0.06)	(-0.26)	(-0.28)	(0.01)	(-1.37)	(-1.28)	(-0.02)	(-0.05)
59.SIC2	-0.00733	-0.00409	-0.00393	-0.0105	-0.0169	-0.0151	-0.00720	-0.0196	-0.0130	-0.00740	-0.0119
	(-0.24)	(-0.13)	(-0.13)	(-0.34)	(-0.56)	(-0.45)	(-0.24)	(-1.28)	(-0.89)	(-0.24)	(-0.34)
70.SIC2	0.0103	0.0125	0.0122	0.00861	-0.00345	0.00379	0.0111	-0.00480	0.00366	0.0102	0.00532
	(0.33)	(0.40)	(0.39)	(0.28)	(-0.12)	(0.11)	(0.36)	(-0.31)	(0.25)	(0.33)	(0.15)
72.SIC2	-0.0152	-0.0127	-0.0124	-0.0174	-0.0133	-0.0259	-0.0141	-0.0328*	-0.0246	-0.0152	-0.0180
	(-0.42)	(-0.35)	(-0.34)	(-0.48)	(-0.34)	(-0.64)	(-0.40)	(-1.86)	(-1.41)	(-0.42)	(-0.44)
73.SIC2	-0.0189	-0.0147	-0.0144	-0.0218	-0.0375	-0.0234	-0.0186	-0.0311**	-0.0333**	-0.0188	-0.0174
	(-0.65)	(-0.50)	(-0.49)	(-0.76)	(-1.30)	(-0.73)	(-0.65)	(-2.12)	(-2.40)	(-0.64)	(-0.53)
75.SIC2	0.0346	0.0375	0.0384	0.0340	0.0118	0.0285	0.0349	0.0159	0.0166	0.0345	0.0345
	(0.95)	(1.03)	(1.05)	(0.94)	(0.34)	(0.71)	(0.98)	(0.90)	(0.94)	(0.95)	(0.84)
76.SIC2	0.00599	0.00750	0.00912	0.00413	-0.000566	0.00283	0.00720	0.00477	0.0101	0.00615	-0.00927
	(0.12)	(0.16)	(0.19)	(0.09)	(-0.01)	(0.05)	(0.15)	(0.21)	(0.44)	(0.13)	(-0.17)
78.SIC2	0.0316	0.0369	0.0379	0.0295	0.00820	0.0308	0.0331	0.0298	0.0103	0.0314	0.0217
	(0.85)	(1.00)	(1.02)	(0.80)	(0.24)	(0.75)	(0.89)	(1.63)	(0.59)	(0.84)	(0.52)

79.SIC2	-0.0140	-0.00923	-0.00926	-0.0147	-0.0405	-0.0181	-0.0128	-0.0358**	-0.0357**	-0.0140	-0.0119
	(-0.44)	(-0.29)	(-0.29)	(-0.47)	(-1.26)	(-0.52)	(-0.41)	(-2.28)	(-2.36)	(-0.44)	(-0.34)
80.SIC2	-0.0109	-0.00625	-0.00649	-0.0106	0.0128	-0.0131	-0.00477	-0.0318*	-0.0150	-0.0109	-0.00848
	(-0.33)	(-0.19)	(-0.20)	(-0.32)	(0.33)	(-0.36)	(-0.15)	(-1.95)	(-0.95)	(-0.33)	(-0.23)
82.SIC2	-0.00966	-0.00345	-0.00352	-0.0139	-0.0155	-0.0135	-0.00815	-0.0224	-0.0170	-0.00973	-0.0143
	(-0.24)	(-0.09)	(-0.09)	(-0.36)	(-0.40)	(-0.31)	(-0.21)	(-1.18)	(-0.90)	(-0.25)	(-0.32)
87.SIC2	-0.0124	-0.00878	-0.00899	-0.0165	-0.0169	-0.0173	-0.0116	-0.0212	-0.0171	-0.0123	-0.0138
	(-0.41)	(-0.29)	(-0.30)	(-0.55)	(-0.57)	(-0.52)	(-0.39)	(-1.40)	(-1.18)	(-0.41)	(-0.40)
96.SIC2	-0.0555	-0.0504	-0.0508	-0.0626	-0.0690	-0.0421	-0.0554	-0.0721**	-0.0707**	-0.0552	-0.0455
	(-0.89)	(-0.80)	(-0.81)	(-1.01)	(-1.27)	(-0.62)	(-0.91)	(-2.47)	(-2.38)	(-0.88)	(-0.65)
2003.year	-0.00295	-0.00189	-0.00140	-0.00213	-0.00116	-0.00161	-0.00228	-0.00551*	-0.00935**	-0.00305	-0.00577
	(-0.43)	(-0.28)	(-0.21)	(-0.32)	(-0.17)	(-0.24)	(-0.34)	(-1.79)	(-2.88)	(-0.45)	(-0.78)
2004.year	-0.00168	-0.000712	-0.000253	-0.00113	-0.00140	-0.00242	-0.00100	-0.00474	-0.00703**	-0.00176	-0.00315
	(-0.25)	(-0.11)	(-0.04)	(-0.17)	(-0.21)	(-0.37)	(-0.15)	(-1.57)	(-2.23)	(-0.27)	(-0.43)
2005.year	0.0189***	0.0200***	0.0204***	0.0190***	0.0187***	0.0160**	0.0192***	0.00567*	0.00377	0.0188***	0.0173**
	(2.74)	(2.92)	(2.98)	(2.80)	(2.76)	(2.34)	(2.80)	(1.88)	(1.19)	(2.72)	(2.29)
2006.year	0.0120*	0.0133**	0.0137**	0.0118*	0.0117*	0.0103	0.0124*	0.00999**	0.00870***	0.0118*	0.00972
	(1.79)	(2.01)	(2.08)	(1.80)	(1.77)	(1.54)	(1.86)	(3.25)	(2.71)	(1.76)	(1.31)
2007.year	0.00535	0.00674	0.00723	0.00498	0.00757	0.00323	0.00614	0.00410	0.00250	0.00524	0.00360
	(0.79)	(1.02)	(1.09)	(0.75)	(1.14)	(0.48)	(0.92)	(1.33)	(0.77)	(0.78)	(0.48)
2008.year	0.00523	0.00540	0.00550	0.00546	0.00557		0.00563	0.00269	0.00185	0.00516	0.00345
	(0.82)	(0.84)	(0.86)	(0.87)	(0.91)		(0.90)	(0.93)	(0.61)	(0.81)	(0.49)
2009.year	-0.0195***	-0.0186***	-0.0184***	-0.0196***	-0.0222***	-0.0179***	-0.0202***	-0.0249***	-0.0249***	-0.0195***	-0.0224***
	(-2.93)	(-2.81)	(-2.77)	(-2.99)	(-3.51)	(-2.68)	(-3.07)	(-8.55)	(-7.96)	(-2.94)	(-3.04)
2010.year	-0.0143**	-0.0135**	-0.0133**	-0.0145**	-0.0171***	-0.0138**	-0.0145**	-0.0181***	-0.0185***	-0.0143**	-0.0136**
	(-2.32)	(-2.20)	(-2.16)	(-2.38)	(-2.89)	(-2.32)	(-2.39)	(-6.44)	(-6.31)	(-2.32)	(-1.97)
_cons	0.289***	0.265***	0.250***	0.279***	0.274***	0.289***	0.280***	0.352***	0.378***	0.290***	0.212***
	(6.13)	(6.25)	(5.06)	(6.67)	(6.28)	(5.77)	(5.95)	(16.57)	(17.27)	(6.14)	(3.44)
number of observations	13950	13950	13950	13950	10530	10850	13630	13668	13677	13950	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.2. Regression results – Power Distance dimension (Hofstede)

	(2) Base model	(30) Ownership Concentration	(31) Rule of Law	(32) Common Legal Origin	(33) ex USA	(34) ex Crisis	(35) Outliers - Size	(36) Outliers - Cash Flow	(37) Outliers - CAPEX	(38) Cash Flow Volatility	(12) Interaction
L.CAPEXF_TA	0.00119	0.00119	0.00122	0.00111	0.00159	0.00108	0.00112	0.00380	0.00546**	0.00151	0.00336
	(0.18)	(0.18)	(0.19)	(0.17)	(0.26)	(0.15)	(0.17)	(1.56)	(2.08)	(0.21)	(0.85)
MV_BV_t1	0.00780	0.00784	0.00725	0.00853	0.00832	0.0118	0.00762	-0.00666*	-0.0134***	0.00780	0.00345
	(0.75)	(0.74)	(0.69)	(0.82)	(0.67)	(0.83)	(0.71)	(-1.70)	(-3.22)	(0.75)	(0.55)
FCF_TA	1.332*	1.358*	1.321*	1.328*	2.794***	1.711*	1.372*	7.958***	3.488***	1.332*	-0.740
	(1.82)	(1.84)	(1.80)	(1.82)	(4.10)	(1.87)	(1.86)	(48.64)	(13.03)	(1.82)	(-0.76)
L.Ln_TA	0.00332	0.00540	0.00519	0.00467	0.00306	0.00261	0.00540	-0.00908**	-0.0185***	0.00329	-0.00376
	(0.33)	(0.53)	(0.51)	(0.48)	(0.25)	(0.21)	(0.49)	(-2.47)	(-4.63)	(0.32)	(-0.52)
Leverage	0.195**	0.191*	0.189*	0.197**	0.264**	0.224*	0.186*	0.407***	0.551***	0.195**	0.236***
	(1.99)	(1.95)	(1.93)	(2.02)	(2.49)	(1.80)	(1.86)	(11.78)	(14.57)	(1.99)	(2.80)
DIV_FCF	0.0000481	0.0000816	0.0000891	0.0000539	-0.0000778	0.000212	0.000119	-0.000404	0.000714	0.0000463	-0.00000895
	(0.03)	(0.06)	(0.06)	(0.04)	(-0.06)	(0.13)	(0.08)	(-0.76)	(1.25)	(0.03)	(-0.01)
L.Cash_TA	0.114	0.122	0.123	0.116	0.0891	0.0882	0.127	0.178***	0.141***	0.113	0.172**
	(0.91)	(0.97)	(0.98)	(0.93)	(0.74)	(0.57)	(0.98)	(3.80)	(2.86)	(0.90)	(2.22)
CF_Vol										-0.000463	
										(-0.11)	
PDI	0.00108	0.00119	0.000958	0.000992	0.00225***	0.00150	0.00110	0.00705***	0.00182***	0.00108	-0.00109**
	(1.27)	(1.36)	(1.12)	(1.18)	(2.89)	(1.49)	(1.28)	(32.30)	(5.58)	(1.27)	(-1.87)
PDI_FCF	-0.00769	-0.00826	-0.00760	-0.00747	-0.0256**	-0.0115	-0.00806	-0.0997***	-0.00788	-0.00770	0.0257***
	(-0.60)	(-0.63)	(-0.59)	(-0.58)	(-2.23)	(-0.72)	(-0.62)	(-36.89)	(-1.59)	(-0.60)	(2.87)
Size_FCF											0.0471
											(0.70)
Leverage_FCF											-0.745
											(-0.78)
DIVfcf_FCF											0.257
											(0.98)
Cash_FCF											-1.607***
											(-2.58)
Anti_FCF											-2.204***
											(-3.58)
Stock_FCF											-0.000449
											(-0.36)
Credit_FCF											0.0112***
											(4.05)
Log_GDP_Capita	-0.0104	-0.00958	-0.00651	-0.0105	-0.00755	-0.0104	-0.0105	0.00182	0.00454	-0.0104	-0.00628
	(-1.03)	(-0.92)	(-0.46)	(-1.03)	(-0.79)	(-0.86)	(-1.04)	(0.49)	(1.13)	(-1.03)	(-1.05)
Credit_GDP	0.000196	0.000130	0.000167	0.000205	0.000337**	0.000243	0.000180	0.0000573	0.000288***	0.000196	-0.000538***
	(1.39)	(0.91)	(1.23)	(1.48)	(2.29)	(1.48)	(1.25)	(1.10)	(5.09)	(1.40)	(-2.63)
Stock_mkt_GDP	0.0000208	0.00000556	-0.0000109	0.0000356	-0.000000168	0.0000311	0.0000158	0.0000137	-0.0000135	0.0000209	0.0000295
	(0.27)	(0.08)	(-0.16)	(0.49)	(-0.00)	(0.31)	(0.20)	(0.47)	(-0.43)	(0.27)	(0.30)
Anti_Self_Dealing	-0.0290				-0.0225	-0.0370	-0.0258	-0.0703***	-0.0757***	-0.0291	0.119**
	(-0.82)				(-0.58)	(-0.86)	(-0.71)	(-5.38)	(-5.31)	(-0.82)	(2.46)
concentration		-0.0387									
		(-1.07)									
rule_law			-0.00521								
			(-0.32)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
common_legal				-0.0202							
				(-1.57)							
2.SIC2	-0.0193	-0.00842	-0.0131	-0.0222	0.00351	-0.0298	-0.0182	-0.0197	-0.0660	-0.0192	-0.0152
	(-0.17)	(-0.08)	(-0.12)	(-0.20)	(0.03)	(-0.22)	(-0.16)	(-0.45)	(-1.49)	(-0.17)	(-0.23)
8.SIC2	-0.00724	0.00121	-0.00191	-0.0101	-0.0283	-0.0410	-0.00425	-0.0666	-0.0697	-0.00729	-0.00748
	(-0.07)	(0.01)	(-0.02)	(-0.09)	(-0.24)	(-0.30)	(-0.04)	(-1.52)	(-1.56)	(-0.07)	(-0.11)
10.SIC2	0.0134	0.0129	0.0160	0.0132	0.0132	-0.00690	0.00905	-0.00386	-0.0344	0.0134	0.0203
	(0.14)	(0.13)	(0.17)	(0.14)	(0.13)	(-0.06)	(0.09)	(-0.10)	(-0.90)	(0.14)	(0.35)
12.SIC2	0.0451	0.0558	0.0477	0.0419	0.0305	0.0379	0.0496	0.0360	-0.0704	0.0451	0.0407
	(0.38)	(0.47)	(0.40)	(0.35)	(0.24)	(0.26)	(0.41)	(0.77)	(-1.47)	(0.38)	(0.57)
13.SIC2	0.0349	0.0384	0.0387	0.0347	0.0105	0.0155	0.0388	-0.0759**	-0.124***	0.0349	0.0460
	(0.40)	(0.44)	(0.44)	(0.40)	(0.11)	(0.15)	(0.44)	(-2.15)	(-3.57)	(0.40)	(0.88)
14.SIC2	-0.00105	0.00312	0.00418	-0.00674	-0.0152	-0.00503	0.00123	0.0317	-0.0315	-0.00110	0.000928
	(-0.01)	(0.03)	(0.04)	(-0.06)	(-0.12)	(-0.04)	(0.01)	(0.69)	(-0.68)	(-0.01)	(0.01)
15.SIC2	-0.0272	-0.0219	-0.0238	-0.0358	-0.0353	-0.0432	-0.0270	0.00707	-0.0426	-0.0272	-0.0271
	(-0.28)	(-0.23)	(-0.25)	(-0.37)	(-0.36)	(-0.37)	(-0.28)	(0.18)	(-1.07)	(-0.28)	(-0.47)
16.SIC2	-0.00233	0.00753	0.00335	-0.00804	-0.00119	-0.0121	0.0000336	0.0307	-0.0354	-0.00233	-0.00472
	(-0.02)	(0.08)	(0.03)	(-0.08)	(-0.01)	(-0.10)	(0.00)	(0.79)	(-0.90)	(-0.02)	(-0.08)
17.SIC2	0.00728	0.0130	0.0117	0.00579	0.00287	-0.000313	0.0144	0.0438	-0.0150	0.00729	-0.00401
	(0.07)	(0.13)	(0.12)	(0.06)	(0.02)	(-0.00)	(0.14)	(1.08)	(-0.37)	(0.07)	(-0.07)
20.SIC2	0.00328	0.0121	0.00902	-0.00158	-0.00628	-0.00615	0.00528	0.0115	-0.0438	0.00323	0.00244
	(0.04)	(0.14)	(0.11)	(-0.02)	(-0.07)	(-0.06)	(0.06)	(0.33)	(-1.28)	(0.04)	(0.05)
22.SIC2	0.00101	0.0123	0.00789	-0.00483	0.00142	-0.00338	0.00411	0.0173	-0.0404	0.000946	-0.00338
	(0.01)	(0.14)	(0.09)	(-0.06)	(0.02)	(-0.03)	(0.05)	(0.48)	(-1.15)	(0.01)	(-0.06)
23.SIC2	-0.00786	0.00230	-0.00341	-0.00964	-0.00738	-0.0150	-0.00546	-0.0108	-0.0543	-0.00789	-0.00433
	(-0.09)	(0.03)	(-0.04)	(-0.11)	(-0.07)	(-0.13)	(-0.06)	(-0.29)	(-1.48)	(-0.09)	(-0.08)
24.SIC2	-0.00685	-0.000421	-0.00304	-0.00862	-0.00551	-0.0197	-0.00855	-0.0151	-0.0606	-0.00687	-0.0106
	(-0.07)	(-0.00)	(-0.03)	(-0.09)	(-0.06)	(-0.17)	(-0.09)	(-0.40)	(-1.61)	(-0.07)	(-0.19)
25.SIC2	-0.0176	-0.0102	-0.0128	-0.0198	-0.00952	-0.0246	-0.0153	-0.0124	-0.0563	-0.0176	-0.0254
	(-0.19)	(-0.11)	(-0.14)	(-0.21)	(-0.09)	(-0.22)	(-0.16)	(-0.33)	(-1.51)	(-0.19)	(-0.45)
26.SIC2	-0.000259	0.00940	0.00595	-0.00680	-0.00568	-0.0109	0.00204	0.0140	-0.0435	-0.000302	-0.00435
	(-0.00)	(0.11)	(0.07)	(-0.08)	(-0.06)	(-0.10)	(0.02)	(0.40)	(-1.26)	(-0.00)	(-0.08)
27.SIC2	-0.0154	-0.00820	-0.0103	-0.0201	-0.0115	-0.0268	-0.0135	-0.0135	-0.0646*	-0.0154	-0.0154
	(-0.17)	(-0.09)	(-0.12)	(-0.23)	(-0.12)	(-0.25)	(-0.15)	(-0.38)	(-1.83)	(-0.17)	(-0.29)
28.SIC2	-0.0104	-0.000878	-0.00330	-0.0155	-0.0108	-0.0204	-0.00849	0.00851	-0.0609*	-0.0105	-0.00703
	(-0.12)	(-0.01)	(-0.04)	(-0.18)	(-0.12)	(-0.20)	(-0.10)	(0.24)	(-1.79)	(-0.12)	(-0.14)
29.SIC2	0.0149	0.0146	0.0126	0.00933	0.00956	-0.00228	0.00655	0.0714*	0.0412	0.0149	0.0238
	(0.15)	(0.15)	(0.13)	(0.10)	(0.09)	(-0.02)	(0.07)	(1.84)	(1.07)	(0.15)	(0.41)
30.SIC2	0.00477	0.0142	0.0108	-0.000999	0.00225	-0.00776	0.00747	0.00896	-0.0556	0.00471	0.00223
	(0.05)	(0.16)	(0.12)	(-0.01)	(0.02)	(-0.07)	(0.09)	(0.25)	(-1.61)	(0.05)	(0.04)
31.SIC2	0.00165	0.00264	0.00118	0.00323	-0.00960	-0.00608	0.00408	-0.0117	-0.0552	0.00159	-0.00515
	(0.01)	(0.02)	(0.01)	(0.02)	(-0.07)	(-0.04)	(0.03)	(-0.21)	(-0.97)	(0.01)	(-0.06)
32.SIC2	-0.00283	0.00727	0.00267	-0.00896	-0.0104	-0.0147	-0.00141	0.0107	-0.0622*	-0.00284	-0.00746
	(-0.03)	(0.08)	(0.03)	(-0.10)	(-0.11)	(-0.14)	(-0.02)	(0.30)	(-1.81)	(-0.03)	(-0.14)
33.SIC2	-0.00671	0.00143	-0.00122	-0.0124	-0.00834	-0.0138	-0.00561	0.0190	-0.0348	-0.00674	-0.00714
	(-0.08)	(0.02)	(-0.01)	(-0.15)	(-0.09)	(-0.13)	(-0.07)	(0.54)	(-1.02)	(-0.08)	(-0.14)
34.SIC2	-0.00353	0.00572	0.00331	-0.00948	-0.00828	-0.0120	-0.00133	0.0134	-0.0508	-0.00356	-0.00655
	(-0.04)	(0.07)	(0.04)	(-0.11)	(-0.09)	(-0.11)	(-0.02)	(0.38)	(-1.46)	(-0.04)	(-0.13)
35.SIC2	0.0763	0.0860	0.0829	0.0718	0.0868	0.0839	0.0799	0.0125	-0.0469	0.0766	0.0449
	(0.88)	(1.00)	(0.96)	(0.83)	(0.94)	(0.80)	(0.92)	(0.35)	(-1.36)	(0.88)	(0.86)
36.SIC2	-0.0145	-0.00634	-0.00842	-0.0184	-0.00986	-0.0223	-0.0125	-0.00987	-0.0659*	-0.0145	-0.0130
	(-0.17)	(-0.07)	(-0.10)	(-0.22)	(-0.11)	(-0.22)	(-0.15)	(-0.28)	(-1.94)	(-0.17)	(-0.26)

37.SIC2	0.00117	0.00938	0.00729	-0.00617	-0.0100	-0.0105	0.00313	0.0101	-0.0493	0.00116	-0.00173
	(0.01)	(0.11)	(0.09)	(-0.07)	(-0.11)	(-0.10)	(0.04)	(0.29)	(-1.45)	(0.01)	(-0.03)
38.SIC2	-0.0105	-0.00133	-0.00400	-0.0131	-0.0108	-0.0226	-0.00622	0.00519	-0.0659*	-0.0105	-0.0137
	(-0.12)	(-0.01)	(-0.04)	(-0.15)	(-0.11)	(-0.21)	(-0.07)	(0.14)	(-1.83)	(-0.12)	(-0.26)
39.SIC2	-0.0227	-0.0133	-0.0171	-0.0243	-0.0151	-0.0344	-0.0203	-0.0259	-0.0995***	-0.0227	-0.0248
	(-0.24)	(-0.14)	(-0.18)	(-0.26)	(-0.14)	(-0.30)	(-0.21)	(-0.68)	(-2.65)	(-0.24)	(-0.44)
40.SIC2	0.0641	0.0757	0.0628	0.0505	0.0672	0.00379	0.0621	0.123**	0.0153	0.0641	0.0637
	(0.45)	(0.53)	(0.44)	(0.36)	(0.49)	(0.02)	(0.44)	(2.25)	(0.26)	(0.45)	(0.74)
41.SIC2	0.0373	0.0506	0.0440	0.0281	0.0285	0.0260	0.0411	0.0152	-0.0418	0.0372	0.0237
	(0.37)	(0.50)	(0.44)	(0.28)	(0.28)	(0.21)	(0.41)	(0.38)	(-1.03)	(0.37)	(0.39)
42.SIC2	0.0290	0.0379	0.0363	0.0241	-0.00791	0.0180	0.0334	0.00131	-0.0508	0.0289	0.0285
	(0.33)	(0.43)	(0.41)	(0.27)	(-0.08)	(0.17)	(0.38)	(0.04)	(-1.44)	(0.33)	(0.54)
44.SIC2	0.0119	0.0203	0.0181	0.00771	-0.000975	-0.00900	0.0141	-0.00628	-0.0981***	0.0119	0.0169
	(0.13)	(0.23)	(0.20)	(0.09)	(-0.01)	(-0.08)	(0.16)	(-0.17)	(-2.76)	(0.13)	(0.32)
45.SIC2	0.00816	0.0117	0.00679	0.00210	-0.00735	-0.00966	0.00614	-0.00690	-0.0411	0.00831	0.0208
	(0.08)	(0.12)	(0.07)	(0.02)	(-0.07)	(-0.08)	(0.06)	(-0.18)	(-1.06)	(0.09)	(0.36)
47.SIC2	0.0399	0.0460	0.0433	0.0330	-0.0199	0.0228	0.00997	-0.00289	-0.0883**	0.0399	0.0465
	(0.42)	(0.49)	(0.46)	(0.35)	(-0.20)	(0.20)	(0.10)	(-0.08)	(-2.32)	(0.42)	(0.82)
48.SIC2	-0.0232	-0.0197	-0.0182	-0.0272	-0.0300	-0.0370	-0.0191	-0.0422	-0.113***	-0.0232	-0.0205
	(-0.26)	(-0.22)	(-0.21)	(-0.31)	(-0.32)	(-0.35)	(-0.22)	(-1.19)	(-3.25)	(-0.26)	(-0.39)
49.SIC2	-0.0144	-0.00964	-0.00949	-0.0196	-0.0331	-0.0329	-0.0132	-0.0132	-0.0903***	-0.0145	-0.0187
	(-0.17)	(-0.11)	(-0.11)	(-0.23)	(-0.36)	(-0.31)	(-0.15)	(-0.37)	(-2.60)	(-0.17)	(-0.36)
50.SIC2	-0.0128	-0.00457	-0.00711	-0.0182	-0.0183	-0.0172	-0.0111	0.0134	-0.0523	-0.0128	-0.0110
	(-0.15)	(-0.05)	(-0.08)	(-0.21)	(-0.20)	(-0.17)	(-0.13)	(0.38)	(-1.53)	(-0.15)	(-0.21)
51.SIC2	-0.000616	0.00762	0.00492	-0.00649	0.00225	-0.0101	0.00158	0.0294	-0.0265	-0.000637	-0.00576
	(-0.01)	(0.09)	(0.06)	(-0.07)	(0.02)	(-0.10)	(0.02)	(0.82)	(-0.76)	(-0.01)	(-0.11)
52.SIC2	-0.0327	-0.0374	-0.0401	-0.0371	-0.0315	-0.0740	-0.0415	0.0261	-0.0967	-0.0324	-0.0261
	(-0.14)	(-0.16)	(-0.17)	(-0.16)	(-0.15)	(-0.23)	(-0.18)	(0.30)	(-1.03)	(-0.14)	(-0.22)
53.SIC2	-0.0137	-0.00820	-0.0120	-0.0206	-0.0149	-0.0188	-0.0139	0.00361	-0.0290	-0.0137	-0.0130
	(-0.14)	(-0.08)	(-0.12)	(-0.21)	(-0.14)	(-0.16)	(-0.14)	(0.09)	(-0.75)	(-0.14)	(-0.22)
54.SIC2	0.00683	0.0138	0.0124	-0.00100	0.00580	-0.00361	0.00821	0.0355	-0.0117	0.00683	0.00689
	(0.07)	(0.15)	(0.14)	(-0.01)	(0.06)	(-0.03)	(0.09)	(0.96)	(-0.32)	(0.07)	(0.13)
55.SIC2	0.00124	0.00857	0.00601	-0.00659	-0.000834	-0.00752	0.00230	0.0378	-0.0150	0.00121	0.00115
	(0.01)	(0.08)	(0.06)	(-0.06)	(-0.01)	(-0.06)	(0.02)	(0.92)	(-0.36)	(0.01)	(0.02)
56.SIC2	-0.00853	0.000697	-0.00272	-0.0118	-0.0140	-0.0211	-0.00701	-0.0199	-0.0712**	-0.00852	-0.00811
	(-0.09)	(0.01)	(-0.03)	(-0.13)	(-0.14)	(-0.19)	(-0.08)	(-0.54)	(-1.99)	(-0.09)	(-0.15)
57.SIC2	-0.0243	-0.0180	-0.0193	-0.0264	-0.0523	-0.0323	-0.0226	-0.0601	-0.110**	-0.0243	-0.00353
	(-0.23)	(-0.17)	(-0.18)	(-0.25)	(-0.41)	(-0.25)	(-0.21)	(-1.40)	(-2.55)	(-0.23)	(-0.05)
58.SIC2	-0.00554	0.00575	0.00247	-0.00655	-0.00134	-0.0276	-0.00167	-0.0571	-0.127***	-0.00560	-0.0105
	(-0.06)	(0.06)	(0.03)	(-0.07)	(-0.01)	(-0.24)	(-0.02)	(-1.49)	(-3.34)	(-0.06)	(-0.18)
59.SIC2	-0.0172	-0.0114	-0.0128	-0.0222	-0.0272	-0.0329	-0.0159	-0.0373	-0.0842**	-0.0172	-0.0165
	(-0.19)	(-0.12)	(-0.14)	(-0.24)	(-0.28)	(-0.30)	(-0.17)	(-1.01)	(-2.31)	(-0.19)	(-0.30)
70.SIC2	0.00285	0.00859	0.00473	0.000813	-0.0134	-0.0156	0.00593	-0.0161	-0.0756**	0.00281	-0.00194
	(0.03)	(0.09)	(0.05)	(0.01)	(-0.14)	(-0.14)	(0.06)	(-0.43)	(-2.04)	(0.03)	(-0.03)
72.SIC2	-0.0303	-0.0252	-0.0269	-0.0341	-0.0569	-0.0555	-0.0274	-0.0918**	-0.154***	-0.0303	-0.0130
	(-0.28)	(-0.23)	(-0.25)	(-0.32)	(-0.45)	(-0.42)	(-0.25)	(-2.16)	(-3.58)	(-0.28)	(-0.20)
73.SIC2	-0.0237	-0.0164	-0.0181	-0.0271	-0.0456	-0.0369	-0.0207	-0.0375	-0.110***	-0.0237	-0.0218
	(-0.27)	(-0.19)	(-0.21)	(-0.31)	(-0.49)	(-0.35)	(-0.24)	(-1.06)	(-3.19)	(-0.27)	(-0.42)
75.SIC2	0.0283	0.0328	0.0338	0.0253	-0.00999	0.0208	0.0303	-0.0573	-0.0955**	0.0283	0.0502
	(0.26)	(0.30)	(0.31)	(0.24)	(-0.09)	(0.16)	(0.28)	(-1.35)	(-2.17)	(0.26)	(0.77)

76.SIC2	-0.00732	-0.00630	-0.00328	-0.0119	0.00203	-0.00873	-0.00527	0.0491	-0.0117	-0.00721	-0.0181
	(-0.05)	(-0.04)	(-0.02)	(-0.08)	(0.01)	(-0.05)	(-0.04)	(0.88)	(-0.20)	(-0.05)	(-0.21)
78.SIC2	0.0107	0.0192	0.0192	0.00826	-0.0347	-0.0162	0.0127	-0.0155	-0.165***	0.0106	0.0149
	(0.10)	(0.17)	(0.18)	(0.08)	(-0.31)	(-0.12)	(0.11)	(-0.35)	(-3.79)	(0.10)	(0.22)
79.SIC2	-0.00847	0.000385	-0.00220	-0.00894	-0.0380	-0.0286	-0.00448	-0.0603	-0.125***	-0.00852	-0.00443
	(-0.09)	(0.00)	(-0.02)	(-0.10)	(-0.36)	(-0.25)	(-0.05)	(-1.59)	(-3.32)	(-0.09)	(-0.08)
80.SIC2	-0.0153	-0.00584	-0.0104	-0.0147	0.0241	-0.0312	-0.00539	-0.0289	-0.0798**	-0.0154	-0.0150
	(-0.15)	(-0.06)	(-0.10)	(-0.15)	(0.19)	(-0.26)	(-0.05)	(-0.73)	(-2.02)	(-0.16)	(-0.25)
82.SIC2	-0.00540	0.00567	0.00300	-0.0110	-0.00663	-0.0149	-0.00172	0.0105	-0.0505	-0.00543	-0.0151
	(-0.05)	(0.05)	(0.03)	(-0.09)	(-0.05)	(-0.10)	(-0.01)	(0.23)	(-1.06)	(-0.05)	(-0.21)
87.SIC2	-0.0147	-0.00758	-0.0107	-0.0190	-0.0182	-0.0233	-0.0128	0.0183	-0.0400	-0.0147	-0.0190
	(-0.16)	(-0.08)	(-0.12)	(-0.21)	(-0.19)	(-0.21)	(-0.14)	(0.50)	(-1.11)	(-0.16)	(-0.35)
96.SIC2	-0.0340	-0.0255	-0.0270	-0.0439	-0.0403	-0.0338	-0.0343	-0.0435	-0.108	-0.0338	-0.0328
	(-0.18)	(-0.14)	(-0.14)	(-0.24)	(-0.23)	(-0.15)	(-0.18)	(-0.62)	(-1.45)	(-0.18)	(-0.29)
2003.year	-0.00512	-0.00368	-0.00303	-0.00431	-0.00911	-0.00690	-0.00364	-0.0335***	-0.0369***	-0.00517	-0.00601
	(-0.26)	(-0.19)	(-0.15)	(-0.22)	(-0.43)	(-0.31)	(-0.18)	(-4.54)	(-4.63)	(-0.26)	(-0.51)
2004.year	0.000222	0.00143	0.00225	0.000583	-0.00370	-0.00196	0.00183	-0.0185***	-0.0163**	0.000174	-0.000405
	(0.01)	(0.07)	(0.12)	(0.03)	(-0.18)	(-0.09)	(0.09)	(-2.56)	(-2.09)	(0.01)	(-0.04)
2005.year	0.0380*	0.0394**	0.0401**	0.0379*	0.0348	0.0326	0.0396*	-0.00860	-0.0156**	0.0379*	0.0241**
	(1.90)	(1.99)	(2.03)	(1.91)	(1.60)	(1.48)	(1.94)	(-1.19)	(-2.01)	(1.90)	(2.05)
2006.year	0.0109	0.0125	0.0134	0.0106	0.00857	0.00902	0.0118	0.00431	0.0113	0.0108	0.0107
	(0.55)	(0.65)	(0.69)	(0.55)	(0.40)	(0.42)	(0.59)	(0.59)	(1.43)	(0.55)	(0.92)
2007.year	0.00280	0.00440	0.00545	0.00218	0.00517	0.00000703	0.00414	-0.000827	-0.000615	0.00274	0.00128
	(0.14)	(0.23)	(0.28)	(0.11)	(0.24)	(0.00)	(0.21)	(-0.11)	(-0.08)	(0.14)	(0.11)
2008.year	0.00132	0.00160	0.00190	0.00137	-0.00320		0.00128	-0.0213***	-0.0216***	0.00128	0.000723
	(0.07)	(0.09)	(0.10)	(0.07)	(-0.16)		(0.07)	(-3.07)	(-2.90)	(0.07)	(0.07)
2009.year	-0.0273	-0.0261	-0.0260	-0.0272	-0.0367*	-0.0308	-0.0281	-0.0744***	-0.0856***	-0.0273	-0.0327***
	(-1.40)	(-1.35)	(-1.34)	(-1.41)	(-1.81)	(-1.42)	(-1.42)	(-10.68)	(-11.45)	(-1.40)	(-2.83)
2010.year	-0.0110	-0.0102	-0.00974	-0.0112	-0.0140	-0.0118	-0.0113	-0.0288***	-0.0262***	-0.0110	-0.0141
	(-0.61)	(-0.56)	(-0.54)	(-0.62)	(-0.73)	(-0.61)	(-0.61)	(-4.28)	(-3.60)	(-0.61)	(-1.30)
_cons	-0.0319	-0.0632	-0.0859	-0.0412	-0.166	-0.0575	-0.0473	-0.470***	-0.155***	-0.0316	0.0994
	(-0.21)	(-0.45)	(-0.56)	(-0.29)	(-1.10)	(-0.32)	(-0.31)	(-8.37)	(-2.60)	(-0.21)	(0.95)
number of observations	13950	13950	13950	13950	10530	10850	13680	13668	13677	13950	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.3. Regression results – Individualism dimension (Hofstede)

	(3) Base model	(39) Ownership Concentration	(40) Rule of Law	(41) Common Legal Origin	(42) ex USA	(43) ex Crisis	(44) Outliers - Size	(45) Outliers - Cash Flow	(46) Outliers - CAPEX	(47) Cash Flow Volatility	(13) Interaction
L.CAPEXF_TA	0.00122	0.00120	0.00122	0.00122	0.00133	0.000975	0.00113	0.00300	0.00559**	0.00157	0.00365
	(0.19)	(0.18)	(0.19)	(0.19)	(0.21)	(0.14)	(0.17)	(1.09)	(2.01)	(0.22)	(1.07)
MV_BV_t1	0.00927	0.00922	0.00889	0.00913	0.00688	0.0127	0.00923	-0.00800*	-0.00825*	0.00929	0.00767
	(0.89)	(0.88)	(0.85)	(0.88)	(0.52)	(0.88)	(0.86)	(-1.78)	(-1.83)	(0.89)	(1.37)
FCF_TA	1.257***	1.239***	1.244***	1.257***	1.182***	1.340**	1.271***	0.316***	4.590***	1.256***	1.520**
	(2.68)	(2.63)	(2.65)	(2.69)	(2.74)	(2.41)	(2.74)	(3.61)	(33.09)	(2.68)	(2.54)
L.Ln_TA	0.00480	0.00656	0.00683	0.00500	0.00362	0.00536	0.00678	-0.00494	-0.0150***	0.00476	-0.00187
	(0.49)	(0.67)	(0.71)	(0.51)	(0.29)	(0.44)	(0.63)	(-1.20)	(-3.59)	(0.48)	(-0.30)
Leverage	0.197**	0.195**	0.193**	0.198**	0.274**	0.219*	0.188*	0.446***	0.516***	0.197**	0.219***
	(2.06)	(2.04)	(2.02)	(2.07)	(2.45)	(1.77)	(1.92)	(11.42)	(12.97)	(2.06)	(3.06)
DIV_FCF	0.000513	0.000522	0.000524	0.000533	0.000523	0.000908	0.000596	0.000454	0.00229***	0.000509	0.0000546
	(0.28)	(0.28)	(0.28)	(0.29)	(0.30)	(0.44)	(0.32)	(0.59)	(2.98)	(0.27)	(0.08)
L.Cash_TA	0.117	0.123	0.129	0.119	0.106	0.0982	0.127	0.241***	0.132**	0.116	0.123*
	(0.95)	(1.00)	(1.05)	(0.97)	(0.84)	(0.64)	(1.00)	(4.57)	(2.54)	(0.94)	(1.80)
CF_Vol										-0.000512	
										(-0.12)	
IDV	-0.000175	-0.000241	-0.000166	-0.0000762	-0.000539	-0.000407	-0.000189	-0.00358***	0.00137***	-0.000177	0.000793**
	(-0.30)	(-0.41)	(-0.29)	(-0.12)	(-0.56)	(-0.32)	(-0.32)	(-18.97)	(5.84)	(-0.31)	(2.49)
IDV_FCF	-0.00624	-0.00599	-0.00613	-0.00623	0.00254	-0.00529	-0.00615	0.0428***	-0.0325***	-0.00624	-0.0216***
	(-0.84)	(-0.80)	(-0.82)	(-0.84)	(0.32)	(-0.56)	(-0.82)	(21.66)	(-11.23)	(-0.84)	(-4.94)
Size_FCF											0.0485
											(0.83)
Leverage_FCF											-0.557
											(-0.69)
DIVfcf_FCF											0.216
											(0.96)
Cash_FCF											-0.983*
											(-1.75)
Anti_FCF											-2.012***
											(-3.80)
Stock_FCF											-0.00160
											(-1.45)
Credit_FCF											0.0129***
											(5.81)
Log_GDP_Capita	-0.00553	-0.00549	-0.000512	-0.00715	-0.00776	-0.00459	-0.00533	0.00791*	0.00371	-0.00551	0.000454
	(-0.52)	(-0.51)	(-0.04)	(-0.66)	(-0.68)	(-0.36)	(-0.50)	(1.75)	(0.82)	(-0.52)	(0.08)
Credit_GDP	0.000201	0.000162	0.000194	0.000201	0.000296**	0.000234	0.000185	0.0000171	0.000290***	0.000201	-0.000656***
	(1.52)	(1.18)	(1.49)	(1.54)	(2.05)	(1.48)	(1.37)	(0.30)	(5.08)	(1.53)	(-3.96)
Stock_mkt_GDP	-0.0000160	-0.0000156	-0.0000286	-0.00000125	-0.0000147	-0.0000139	-0.0000220	-0.0000563	-0.0000432	-0.0000159	0.0000718
	(-0.20)	(-0.23)	(-0.45)	(-0.01)	(-0.18)	(-0.13)	(-0.27)	(-1.62)	(-1.24)	(-0.20)	(0.83)
Anti_Self_Dealing	-0.0101				-0.00488	-0.00943	-0.00678	-0.0269*	-0.0393***	-0.0102	0.117***
	(-0.29)				(-0.12)	(-0.22)	(-0.19)	(-1.84)	(-2.64)	(-0.30)	(2.83)
concentration		-0.0253									
		(-0.75)									
rule_law			-0.00777								
			(-0.55)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
common_legal					-0.00855						
					(-0.56)						
2.SIC2	-0.0289	-0.0252	-0.0277	-0.0298	-0.0206	-0.0394	-0.0279	-0.0926*	-0.0762	-0.0289	-0.00455
	(-0.27)	(-0.23)	(-0.26)	(-0.28)	(-0.16)	(-0.29)	(-0.26)	(-1.87)	(-1.63)	(-0.27)	(-0.08)
8.SIC2	-0.000950	0.00413	0.00179	-0.00223	-0.0283	-0.0282	0.00179	-0.105**	-0.0409	-0.00101	0.0109
	(-0.01)	(0.04)	(0.02)	(-0.02)	(-0.23)	(-0.21)	(0.02)	(-2.13)	(-0.87)	(-0.01)	(0.19)
10.SIC2	0.00718	0.00541	0.0106	0.00649	-0.00941	-0.00890	0.00395	-0.0814*	-0.0444	0.00718	0.0349
	(0.08)	(0.06)	(0.11)	(0.07)	(-0.09)	(-0.08)	(0.04)	(-1.88)	(-1.11)	(0.08)	(0.71)
12.SIC2	0.0277	0.0344	0.0316	0.0251	-0.00947	0.0181	0.0320	-0.0431	-0.117**	0.0277	0.0532
	(0.24)	(0.30)	(0.27)	(0.21)	(-0.07)	(0.13)	(0.27)	(-0.82)	(-2.33)	(0.24)	(0.87)
13.SIC2	0.0405	0.0412	0.0436	0.0399	0.00562	0.0251	0.0431	-0.144***	-0.0807**	0.0405	0.0648
	(0.47)	(0.48)	(0.51)	(0.47)	(0.05)	(0.24)	(0.50)	(-3.60)	(-2.20)	(0.47)	(1.43)
14.SIC2	-0.0175	-0.0173	-0.0137	-0.0193	-0.0426	-0.0208	-0.0156	-0.0432	-0.0653	-0.0176	0.00647
	(-0.15)	(-0.15)	(-0.12)	(-0.17)	(-0.33)	(-0.15)	(-0.14)	(-0.84)	(-1.33)	(-0.15)	(0.11)
15.SIC2	-0.0538	-0.0535	-0.0503	-0.0551	-0.0696	-0.0788	-0.0538	-0.0867**	-0.0899**	-0.0538	-0.0316
	(-0.57)	(-0.57)	(-0.54)	(-0.59)	(-0.67)	(-0.68)	(-0.57)	(-1.98)	(-2.14)	(-0.57)	(-0.64)
16.SIC2	-0.0174	-0.0135	-0.0140	-0.0193	-0.0303	-0.0268	-0.0152	-0.0443	-0.0637	-0.0174	0.00221
	(-0.18)	(-0.14)	(-0.15)	(-0.20)	(-0.28)	(-0.23)	(-0.16)	(-1.01)	(-1.53)	(-0.18)	(0.04)
17.SIC2	-0.00965	-0.00714	-0.00536	-0.0103	-0.0301	-0.0155	-0.00324	-0.0247	-0.0597	-0.00965	0.00159
	(-0.10)	(-0.07)	(-0.05)	(-0.11)	(-0.24)	(-0.13)	(-0.03)	(-0.54)	(-1.41)	(-0.10)	(0.03)
20.SIC2	-0.0135	-0.0104	-0.00962	-0.0145	-0.0318	-0.0222	-0.0117	-0.0580	-0.0741**	-0.0135	0.00275
	(-0.16)	(-0.12)	(-0.12)	(-0.17)	(-0.33)	(-0.22)	(-0.14)	(-1.47)	(-2.07)	(-0.16)	(0.06)
22.SIC2	-0.0174	-0.0133	-0.0121	-0.0188	-0.0297	-0.0230	-0.0146	-0.0610	-0.0706*	-0.0175	-0.00285
	(-0.20)	(-0.16)	(-0.14)	(-0.22)	(-0.30)	(-0.22)	(-0.17)	(-1.52)	(-1.92)	(-0.20)	(-0.06)
23.SIC2	-0.0157	-0.0107	-0.0128	-0.0165	-0.0209	-0.0210	-0.0134	-0.0651	-0.0677*	-0.0158	0.000922
	(-0.17)	(-0.12)	(-0.14)	(-0.18)	(-0.20)	(-0.19)	(-0.15)	(-1.55)	(-1.75)	(-0.17)	(0.02)
24.SIC2	-0.0153	-0.0122	-0.0122	-0.0157	-0.0247	-0.0261	-0.0169	-0.0726*	-0.0719*	-0.0154	-0.00325
	(-0.17)	(-0.13)	(-0.13)	(-0.17)	(-0.23)	(-0.23)	(-0.18)	(-1.70)	(-1.82)	(-0.17)	(-0.07)
25.SIC2	-0.0262	-0.0230	-0.0228	-0.0273	-0.0303	-0.0320	-0.0240	-0.0744*	-0.0738*	-0.0262	-0.0161
	(-0.29)	(-0.25)	(-0.25)	(-0.30)	(-0.28)	(-0.28)	(-0.26)	(-1.75)	(-1.89)	(-0.29)	(-0.33)
26.SIC2	-0.0145	-0.0110	-0.0107	-0.0164	-0.0302	-0.0242	-0.0126	-0.0584	-0.0660*	-0.0146	0.000538
	(-0.17)	(-0.13)	(-0.13)	(-0.19)	(-0.31)	(-0.23)	(-0.15)	(-1.47)	(-1.82)	(-0.17)	(0.01)
27.SIC2	-0.0275	-0.0253	-0.0242	-0.0289	-0.0363	-0.0386	-0.0259	-0.0868**	-0.0803**	-0.0276	-0.00838
	(-0.32)	(-0.29)	(-0.28)	(-0.33)	(-0.37)	(-0.36)	(-0.30)	(-2.15)	(-2.17)	(-0.32)	(-0.18)
28.SIC2	-0.0262	-0.0231	-0.0220	-0.0276	-0.0389	-0.0365	-0.0245	-0.0676*	-0.0900**	-0.0262	-0.00120
	(-0.32)	(-0.28)	(-0.27)	(-0.33)	(-0.41)	(-0.36)	(-0.29)	(-1.73)	(-2.53)	(-0.32)	(-0.03)
29.SIC2	0.0000358	-0.00261	-0.00313	-0.00157	-0.0161	-0.0176	-0.00599	-0.00358	0.00445	0.0000491	0.0254
	(0.00)	(-0.03)	(-0.03)	(-0.02)	(-0.14)	(-0.15)	(-0.06)	(-0.08)	(0.11)	(0.00)	(0.51)
30.SIC2	-0.00912	-0.00542	-0.00521	-0.0109	-0.0224	-0.0215	-0.00672	-0.0657*	-0.0783**	-0.00920	0.00839
	(-0.11)	(-0.06)	(-0.06)	(-0.13)	(-0.23)	(-0.21)	(-0.08)	(-1.65)	(-2.15)	(-0.11)	(0.19)
31.SIC2	-0.0124	-0.0122	-0.00932	-0.0116	-0.0376	-0.0208	-0.0102	-0.0909	-0.0763	-0.0125	0.00564
	(-0.09)	(-0.09)	(-0.07)	(-0.08)	(-0.26)	(-0.12)	(-0.07)	(-1.47)	(-1.28)	(-0.09)	(0.08)
32.SIC2	-0.0211	-0.0177	-0.0184	-0.0227	-0.0410	-0.0331	-0.0200	-0.0752*	-0.0944***	-0.0212	-0.00249
	(-0.25)	(-0.21)	(-0.22)	(-0.27)	(-0.43)	(-0.32)	(-0.24)	(-1.90)	(-2.62)	(-0.25)	(-0.06)
33.SIC2	-0.0200	-0.0176	-0.0173	-0.0219	-0.0330	-0.0256	-0.0191	-0.0528	-0.0591*	-0.0201	-0.000261
	(-0.24)	(-0.21)	(-0.21)	(-0.26)	(-0.34)	(-0.25)	(-0.23)	(-1.34)	(-1.65)	(-0.24)	(-0.01)
34.SIC2	-0.0183	-0.0151	-0.0142	-0.0200	-0.0333	-0.0250	-0.0162	-0.0574	-0.0756**	-0.0183	-0.00129
	(-0.22)	(-0.18)	(-0.17)	(-0.24)	(-0.34)	(-0.24)	(-0.19)	(-1.44)	(-2.08)	(-0.22)	(-0.03)
35.SIC2	0.0585	0.0625	0.0631	0.0570	0.0652	0.0687	0.0619	-0.0597	-0.0803**	0.0588	0.0427
	(0.69)	(0.74)	(0.75)	(0.67)	(0.67)	(0.65)	(0.72)	(-1.50)	(-2.23)	(0.69)	(0.96)
36.SIC2	-0.0283	-0.0253	-0.0240	-0.0295	-0.0352	-0.0357	-0.0265	-0.0810**	-0.0892**	-0.0283	-0.00747
	(-0.34)	(-0.31)	(-0.29)	(-0.36)	(-0.37)	(-0.35)	(-0.32)	(-2.06)	(-2.51)	(-0.34)	(-0.17)
37.SIC2	-0.0150	-0.0129	-0.0120	-0.0169	-0.0358	-0.0273	-0.0129	-0.0687*	-0.0749**	-0.0150	0.00215

(-0.18)	(-0.16)	(-0.14)	(-0.20)	(-0.38)	(-0.27)	(-0.15)	(-1.75)	(-2.10)	(-0.18)	(0.05)
38.SIC2 -0.0221	-0.0178	-0.0173	-0.0236	-0.0357	-0.0304	-0.0183	-0.0621	-0.0904**	-0.0221	-0.00277
(-0.25)	(-0.20)	(-0.20)	(-0.27)	(-0.35)	(-0.28)	(-0.21)	(-1.51)	(-2.40)	(-0.25)	(-0.06)
39.SIC2 -0.0377	-0.0333	-0.0336	-0.0387	-0.0439	-0.0499	-0.0354	-0.0993**	-0.133***	-0.0377	-0.0159
(-0.41)	(-0.36)	(-0.37)	(-0.42)	(-0.40)	(-0.44)	(-0.38)	(-2.32)	(-3.37)	(-0.41)	(-0.33)
40.SIC2 0.0470	0.0518	0.0416	0.0421	0.0392	-0.0150	0.0450	0.0432	-0.0210	0.0470	0.0649
(0.34)	(0.37)	(0.30)	(0.30)	(0.27)	(-0.09)	(0.32)	(0.70)	(-0.34)	(0.34)	(0.88)
41.SIC2 0.0231	0.0290	0.0282	0.0197	0.00173	0.0134	0.0265	-0.0553	-0.0663	0.0230	0.0290
(0.23)	(0.30)	(0.29)	(0.20)	(0.02)	(0.11)	(0.27)	(-1.22)	(-1.56)	(0.23)	(0.56)
42.SIC2 0.0197	0.0231	0.0248	0.0183	-0.0304	0.0106	0.0240	-0.0629	-0.0575	0.0196	0.0382
(0.23)	(0.27)	(0.29)	(0.21)	(-0.30)	(0.10)	(0.27)	(-1.55)	(-1.55)	(0.23)	(0.84)
44.SIC2 -0.00219	0.000550	0.00153	-0.00354	-0.0292	-0.0216	-0.000276	-0.0864**	-0.116***	-0.00217	0.0266
(-0.03)	(0.01)	(0.02)	(-0.04)	(-0.29)	(-0.20)	(-0.00)	(-2.13)	(-3.11)	(-0.02)	(0.58)
45.SIC2 -0.00930	-0.00949	-0.00995	-0.0114	-0.0408	-0.0266	-0.0111	-0.0950**	-0.0743*	-0.00916	0.0236
(-0.10)	(-0.10)	(-0.10)	(-0.12)	(-0.37)	(-0.23)	(-0.12)	(-2.18)	(-1.83)	(-0.10)	(0.47)
47.SIC2 0.0281	0.0299	0.0315	0.0254	-0.0443	0.0117	-0.00239	-0.0853**	-0.103***	0.0281	0.0535
(0.30)	(0.32)	(0.34)	(0.27)	(-0.42)	(0.10)	(-0.03)	(-1.99)	(-2.57)	(0.30)	(1.10)
48.SIC2 -0.0365	-0.0375	-0.0342	-0.0378	-0.0562	-0.0490	-0.0326	-0.119***	-0.134***	-0.0365	-0.0142
(-0.43)	(-0.44)	(-0.40)	(-0.44)	(-0.57)	(-0.46)	(-0.38)	(-2.98)	(-3.66)	(-0.43)	(-0.31)
49.SIC2 -0.0315	-0.0315	-0.0288	-0.0329	-0.0611	-0.0487	-0.0306	-0.0926**	-0.121***	-0.0316	-0.0173
(-0.37)	(-0.37)	(-0.34)	(-0.39)	(-0.62)	(-0.46)	(-0.36)	(-2.33)	(-3.32)	(-0.37)	(-0.38)
50.SIC2 -0.0293	-0.0264	-0.0254	-0.0311	-0.0452	-0.0340	-0.0281	-0.0593	-0.0882**	-0.0293	-0.00618
(-0.35)	(-0.32)	(-0.30)	(-0.37)	(-0.47)	(-0.33)	(-0.33)	(-1.50)	(-2.46)	(-0.35)	(-0.14)
51.SIC2 -0.0168	-0.0138	-0.0130	-0.0183	-0.0263	-0.0267	-0.0149	-0.0494	-0.0551	-0.0168	0.0000647
(-0.20)	(-0.16)	(-0.15)	(-0.22)	(-0.27)	(-0.25)	(-0.17)	(-1.23)	(-1.51)	(-0.20)	(0.00)
52.SIC2 -0.0965	-0.0971	-0.0984	-0.100	-0.113	-0.187	-0.107	-0.0897	-0.313***	-0.0959	-0.0374
(-0.35)	(-0.35)	(-0.35)	(-0.36)	(-0.42)	(-0.49)	(-0.39)	(-0.77)	(-2.69)	(-0.35)	(-0.32)
53.SIC2 -0.0258	-0.0248	-0.0256	-0.0278	-0.0402	-0.0318	-0.0260	-0.0735*	-0.0459	-0.0258	-0.00643
(-0.27)	(-0.26)	(-0.27)	(-0.29)	(-0.36)	(-0.27)	(-0.27)	(-1.68)	(-1.13)	(-0.27)	(-0.13)
54.SIC2 -0.00940	-0.00809	-0.00658	-0.0115	-0.0223	-0.0212	-0.00819	-0.0491	-0.0375	-0.00942	0.0141
(-0.11)	(-0.09)	(-0.07)	(-0.13)	(-0.22)	(-0.19)	(-0.09)	(-1.18)	(-0.98)	(-0.11)	(0.30)
55.SIC2 -0.0175	-0.0157	-0.0136	-0.0203	-0.0338	-0.0275	-0.0166	-0.0425	-0.0570	-0.0176	0.00411
(-0.17)	(-0.16)	(-0.14)	(-0.20)	(-0.30)	(-0.22)	(-0.16)	(-0.92)	(-1.31)	(-0.17)	(0.08)
56.SIC2 -0.0177	-0.0137	-0.0135	-0.0192	-0.0394	-0.0280	-0.0162	-0.0880**	-0.0847**	-0.0177	0.00211
(-0.20)	(-0.16)	(-0.15)	(-0.22)	(-0.38)	(-0.26)	(-0.18)	(-2.14)	(-2.25)	(-0.20)	(0.05)
57.SIC2 -0.0376	-0.0353	-0.0338	-0.0387	-0.0809	-0.0435	-0.0359	-0.134***	-0.136***	-0.0375	0.00601
(-0.36)	(-0.34)	(-0.32)	(-0.37)	(-0.60)	(-0.33)	(-0.34)	(-2.77)	(-3.00)	(-0.36)	(0.11)
58.SIC2 -0.0109	-0.00551	-0.00572	-0.0115	-0.0274	-0.0274	-0.00731	-0.126***	-0.120***	-0.0110	0.00504
(-0.12)	(-0.06)	(-0.06)	(-0.12)	(-0.24)	(-0.24)	(-0.08)	(-2.92)	(-3.01)	(-0.12)	(0.10)
59.SIC2 -0.0284	-0.0270	-0.0252	-0.0296	-0.0529	-0.0429	-0.0273	-0.117***	-0.0894**	-0.0285	-0.00780
(-0.32)	(-0.30)	(-0.28)	(-0.33)	(-0.51)	(-0.39)	(-0.30)	(-2.80)	(-2.33)	(-0.32)	(-0.16)
70.SIC2 -0.0143	-0.0113	-0.0108	-0.0140	-0.0400	-0.0338	-0.0117	-0.0900**	-0.102***	-0.0144	-0.00187
(-0.16)	(-0.12)	(-0.12)	(-0.15)	(-0.39)	(-0.30)	(-0.13)	(-2.14)	(-2.61)	(-0.16)	(-0.04)
72.SIC2 -0.0370	-0.0350	-0.0334	-0.0387	-0.0728	-0.0557	-0.0343	-0.163***	-0.152***	-0.0370	-0.00159
(-0.35)	(-0.33)	(-0.31)	(-0.36)	(-0.55)	(-0.42)	(-0.32)	(-3.39)	(-3.36)	(-0.35)	(-0.03)
73.SIC2 -0.0352	-0.0322	-0.0305	-0.0369	-0.0712	-0.0460	-0.0322	-0.108***	-0.128***	-0.0352	-0.0118
(-0.42)	(-0.38)	(-0.36)	(-0.43)	(-0.72)	(-0.44)	(-0.38)	(-2.69)	(-3.54)	(-0.41)	(-0.27)
75.SIC2 0.0262	0.0271	0.0309	0.0246	-0.0248	0.0196	0.0281	-0.128***	-0.0902*	0.0261	0.0638
(0.25)	(0.26)	(0.29)	(0.23)	(-0.21)	(0.15)	(0.26)	(-2.66)	(-1.95)	(0.25)	(1.14)
76.SIC2 -0.0245	-0.0257	-0.0206	-0.0266	-0.0332	-0.0273	-0.0224	-0.0384	-0.0523	-0.0244	-0.00293
(-0.17)	(-0.18)	(-0.15)	(-0.19)	(-0.23)	(-0.16)	(-0.16)	(-0.61)	(-0.87)	(-0.17)	(-0.04)
78.SIC2 0.0107	0.0148	0.0190	0.00889	-0.0410	-0.00763	0.0118	-0.0955*	-0.144***	0.0106	0.0298
(0.10)	(0.14)	(0.18)	(0.08)	(-0.35)	(-0.06)	(0.11)	(-1.92)	(-3.12)	(0.10)	(0.52)
79.SIC2 -0.0123	-0.00768	-0.00684	-0.0127	-0.0472	-0.0256	-0.00849	-0.101**	-0.121***	-0.0124	0.00213

	(-0.13)	(-0.08)	(-0.07)	(-0.14)	(-0.43)	(-0.22)	(-0.09)	(-2.35)	(-3.04)	(-0.13)	(0.04)
80.SIC2	-0.0274	-0.0224	-0.0226	-0.0275	-0.0175	-0.0392	-0.0212	-0.103**	-0.111***	-0.0274	-0.00579
	(-0.28)	(-0.23)	(-0.23)	(-0.29)	(-0.13)	(-0.33)	(-0.22)	(-2.32)	(-2.67)	(-0.28)	(-0.11)
82.SIC2	-0.0205	-0.0162	-0.0152	-0.0220	-0.0343	-0.0318	-0.0170	-0.0643	-0.0747	-0.0206	-0.0107
	(-0.18)	(-0.14)	(-0.13)	(-0.19)	(-0.26)	(-0.22)	(-0.15)	(-1.24)	(-1.50)	(-0.18)	(-0.18)
87.SIC2	-0.0278	-0.0247	-0.0243	-0.0296	-0.0412	-0.0373	-0.0260	-0.0494	-0.0705*	-0.0278	-0.0147
	(-0.31)	(-0.28)	(-0.28)	(-0.33)	(-0.40)	(-0.34)	(-0.29)	(-1.19)	(-1.85)	(-0.31)	(-0.32)
96.SIC2	-0.0551	-0.0535	-0.0530	-0.0577	-0.0699	-0.0579	-0.0550	-0.134*	-0.137*	-0.0548	-0.0325
	(-0.30)	(-0.29)	(-0.29)	(-0.32)	(-0.38)	(-0.26)	(-0.30)	(-1.68)	(-1.75)	(-0.30)	(-0.34)
2003.year	-0.00127	-0.000249	0.000926	-0.00156	-0.00527	-0.000921	0.000329	-0.0237***	-0.0283***	-0.00133	-0.00440
	(-0.06)	(-0.01)	(0.05)	(-0.08)	(-0.23)	(-0.04)	(0.02)	(-2.81)	(-3.33)	(-0.07)	(-0.44)
2004.year	0.00312	0.00391	0.00501	0.00279	0.00112	0.00288	0.00479	-0.00528	-0.0123	0.00307	-0.00132
	(0.16)	(0.21)	(0.27)	(0.15)	(0.05)	(0.14)	(0.25)	(-0.65)	(-1.50)	(0.16)	(-0.13)
2005.year	0.0386*	0.0395**	0.0405**	0.0383*	0.0401*	0.0358	0.0403**	0.00381	-0.0155*	0.0386*	0.0196*
	(1.95)	(2.02)	(2.07)	(1.93)	(1.75)	(1.62)	(2.00)	(0.47)	(-1.88)	(1.95)	(1.90)
2006.year	0.0126	0.0134	0.0144	0.0121	0.0118	0.0124	0.0137	0.0140*	0.00998	0.0125	0.00959
	(0.65)	(0.70)	(0.76)	(0.62)	(0.52)	(0.57)	(0.69)	(1.69)	(1.19)	(0.65)	(0.96)
2007.year	0.00530	0.00593	0.00698	0.00464	0.00765	0.00426	0.00667	0.00703	0.00177	0.00523	0.000712
	(0.27)	(0.31)	(0.37)	(0.24)	(0.34)	(0.20)	(0.34)	(0.84)	(0.21)	(0.27)	(0.07)
2008.year	0.00289	0.00317	0.00360	0.00299	-0.000440		0.00288	-0.0190**	-0.0152*	0.00283	-0.000327
	(0.16)	(0.17)	(0.19)	(0.16)	(-0.02)		(0.15)	(-2.42)	(-1.92)	(0.15)	(-0.03)
2009.year	-0.0253	-0.0247	-0.0243	-0.0256	-0.0355*	-0.0271	-0.0257	-0.0723***	-0.0753***	-0.0253	-0.0319***
	(-1.32)	(-1.29)	(-1.27)	(-1.33)	(-1.65)	(-1.25)	(-1.31)	(-9.08)	(-9.44)	(-1.32)	(-3.20)
2010.year	-0.00907	-0.00877	-0.00824	-0.00941	-0.0115	-0.00885	-0.00908	-0.0225***	-0.0213***	-0.00909	-0.0147
	(-0.51)	(-0.49)	(-0.46)	(-0.53)	(-0.57)	(-0.45)	(-0.50)	(-2.94)	(-2.76)	(-0.51)	(-1.56)
_cons	-0.0171	-0.0212	-0.0798	-0.00963	0.00814	-0.0250	-0.0328	0.0623	-0.122**	-0.0168	-0.0698
	(-0.12)	(-0.17)	(-0.57)	(-0.07)	(0.05)	(-0.15)	(-0.23)	(1.02)	(-2.06)	(-0.12)	(-0.87)
number of observations	13950	13950	13950	13950	10530	10850	13680	13668	13677	13950	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.4. Regression results – Uncertainty Avoidance dimension (Hofstede)

	(4) Base model	(48) Ownership Concentration	(49) Rule of Law	(50) Common Legal Origin	(51) ex USA	(52) ex Crisis	(53) Outliers - Size	(54) Outliers - Cash Flow	(55) Outliers - CAPEX	(56) Cash Flow Volatility	(14) Interaction
L.CAPEXF_TA	0.00361	0.00362	0.00362	0.00362	0.00386	0.00354	0.00361	0.00569***	0.00583***	0.00424	0.00362
	(1.12)	(1.11)	(1.11)	(1.11)	(1.37)	(1.08)	(1.13)	(4.63)	(4.66)	(1.20)	(1.08)
MV_BV_t1	0.00679	0.00587	0.00587	0.00565	0.00735	0.0115*	0.00725	0.00146	0.00285	0.00681	0.00792
	(1.32)	(1.14)	(1.14)	(1.11)	(1.29)	(1.76)	(1.39)	(0.74)	(1.40)	(1.33)	(1.48)
FCF_TA	-0.684***	-0.681***	-0.684***	-0.681***	-0.645***	-0.635***	-0.678***	-0.486***	-1.275***	-0.685***	-2.158**
	(-3.23)	(-3.18)	(-3.20)	(-3.18)	(-3.73)	(-2.76)	(-3.24)	(-16.38)	(-17.20)	(-3.23)	(-2.45)
L.Ln_TA	-0.00102	-0.00145	-0.00141	-0.00153	-0.00597	-0.0000320	-0.000640	-0.00708***	-0.0116***	-0.00108	-0.00764
	(-0.20)	(-0.30)	(-0.29)	(-0.31)	(-1.05)	(-0.01)	(-0.12)	(-3.72)	(-5.90)	(-0.21)	(-1.24)
Leverage	0.220***	0.220***	0.221***	0.221***	0.270***	0.218***	0.216***	0.327***	0.291***	0.219***	0.171**
	(4.58)	(4.55)	(4.57)	(4.55)	(5.54)	(3.78)	(4.46)	(18.63)	(15.64)	(4.56)	(2.32)
DIV_FCF	0.00000574	0.000000582	0.00000604	0.0000161	-0.000524	0.000217	0.0000526	0.000351	-0.0000377	3.55e-08	0.000139
	(0.01)	(0.00)	(0.01)	(0.02)	(-0.65)	(0.22)	(0.06)	(0.99)	(-0.10)	(0.00)	(0.19)
L.Cash_TA	0.0992	0.102	0.105*	0.102	0.0776	0.0727	0.102	0.132***	0.0926***	0.0971	0.183***
	(1.60)	(1.64)	(1.69)	(1.64)	(1.36)	(1.01)	(1.62)	(5.55)	(3.92)	(1.56)	(2.78)
CF_Vol										-0.000896	
										(-0.44)	
UAI	-0.00123***	-0.00135***	-0.00140***	-0.00148***	-0.00167***	-0.00109***	-0.00123***	-0.00171***	-0.00244***	-0.00123***	-0.00127***
	(-4.46)	(-5.24)	(-5.49)	(-5.16)	(-7.47)	(-3.64)	(-4.55)	(-26.37)	(-29.43)	(-4.46)	(-2.78)
UAI_FCF	0.0307***	0.0306***	0.0306***	0.0305***	0.0336***	0.0317***	0.0310***	0.0394***	0.0488***	0.0307***	0.0306***
	(9.03)	(8.87)	(8.91)	(8.86)	(13.47)	(8.90)	(9.32)	(102.47)	(59.31)	(9.03)	(5.09)
Size_FCF											0.0928
											(1.60)
Leverage_FCF											0.409
											(0.48)
DIVfcf_FCF											0.213
											(0.96)
Cash_FCF											-1.931***
											(-3.75)
Anti_FCF											0.608
											(0.81)
Stock_FCF											0.00124
											(1.25)
Credit_FCF											0.00265
											(1.40)
Log_GDP_Capita	-0.00687	-0.00828	-0.00277	-0.00872*	-0.00409	-0.00793	-0.00667	-0.00163	-0.000678	-0.00686	-0.00719
	(-1.43)	(-1.64)	(-0.39)	(-1.74)	(-0.96)	(-1.47)	(-1.42)	(-0.90)	(-0.37)	(-1.43)	(-1.48)
Credit_GDP	0.0000707	0.000112	0.000104	0.000116*	0.000203***	0.0000634	0.0000615	0.0000374	0.0000881***	0.0000713	-0.0000926
	(1.05)	(1.64)	(1.62)	(1.68)	(2.98)	(0.83)	(0.91)	(1.44)	(3.33)	(1.06)	(-0.60)
Stock_mkt_GDP	0.0000402	0.0000535	0.0000560	0.0000601	0.0000213	0.0000579	0.0000383	0.0000290*	0.0000266	0.0000406	-0.0000268
	(1.04)	(1.43)	(1.54)	(1.63)	(0.59)	(1.22)	(0.99)	(1.94)	(1.75)	(1.05)	(-0.33)
Anti_Self_Dealing	0.0303				0.00957	0.0408*	0.0325	0.0216***	0.00508	0.0302	-0.0189
	(1.43)				(0.49)	(1.65)	(1.53)	(2.66)	(0.61)	(1.42)	(-0.32)
concentration		0.0119									
		(0.68)									

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
rule_law			-0.00859								
			(-1.20)								
common_legal				-0.00665							
				(-0.78)							
2.SIC2	-0.0118	-0.0179	-0.0193	-0.0183	0.000888	-0.0200	-0.0116	-0.0418**	-0.0171	-0.0117	-0.0213
	(-0.22)	(-0.33)	(-0.35)	(-0.33)	(0.02)	(-0.32)	(-0.22)	(-1.88)	(-0.80)	(-0.21)	(-0.38)
8.SIC2	-0.0183	-0.0218	-0.0220	-0.0228	-0.0469	-0.0402	-0.0181	-0.0604***	-0.0444**	-0.0184	-0.0165
	(-0.33)	(-0.39)	(-0.40)	(-0.41)	(-0.87)	(-0.64)	(-0.33)	(-2.72)	(-2.06)	(-0.34)	(-0.29)
10.SIC2	0.0115	0.0113	0.0115	0.00970	0.00415	-0.00570	0.00925	-0.0276	0.00321	0.0115	0.00912
	(0.25)	(0.24)	(0.24)	(0.20)	(0.09)	(-0.11)	(0.19)	(-1.41)	(0.18)	(0.24)	(0.19)
12.SIC2	0.0261	0.0233	0.0226	0.0223	-0.0114	0.0169	0.0264	-0.0299	-0.0109	0.0261	0.0273
	(0.45)	(0.40)	(0.38)	(0.38)	(-0.19)	(0.25)	(0.46)	(-1.26)	(-0.48)	(0.45)	(0.45)
13.SIC2	0.0434	0.0414	0.0410	0.0402	0.0255	0.0322	0.0461	-0.0141	0.00754	0.0434	0.0384
	(1.01)	(0.95)	(0.95)	(0.92)	(0.56)	(0.65)	(1.08)	(-0.79)	(0.45)	(1.01)	(0.87)
14.SIC2	-0.00876	-0.00977	-0.00966	-0.0114	-0.0256	-0.00644	-0.00843	-0.0342	-0.0124	-0.00887	-0.0170
	(-0.15)	(-0.17)	(-0.17)	(-0.20)	(-0.44)	(-0.10)	(-0.15)	(-1.47)	(-0.56)	(-0.15)	(-0.29)
15.SIC2	-0.0315	-0.0338	-0.0313	-0.0356	-0.0446	-0.0620	-0.0316	-0.0414**	-0.0271	-0.0315	-0.0336
	(-0.67)	(-0.71)	(-0.66)	(-0.75)	(-0.97)	(-1.15)	(-0.68)	(-2.09)	(-1.42)	(-0.67)	(-0.69)
16.SIC2	-0.00326	-0.00798	-0.00739	-0.00947	-0.0196	-0.00851	-0.00263	-0.0274	-0.00969	-0.00329	-0.0122
	(-0.07)	(-0.17)	(-0.16)	(-0.20)	(-0.41)	(-0.16)	(-0.06)	(-1.39)	(-0.51)	(-0.07)	(-0.25)
17.SIC2	-0.0139	-0.0166	-0.0164	-0.0182	-0.0535	-0.0217	-0.0102	-0.0443**	-0.0319*	-0.0139	-0.0216
	(-0.28)	(-0.33)	(-0.33)	(-0.37)	(-0.98)	(-0.38)	(-0.21)	(-2.16)	(-1.66)	(-0.28)	(-0.42)
20.SIC2	-0.00811	-0.0114	-0.0106	-0.0122	-0.0263	-0.0164	-0.00806	-0.0396**	-0.0207	-0.00823	-0.0118
	(-0.19)	(-0.27)	(-0.25)	(-0.29)	(-0.62)	(-0.34)	(-0.19)	(-2.23)	(-1.26)	(-0.20)	(-0.27)
22.SIC2	-0.00702	-0.0120	-0.0104	-0.0136	-0.0200	-0.00966	-0.00644	-0.0348**	-0.0187	-0.00715	-0.0116
	(-0.16)	(-0.28)	(-0.24)	(-0.31)	(-0.46)	(-0.20)	(-0.15)	(-1.92)	(-1.11)	(-0.17)	(-0.26)
23.SIC2	-0.0130	-0.0167	-0.0163	-0.0163	-0.0179	-0.0166	-0.0127	-0.0427**	-0.0248	-0.0131	-0.0157
	(-0.29)	(-0.37)	(-0.36)	(-0.36)	(-0.39)	(-0.32)	(-0.28)	(-2.25)	(-1.40)	(-0.29)	(-0.33)
24.SIC2	-0.00539	-0.00756	-0.00714	-0.00800	-0.0139	-0.00955	-0.00551	-0.0349*	-0.0190	-0.00544	-0.0107
	(-0.12)	(-0.16)	(-0.15)	(-0.17)	(-0.30)	(-0.18)	(-0.12)	(-1.82)	(-1.05)	(-0.12)	(-0.23)
25.SIC2	-0.0193	-0.0232	-0.0229	-0.0246	-0.0239	-0.0266	-0.0188	-0.0539***	-0.0306*	-0.0193	-0.0286
	(-0.42)	(-0.50)	(-0.50)	(-0.53)	(-0.50)	(-0.51)	(-0.42)	(-2.81)	(-1.71)	(-0.42)	(-0.60)
26.SIC2	-0.00507	-0.00923	-0.00788	-0.0105	-0.0187	-0.0133	-0.00458	-0.0339**	-0.0139	-0.00516	-0.0108
	(-0.12)	(-0.22)	(-0.18)	(-0.24)	(-0.44)	(-0.27)	(-0.11)	(-1.89)	(-0.84)	(-0.12)	(-0.24)
27.SIC2	-0.0163	-0.0195	-0.0190	-0.0209	-0.0225	-0.0264	-0.0160	-0.0464**	-0.0237	-0.0164	-0.0226
	(-0.38)	(-0.45)	(-0.44)	(-0.48)	(-0.51)	(-0.53)	(-0.37)	(-2.55)	(-1.40)	(-0.38)	(-0.50)
28.SIC2	-0.00737	-0.0124	-0.0114	-0.0139	-0.0178	-0.0117	-0.00708	-0.0368**	-0.0135	-0.00743	-0.0141
	(-0.18)	(-0.30)	(-0.27)	(-0.33)	(-0.42)	(-0.24)	(-0.17)	(-2.09)	(-0.83)	(-0.18)	(-0.33)
29.SIC2	0.0222	0.0211	0.0208	0.0203	0.0152	0.00618	0.0133	0.0104	0.0432**	0.0222	0.0171
	(0.47)	(0.44)	(0.43)	(0.42)	(0.29)	(0.11)	(0.28)	(0.53)	(2.33)	(0.47)	(0.35)
30.SIC2	-0.00424	-0.00793	-0.00746	-0.00929	-0.0158	-0.0131	-0.00389	-0.0418**	-0.0194	-0.00436	-0.00625
	(-0.10)	(-0.19)	(-0.17)	(-0.22)	(-0.37)	(-0.27)	(-0.09)	(-2.33)	(-1.17)	(-0.10)	(-0.14)
31.SIC2	-0.0233	-0.0205	-0.0210	-0.0196	-0.0388	-0.0334	-0.0234	-0.0597**	-0.0397	-0.0234	-0.0287
	(-0.33)	(-0.29)	(-0.30)	(-0.28)	(-0.60)	(-0.42)	(-0.34)	(-2.15)	(-1.45)	(-0.33)	(-0.40)
32.SIC2	-0.0103	-0.0150	-0.0144	-0.0161	-0.0269	-0.0214	-0.0102	-0.0466***	-0.0228	-0.0103	-0.0145
	(-0.24)	(-0.35)	(-0.34)	(-0.38)	(-0.64)	(-0.44)	(-0.24)	(-2.62)	(-1.39)	(-0.25)	(-0.33)
33.SIC2	-0.0107	-0.0150	-0.0143	-0.0164	-0.0211	-0.0156	-0.0106	-0.0357**	-0.0160	-0.0108	-0.0160
	(-0.26)	(-0.35)	(-0.34)	(-0.39)	(-0.50)	(-0.32)	(-0.26)	(-2.01)	(-0.97)	(-0.26)	(-0.37)
34.SIC2	-0.00965	-0.0138	-0.0132	-0.0152	-0.0245	-0.0138	-0.00941	-0.0384**	-0.0207	-0.00973	-0.0164
	(-0.23)	(-0.32)	(-0.31)	(-0.35)	(-0.57)	(-0.28)	(-0.22)	(-2.13)	(-1.25)	(-0.23)	(-0.37)
35.SIC2	0.0354	0.0308	0.0317	0.0292	0.0289	0.0360	0.0358	-0.0358**	-0.0126	0.0359	0.0303
	(0.83)	(0.72)	(0.74)	(0.68)	(0.67)	(0.73)	(0.85)	(-2.00)	(-0.77)	(0.84)	(0.68)

36.SIC2	-0.0158	-0.0202	-0.0190	-0.0217	-0.0224	-0.0209	-0.0150	-0.0482***	-0.0277*	-0.0158	-0.0182
	(-0.38)	(-0.48)	(-0.46)	(-0.52)	(-0.53)	(-0.44)	(-0.36)	(-2.72)	(-1.70)	(-0.38)	(-0.42)
37.SIC2	-0.0101	-0.0140	-0.0129	-0.0153	-0.0265	-0.0206	-0.0115	-0.0461***	-0.0210	-0.0101	-0.0133
	(-0.24)	(-0.33)	(-0.31)	(-0.36)	(-0.63)	(-0.43)	(-0.28)	(-2.61)	(-1.29)	(-0.24)	(-0.31)
38.SIC2	-0.0176	-0.0215	-0.0213	-0.0228	-0.0268	-0.0247	-0.0148	-0.0497***	-0.0341**	-0.0177	-0.0259
	(-0.40)	(-0.49)	(-0.48)	(-0.51)	(-0.59)	(-0.49)	(-0.34)	(-2.68)	(-1.98)	(-0.40)	(-0.57)
39.SIC2	-0.0304	-0.0347	-0.0344	-0.0355	-0.0391	-0.0380	-0.0302	-0.0748***	-0.0497***	-0.0304	-0.0363
	(-0.66)	(-0.75)	(-0.74)	(-0.76)	(-0.80)	(-0.71)	(-0.66)	(-3.88)	(-2.76)	(-0.66)	(-0.76)
40.SIC2	0.0823	0.0754	0.0721	0.0728	0.0756	0.0206	0.0818	0.0675**	0.0472*	0.0823	0.0755
	(1.18)	(1.07)	(1.02)	(1.03)	(1.18)	(0.26)	(1.19)	(2.43)	(1.67)	(1.18)	(1.04)
41.SIC2	0.0259	0.0204	0.0217	0.0179	0.00487	0.0205	0.0266	-0.0175	0.00250	0.0257	0.0177
	(0.52)	(0.41)	(0.44)	(0.36)	(0.10)	(0.36)	(0.54)	(-0.86)	(0.13)	(0.52)	(0.35)
42.SIC2	0.0280	0.0247	0.0254	0.0234	-0.0165	0.0222	0.0310	-0.00859	0.00876	0.0278	0.0223
	(0.64)	(0.56)	(0.58)	(0.53)	(-0.37)	(0.44)	(0.72)	(-0.47)	(0.51)	(0.64)	(0.50)
44.SIC2	0.0138	0.00914	0.00970	0.00737	-0.00670	0.00182	0.0144	-0.0342*	-0.00954	0.0139	0.0126
	(0.32)	(0.21)	(0.22)	(0.17)	(-0.15)	(0.04)	(0.33)	(-1.87)	(-0.56)	(0.32)	(0.28)
45.SIC2	-0.00253	-0.00402	-0.00321	-0.00446	-0.0231	-0.0169	-0.00307	-0.0440**	-0.00750	-0.00231	0.000213
	(-0.05)	(-0.08)	(-0.07)	(-0.09)	(-0.48)	(-0.31)	(-0.07)	(-2.24)	(-0.40)	(-0.05)	(0.00)
47.SIC2	0.0316	0.0287	0.0291	0.0259	-0.0314	0.0205	-0.00115	-0.0201	-0.0262	0.0316	0.0297
	(0.68)	(0.61)	(0.62)	(0.55)	(-0.68)	(0.38)	(-0.02)	(-1.04)	(-1.43)	(0.68)	(0.62)
48.SIC2	-0.0366	-0.0394	-0.0402	-0.0415	-0.0519	-0.0453	-0.0352	-0.0838***	-0.0551***	-0.0366	-0.0388
	(-0.85)	(-0.91)	(-0.93)	(-0.95)	(-1.20)	(-0.92)	(-0.82)	(-4.65)	(-3.28)	(-0.85)	(-0.87)
49.SIC2	-0.0262	-0.0288	-0.0290	-0.0307	-0.0495	-0.0387	-0.0261	-0.0679***	-0.0412**	-0.0262	-0.0286
	(-0.61)	(-0.67)	(-0.68)	(-0.71)	(-1.15)	(-0.79)	(-0.62)	(-3.79)	(-2.48)	(-0.61)	(-0.65)
50.SIC2	-0.0145	-0.0185	-0.0176	-0.0201	-0.0274	-0.0182	-0.0146	-0.0423**	-0.0226	-0.0145	-0.0210
	(-0.35)	(-0.44)	(-0.42)	(-0.47)	(-0.65)	(-0.38)	(-0.35)	(-2.38)	(-1.38)	(-0.35)	(-0.48)
51.SIC2	-0.00418	-0.00776	-0.00693	-0.00936	-0.0139	-0.0123	-0.00389	-0.0283	-0.0108	-0.00424	-0.0114
	(-0.10)	(-0.18)	(-0.16)	(-0.22)	(-0.32)	(-0.25)	(-0.09)	(-1.57)	(-0.65)	(-0.10)	(-0.26)
52.SIC2	-0.0346	-0.0325	-0.0326	-0.0349	0.0207	-0.0784	-0.0407	-0.0921*	-0.0285	-0.0338	-0.0553
	(-0.24)	(-0.22)	(-0.23)	(-0.24)	(0.17)	(-0.43)	(-0.29)	(-1.70)	(-0.52)	(-0.24)	(-0.46)
53.SIC2	-0.0125	-0.0154	-0.0157	-0.0169	-0.0188	-0.0161	-0.0125	-0.0345*	-0.00938	-0.0125	-0.0169
	(-0.26)	(-0.32)	(-0.33)	(-0.35)	(-0.38)	(-0.29)	(-0.27)	(-1.75)	(-0.50)	(-0.26)	(-0.34)
54.SIC2	0.00480	0.00162	0.00227	-0.0000481	-0.00550	-0.00779	0.00523	-0.0238	0.00604	0.00477	-0.00294
	(0.11)	(0.04)	(0.05)	(-0.00)	(-0.12)	(-0.15)	(0.12)	(-1.27)	(0.34)	(0.11)	(-0.06)
55.SIC2	-0.00627	-0.0100	-0.00859	-0.0125	-0.0228	-0.0182	-0.00625	-0.0314	-0.00602	-0.00635	-0.0117
	(-0.12)	(-0.20)	(-0.17)	(-0.24)	(-0.46)	(-0.31)	(-0.13)	(-1.51)	(-0.30)	(-0.13)	(-0.22)
56.SIC2	-0.00842	-0.0129	-0.0117	-0.0140	-0.0297	-0.0168	-0.00853	-0.0454**	-0.0212	-0.00844	-0.0104
	(-0.19)	(-0.29)	(-0.26)	(-0.31)	(-0.65)	(-0.33)	(-0.20)	(-2.45)	(-1.23)	(-0.19)	(-0.23)
57.SIC2	-0.0248	-0.0278	-0.0278	-0.0290	-0.0533	-0.0289	-0.0249	-0.0730***	-0.0456**	-0.0247	-0.0164
	(-0.47)	(-0.52)	(-0.52)	(-0.54)	(-0.90)	(-0.48)	(-0.48)	(-3.35)	(-2.20)	(-0.47)	(-0.30)
58.SIC2	-0.0102	-0.0151	-0.0154	-0.0161	-0.0280	-0.0255	-0.00979	-0.0587***	-0.0407**	-0.0103	-0.0117
	(-0.22)	(-0.32)	(-0.33)	(-0.34)	(-0.55)	(-0.47)	(-0.21)	(-3.01)	(-2.21)	(-0.22)	(-0.24)
59.SIC2	-0.0162	-0.0186	-0.0181	-0.0200	-0.0305	-0.0278	-0.0161	-0.0512***	-0.0251	-0.0162	-0.0226
	(-0.36)	(-0.41)	(-0.40)	(-0.44)	(-0.67)	(-0.54)	(-0.36)	(-2.73)	(-1.43)	(-0.36)	(-0.49)
70.SIC2	-0.0163	-0.0164	-0.0158	-0.0162	-0.0393	-0.0310	-0.0162	-0.0600***	-0.0359**	-0.0164	-0.0172
	(-0.36)	(-0.35)	(-0.34)	(-0.35)	(-0.87)	(-0.59)	(-0.36)	(-3.16)	(-2.02)	(-0.36)	(-0.37)
72.SIC2	-0.0273	-0.0288	-0.0285	-0.0304	-0.0284	-0.0400	-0.0266	-0.0783***	-0.0443**	-0.0273	-0.0366
	(-0.51)	(-0.53)	(-0.53)	(-0.56)	(-0.48)	(-0.65)	(-0.50)	(-3.62)	(-2.13)	(-0.51)	(-0.66)
73.SIC2	-0.0382	-0.0415	-0.0408	-0.0432	-0.0732*	-0.0469	-0.0382	-0.0756***	-0.0624***	-0.0382	-0.0349
	(-0.90)	(-0.97)	(-0.95)	(-1.00)	(-1.67)	(-0.96)	(-0.90)	(-4.20)	(-3.76)	(-0.89)	(-0.79)
75.SIC2	0.0319	0.0301	0.0309	0.0286	0.00103	0.0233	0.0320	-0.0198	0.00309	0.0318	0.0183
	(0.60)	(0.56)	(0.58)	(0.53)	(0.02)	(0.38)	(0.61)	(-0.92)	(0.15)	(0.60)	(0.33)
76.SIC2	-0.00928	-0.00948	-0.00961	-0.0117	-0.0193	-0.0137	-0.00871	-0.0275	-0.00553	-0.00912	-0.0289
	(-0.13)	(-0.13)	(-0.14)	(-0.16)	(-0.30)	(-0.17)	(-0.13)	(-0.98)	(-0.20)	(-0.13)	(-0.40)

78.SIC2	-0.0241	-0.0268	-0.0251	-0.0286	-0.0615	-0.0432	-0.0279	-0.0638***	-0.0767***	-0.0243	0.00744
	(-0.44)	(-0.49)	(-0.46)	(-0.52)	(-1.17)	(-0.69)	(-0.51)	(-2.85)	(-3.64)	(-0.45)	(0.13)
79.SIC2	-0.0217	-0.0250	-0.0244	-0.0257	-0.0585	-0.0329	-0.0213	-0.0718***	-0.0566***	-0.0218	-0.0247
	(-0.47)	(-0.53)	(-0.52)	(-0.55)	(-1.20)	(-0.61)	(-0.46)	(-3.72)	(-3.11)	(-0.47)	(-0.52)
80.SIC2	-0.0292	-0.0324	-0.0320	-0.0325	-0.0268	-0.0380	-0.0224	-0.0793***	-0.0425**	-0.0293	-0.0262
	(-0.60)	(-0.66)	(-0.66)	(-0.66)	(-0.46)	(-0.68)	(-0.46)	(-3.95)	(-2.24)	(-0.60)	(-0.52)
82.SIC2	-0.0216	-0.0261	-0.0255	-0.0275	-0.0375	-0.0274	-0.0209	-0.0532**	-0.0374*	-0.0216	-0.0257
	(-0.37)	(-0.45)	(-0.44)	(-0.47)	(-0.64)	(-0.41)	(-0.37)	(-2.27)	(-1.64)	(-0.37)	(-0.43)
87.SIC2	-0.0235	-0.0271	-0.0261	-0.0289	-0.0372	-0.0294	-0.0232	-0.0492***	-0.0356**	-0.0234	-0.0263
	(-0.53)	(-0.61)	(-0.59)	(-0.64)	(-0.83)	(-0.58)	(-0.53)	(-2.63)	(-2.05)	(-0.53)	(-0.57)
96.SIC2	-0.0587	-0.0630	-0.0631	-0.0647	-0.0734	-0.0489	-0.0591	-0.106***	-0.0816**	-0.0584	-0.0502
	(-0.64)	(-0.68)	(-0.69)	(-0.70)	(-0.89)	(-0.46)	(-0.66)	(-2.96)	(-2.29)	(-0.64)	(-0.53)
2003.year	-0.00872	-0.00907	-0.00868	-0.00928	-0.0131	-0.00868	-0.00836	-0.0189***	-0.0187***	-0.00882	-0.0101
	(-0.87)	(-0.91)	(-0.88)	(-0.93)	(-1.30)	(-0.83)	(-0.83)	(-4.96)	(-4.81)	(-0.88)	(-1.02)
2004.year	-0.00448	-0.00462	-0.00443	-0.00479	-0.00848	-0.00848	-0.00391	-0.0116***	-0.0121***	-0.00457	-0.00708
	(-0.46)	(-0.48)	(-0.46)	(-0.49)	(-0.86)	(-0.57)	(-0.40)	(-3.13)	(-3.19)	(-0.47)	(-0.73)
2005.year	0.0183*	0.0183*	0.0184*	0.0182*	0.0135	0.0143	0.0185*	-0.00499	-0.00419	0.0182*	0.0158
	(1.81)	(1.81)	(1.82)	(1.79)	(1.31)	(1.36)	(1.82)	(-1.34)	(-1.10)	(1.80)	(1.56)
2006.year	0.00884	0.00840	0.00843	0.00814	0.00527	0.00698	0.00885	0.00538	0.00532	0.00870	0.00426
	(0.90)	(0.86)	(0.86)	(0.83)	(0.52)	(0.68)	(0.90)	(1.42)	(1.38)	(0.89)	(0.43)
2007.year	0.00118	0.000701	0.000658	0.000409	0.000305	-0.00146	0.00158	0.000586	-0.00141	0.00106	-0.00274
	(0.12)	(0.07)	(0.07)	(0.04)	(0.03)	(-0.14)	(0.16)	(0.15)	(-0.36)	(0.11)	(-0.28)
2008.year	0.0000470	0.000504	0.000526	0.000583	-0.00371		-0.000414	-0.00902**	-0.00634*	-0.0000278	-0.00134
	(0.01)	(0.05)	(0.06)	(0.06)	(-0.40)		(-0.04)	(-2.54)	(-1.75)	(-0.00)	(-0.14)
2009.year	-0.0314***	-0.0319***	-0.0317***	-0.0320***	-0.0412***	-0.0326***	-0.0322***	-0.0512***	-0.0445***	-0.0314***	-0.0301***
	(-3.25)	(-3.28)	(-3.27)	(-3.29)	(-4.33)	(-3.23)	(-3.32)	(-14.33)	(-12.04)	(-3.25)	(-3.08)
2010.year	-0.0152*	-0.0157*	-0.0155*	-0.0159*	-0.0199**	-0.0155*	-0.0156*	-0.0227***	-0.0212***	-0.0153*	-0.0156*
	(-1.70)	(-1.74)	(-1.72)	(-1.75)	(-2.22)	(-1.69)	(-1.74)	(-6.57)	(-6.04)	(-1.70)	(-1.68)
_cons	0.0683	0.105	0.0654	0.125**	0.0984	0.0579	0.0625	0.0792***	0.143***	0.0688	0.185**
	(0.99)	(1.81)	(0.95)	(2.08)	(1.48)	(0.74)	(0.90)	(2.92)	(5.28)	(1.00)	(1.99)
number of observations	13950	13950	13950	13950	10530	10850	13680	13688	13677	13950	13950

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.5. Regression results – Assertiveness dimension (GLOBE)

	(6) Base model	(57) Ownership Concentration	(58) Rule of Law	(59) Common Legal Origin	(60) ex USA	(61) ex Crisis	(62) Outliers - Size	(63) Outliers - Cash Flow	(64) Outliers - CAPEX	(65) Cash Flow Volatility	(15) Interaction
L.CAPEXF_TA	0.00430	0.00432*	0.00433*	0.00429*	0.00440*	0.00443*	0.00428	0.00571***	0.00606***	0.00487*	0.00444*
	(1.64)	(1.64)	(1.65)	(1.66)	(1.86)	(1.85)	(1.64)	(4.49)	(4.74)	(1.70)	(1.70)
MV_BV_t1	0.0104**	0.0110**	0.0110**	0.0111**	0.0139***	0.0150***	0.0107**	0.0154***	0.00889***	0.0104**	0.00655
	(2.40)	(2.49)	(2.50)	(2.60)	(2.71)	(3.03)	(2.40)	(7.24)	(4.12)	(2.40)	(1.52)
FCF_TA	-5.833***	-5.804***	-5.800***	-5.860***	-5.996***	-6.712***	-5.962***	-10.83***	-8.112***	-5.833***	-2.852***
	(-10.36)	(-10.28)	(-10.27)	(-10.56)	(-13.49)	(-11.58)	(-10.58)	(-82.77)	(-42.95)	(-10.35)	(-4.33)
L.Ln_TA	-0.000619	0.000740	0.000944	0.000069	0.00302	-0.000793	0.000636	0.000670	-0.00761***	-0.000665	-0.00212
	(-0.15)	(0.18)	(0.23)	(0.02)	(0.65)	(-0.19)	(0.15)	(0.34)	(-3.83)	(-0.16)	(-0.43)
Leverage	0.178***	0.175***	0.175***	0.178***	0.209***	0.173***	0.164***	0.109***	0.215***	0.177***	0.229***
	(4.48)	(4.41)	(4.39)	(4.59)	(4.89)	(4.05)	(4.02)	(5.79)	(10.96)	(4.46)	(4.07)
DIV_FCF	0.000615	0.000616	0.000631	0.000626	0.000362	0.00101	0.000636	0.000888**	0.00119***	0.000608	-0.0000369
	(0.75)	(0.75)	(0.77)	(0.78)	(0.52)	(1.31)	(0.79)	(2.28)	(3.07)	(0.74)	(-0.07)
L.Cash_TA	0.108**	0.111**	0.116**	0.107**	0.113**	0.110**	0.110**	0.102***	0.107***	0.106**	0.151***
	(2.13)	(2.17)	(2.27)	(2.15)	(2.34)	(2.08)	(2.11)	(4.08)	(4.37)	(2.08)	(2.90)
CF_Vol										-0.000825	
										(-0.50)	
ASSE	-0.0784***	-0.0780***	-0.0779***	-0.0823***	-0.0871***	-0.0854***	-0.0800***	-0.147***	-0.112***	-0.0783***	-0.0422***
	(-9.20)	(-9.13)	(-9.03)	(-9.69)	(-12.82)	(-10.05)	(-9.42)	(-65.62)	(-39.34)	(-9.19)	(-5.32)
ASSE_FCF	1.484***	1.478***	1.477***	1.491***	1.554***	1.677***	1.508***	2.505***	2.047***	1.484***	0.937***
	(12.24)	(12.15)	(12.14)	(12.48)	(17.03)	(13.69)	(12.53)	(99.21)	(59.35)	(12.23)	(8.26)
Size_FCF											0.0292
											(0.64)
Leverage_FCF											-0.815
											(-1.26)
DIVfcf_FCF											0.242
											(1.40)
Cash_FCF											-1.253***
											(-3.01)
Anti_FCF											-1.261***
											(-2.90)
Stock_FCF											-0.00104
											(-1.26)
Credit_FCF											0.00328**
											(2.21)
Log_GDP_Capita	-0.0130***	-0.0109***	-0.0109*	-0.0120***	-0.0124***	-0.0137***	-0.0131***	-0.0148***	-0.0112***	-0.0130***	-0.0102***
	(-3.32)	(-2.70)	(-1.88)	(-3.07)	(-3.42)	(-3.45)	(-3.35)	(-7.72)	(-5.80)	(-3.31)	(-2.63)
Credit_GDP	0.0000249	0.00000203	0.00000448	0.0000614	0.000237***	0.00000810	0.0000172	0.0000685**	0.0000162	0.0000253	-0.000208*
	(0.41)	(0.03)	(0.07)	(1.01)	(3.75)	(0.13)	(0.28)	(2.30)	(0.54)	(0.42)	(-1.70)
Stock_mkt_GDP	0.0000212	-0.0000228	-0.0000256	-0.0000237	-0.0000277	0.0000394	0.0000159	0.0000123	0.0000141	0.0000214	0.0000830
	(0.67)	(-0.83)	(-1.02)	(0.84)	(-0.89)	(1.14)	(0.50)	(0.78)	(0.89)	(0.67)	(1.27)
Anti_Self_Dealing	-0.0359**				-0.00332	-0.0368**	-0.0324**	-0.0334***	-0.0569***	-0.0361**	0.0501
	(-2.38)				(-0.20)	(-2.35)	(-2.14)	(-4.58)	(-7.64)	(-2.39)	(1.48)
concentration		-0.00299									
		(-0.21)									

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
rule_law				0.000130							
				(0.02)							
common_legal				-0.020319***							
				(-3.864)							
2.SIC2	-0.0290	-0.0185	-0.0190	-0.0287	-0.00975	-0.0270	-0.0271	-0.0235	-0.0408*	-0.0289	-0.0153
	(-0.65)	(-0.42)	(-0.43)	(-0.66)	(-0.20)	(-0.59)	(-0.61)	(-1.02)	(-1.88)	(-0.65)	(-0.35)
8.SIC2	0.0171	0.0221	0.0220	0.0141	0.0129	0.00618	0.0201	0.0404*	0.01000	0.0170	0.0117
	(0.39)	(0.50)	(0.50)	(0.32)	(0.28)	(0.13)	(0.45)	(1.75)	(0.46)	(0.38)	(0.26)
10.SIC2	-0.000402	0.00373	0.00411	0.00287	-0.00200	-0.00298	-0.00378	0.00895	-0.0161	-0.000435	0.0117
	(-0.01)	(0.10)	(0.11)	(0.08)	(-0.05)	(-0.07)	(-0.10)	(0.44)	(-0.85)	(-0.01)	(0.30)
12.SIC2	0.0103	0.0172	0.0170	0.0078	-0.0167	-0.000770	0.0142	0.0181	-0.0354	0.0103	0.0322
	(0.20)	(0.34)	(0.33)	(0.15)	(-0.30)	(-0.01)	(0.28)	(0.69)	(-1.40)	(0.20)	(0.63)
13.SIC2	0.0487	0.0528	0.0530	0.0497	0.0511	0.0499	0.0554	0.0774***	0.0207	0.0487	0.0524
	(1.40)	(1.51)	(1.52)	(1.45)	(1.34)	(1.39)	(1.59)	(4.16)	(1.21)	(1.39)	(1.51)
14.SIC2	-0.0107	-0.00430	-0.00390	-0.00133	-0.0240	0.00422	-0.00853	-0.00365	-0.0172	-0.0108	-0.00257
	(-0.23)	(-0.09)	(-0.08)	(-0.29)	(-0.49)	(0.09)	(-0.18)	(-0.15)	(-0.75)	(-0.23)	(-0.06)
15.SIC2	-0.0296	-0.0236	-0.0237	-0.0362	-0.0448	-0.00954	-0.0285	-0.0183	-0.0228	-0.0296	-0.0220
	(-0.77)	(-0.61)	(-0.61)	(-0.96)	(-1.15)	(-0.24)	(-0.74)	(-0.88)	(-1.14)	(-0.76)	(-0.57)
16.SIC2	-0.0179	-0.00969	-0.00986	-0.0213	-0.0267	-0.0158	-0.0158	-0.0187	-0.0208	-0.0179	-0.00440
	(-0.47)	(-0.25)	(-0.26)	(-0.56)	(-0.67)	(-0.40)	(-0.41)	(-0.91)	(-1.07)	(-0.47)	(-0.11)
17.SIC2	-0.0127	-0.00649	-0.00675	-0.01145	-0.0193	-0.0116	-0.00267	-0.0121	-0.0221	-0.0126	-0.0000222
	(-0.30)	(-0.16)	(-0.16)	(-0.28)	(-0.35)	(-0.27)	(-0.06)	(-0.54)	(-1.07)	(-0.30)	(-0.00)
20.SIC2	-0.00236	0.00588	0.00589	-0.00517	-0.0108	0.000404	-0.000276	0.00354	-0.0124	-0.00245	0.00436
	(-0.07)	(0.17)	(0.17)	(-0.15)	(-0.30)	(0.01)	(-0.01)	(0.19)	(-0.74)	(-0.07)	(0.13)
22.SIC2	-0.00593	0.00367	0.00384	-0.01087	-0.00544	-0.00593	-0.00345	-0.00763	-0.0178	-0.00603	0.00355
	(-0.17)	(0.11)	(0.11)	(-0.32)	(-0.15)	(-0.16)	(-0.10)	(-0.41)	(-1.04)	(-0.17)	(0.10)
23.SIC2	-0.00341	0.00331	0.00319	-0.00458	0.0103	0.000433	-0.00106	0.00222	-0.0110	-0.00345	0.00380
	(-0.09)	(0.09)	(0.09)	(-0.13)	(0.26)	(0.01)	(-0.03)	(0.11)	(-0.61)	(-0.09)	(0.10)
24.SIC2	-0.0120	-0.00751	-0.00754	-0.01335	-0.0127	-0.0115	-0.01000	-0.00754	-0.0258	-0.0120	-0.00584
	(-0.32)	(-0.20)	(-0.20)	(-0.36)	(-0.32)	(-0.30)	(-0.27)	(-0.38)	(-1.39)	(-0.32)	(-0.16)
25.SIC2	-0.0308	-0.0246	-0.0246	-0.0319	-0.0279	-0.0312	-0.0289	-0.0386*	-0.0425**	-0.0308	-0.0230
	(-0.83)	(-0.66)	(-0.66)	(-0.88)	(-0.70)	(-0.82)	(-0.78)	(-1.95)	(-2.33)	(-0.83)	(-0.62)
26.SIC2	-0.0105	-0.00194	-0.00192	-0.00152	-0.0158	-0.0101	-0.00823	-0.00826	-0.0225	-0.0106	-0.00142
	(-0.30)	(-0.06)	(-0.06)	(-0.45)	(-0.44)	(-0.28)	(-0.24)	(-0.44)	(-1.33)	(-0.31)	(-0.04)
27.SIC2	-0.0163	-0.00889	-0.00880	-0.01863	-0.0133	-0.0158	-0.0140	-0.00461	-0.0229	-0.0164	-0.0115
	(-0.46)	(-0.25)	(-0.25)	(-0.54)	(-0.36)	(-0.43)	(-0.40)	(-0.24)	(-1.32)	(-0.46)	(-0.33)
28.SIC2	-0.0212	-0.0117	-0.0117	-0.0233	-0.0230	-0.0195	-0.0191	-0.0139	-0.0326**	-0.0213	-0.00788
	(-0.63)	(-0.35)	(-0.35)	(-0.70)	(-0.65)	(-0.56)	(-0.56)	(-0.76)	(-1.96)	(-0.63)	(-0.23)
29.SIC2	0.00997	0.0114	0.0111	0.0075	-0.0177	-0.00152	0.00458	-0.0000946	0.0166	0.00997	0.0208
	(0.26)	(0.29)	(0.28)	(0.20)	(-0.39)	(-0.04)	(0.12)	(-0.00)	(0.88)	(0.26)	(0.54)
30.SIC2	-0.00713	0.00154	0.00159	-0.01063	-0.00570	-0.00726	-0.00460	-0.00211	-0.0204	-0.00722	0.00141
	(-0.21)	(0.04)	(0.05)	(-0.31)	(-0.16)	(-0.20)	(-0.13)	(-0.11)	(-1.20)	(-0.21)	(0.04)
31.SIC2	-0.00859	-0.00737	-0.00674	-0.00866	-0.0199	-0.000259	-0.00683	-0.00618	-0.0231	-0.00869	-0.00301
	(-0.15)	(-0.13)	(-0.12)	(-0.15)	(-0.37)	(-0.00)	(-0.12)	(-0.21)	(-0.83)	(-0.15)	(-0.05)
32.SIC2	-0.0186	-0.00959	-0.00986	-0.00219	-0.0296	-0.0168	-0.0166	-0.0146	-0.0323*	-0.0186	-0.00725
	(-0.54)	(-0.28)	(-0.29)	(-0.65)	(-0.83)	(-0.47)	(-0.48)	(-0.79)	(-1.92)	(-0.54)	(-0.21)
33.SIC2	-0.0194	-0.0109	-0.0110	-0.0224	-0.0226	-0.0163	-0.0181	-0.0182	-0.0269	-0.0195	-0.00895
	(-0.57)	(-0.32)	(-0.32)	(-0.67)	(-0.63)	(-0.46)	(-0.53)	(-0.99)	(-1.61)	(-0.57)	(-0.26)
34.SIC2	-0.0115	-0.00245	-0.00247	-0.01501	-0.0164	-0.0102	-0.00931	-0.00496	-0.0224	-0.0116	-0.00334
	(-0.33)	(-0.07)	(-0.07)	(-0.44)	(-0.45)	(-0.29)	(-0.27)	(-0.27)	(-1.32)	(-0.33)	(-0.10)
35.SIC2	0.00815	0.0169	0.0167	0.0052	0.0117	0.00968	0.0109	-0.0221	-0.0354**	0.00869	0.0250
	(0.23)	(0.49)	(0.48)	(0.15)	(0.32)	(0.27)	(0.31)	(-1.19)	(-2.11)	(0.25)	(0.72)
36.SIC2	-0.0183	-0.0104	-0.0107	-0.0207	-0.00834	-0.0162	-0.0156	-0.0132	-0.0285*	-0.0182	-0.00638
	(-0.54)	(-0.31)	(-0.32)	(-0.62)	(-0.23)	(-0.46)	(-0.46)	(-0.72)	(-1.72)	(-0.54)	(-0.19)

37.SIC2	-0.0160	-0.00745	-0.00761	-0.02014	-0.0286	-0.0173	-0.0151	-0.0134	-0.0288*	-0.0160	-0.00469
	(-0.47)	(-0.22)	(-0.23)	(-0.06)	(-0.81)	(-0.50)	(-0.44)	(-0.73)	(-1.73)	(-0.47)	(-0.14)
38.SIC2	-0.0279	-0.0182	-0.0183	-0.02839	-0.0165	-0.0330	-0.0223	-0.0270	-0.0447**	-0.0279	-0.0133
	(-0.77)	(-0.51)	(-0.51)	(-0.08)	(-0.42)	(-0.88)	(-0.62)	(-1.39)	(-2.52)	(-0.77)	(-0.37)
39.SIC2	-0.0431	-0.0349	-0.0352	-0.04356	-0.0347	-0.0473	-0.0405	-0.0420**	-0.0625***	-0.0430	-0.0251
	(-1.14)	(-0.93)	(-0.94)	(-0.10)	(-0.83)	(-1.21)	(-1.08)	(-2.09)	(-3.39)	(-1.14)	(-0.67)
40.SIC2	0.0284	0.0341	0.0331	0.00185	0.0177	-0.0261	0.0272	0.0118	-0.0196	0.0284	0.0510
	(0.50)	(0.60)	(0.58)	(0.33)	(0.33)	(-0.45)	(0.48)	(0.41)	(-0.69)	(0.50)	(0.90)
41.SIC2	0.00682	0.0162	0.0164	0.00009	0.00409	0.0135	0.00974	0.0127	-0.0138	0.00665	0.0153
	(0.17)	(0.40)	(0.40)	(0.00)	(0.10)	(0.32)	(0.24)	(0.59)	(-0.69)	(0.16)	(0.38)
42.SIC2	0.0381	0.0465	0.0469	0.03529	0.00748	0.0412	0.0441	0.0604***	0.0243	0.0379	0.0383
	(1.08)	(1.33)	(1.34)	(1.02)	(0.20)	(1.13)	(1.24)	(3.19)	(1.40)	(1.07)	(1.09)
44.SIC2	-0.00260	0.00545	0.00539	-0.00346	-0.0120	-0.00762	0.000870	0.0125	-0.0255	-0.00257	0.0150
	(-0.07)	(0.15)	(0.15)	(-0.01)	(-0.32)	(-0.21)	(0.02)	(0.66)	(-1.46)	(-0.07)	(0.42)
45.SIC2	0.00801	0.00971	0.00908	0.00447	-0.0117	0.00849	0.00898	0.0216	0.00411	0.00821	0.0212
	(0.21)	(0.25)	(0.23)	(0.12)	(-0.29)	(0.21)	(0.23)	(1.06)	(0.22)	(0.21)	(0.55)
47.SIC2	0.0387	0.0449	0.0450	0.03483	-0.0283	0.0284	-0.00609	0.0476**	-0.0277	0.0386	0.0514
	(0.99)	(1.15)	(1.15)	(0.9)	(-0.69)	(0.70)	(-0.15)	(2.30)	(-1.42)	(0.98)	(1.32)
48.SIC2	-0.00885	-0.00170	-0.00143	-0.00924	-0.00330	-0.0101	-0.00529	0.0155	-0.0147	-0.00886	-0.00892
	(-0.25)	(-0.05)	(-0.04)	(-0.27)	(-0.09)	(-0.28)	(-0.15)	(0.83)	(-0.85)	(-0.25)	(-0.26)
49.SIC2	-0.0370	-0.0298	-0.0295	-0.38895	-0.0586	-0.0410	-0.0348	-0.0371**	-0.0548***	-0.0370	-0.0238
	(-1.06)	(-0.86)	(-0.85)	(-1.13)	(-1.61)	(-1.14)	(-1.00)	(-1.99)	(-3.21)	(-1.06)	(-0.69)
50.SIC2	-0.0268	-0.0183	-0.0184	-0.02989	-0.0328	-0.0242	-0.0246	-0.0231	-0.0372**	-0.0268	-0.0133
	(-0.78)	(-0.54)	(-0.54)	(-0.89)	(-0.92)	(-0.69)	(-0.72)	(-1.25)	(-2.22)	(-0.78)	(-0.39)
51.SIC2	-0.0143	-0.00702	-0.00712	-0.01770	-0.0155	-0.0164	-0.0124	-0.0144	-0.0241	-0.0144	-0.00338
	(-0.41)	(-0.20)	(-0.21)	(-0.52)	(-0.43)	(-0.46)	(-0.36)	(-0.77)	(-1.41)	(-0.41)	(-0.10)
52.SIC2	-0.166	-0.167	-0.171	-0.16884	-0.0995	-0.334	-0.171	-0.239**	-0.311***	-0.164	-0.0168
	(-0.74)	(-0.74)	(-0.76)	(-0.77)	(-0.51)	(-1.25)	(-0.77)	(-2.22)	(-2.92)	(-0.73)	(-0.10)
53.SIC2	-0.0215	-0.0160	-0.0162	-0.02470	-0.0227	-0.0136	-0.0206	-0.0171	-0.0216	-0.0215	-0.0180
	(-0.55)	(-0.40)	(-0.41)	(-0.64)	(-0.52)	(-0.33)	(-0.52)	(-0.83)	(-1.12)	(-0.55)	(-0.46)
54.SIC2	0.00342	0.0131	0.0130	-0.00012	0.0000869	0.00112	0.00585	0.00364	-0.000232	0.00338	0.00641
	(0.09)	(0.36)	(0.35)	(-0.00)	(0.00)	(0.03)	(0.16)	(0.18)	(-0.01)	(0.09)	(0.17)
55.SIC2	-0.00422	0.00523	0.00536	-0.00951	-0.0134	-0.0113	-0.00234	0.00174	-0.00909	-0.00432	0.00841
	(-0.10)	(0.12)	(0.13)	(-0.23)	(-0.31)	(-0.26)	(-0.06)	(0.08)	(-0.43)	(-0.10)	(0.20)
56.SIC2	-0.0194	-0.0106	-0.0108	-0.02118	-0.0308	-0.0212	-0.0172	-0.0111	-0.0344*	-0.0194	-0.00613
	(-0.54)	(-0.30)	(-0.30)	(-0.60)	(-0.78)	(-0.57)	(-0.48)	(-0.57)	(-1.94)	(-0.54)	(-0.17)
57.SIC2	-0.0329	-0.0264	-0.0266	-0.03333	-0.0477	-0.0281	-0.0303	-0.0188	-0.0560***	-0.0328	-0.00794
	(-0.77)	(-0.62)	(-0.62)	(-0.79)	(-0.95)	(-0.63)	(-0.70)	(-0.83)	(-2.65)	(-0.76)	(-0.19)
58.SIC2	-0.0167	-0.00727	-0.00715	-0.01653	-0.0161	-0.0203	-0.0127	-0.00578	-0.0417**	-0.0168	-0.00669
	(-0.44)	(-0.19)	(-0.19)	(-0.44)	(-0.38)	(-0.51)	(-0.33)	(-0.29)	(-2.23)	(-0.44)	(-0.18)
59.SIC2	-0.0207	-0.0143	-0.0143	-0.02296	-0.0320	-0.0200	-0.0186	-0.0116	-0.0302*	-0.0208	-0.0168
	(-0.57)	(-0.39)	(-0.39)	(-0.64)	(-0.83)	(-0.53)	(-0.51)	(-0.59)	(-1.68)	(-0.57)	(-0.46)
70.SIC2	-0.00119	0.00118	0.00138	-0.00338	-0.0154	-0.00184	0.00169	0.0135	-0.0123	-0.00125	0.00267
	(-0.03)	(0.03)	(0.04)	(-0.09)	(-0.40)	(-0.05)	(0.05)	(0.68)	(-0.67)	(-0.03)	(0.07)
72.SIC2	-0.0397	-0.0324	-0.0320	-0.03944	0.00892	-0.0370	-0.0354	-0.0218	-0.0535**	-0.0397	-0.0285
	(-0.84)	(-0.69)	(-0.68)	(-0.85)	(0.13)	(-0.76)	(-0.75)	(-0.90)	(-2.31)	(-0.84)	(-0.61)
73.SIC2	-0.0342	-0.0255	-0.0257	-0.03510	-0.0439	-0.0361	-0.0304	-0.0235	-0.0538***	-0.0341	-0.0209
	(-0.98)	(-0.74)	(-0.74)	(-1.03)	(-1.17)	(-1.00)	(-0.87)	(-1.25)	(-3.15)	(-0.98)	(-0.60)
75.SIC2	0.0109	0.0190	0.0194	0.01257	-0.00415	0.00507	0.0141	0.0277	-0.00903	0.0108	0.0206
	(0.25)	(0.43)	(0.44)	(0.29)	(-0.09)	(0.11)	(0.32)	(1.20)	(-0.41)	(0.24)	(0.47)
76.SIC2	-0.0158	-0.00974	-0.00980	-0.01763	-0.0216	-0.0152	-0.0136	-0.00916	-0.0196	-0.0156	-0.00919
	(-0.28)	(-0.17)	(-0.17)	(-0.31)	(-0.39)	(-0.26)	(-0.24)	(-0.31)	(-0.70)	(-0.27)	(-0.16)
78.SIC2	0.106**	0.115**	0.116**	0.10410**	0.0973**	0.129***	0.138***	0.135***	0.113***	0.105**	0.0599
	(2.28)	(2.51)	(2.52)	(2.29)	(2.12)	(2.64)	(2.84)	(5.62)	(4.99)	(2.27)	(1.29)

79.SIC2	-0.0189	-0.0124	-0.0122	-0.01888	-0.0308	-0.0162	-0.0148	-0.0100	-0.0433**	-0.0189	-0.00870
	(-0.50)	(-0.33)	(-0.33)	(-0.51)	(-0.75)	(-0.42)	(-0.39)	(-0.50)	(-2.34)	(-0.50)	(-0.23)
80.SIC2	-0.0298	-0.0241	-0.0239	-0.02897	-0.00526	-0.0256	-0.0223	-0.0266	-0.0394**	-0.0298	-0.0116
	(-0.76)	(-0.61)	(-0.61)	(-0.75)	(-0.11)	(-0.63)	(-0.57)	(-1.28)	(-2.03)	(-0.76)	(-0.30)
82.SIC2	-0.0245	-0.0140	-0.0140	-0.02714	-0.0246	-0.0271	-0.0215	-0.0228	-0.0390*	-0.0246	-0.0185
	(-0.52)	(-0.30)	(-0.30)	(-0.59)	(-0.50)	(-0.56)	(-0.46)	(-0.94)	(-1.68)	(-0.52)	(-0.40)
87.SIC2	-0.0279	-0.0210	-0.0213	-0.03104	-0.0228	-0.0322	-0.0261	-0.0264	-0.0366**	-0.0278	-0.0178
	(-0.76)	(-0.57)	(-0.58)	(-0.86)	(-0.58)	(-0.85)	(-0.71)	(-1.34)	(-2.03)	(-0.76)	(-0.48)
96.SIC2	-0.0755	-0.0644	-0.0655	-0.08030	-0.0857	-0.0638	-0.0739	-0.0789**	-0.102***	-0.0753	-0.0525
	(-1.02)	(-0.87)	(-0.88)	(-1.1)	(-1.23)	(-0.83)	(-1.00)	(-2.12)	(-2.79)	(-1.01)	(-0.71)
2003.year	-0.00365	-0.00179	-0.00140	-0.00277	0.00145	-0.00201	-0.00271	0.00519	-0.00982**	-0.00374	-0.00670
	(-0.44)	(-0.22)	(-0.17)	(-0.34)	(0.16)	(-0.25)	(-0.32)	(1.27)	(-2.39)	(-0.45)	(-0.83)
2004.year	-0.00227	-0.000452	-0.0000860	-0.00172	0.00171	-0.00260	-0.00152	0.00158	-0.00713*	-0.00236	-0.00286
	(-0.28)	(-0.06)	(-0.01)	(-0.22)	(0.20)	(-0.34)	(-0.19)	(0.40)	(-1.79)	(-0.29)	(-0.36)
2005.year	0.0201**	0.0220***	0.0223***	0.02009**	0.0236***	0.0169**	0.0203**	0.0145***	0.00268	0.0200**	0.0184**
	(2.37)	(2.61)	(2.65)	(2.42)	(2.64)	(2.13)	(2.36)	(3.65)	(0.67)	(2.35)	(2.25)
2006.year	0.00986	0.0123	0.0127	0.00992	0.0128	0.00864	0.00996	0.0115***	0.00700*	0.00973	0.0102
	(1.20)	(1.52)	(1.57)	(1.23)	(1.45)	(1.12)	(1.19)	(2.84)	(1.72)	(1.18)	(1.27)
2007.year	0.00488	0.00762	0.00801	0.00478	0.0110	0.00388	0.00502	0.00752*	0.00260	0.00477	0.00277
	(0.59)	(0.94)	(0.99)	(0.59)	(1.24)	(0.50)	(0.60)	(1.85)	(0.64)	(0.58)	(0.34)
2008.year	0.00477	0.00482	0.00505	0.00490	0.00625		0.00506	0.0116***	0.00233	0.00469	0.00175
	(0.61)	(0.61)	(0.64)	(0.64)	(0.76)		(0.64)	(3.02)	(0.60)	(0.60)	(0.23)
2009.year	-0.0207**	-0.0196**	-0.0193**	-0.02064***	-0.0234***	-0.0181**	-0.0208**	-0.00566	-0.0257***	-0.0208***	-0.0270***
	(-2.56)	(-2.41)	(-2.38)	(-2.59)	(-2.79)	(-2.36)	(-2.53)	(-1.46)	(-6.49)	(-2.56)	(-3.42)
2010.year	-0.0139*	-0.0125*	-0.0124	-0.01384*	-0.0157**	-0.0135**	-0.0142*	-0.0130***	-0.0179***	-0.0139*	-0.0151**
	(-1.84)	(-1.66)	(-1.64)	(-1.87)	(-1.98)	(-1.96)	(-1.86)	(-3.52)	(-4.83)	(-1.84)	(-2.03)
_cons	0.483***	0.430***	0.427***	0.47065***	0.444***	0.520***	0.483***	0.821***	0.675***	0.484***	0.251***
	(7.02)	(6.84)	(6.26)	(7.41)	(6.85)	(7.54)	(6.95)	(27.62)	(22.09)	(7.02)	(3.53)
number of observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.6. Regression results – Power Distance dimension (GLOBE)

	(7) Base model	(66) Ownership Concentration	(67) Rule of Law	(68) Common Legal Origin	(69) ex USA	(70) ex Crisis	(71) Outliers - Size	(72) Outliers - Cash Flow	(73) Outliers - CAPEX	(74) Cash Flow Volatility	(16) Interaction
L.CAPEXF_TA	0.00147	0.00150	0.00148	0.00140	0.00187	0.00140	0.00139	0.00376	0.00579**	0.00176	0.00324
	(0.22)	(0.23)	(0.22)	(0.21)	(0.31)	(0.20)	(0.21)	(1.50)	(2.16)	(0.24)	(0.75)
MV_BV_t1	0.00624	0.00597	0.00582	0.00720	0.00654	0.00847	0.00583	-0.0117***	-0.0165***	0.00623	0.00384
	(0.57)	(0.54)	(0.53)	(0.66)	(0.49)	(0.52)	(0.52)	(-2.81)	(-3.71)	(0.57)	(0.54)
FCF_TA	2.950	2.929	2.849	3.003	5.937**	4.665	3.302	31.31***	8.870***	2.954	-2.196
	(0.85)	(0.84)	(0.82)	(0.87)	(2.09)	(1.09)	(0.95)	(37.61)	(6.59)	(0.85)	(-1.01)
L.Ln_TA	0.00119	0.00221	0.00284	0.00241	-0.00214	-0.0000353	0.00253	-0.0191***	-0.0192***	0.00115	-0.00185
	(0.12)	(0.21)	(0.27)	(0.24)	(-0.17)	(-0.00)	(0.23)	(-5.05)	(-4.66)	(0.11)	(-0.23)
Leverage	0.205**	0.200**	0.198**	0.207**	0.325***	0.247*	0.198*	0.502***	0.540***	0.204**	0.252***
	(2.03)	(1.98)	(1.96)	(2.06)	(2.95)	(1.94)	(1.92)	(13.60)	(13.56)	(2.02)	(2.72)
DIV_FCF	0.000240	0.000241	0.000220	0.000230	-0.000181	0.000694	0.000351	0.000812	0.00179**	0.000237	0.0000928
	(0.12)	(0.12)	(0.11)	(0.11)	(-0.10)	(0.31)	(0.18)	(1.08)	(2.25)	(0.12)	(0.10)
L.Cash_TA	0.112	0.116	0.125	0.113	0.0799	0.101	0.124	0.173***	0.118**	0.111	0.213**
	(0.89)	(0.91)	(0.99)	(0.90)	(0.65)	(0.65)	(0.95)	(3.59)	(2.35)	(0.87)	(2.52)
CF_Vol										-0.000412	
										(-0.10)	
PDIN	0.0759	0.0621	0.0624	0.0686	0.132*	0.123	0.0839	0.776***	0.225***	0.0761	-0.0626
	(0.82)	(0.68)	(0.69)	(0.76)	(1.67)	(1.10)	(0.91)	(31.10)	(6.20)	(0.82)	(-0.96)
PDIN_FCF	-0.685	-0.679	-0.652	-0.701	-1.548	-1.223	-0.797	-10.05***	-2.027***	-0.687	1.398
	(-0.57)	(-0.57)	(-0.54)	(-0.59)	(-1.57)	(-0.83)	(-0.66)	(-35.19)	(-4.31)	(-0.57)	(1.61)
Size_FCF											0.0338
											(0.44)
Leverage_FCF											-1.166
											(-1.08)
DIVfcf_FCF											0.280
											(0.97)
Cash_FCF											-2.325***
											(-3.57)
Anti_FCF											-2.376***
											(-3.16)
Stock_FCF											-0.000370
											(-0.26)
Credit_FCF											0.00547**
											(2.21)
Log_GDP_Capita	-0.0138	-0.0134	-0.00212	-0.0135	-0.0102	-0.0151	-0.0137	0.00786**	-0.00143	-0.0138	-0.0108
	(-1.35)	(-1.28)	(-0.14)	(-1.30)	(-1.07)	(-1.23)	(-1.35)	(2.03)	(-0.34)	(-1.35)	(-1.63)
Credit_GDP	0.000102	0.0000841	0.000111	0.000128	0.000290*	0.000119	0.0000900	-0.000109*	-0.000000247	0.000103	-0.000262
	(0.68)	(0.52)	(0.73)	(0.84)	(1.87)	(0.67)	(0.59)	(-1.90)	(-0.00)	(0.69)	(-1.29)
Stock_mkt_GDP	0.0000228	0.00000560	-0.00000785	0.0000422	-0.0000184	0.0000247	0.0000176	-0.000109***	-0.0000328	0.0000230	0.0000399
	(0.27)	(0.07)	(-0.11)	(0.52)	(-0.23)	(0.23)	(0.21)	(-3.42)	(-0.96)	(0.27)	(0.35)
Anti_Self_Dealing	-0.0323				-0.00944	-0.0394	-0.0302	-0.0745***	-0.0824***	-0.0324	0.120**
	(-0.80)				(-0.21)	(-0.80)	(-0.75)	(-4.88)	(-4.97)	(-0.80)	(2.10)
concentration		-0.0156									
		(-0.44)									
rule_law			-0.0158								
			(-1.05)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
common_legal				-0.0223* (-1.70)							
2.SIC2	-0.0308 (-0.28)	-0.0209 (-0.19)	-0.0260 (-0.23)	-0.0331 (-0.30)	-0.0174 (-0.14)	-0.0470 (-0.35)	-0.0306 (-0.28)	-0.0921** (-2.04)	-0.0797* (-1.76)	-0.0307 (-0.28)	-0.0128 (-0.17)
8.SIC2	-0.0114 (-0.10)	-0.00506 (-0.05)	-0.00791 (-0.07)	-0.0151 (-0.14)	-0.0402 (-0.35)	-0.0484 (-0.36)	-0.0102 (-0.09)	-0.125*** (-2.78)	-0.0711 (-1.55)	-0.0115 (-0.10)	-0.00370 (-0.05)
10.SIC2	-0.00283 (-0.03)	-0.00179 (-0.02)	0.00519 (0.05)	-0.000989 (-0.01)	-0.0204 (-0.20)	-0.0275 (-0.23)	-0.00655 (-0.07)	-0.0899** (-2.24)	-0.0679* (-1.72)	-0.00284 (-0.03)	0.0170 (0.27)
12.SIC2	0.0189 (0.15)	0.0237 (0.18)	0.0191 (0.15)	0.0153 (0.12)	-0.0414 (-0.30)	-0.00181 (-0.01)	0.0202 (0.16)	-0.120** (-2.33)	-0.113** (-2.15)	0.0189 (0.15)	0.0520 (0.62)
13.SIC2	0.0207 (0.24)	0.0239 (0.27)	0.0268 (0.31)	0.0214 (0.24)	-0.0217 (-0.22)	-0.00214 (-0.02)	0.0239 (0.27)	-0.112*** (-3.09)	-0.141*** (-3.97)	0.0207 (0.24)	0.0433 (0.75)
14.SIC2	-0.0151 (-0.13)	-0.0105 (-0.09)	-0.00745 (-0.06)	-0.0203 (-0.17)	-0.0476 (-0.39)	-0.0235 (-0.17)	-0.0135 (-0.12)	-0.0589 (-1.26)	-0.0502 (-1.06)	-0.0151 (-0.13)	0.000206 (0.00)
15.SIC2	-0.0433 (-0.45)	-0.0370 (-0.38)	-0.0336 (-0.35)	-0.0507 (-0.52)	-0.0689 (-0.70)	-0.0679 (-0.58)	-0.0433 (-0.45)	-0.0802** (-1.98)	-0.0691* (-1.66)	-0.0433 (-0.44)	-0.0320 (-0.50)
16.SIC2	-0.0142 (-0.15)	-0.00714 (-0.07)	-0.00790 (-0.08)	-0.0198 (-0.21)	-0.0317 (-0.31)	-0.0281 (-0.24)	-0.0126 (-0.13)	-0.0456 (-1.14)	-0.0479 (-1.19)	-0.0142 (-0.15)	-0.00130 (-0.02)
17.SIC2	-0.00898 (-0.09)	-0.00374 (-0.04)	-0.00390 (-0.04)	-0.00762 (-0.07)	-0.0344 (-0.25)	-0.0223 (-0.18)	-0.00110 (-0.01)	-0.0613 (-1.42)	-0.0272 (-0.64)	-0.00897 (-0.09)	0.0000389 (0.00)
20.SIC2	-0.0113 (-0.13)	-0.00410 (-0.05)	-0.00405 (-0.05)	-0.0158 (-0.18)	-0.0390 (-0.43)	-0.0240 (-0.23)	-0.0104 (-0.12)	-0.0818** (-2.27)	-0.0637* (-1.82)	-0.0114 (-0.13)	0.00403 (0.07)
22.SIC2	-0.0187 (-0.21)	-0.00963 (-0.11)	-0.00810 (-0.09)	-0.0235 (-0.27)	-0.0361 (-0.39)	-0.0298 (-0.28)	-0.0170 (-0.19)	-0.0786** (-2.14)	-0.0737** (-2.06)	-0.0188 (-0.21)	-0.00458 (-0.08)
23.SIC2	-0.0191 (-0.21)	-0.0134 (-0.14)	-0.0152 (-0.17)	-0.0209 (-0.23)	-0.0315 (-0.32)	-0.0292 (-0.26)	-0.0179 (-0.19)	-0.0909** (-2.37)	-0.0673* (-1.79)	-0.0191 (-0.21)	-0.00168 (-0.03)
24.SIC2	-0.0176 (-0.19)	-0.0133 (-0.14)	-0.0138 (-0.15)	-0.0195 (-0.21)	-0.0305 (-0.31)	-0.0331 (-0.29)	-0.0164 (-0.17)	-0.0720* (-1.84)	-0.0672* (-1.75)	-0.0176 (-0.19)	-0.00926 (-0.15)
25.SIC2	-0.0286 (-0.31)	-0.0235 (-0.25)	-0.0228 (-0.24)	-0.0305 (-0.33)	-0.0349 (-0.34)	-0.0389 (-0.35)	-0.0271 (-0.29)	-0.0826** (-2.13)	-0.0663* (-1.75)	-0.0286 (-0.31)	-0.0231 (-0.38)
26.SIC2	-0.0108 (-0.12)	-0.00338 (-0.04)	-0.00296 (-0.03)	-0.0178 (-0.21)	-0.0330 (-0.36)	-0.0241 (-0.23)	-0.00925 (-0.11)	-0.0621* (-1.71)	-0.0563 (-1.59)	-0.0108 (-0.12)	-0.000102 (-0.00)
27.SIC2	-0.0287 (-0.32)	-0.0227 (-0.26)	-0.0221 (-0.25)	-0.0333 (-0.38)	-0.0414 (-0.44)	-0.0433 (-0.40)	-0.0277 (-0.31)	-0.0927** (-2.50)	-0.0795** (-2.20)	-0.0287 (-0.32)	-0.0133 (-0.23)
28.SIC2	-0.0243 (-0.29)	-0.0162 (-0.19)	-0.0151 (-0.18)	-0.0291 (-0.34)	-0.0426 (-0.47)	-0.0382 (-0.37)	-0.0232 (-0.27)	-0.0726** (-2.03)	-0.0773** (-2.24)	-0.0244 (-0.29)	-0.00541 (-0.10)
29.SIC2	0.00336 (0.03)	0.00533 (0.05)	0.00396 (0.04)	-0.000165 (-0.00)	-0.0190 (-0.17)	-0.0166 (-0.14)	-0.00241 (-0.02)	0.00530 (0.13)	0.00774 (0.20)	0.00339 (0.03)	0.0186 (0.29)
30.SIC2	-0.00856 (-0.10)	-0.000885 (-0.01)	-0.00124 (-0.01)	-0.0147 (-0.17)	-0.0263 (-0.29)	-0.0274 (-0.26)	-0.00714 (-0.08)	-0.0861** (-2.36)	-0.0682** (-1.92)	-0.00861 (-0.10)	0.00493 (0.09)
31.SIC2	-0.0199 (-0.14)	-0.0209 (-0.15)	-0.0181 (-0.13)	-0.0168 (-0.12)	-0.0502 (-0.37)	-0.0343 (-0.20)	-0.0189 (-0.13)	-0.0962* (-1.71)	-0.0901 (-1.55)	-0.0200 (-0.14)	-0.0124 (-0.13)
32.SIC2	-0.0157 (-0.18)	-0.00766 (-0.09)	-0.00971 (-0.11)	-0.0219 (-0.25)	-0.0416 (-0.46)	-0.0295 (-0.28)	-0.0151 (-0.18)	-0.0714** (-1.97)	-0.0725** (-2.07)	-0.0157 (-0.18)	-0.00296 (-0.05)
33.SIC2	-0.0184 (-0.21)	-0.0112 (-0.13)	-0.0111 (-0.13)	-0.0240 (-0.28)	-0.0341 (-0.38)	-0.0274 (-0.26)	-0.0178 (-0.21)	-0.0604* (-1.68)	-0.0483 (-1.38)	-0.0184 (-0.21)	-0.00360 (-0.06)
34.SIC2	-0.0160 (-0.18)	-0.00868 (-0.10)	-0.00846 (-0.10)	-0.0221 (-0.26)	-0.0382 (-0.42)	-0.0276 (-0.26)	-0.0150 (-0.17)	-0.0751** (-2.06)	-0.0634* (-1.80)	-0.0161 (-0.19)	-0.00222 (-0.04)
35.SIC2	0.0618 (0.71)	0.0695 (0.81)	0.0703 (0.82)	0.0576 (0.67)	0.0562 (0.61)	0.0652 (0.62)	0.0637 (0.73)	-0.0760** (-2.10)	-0.0633* (-1.81)	0.0621 (0.71)	0.0504 (0.88)
36.SIC2	-0.0283 (-0.33)	-0.0214 (-0.25)	-0.0198 (-0.23)	-0.0316 (-0.37)	-0.0396 (-0.44)	-0.0418 (-0.41)	-0.0272 (-0.32)	-0.0912** (-2.54)	-0.0807** (-2.33)	-0.0283 (-0.33)	-0.0111 (-0.20)
37.SIC2	-0.00998 (-0.12)	-0.00234 (-0.03)	-0.00197 (-0.02)	-0.0173 (-0.20)	-0.0379 (-0.42)	-0.0264 (-0.26)	-0.00921 (-0.11)	-0.0741** (-2.07)	-0.0624* (-1.80)	-0.01000 (-0.12)	0.00269 (0.05)

38.SIC2	-0.0249	-0.0172	-0.0171	-0.0268	-0.0334	-0.0422	-0.0209	-0.0814**	-0.0767**	-0.0250	-0.0111
	(-0.27)	(-0.19)	(-0.19)	(-0.30)	(-0.34)	(-0.38)	(-0.23)	(-2.15)	(-2.08)	(-0.27)	(-0.19)
39.SIC2	-0.0419	-0.0348	-0.0351	-0.0427	-0.0520	-0.0594	-0.0412	-0.113***	-0.120***	-0.0419	-0.0256
	(-0.44)	(-0.37)	(-0.37)	(-0.45)	(-0.49)	(-0.52)	(-0.44)	(-2.89)	(-3.11)	(-0.44)	(-0.41)
40.SIC2	0.0579	0.0652	0.0510	0.0438	0.0506	-0.00662	0.0567	0.0888	-0.00296	0.0579	0.0686
	(0.41)	(0.46)	(0.36)	(0.31)	(0.37)	(-0.04)	(0.40)	(1.58)	(-0.05)	(0.41)	(0.73)
41.SIC2	0.0134	0.0230	0.0220	0.00465	-0.0117	0.00156	0.0159	-0.0534	-0.0593	0.0133	0.0181
	(0.13)	(0.23)	(0.22)	(0.05)	(-0.11)	(0.01)	(0.16)	(-1.27)	(-1.41)	(0.13)	(0.27)
42.SIC2	0.0163	0.0236	0.0251	0.0115	-0.0404	0.00157	0.0198	-0.0751**	-0.0650*	0.0162	0.0293
	(0.18)	(0.27)	(0.28)	(0.13)	(-0.43)	(0.01)	(0.22)	(-2.03)	(-1.80)	(0.18)	(0.50)
44.SIC2	-0.000498	0.00644	0.00731	-0.00409	-0.0372	-0.0277	0.000511	-0.0938**	-0.107***	-0.000480	0.0233
	(-0.01)	(0.07)	(0.08)	(-0.05)	(-0.39)	(-0.26)	(0.01)	(-2.53)	(-2.96)	(-0.01)	(0.40)
45.SIC2	-0.00991	-0.00761	-0.00720	-0.0143	-0.0496	-0.0364	-0.0115	-0.0773*	-0.0727*	-0.00978	0.0136
	(-0.10)	(-0.08)	(-0.07)	(-0.15)	(-0.48)	(-0.31)	(-0.12)	(-1.94)	(-1.85)	(-0.10)	(0.21)
47.SIC2	0.0379	0.0430	0.0443	0.0324	-0.0524	0.0112	-0.00581	-0.0644	-0.102**	0.0379	0.0568
	(0.38)	(0.44)	(0.45)	(0.33)	(-0.50)	(0.09)	(-0.06)	(-1.59)	(-2.50)	(0.38)	(0.88)
48.SIC2	-0.0377	-0.0330	-0.0306	-0.0405	-0.0646	-0.0536	-0.0351	-0.145***	-0.127***	-0.0377	-0.0179
	(-0.43)	(-0.38)	(-0.35)	(-0.46)	(-0.69)	(-0.50)	(-0.40)	(-3.95)	(-3.56)	(-0.43)	(-0.31)
49.SIC2	-0.0262	-0.0210	-0.0198	-0.0308	-0.0646	-0.0478	-0.0254	-0.0855**	-0.102***	-0.0262	-0.0150
	(-0.30)	(-0.24)	(-0.23)	(-0.35)	(-0.70)	(-0.45)	(-0.29)	(-2.35)	(-2.87)	(-0.30)	(-0.26)
50.SIC2	-0.0286	-0.0217	-0.0208	-0.0337	-0.0484	-0.0370	-0.0280	-0.0718**	-0.0674*	-0.0286	-0.0127
	(-0.33)	(-0.25)	(-0.24)	(-0.40)	(-0.54)	(-0.36)	(-0.33)	(-1.99)	(-1.93)	(-0.33)	(-0.23)
51.SIC2	-0.0126	-0.00567	-0.00587	-0.0177	-0.0268	-0.0244	-0.0111	-0.0552	-0.0407	-0.0126	-0.000667
	(-0.14)	(-0.07)	(-0.07)	(-0.20)	(-0.29)	(-0.23)	(-0.13)	(-1.50)	(-1.14)	(-0.14)	(-0.01)
52.SIC2	-0.0758	-0.0743	-0.0744	-0.0729	0.0290	-0.246	-0.104	-0.272	-0.458**	-0.0748	-0.0653
	(-0.14)	(-0.13)	(-0.13)	(-0.13)	(0.06)	(-0.32)	(-0.19)	(-1.31)	(-2.08)	(-0.13)	(-0.24)
53.SIC2	-0.0255	-0.0203	-0.0228	-0.0321	-0.0347	-0.0333	-0.0256	-0.0562	-0.0440	-0.0255	-0.0172
	(-0.26)	(-0.21)	(-0.23)	(-0.33)	(-0.32)	(-0.28)	(-0.26)	(-1.39)	(-1.10)	(-0.26)	(-0.26)
54.SIC2	-0.00700	0.000843	0.00111	-0.0148	-0.0264	-0.0232	-0.00587	-0.0651*	-0.0370	-0.00703	0.00834
	(-0.08)	(0.01)	(0.01)	(-0.16)	(-0.27)	(-0.21)	(-0.06)	(-1.69)	(-0.98)	(-0.08)	(0.14)
55.SIC2	-0.0140	-0.00664	-0.00374	-0.0211	-0.0339	-0.0246	-0.0130	-0.0544	-0.0512	-0.0141	0.00390
	(-0.13)	(-0.06)	(-0.04)	(-0.20)	(-0.31)	(-0.19)	(-0.12)	(-1.26)	(-1.18)	(-0.13)	(0.06)
56.SIC2	-0.0258	-0.0180	-0.0170	-0.0284	-0.0549	-0.0404	-0.0252	-0.107***	-0.0962***	-0.0258	-0.00759
	(-0.28)	(-0.20)	(-0.19)	(-0.31)	(-0.54)	(-0.37)	(-0.28)	(-2.82)	(-2.61)	(-0.28)	(-0.13)
57.SIC2	-0.0400	-0.0348	-0.0332	-0.0411	-0.0870	-0.0533	-0.0393	-0.116***	-0.125***	-0.0399	-0.00661
	(-0.37)	(-0.32)	(-0.31)	(-0.38)	(-0.69)	(-0.41)	(-0.36)	(-2.64)	(-2.85)	(-0.37)	(-0.09)
58.SIC2	-0.0206	-0.0120	-0.0126	-0.0213	-0.0374	-0.0468	-0.0187	-0.133***	-0.140***	-0.0207	-0.00696
	(-0.21)	(-0.13)	(-0.13)	(-0.22)	(-0.34)	(-0.40)	(-0.19)	(-3.36)	(-3.60)	(-0.21)	(-0.11)
59.SIC2	-0.0272	-0.0218	-0.0207	-0.0317	-0.0474	-0.0453	-0.0266	-0.0954**	-0.0877**	-0.0272	-0.0168
	(-0.30)	(-0.24)	(-0.23)	(-0.35)	(-0.49)	(-0.41)	(-0.29)	(-2.50)	(-2.35)	(-0.30)	(-0.28)
70.SIC2	-0.0159	-0.0124	-0.0127	-0.0171	-0.0553	-0.0408	-0.0145	-0.122***	-0.105***	-0.0160	-0.00230
	(-0.17)	(-0.13)	(-0.13)	(-0.18)	(-0.57)	(-0.36)	(-0.15)	(-3.16)	(-2.76)	(-0.17)	(-0.04)
72.SIC2	-0.0529	-0.0463	-0.0454	-0.0540	-0.0312	-0.0737	-0.0503	-0.148***	-0.153***	-0.0529	-0.0313
	(-0.45)	(-0.39)	(-0.38)	(-0.46)	(-0.18)	(-0.51)	(-0.42)	(-3.12)	(-3.18)	(-0.45)	(-0.40)
73.SIC2	-0.0409	-0.0341	-0.0321	-0.0434	-0.0844	-0.0601	-0.0393	-0.124***	-0.126***	-0.0409	-0.0196
	(-0.47)	(-0.39)	(-0.37)	(-0.50)	(-0.89)	(-0.57)	(-0.45)	(-3.38)	(-3.54)	(-0.47)	(-0.34)
75.SIC2	0.00879	0.0142	0.0188	0.00751	-0.0265	-0.000559	0.00986	-0.0720	-0.0758*	0.00874	0.0282
	(0.08)	(0.13)	(0.17)	(0.07)	(-0.23)	(-0.00)	(0.09)	(-1.59)	(-1.66)	(0.08)	(0.39)
76.SIC2	-0.0248	-0.0226	-0.0178	-0.0286	-0.0376	-0.0351	-0.0237	-0.0566	-0.0342	-0.0248	-0.0187
	(-0.17)	(-0.16)	(-0.12)	(-0.20)	(-0.27)	(-0.20)	(-0.17)	(-1.00)	(-0.59)	(-0.17)	(-0.20)
78.SIC2	-0.0206	-0.0128	-0.00641	-0.0230	-0.0865	-0.0666	-0.0235	-0.149***	-0.223***	-0.0208	-0.00941
	(-0.18)	(-0.11)	(-0.06)	(-0.20)	(-0.75)	(-0.47)	(-0.20)	(-3.18)	(-4.82)	(-0.18)	(-0.12)
79.SIC2	-0.0211	-0.0143	-0.0127	-0.0206	-0.0560	-0.0430	-0.0184	-0.0884**	-0.135***	-0.0211	-0.0148
	(-0.22)	(-0.15)	(-0.13)	(-0.22)	(-0.53)	(-0.37)	(-0.19)	(-2.26)	(-3.49)	(-0.22)	(-0.24)

80.SIC2	-0.0366	-0.0302	-0.0294	-0.0344	-0.0479	-0.0584	-0.0275	-0.150***	-0.106***	-0.0367	-0.0115
	(-0.37)	(-0.31)	(-0.30)	(-0.35)	(-0.38)	(-0.49)	(-0.28)	(-3.68)	(-2.63)	(-0.37)	(-0.18)
82.SIC2	-0.0208	-0.0118	-0.0116	-0.0263	-0.0426	-0.0359	-0.0190	-0.102**	-0.0673	-0.0209	-0.00936
	(-0.18)	(-0.10)	(-0.10)	(-0.22)	(-0.34)	(-0.25)	(-0.16)	(-2.14)	(-1.39)	(-0.18)	(-0.12)
87.SIC2	-0.0340	-0.0270	-0.0267	-0.0375	-0.0510	-0.0501	-0.0332	-0.0995***	-0.0683*	-0.0339	-0.0216
	(-0.37)	(-0.29)	(-0.29)	(-0.41)	(-0.51)	(-0.45)	(-0.36)	(-2.58)	(-1.81)	(-0.37)	(-0.35)
96.SIC2	-0.0460	-0.0375	-0.0399	-0.0564	-0.0677	-0.0526	-0.0477	-0.131*	-0.114	-0.0458	-0.0250
	(-0.25)	(-0.20)	(-0.21)	(-0.30)	(-0.39)	(-0.23)	(-0.26)	(-1.80)	(-1.51)	(-0.25)	(-0.20)
2003.year	-0.00734	-0.00635	-0.00442	-0.00653	-0.0126	-0.00856	-0.00620	-0.0305***	-0.0345***	-0.00740	-0.00980
	(-0.35)	(-0.30)	(-0.21)	(-0.31)	(-0.56)	(-0.37)	(-0.29)	(-3.83)	(-4.05)	(-0.35)	(-0.74)
2004.year	-0.00104	-0.0000228	0.00158	-0.000761	-0.00487	-0.00209	0.000627	-0.0113	-0.0136	-0.00109	-0.00307
	(-0.05)	(-0.00)	(0.08)	(-0.04)	(-0.22)	(-0.09)	(0.03)	(-1.46)	(-1.64)	(-0.05)	(-0.24)
2005.year	0.0382*	0.0394*	0.0408**	0.0380*	0.0329	0.0338	0.0396*	-0.00323	-0.0123	0.0382*	0.0255*
	(1.82)	(1.89)	(1.96)	(1.82)	(1.45)	(1.46)	(1.86)	(-0.42)	(-1.48)	(1.82)	(1.90)
2006.year	0.0115	0.0129	0.0141	0.0110	0.00876	0.0115	0.0124	0.0137*	0.0174**	0.0115	0.0107
	(0.56)	(0.63)	(0.69)	(0.53)	(0.39)	(0.51)	(0.59)	(1.73)	(2.05)	(0.55)	(0.81)
2007.year	0.00296	0.00438	0.00561	0.00199	0.00471	0.00230	0.00440	0.0109	0.00422	0.00290	0.00117
	(0.14)	(0.21)	(0.27)	(0.10)	(0.21)	(0.10)	(0.21)	(1.37)	(0.49)	(0.14)	(0.09)
2008.year	0.000276	0.000558	0.00110	0.000307	-0.00572		0.0000728	-0.0220***	-0.0201**	0.000236	0.000913
	(0.01)	(0.03)	(0.06)	(0.02)	(-0.27)		(0.00)	(-2.94)	(-2.51)	(0.01)	(0.07)
2009.year	-0.0296	-0.0290	-0.0283	-0.0296	-0.0439**	-0.0328	-0.0308	-0.0754***	-0.0836***	-0.0296	-0.0317**
	(-1.45)	(-1.43)	(-1.39)	(-1.46)	(-2.07)	(-1.46)	(-1.50)	(-10.04)	(-10.47)	(-1.46)	(-2.43)
2010.year	-0.0111	-0.0105	-0.00973	-0.0114	-0.0143	-0.0109	-0.0113	-0.0193***	-0.0228***	-0.0111	-0.0145
	(-0.58)	(-0.55)	(-0.51)	(-0.60)	(-0.71)	(-0.54)	(-0.59)	(-2.66)	(-2.94)	(-0.58)	(-1.18)
_cons	-0.117	-0.105	-0.214	-0.118	-0.338	-0.231	-0.151	-2.190***	-0.567***	-0.117	0.201
	(-0.39)	(-0.35)	(-0.66)	(-0.39)	(-1.31)	(-0.63)	(-0.50)	(-24.17)	(-4.75)	(-0.39)	(1.05)
number of observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.7. Regression results – Institutional Collectivism dimension (GLOBE)

	(8) Base model	(75) Ownership Concentration	(76) Rule of Law	(77) Common Legal Origin	(78) ex USA	(79) ex Crisis	(80) Outliers - Size	(81) Outliers - Cash Flow	(82) Outliers - CAPEX	(83) Cash Flow Volatility	(17) Interaction
L.CAPEXF_TA	0.00307	0.00310	0.00309	0.00300	0.00416	0.00322	0.00316	0.00552***	0.00604***	0.00352	0.00358
	(0.72)	(0.73)	(0.73)	(0.71)	(1.51)	(0.78)	(0.77)	(3.58)	(3.76)	(0.75)	(0.92)
MV_BV_t1	0.00783	0.00807	0.00808	0.00868	0.0107*	0.0115	0.00762	0.00428*	0.00112	0.00782	0.00396
	(1.15)	(1.17)	(1.17)	(1.27)	(1.81)	(1.38)	(1.12)	(1.72)	(0.43)	(1.14)	(0.64)
FCF_TA	12.26***	12.33***	12.27***	12.28***	16.21***	14.43***	12.66***	23.83***	21.38***	12.26***	7.572***
	(6.39)	(6.42)	(6.41)	(6.45)	(15.65)	(6.74)	(6.89)	(85.49)	(47.77)	(6.39)	(3.31)
L.Ln_TA	0.00226	0.00331	0.00384	0.00336	0.00423	0.000759	0.00359	-0.000923	-0.00812***	0.00222	-0.00477
	(0.33)	(0.51)	(0.59)	(0.53)	(0.72)	(0.10)	(0.51)	(-0.38)	(-3.17)	(0.33)	(-0.65)
Leverage	0.160**	0.156**	0.157**	0.161**	0.172***	0.173**	0.153**	0.173***	0.256***	0.159**	0.254***
	(2.44)	(2.40)	(2.40)	(2.49)	(3.41)	(2.29)	(2.36)	(7.60)	(10.29)	(2.43)	(3.03)
DIV_FCF	0.000216	0.000208	0.000209	0.000212	-0.000205	0.000555	0.000324	0.000745*	0.000495	0.000212	0.0000262
	(0.17)	(0.16)	(0.16)	(0.17)	(-0.26)	(0.43)	(0.26)	(1.66)	(1.06)	(0.16)	(0.03)
L.Cash_TA	0.114	0.117	0.123	0.115	0.101*	0.0953	0.125	0.139***	0.0995***	0.113	0.215***
	(1.36)	(1.40)	(1.48)	(1.38)	(1.74)	(1.02)	(1.50)	(4.53)	(3.20)	(1.34)	(2.79)
CF_Vol										-0.000635	
										(-0.24)	
COL1	0.139***	0.141***	0.137***	0.143***	0.199***	0.158***	0.143***	0.302***	0.261***	0.139***	0.0565*
	(4.49)	(4.50)	(4.46)	(4.65)	(11.32)	(4.75)	(4.83)	(49.24)	(30.07)	(4.49)	(1.81)
COL1_FCF	-2.619***	-2.635***	-2.621***	-2.621***	-3.432***	-3.102***	-2.702***	-5.212***	-4.553***	-2.619***	-1.325***
	(-5.90)	(-5.93)	(-5.92)	(-5.95)	(-14.26)	(-6.23)	(-6.36)	(-78.36)	(-40.90)	(-5.90)	(-3.02)
Size_FCF											0.0605
											(0.89)
Leverage_FCF											-1.184
											(-1.23)
DIVfcf_FCF											0.222
											(0.85)
Cash_FCF											-2.243***
											(-3.81)
Anti_FCF											-1.742***
											(-2.80)
Stock_FCF											0.000297
											(0.25)
Credit_FCF											0.00103
											(0.36)
Log_GDP_Capita	-0.0223***	-0.0215***	-0.0145	-0.0210***	-0.0180***	-0.0247***	-0.0227***	-0.0226***	-0.0195***	-0.0223***	-0.0184***
	(-3.28)	(-3.11)	(-1.52)	(-3.06)	(-4.07)	(-3.34)	(-3.48)	(-9.09)	(-7.53)	(-3.28)	(-3.02)
Credit_GDP	0.0000233	-0.0000165	0.00000657	0.0000537	0.000261***	0.0000269	0.00000968	0.00000623	0.0000247	0.0000238	-0.0000368
	(0.22)	(-0.16)	(0.06)	(0.51)	(3.28)	(0.23)	(0.09)	(0.16)	(0.61)	(0.22)	(-0.16)
Stock_mkt_GDP	0.0000389	0.0000247	0.0000106	0.0000572	-0.0000280	0.0000558	0.0000350	0.0000252	0.0000303	0.0000392	0.0000100
	(0.75)	(0.56)	(0.26)	(1.25)	(-0.76)	(0.93)	(0.69)	(1.32)	(1.52)	(0.75)	(0.11)
Anti_Self_Dealing	-0.0226				0.00877	-0.0274	-0.0202	-0.0283***	-0.0478***	-0.0227	0.0923*
	(-0.91)				(0.44)	(-0.99)	(-0.83)	(-3.15)	(-5.03)	(-0.91)	(1.89)
concentration		-0.0220									
		(-0.92)									
rule_law			-0.0103								
			(-1.07)								

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
common_legal				-0.0209**							
				(-2.42)							
2.SIC2	-0.0103	-0.00263	-0.00693	-0.0139	0.0247	-0.0148	-0.00966	-0.00266	-0.0153	-0.0102	-0.0100
	(-0.14)	(-0.04)	(-0.10)	(-0.20)	(0.43)	(-0.19)	(-0.14)	(-0.09)	(-0.56)	(-0.14)	(-0.15)
8.SIC2	0.00910	0.0146	0.0116	0.00468	0.00463	-0.0114	0.0110	0.00649	-0.00316	0.00905	-0.000257
	(0.13)	(0.20)	(0.16)	(0.07)	(0.09)	(-0.14)	(0.16)	(0.23)	(-0.11)	(0.13)	(-0.00)
10.SIC2	0.00783	0.00785	0.0131	0.0104	0.0164	-0.0112	0.00267	0.0121	-0.00760	0.00782	0.00942
	(0.12)	(0.13)	(0.21)	(0.17)	(0.35)	(-0.16)	(0.04)	(0.48)	(-0.32)	(0.12)	(0.16)
12.SIC2	0.0832	0.0904	0.0852	0.0812	0.104	0.0932	0.0863	0.0965***	0.0732**	0.0832	0.0522
	(0.99)	(1.08)	(1.02)	(0.97)	(1.60)	(1.01)	(1.06)	(3.01)	(2.28)	(0.99)	(0.69)
13.SIC2	0.0294	0.0313	0.0331	0.0299	0.0214	0.0163	0.0337	0.0176	-0.0369*	0.0294	0.0396
	(0.52)	(0.55)	(0.58)	(0.53)	(0.48)	(0.26)	(0.61)	(0.78)	(-1.72)	(0.52)	(0.76)
14.SIC2	0.0137	0.0166	0.0187	0.00855	0.00643	0.0161	0.0158	0.0370	0.0203	0.0136	0.00292
	(0.18)	(0.22)	(0.25)	(0.11)	(0.11)	(0.19)	(0.22)	(1.27)	(0.71)	(0.18)	(0.04)
15.SIC2	-0.00876	-0.00482	-0.00255	-0.0176	-0.0144	0.0133	-0.00793	0.0110	0.0143	-0.00876	-0.0188
	(-0.14)	(-0.08)	(-0.04)	(-0.28)	(-0.32)	(0.19)	(-0.13)	(0.44)	(0.57)	(-0.14)	(-0.32)
16.SIC2	0.00436	0.0106	0.00939	-0.00168	0.00479	-0.00343	0.00621	0.0148	0.0158	0.00434	0.00105
	(0.07)	(0.17)	(0.15)	(-0.03)	(0.10)	(-0.05)	(0.10)	(0.60)	(0.65)	(0.07)	(0.02)
17.SIC2	0.0168	0.0214	0.0210	0.0175	0.0132	0.00930	0.0249	0.0320	0.0261	0.0168	0.00318
	(0.25)	(0.32)	(0.31)	(0.26)	(0.21)	(0.12)	(0.37)	(1.19)	(1.01)	(0.25)	(0.05)
20.SIC2	0.0203	0.0265	0.0258	0.0153	0.0210	0.0129	0.0222	0.0356	0.0199	0.0202	0.0101
	(0.36)	(0.48)	(0.47)	(0.28)	(0.50)	(0.21)	(0.41)	(1.59)	(0.94)	(0.36)	(0.20)
22.SIC2	0.00859	0.0154	0.0163	0.00203	0.0155	-0.00200	0.0110	0.0123	-0.0000336	0.00850	0.00453
	(0.15)	(0.27)	(0.29)	(0.04)	(0.36)	(-0.03)	(0.20)	(0.54)	(-0.00)	(0.15)	(0.09)
23.SIC2	-0.000929	0.00516	0.00276	-0.00281	0.00768	-0.00782	0.000724	0.00982	-0.0102	-0.000972	-0.00379
	(-0.02)	(0.09)	(0.05)	(-0.05)	(0.17)	(-0.12)	(0.01)	(0.41)	(-0.45)	(-0.02)	(-0.07)
24.SIC2	-0.00212	0.00178	0.000820	-0.00432	0.00750	-0.0137	-0.000719	0.000642	-0.0153	-0.00215	-0.00643
	(-0.03)	(0.03)	(0.01)	(-0.07)	(0.16)	(-0.20)	(-0.01)	(0.03)	(-0.66)	(-0.04)	(-0.12)
25.SIC2	-0.0119	-0.00748	-0.00743	-0.0142	-0.00132	-0.0206	-0.0103	-0.0111	-0.0183	-0.0120	-0.0200
	(-0.20)	(-0.12)	(-0.12)	(-0.24)	(-0.03)	(-0.31)	(-0.17)	(-0.46)	(-0.80)	(-0.20)	(-0.36)
26.SIC2	0.00941	0.0161	0.0154	0.00207	0.0112	-0.0000784	0.0113	0.0185	0.00200	0.00935	0.00331
	(0.17)	(0.29)	(0.28)	(0.04)	(0.27)	(-0.00)	(0.21)	(0.82)	(0.09)	(0.17)	(0.06)
27.SIC2	-0.00381	0.00130	0.00106	-0.00850	0.0129	-0.0120	-0.00227	0.0103	-0.00754	-0.00386	-0.0109
	(-0.07)	(0.02)	(0.02)	(-0.15)	(0.30)	(-0.19)	(-0.04)	(0.45)	(-0.35)	(-0.07)	(-0.21)
28.SIC2	0.00393	0.0105	0.0105	-0.00150	0.0125	-0.00229	0.00553	0.0205	0.00200	0.00389	-0.000636
	(0.07)	(0.19)	(0.19)	(-0.03)	(0.30)	(-0.04)	(0.10)	(0.92)	(0.10)	(0.07)	(-0.01)
29.SIC2	0.0223	0.0230	0.0215	0.0184	0.00479	0.00458	0.0172	0.0381	0.0422*	0.0223	0.0264
	(0.35)	(0.36)	(0.34)	(0.29)	(0.09)	(0.07)	(0.28)	(1.54)	(1.77)	(0.35)	(0.46)
30.SIC2	0.0143	0.0207	0.0196	0.00786	0.0214	0.00858	0.0161	0.0273	0.00507	0.0142	0.00636
	(0.25)	(0.37)	(0.35)	(0.14)	(0.50)	(0.14)	(0.29)	(1.20)	(0.24)	(0.25)	(0.12)
31.SIC2	-0.00134	-0.00214	0.000994	0.00171	-0.0109	-0.00491	0.000189	-0.00179	-0.0202	-0.00145	-0.0112
	(-0.01)	(-0.02)	(0.01)	(0.02)	(-0.17)	(-0.05)	(0.00)	(-0.05)	(-0.58)	(-0.02)	(-0.13)
32.SIC2	0.0110	0.0183	0.0159	0.00407	0.00981	0.00375	0.0122	0.0225	0.00489	0.0110	0.00458
	(0.20)	(0.33)	(0.29)	(0.07)	(0.23)	(0.06)	(0.22)	(1.00)	(0.23)	(0.20)	(0.09)
33.SIC2	-0.00227	0.00358	0.00287	-0.00840	-0.00150	-0.0107	-0.00138	0.00856	-0.00484	-0.00232	-0.00436
	(-0.04)	(0.07)	(0.05)	(-0.15)	(-0.04)	(-0.18)	(-0.03)	(0.38)	(-0.23)	(-0.04)	(-0.09)
34.SIC2	0.0123	0.0185	0.0181	0.00575	0.0154	0.00402	0.0141	0.0305	0.0108	0.0123	0.00244
	(0.22)	(0.33)	(0.32)	(0.10)	(0.36)	(0.06)	(0.26)	(1.34)	(0.50)	(0.22)	(0.05)
35.SIC2	0.0548	0.0609	0.0610	0.0499	0.0475	0.0502	0.0559	0.0121	-0.000652	0.0553	0.0467
	(0.97)	(1.10)	(1.10)	(0.90)	(1.12)	(0.81)	(1.02)	(0.54)	(-0.03)	(0.98)	(0.91)
36.SIC2	0.000412	0.00588	0.00666	-0.00382	0.0191	-0.00492	0.00236	0.0127	-0.00315	0.000455	-0.00465
	(0.01)	(0.11)	(0.12)	(-0.07)	(0.46)	(-0.08)	(0.04)	(0.57)	(-0.15)	(0.01)	(-0.09)
37.SIC2	0.0108	0.0167	0.0161	0.00295	0.00540	0.00294	0.0119	0.0195	0.00530	0.0108	0.00579
	(0.20)	(0.30)	(0.29)	(0.05)	(0.13)	(0.05)	(0.22)	(0.88)	(0.25)	(0.19)	(0.11)

38.SIC2	0.000218	0.00677	0.00661	-0.00246	0.0170	-0.0164	0.00409	0.0112	-0.00768	0.000214	-0.00919
	(0.00)	(0.12)	(0.11)	(-0.04)	(0.37)	(-0.25)	(0.07)	(0.47)	(-0.34)	(0.00)	(-0.17)
39.SIC2	-0.0135	-0.00750	-0.00818	-0.0154	0.00638	-0.0227	-0.0124	-0.0107	-0.0260	-0.0135	-0.0179
	(-0.22)	(-0.12)	(-0.13)	(-0.25)	(0.13)	(-0.33)	(-0.21)	(-0.44)	(-1.12)	(-0.22)	(-0.32)
40.SIC2	0.0606	0.0677	0.0563	0.0461	0.0530	0.0146	0.0590	0.0591*	0.0330	0.0606	0.0767
	(0.66)	(0.74)	(0.61)	(0.50)	(0.84)	(0.14)	(0.66)	(1.69)	(0.92)	(0.66)	(0.91)
41.SIC2	0.0221	0.0301	0.0281	0.0127	0.0217	0.0109	0.0244	0.0277	0.0116	0.0219	0.0175
	(0.33)	(0.46)	(0.43)	(0.19)	(0.45)	(0.15)	(0.38)	(1.06)	(0.46)	(0.33)	(0.29)
42.SIC2	0.0464	0.0523	0.0527	0.0411	0.0301	0.0386	0.0507	0.0565**	0.0312	0.0463	0.0336
	(0.80)	(0.92)	(0.92)	(0.72)	(0.69)	(0.61)	(0.90)	(2.46)	(1.43)	(0.80)	(0.64)
44.SIC2	0.0266	0.0324	0.0319	0.0229	0.0286	0.0127	0.0279	0.0336	-0.00117	0.0267	0.0228
	(0.46)	(0.56)	(0.55)	(0.40)	(0.65)	(0.20)	(0.49)	(1.45)	(-0.05)	(0.46)	(0.43)
45.SIC2	0.0119	0.0138	0.0125	0.00833	0.00222	-0.00438	0.0105	0.0213	0.00891	0.0121	0.0145
	(0.19)	(0.22)	(0.20)	(0.13)	(0.05)	(-0.06)	(0.17)	(0.86)	(0.37)	(0.19)	(0.25)
47.SIC2	0.0591	0.0631	0.0635	0.0537	0.000805	0.0421	0.0151	0.0604**	-0.00608	0.0591	0.0566
	(0.92)	(0.99)	(1.00)	(0.84)	(0.02)	(0.60)	(0.24)	(2.41)	(-0.25)	(0.92)	(0.97)
48.SIC2	0.00182	0.00483	0.00649	-0.00116	0.0197	-0.00982	0.00512	0.0215	-0.00555	0.00183	-0.0142
	(0.03)	(0.08)	(0.11)	(-0.02)	(0.46)	(-0.16)	(0.09)	(0.94)	(-0.26)	(0.03)	(-0.27)
49.SIC2	-0.00923	-0.00528	-0.00477	-0.0139	-0.0240	-0.0239	-0.00841	-0.00585	-0.0276	-0.00923	-0.0117
	(-0.16)	(-0.09)	(-0.08)	(-0.25)	(-0.56)	(-0.38)	(-0.15)	(-0.26)	(-1.28)	(-0.16)	(-0.23)
50.SIC2	-0.00137	0.00443	0.00446	-0.00690	0.00000952	-0.00454	0.000254	0.0187	0.00161	-0.00138	-0.00845
	(-0.02)	(0.08)	(0.08)	(-0.12)	(0.00)	(-0.07)	(0.00)	(0.83)	(0.08)	(-0.02)	(-0.17)
51.SIC2	0.0101	0.0158	0.0150	0.00440	0.0165	0.000254	0.0120	0.0213	0.0124	0.0101	0.00405
	(0.18)	(0.28)	(0.27)	(0.08)	(0.39)	(0.00)	(0.22)	(0.93)	(0.57)	(0.18)	(0.08)
52.SIC2	-0.100	-0.0955	-0.101	-0.0993	0.00572	-0.248	-0.128	-0.276**	-0.191	-0.0992	-0.0614
	(-0.28)	(-0.27)	(-0.28)	(-0.28)	(0.03)	(-0.55)	(-0.38)	(-2.21)	(-1.47)	(-0.28)	(-0.26)
53.SIC2	-0.0134	-0.00910	-0.0118	-0.0199	-0.00907	-0.0149	-0.0133	-0.00544	-0.00962	-0.0133	-0.0147
	(-0.21)	(-0.14)	(-0.18)	(-0.31)	(-0.18)	(-0.21)	(-0.21)	(-0.22)	(-0.40)	(-0.21)	(-0.25)
54.SIC2	0.0233	0.0297	0.0292	0.0153	0.0334	0.0155	0.0253	0.0376	0.0328	0.0233	0.00927
	(0.39)	(0.50)	(0.49)	(0.26)	(0.74)	(0.23)	(0.43)	(1.56)	(1.44)	(0.38)	(0.17)
55.SIC2	0.0126	0.0188	0.0200	0.00553	0.0185	0.00722	0.0141	0.0319	0.0166	0.0125	0.00862
	(0.18)	(0.27)	(0.29)	(0.08)	(0.36)	(0.09)	(0.21)	(1.18)	(0.63)	(0.18)	(0.14)
56.SIC2	-0.00280	0.00374	0.00383	-0.00642	0.00673	-0.0134	-0.00182	0.00531	-0.0186	-0.00281	-0.00282
	(-0.05)	(0.06)	(0.07)	(-0.11)	(0.14)	(-0.21)	(-0.03)	(0.23)	(-0.83)	(-0.05)	(-0.05)
57.SIC2	-0.0106	-0.00676	-0.00569	-0.0122	-0.0212	-0.0169	-0.00964	-0.0104	-0.0275	-0.0105	-0.00261
	(-0.15)	(-0.10)	(-0.08)	(-0.18)	(-0.36)	(-0.22)	(-0.14)	(-0.38)	(-1.03)	(-0.15)	(-0.04)
58.SIC2	0.000785	0.00781	0.00678	-0.000960	0.0238	-0.0187	0.00290	-0.00665	-0.0365	0.000717	-0.00363
	(0.01)	(0.13)	(0.11)	(-0.02)	(0.47)	(-0.27)	(0.05)	(-0.27)	(-1.54)	(0.01)	(-0.06)
59.SIC2	-0.00710	-0.00300	-0.00268	-0.0118	0.000746	-0.0184	-0.00612	0.00173	-0.0170	-0.00714	-0.0142
	(-0.12)	(-0.05)	(-0.05)	(-0.20)	(0.02)	(-0.28)	(-0.11)	(0.07)	(-0.75)	(-0.12)	(-0.26)
70.SIC2	0.0174	0.0204	0.0195	0.0158	0.0126	0.00837	0.0195	0.0314	0.00531	0.0173	0.00540
	(0.28)	(0.33)	(0.32)	(0.26)	(0.28)	(0.12)	(0.33)	(1.30)	(0.23)	(0.28)	(0.10)
72.SIC2	-0.0214	-0.0160	-0.0163	-0.0229	0.0455	-0.0340	-0.0185	-0.00896	-0.0407	-0.0214	-0.0275
	(-0.28)	(-0.21)	(-0.21)	(-0.30)	(0.57)	(-0.40)	(-0.25)	(-0.30)	(-1.40)	(-0.28)	(-0.39)
73.SIC2	-0.0124	-0.00673	-0.00590	-0.0152	-0.0140	-0.0244	-0.00964	-0.00426	-0.0305	-0.0124	-0.0171
	(-0.22)	(-0.12)	(-0.10)	(-0.27)	(-0.32)	(-0.39)	(-0.17)	(-0.19)	(-1.41)	(-0.22)	(-0.33)
75.SIC2	0.0278	0.0319	0.0347	0.0268	0.0265	0.0181	0.0290	0.0353	0.00983	0.0277	0.0242
	(0.38)	(0.44)	(0.48)	(0.37)	(0.49)	(0.23)	(0.41)	(1.25)	(0.36)	(0.38)	(0.37)
76.SIC2	0.00702	0.00795	0.0124	0.00361	0.0190	0.00340	0.00899	0.0351	0.0269	0.00714	-0.0155
	(0.08)	(0.09)	(0.13)	(0.04)	(0.30)	(0.03)	(0.10)	(0.99)	(0.76)	(0.08)	(-0.18)
78.SIC2	0.0736	0.0798	0.0840	0.0703	0.0675	0.0617	0.0969	0.118***	0.0588**	0.0735	0.0185
	(0.97)	(1.07)	(1.13)	(0.94)	(1.25)	(0.74)	(1.26)	(4.04)	(2.06)	(0.97)	(0.27)

79.SIC2	-0.0137	-0.00872	-0.00809	-0.0143	-0.0368	-0.0308	-0.0117	-0.0203	-0.0588**	-0.0138	-0.0108
	(-0.22)	(-0.14)	(-0.13)	(-0.23)	(-0.76)	(-0.45)	(-0.20)	(-0.84)	(-2.52)	(-0.22)	(-0.19)
80.SIC2	-0.00486	0.000203	-0.0000710	-0.00350	0.0409	-0.0168	0.00627	0.00196	-0.00904	-0.00489	-0.00715
	(-0.08)	(0.00)	(-0.00)	(-0.05)	(0.70)	(-0.24)	(0.10)	(0.08)	(-0.37)	(-0.08)	(-0.12)
82.SIC2	0.00285	0.0102	0.00971	-0.00326	0.0105	-0.00403	0.00540	0.0129	-0.000996	0.00281	-0.00825
	(0.04)	(0.13)	(0.13)	(-0.04)	(0.18)	(-0.05)	(0.07)	(0.44)	(-0.03)	(0.04)	(-0.12)
87.SIC2	-0.0101	-0.00466	-0.00504	-0.0146	-0.00581	-0.0172	-0.00880	0.00438	-0.00936	-0.0100	-0.0162
	(-0.17)	(-0.08)	(-0.08)	(-0.25)	(-0.13)	(-0.26)	(-0.15)	(0.18)	(-0.41)	(-0.17)	(-0.30)
96.SIC2	-0.0369	-0.0301	-0.0322	-0.0474	-0.0456	-0.0306	-0.0384	-0.0451	-0.0539	-0.0367	-0.0309
	(-0.31)	(-0.25)	(-0.27)	(-0.40)	(-0.56)	(-0.23)	(-0.33)	(-1.00)	(-1.18)	(-0.30)	(-0.28)
2003.year	-0.00483	-0.00392	-0.00253	-0.00393	-0.000203	-0.00568	-0.00409	-0.00490	-0.0176***	-0.00490	-0.0102
	(-0.35)	(-0.29)	(-0.19)	(-0.29)	(-0.02)	(-0.41)	(-0.30)	(-0.99)	(-3.40)	(-0.36)	(-0.85)
2004.year	-0.00250	-0.00174	-0.000516	-0.00213	-0.00204	-0.00458	-0.00149	-0.00379	-0.0119**	-0.00256	-0.00417
	(-0.19)	(-0.13)	(-0.04)	(-0.16)	(-0.20)	(-0.35)	(-0.11)	(-0.78)	(-2.37)	(-0.19)	(-0.36)
2005.year	0.0301**	0.0309**	0.0319**	0.0298**	0.0251**	0.0250*	0.0302**	0.0110**	0.000559	0.0300**	0.0240**
	(2.19)	(2.29)	(2.37)	(2.21)	(2.39)	(1.82)	(2.24)	(2.27)	(0.11)	(2.19)	(1.98)
2006.year	0.0123	0.0134	0.0144	0.0118	0.0127	0.0107	0.0125	0.0136***	0.0109**	0.0122	0.0106
	(0.92)	(1.02)	(1.10)	(0.90)	(1.22)	(0.80)	(0.94)	(2.76)	(2.14)	(0.91)	(0.89)
2007.year	0.00692	0.00802	0.00912	0.00601	0.0163	0.00547	0.00780	0.0104**	0.00599	0.00684	0.00396
	(0.51)	(0.61)	(0.69)	(0.45)	(1.57)	(0.40)	(0.59)	(2.11)	(1.16)	(0.50)	(0.33)
2008.year	0.00364	0.00364	0.00398	0.00372	0.00509		0.00314	0.00481	-0.00228	0.00359	0.00218
	(0.29)	(0.29)	(0.31)	(0.29)	(0.53)		(0.25)	(1.04)	(-0.47)	(0.28)	(0.19)
2009.year	-0.0189	-0.0182	-0.0177	-0.0190	-0.0169*	-0.0183	-0.0205	-0.0211***	-0.0341***	-0.0189	-0.0269**
	(-1.42)	(-1.38)	(-1.34)	(-1.44)	(-1.71)	(-1.36)	(-1.57)	(-4.54)	(-6.85)	(-1.42)	(-2.26)
2010.year	-0.0126	-0.0121	-0.0114	-0.0129	-0.0147	-0.0130	-0.0135	-0.0172***	-0.0212***	-0.0126	-0.0137
	(-1.03)	(-0.99)	(-0.94)	(-1.06)	(-1.59)	(-1.08)	(-1.12)	(-3.83)	(-4.56)	(-1.03)	(-1.23)
_cons	-0.433**	-0.463***	-0.517***	-0.476***	-0.818***	-0.478***	-0.458***	-1.136***	-0.943***	-0.432**	-0.145
	(-2.56)	(-2.77)	(-3.04)	(-2.88)	(-7.50)	(-2.62)	(-2.77)	(-24.32)	(-17.34)	(-2.55)	(-0.79)
number of observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.8. Regression results – In-group Collectivism dimension (GLOBE)

	(9) Base model	(84) Ownership Concentration	(85) Rule of Law	(86) Common Legal Origin	(87) ex USA	(88) ex Crisis	(89) Outliers - Size	(90) Outliers - Cash Flow	(91) Outliers - CAPEX	(92) Cash Flow Volatility	(18) Interaction
L.CAPEXF_TA	0.00247	0.00245	0.00246	0.00246	0.00257	0.00238	0.00245	0.00485***	0.00535***	0.00309	0.00362
	(0.54)	(0.53)	(0.54)	(0.53)	(0.61)	(0.50)	(0.54)	(2.69)	(3.04)	(0.62)	(1.03)
MV_BV_t1	0.0121	0.0112	0.0112	0.0110	0.0153*	0.0191*	0.0123	0.0192***	0.00809***	0.0121	0.00773
	(1.62)	(1.50)	(1.50)	(1.47)	(1.69)	(1.59)	(1.59)	(6.43)	(2.74)	(1.61)	(1.33)
FCF_TA	17.36***	17.25***	17.30***	17.24***	21.73***	19.87***	18.00***	47.03***	34.18***	17.37***	12.36***
	(5.40)	(5.34)	(5.37)	(5.33)	(7.54)	(5.31)	(5.50)	(63.52)	(41.46)	(5.40)	(4.93)
L.Ln_TA	0.000780	-0.0000351	0.000538	0.000421	0.000883	0.00134	0.00292	-0.00396	-0.0104***	0.000724	0.00213
	(0.11)	(-0.01)	(0.08)	(0.06)	(0.10)	(0.16)	(0.38)	(-1.44)	(-3.81)	(0.10)	(0.32)
Leverage	0.174**	0.176**	0.175**	0.175**	0.226***	0.179**	0.158**	0.0973***	0.278***	0.173**	0.192**
	(2.50)	(2.52)	(2.51)	(2.49)	(2.92)	(2.11)	(2.19)	(3.66)	(10.35)	(2.49)	(2.51)
DIV_FCF	0.000631	0.000639	0.000619	0.000672	0.000150	0.00115	0.000661	0.000380	0.00140***	0.000629	0.000102
	(0.46)	(0.46)	(0.45)	(0.48)	(0.13)	(0.78)	(0.49)	(0.73)	(2.74)	(0.46)	(0.13)
L.Cash_TA	0.0729	0.0735	0.0797	0.0782	0.0815	0.0572	0.0824	0.0438	0.0615*	0.0709	0.151**
	(0.83)	(0.83)	(0.91)	(0.88)	(0.95)	(0.55)	(0.91)	(1.24)	(1.84)	(0.80)	(2.13)
CF_Vol										-0.000894	
										(-0.31)	
COL2	0.150***	0.159***	0.158***	0.170***	0.231***	0.162***	0.156***	0.502***	0.326***	0.150***	0.0925***
	(3.66)	(3.87)	(3.85)	(4.02)	(5.72)	(3.47)	(3.74)	(44.71)	(26.66)	(3.65)	(2.88)
COL2_FCF	-2.976***	-2.957***	-2.966***	-2.957***	-3.740***	-3.422***	-3.094***	-8.397***	-5.886***	-2.978***	-2.105***
	(-5.10)	(-5.05)	(-5.08)	(-5.04)	(-7.04)	(-5.01)	(-5.20)	(-60.79)	(-37.74)	(-5.10)	(-4.64)
Size_FCF											-0.0149
											(-0.24)
Leverage_FCF											-0.408
											(-0.46)
DIVfcf_FCF											0.296
											(1.26)
Cash_FCF											-1.703***
											(-3.09)
Anti_FCF											-0.476
											(-0.72)
Stock_FCF											-0.00288**
											(-2.22)
Credit_FCF											0.00733***
											(3.81)
Log_GDP_Capita	-0.0116*	-0.0144**	-0.00167	-0.0141**	-0.0114*	-0.0130	-0.0113	-0.00629**	-0.00553**	-0.0116*	-0.00968*
	(-1.67)	(-2.04)	(-0.17)	(-2.01)	(-1.72)	(-1.62)	(-1.64)	(-2.29)	(-2.06)	(-1.67)	(-1.83)
Credit_GDP	0.000179*	0.000168	0.000204**	0.000209**	0.000416***	0.000209*	0.000162	0.000260***	0.000228***	0.000179*	-0.000337**
	(1.84)	(1.62)	(2.13)	(2.12)	(3.84)	(1.88)	(1.62)	(6.70)	(6.04)	(1.84)	(-2.16)
Stock_mkt_GDP	-0.0000638	-0.00000334	-0.0000186	0.00000822	-0.0000588	-0.0000649	-0.0000762	-0.000111***	-0.000126***	-0.0000639	0.000127
	(-1.00)	(-0.07)	(-0.42)	(0.13)	(-0.98)	(-0.83)	(-1.18)	(-4.36)	(-5.05)	(-1.00)	(1.26)
Anti_Self_Dealing	0.0325				0.0334	0.0414	0.0389	0.0518***	0.0381***	0.0326	0.0563
	(1.05)				(1.11)	(1.13)	(1.24)	(4.25)	(3.14)	(1.05)	(1.12)
concentration		-0.0198									
		(-0.78)									
rule_law			-0.0179*								
			(-1.69)								

common_legal				-0.00928							
				(-0.74)							
2.SIC2	0.000520	-0.00596	-0.0119	-0.00919	0.0294	0.00186	0.00350	0.0545*	0.00391	0.000593	0.00597
	(0.01)	(-0.08)	(-0.15)	(-0.12)	(0.33)	(0.02)	(0.05)	(1.66)	(0.13)	(0.01)	(0.10)
8.SIC2	0.000894	0.00115	-0.00294	-0.000863	-0.00816	-0.0199	0.00520	0.0326	-0.0183	0.000788	0.00595
	(0.01)	(0.01)	(-0.04)	(-0.01)	(-0.10)	(-0.22)	(0.07)	(1.00)	(-0.61)	(0.01)	(0.10)
10.SIC2	0.0202	0.0142	0.0216	0.0186	0.0246	0.0159	0.0197	0.0813***	0.0107	0.0202	0.0293
	(0.30)	(0.21)	(0.32)	(0.27)	(0.34)	(0.20)	(0.29)	(2.78)	(0.41)	(0.30)	(0.56)
12.SIC2	0.0523	0.0491	0.0429	0.0455	0.0398	0.0444	0.0594	0.110***	0.0123	0.0523	0.0697
	(0.58)	(0.55)	(0.48)	(0.51)	(0.40)	(0.42)	(0.66)	(2.94)	(0.35)	(0.58)	(1.01)
13.SIC2	0.0839	0.0792	0.0820	0.0806	0.104	0.0798	0.0914	0.199***	0.0664***	0.0839	0.0739
	(1.35)	(1.27)	(1.32)	(1.29)	(1.48)	(1.10)	(1.47)	(7.45)	(2.77)	(1.35)	(1.55)
14.SIC2	-0.00112	-0.00551	-0.00282	-0.00438	0.00111	0.00337	0.00242	0.0467	0.000610	-0.00124	0.00685
	(-0.01)	(-0.07)	(-0.03)	(-0.05)	(0.01)	(0.04)	(0.03)	(1.37)	(0.02)	(-0.02)	(0.11)
15.SIC2	-0.0258	-0.0273	-0.0240	-0.0285	-0.0226	-0.0388	-0.0238	0.0564*	-0.0148	-0.0258	-0.0227
	(-0.38)	(-0.40)	(-0.35)	(-0.42)	(-0.32)	(-0.49)	(-0.35)	(1.92)	(-0.54)	(-0.38)	(-0.43)
16.SIC2	0.00209	-0.00128	-0.00278	-0.00362	0.00407	0.000757	0.00555	0.0446	0.00643	0.00205	0.00923
	(0.03)	(-0.02)	(-0.04)	(-0.05)	(0.06)	(0.01)	(0.08)	(1.54)	(0.24)	(0.03)	(0.18)
17.SIC2	0.00225	-0.00113	-0.00153	-0.00121	0.0114	0.00227	0.0130	0.0350	0.000490	0.00229	0.0118
	(0.03)	(-0.02)	(-0.02)	(-0.02)	(0.12)	(0.03)	(0.17)	(1.11)	(0.02)	(0.03)	(0.21)
20.SIC2	0.00855	0.00516	0.00425	0.00372	0.0119	0.00626	0.0122	0.0597**	0.00683	0.00843	0.0101
	(0.14)	(0.09)	(0.07)	(0.06)	(0.18)	(0.09)	(0.20)	(2.28)	(0.29)	(0.14)	(0.22)
22.SIC2	0.00564	0.000944	0.00191	-0.00121	0.0187	0.00701	0.0103	0.0634**	0.00533	0.00551	0.00646
	(0.09)	(0.02)	(0.03)	(-0.02)	(0.28)	(0.10)	(0.17)	(2.38)	(0.22)	(0.09)	(0.14)
23.SIC2	-0.00907	-0.0115	-0.0145	-0.0134	0.00199	-0.00971	-0.00540	0.0236	-0.0219	-0.00914	0.00220
	(-0.14)	(-0.18)	(-0.22)	(-0.21)	(0.03)	(-0.13)	(-0.08)	(0.85)	(-0.88)	(-0.14)	(0.04)
24.SIC2	-0.000592	-0.00295	-0.00388	-0.00484	-0.00227	0.000504	0.00284	0.0361	-0.0105	-0.000637	0.00346
	(-0.01)	(-0.04)	(-0.06)	(-0.07)	(-0.03)	(0.01)	(0.04)	(1.27)	(-0.41)	(-0.01)	(0.07)
25.SIC2	-0.0143	-0.0180	-0.0177	-0.0191	-0.00474	-0.0197	-0.0109	0.0173	-0.0198	-0.0144	-0.0122
	(-0.22)	(-0.28)	(-0.27)	(-0.29)	(-0.07)	(-0.26)	(-0.17)	(0.62)	(-0.79)	(-0.22)	(-0.24)
26.SIC2	0.00322	-0.000412	-0.000965	-0.00342	0.00848	0.000409	0.00699	0.0455*	-0.00140	0.00313	0.00767
	(0.05)	(-0.01)	(-0.02)	(-0.06)	(0.13)	(0.01)	(0.12)	(1.72)	(-0.06)	(0.05)	(0.16)
27.SIC2	-0.00302	-0.00679	-0.00690	-0.00763	0.00943	-0.00694	0.000861	0.0617**	0.00206	-0.00311	-0.00212
	(-0.05)	(-0.11)	(-0.11)	(-0.12)	(0.14)	(-0.10)	(0.01)	(2.29)	(0.09)	(-0.05)	(-0.04)
28.SIC2	-0.00595	-0.0104	-0.0101	-0.0113	0.00548	-0.00782	-0.00233	0.0483*	-0.00880	-0.00603	0.00313
	(-0.10)	(-0.17)	(-0.17)	(-0.19)	(0.09)	(-0.11)	(-0.04)	(1.86)	(-0.38)	(-0.10)	(0.07)
29.SIC2	0.0202	0.0196	0.0178	0.0190	0.0199	0.00381	0.0163	0.0740**	0.0450*	0.0202	0.0251
	(0.30)	(0.29)	(0.26)	(0.28)	(0.25)	(0.05)	(0.23)	(2.55)	(1.72)	(0.30)	(0.48)
30.SIC2	0.0141	0.00999	0.00870	0.00757	0.0279	0.0107	0.0185	0.0707***	0.0109	0.0140	0.0187
	(0.23)	(0.16)	(0.14)	(0.12)	(0.43)	(0.15)	(0.30)	(2.66)	(0.46)	(0.23)	(0.40)
31.SIC2	-0.00487	-0.00686	-0.00395	-0.00259	-0.00345	-0.00147	-0.00116	0.0377	-0.0187	-0.00503	-0.00558
	(-0.05)	(-0.07)	(-0.04)	(-0.03)	(-0.04)	(-0.01)	(-0.01)	(0.92)	(-0.49)	(-0.05)	(-0.07)
32.SIC2	0.00350	0.000116	-0.00323	-0.00315	0.00534	0.000637	0.00663	0.0583**	-0.00110	0.00347	0.00799
	(0.06)	(0.00)	(-0.05)	(-0.05)	(0.08)	(0.01)	(0.11)	(2.22)	(-0.05)	(0.06)	(0.17)
33.SIC2	-0.000797	-0.00460	-0.00555	-0.00612	0.0142	-0.000830	0.00169	0.0481*	0.00523	-0.000880	0.00438
	(-0.01)	(-0.08)	(-0.09)	(-0.10)	(0.22)	(-0.01)	(0.03)	(1.84)	(0.23)	(-0.01)	(0.09)
34.SIC2	-0.00147	-0.00577	-0.00637	-0.00732	0.00319	-0.0000757	0.00199	0.0391	-0.00744	-0.00156	0.00487
	(-0.02)	(-0.09)	(-0.11)	(-0.12)	(0.05)	(-0.00)	(0.03)	(1.48)	(-0.32)	(-0.03)	(0.10)
35.SIC2	0.0523	0.0487	0.0488	0.0471	0.0740	0.0592	0.0567	0.0395	-0.00799	0.0528	0.0500
	(0.87)	(0.80)	(0.81)	(0.78)	(1.13)	(0.83)	(0.93)	(1.50)	(-0.34)	(0.87)	(1.07)
36.SIC2	-0.0100	-0.0140	-0.0126	-0.0151	0.00448	-0.0120	-0.00658	0.0337	-0.0170	-0.0100	-0.0000772
	(-0.17)	(-0.24)	(-0.21)	(-0.25)	(0.07)	(-0.17)	(-0.11)	(1.29)	(-0.74)	(-0.17)	(-0.00)
37.SIC2	0.00459	0.00115	0.000710	-0.000769	0.00698	-0.00113	0.00738	0.0555**	-0.000169	0.00453	0.00959
	(0.08)	(0.02)	(0.01)	(-0.01)	(0.11)	(-0.02)	(0.12)	(2.13)	(-0.01)	(0.08)	(0.21)

38.SIC2	-0.00934	-0.0149	-0.0153	-0.0156	0.0120	-0.0110	-0.00232	0.0262	-0.0196	-0.00936	0.00235
	(-0.15)	(-0.24)	(-0.24)	(-0.25)	(0.17)	(-0.15)	(-0.04)	(0.95)	(-0.80)	(-0.15)	(0.05)
39.SIC2	-0.0283	-0.0324	-0.0333	-0.0332	-0.0137	-0.0362	-0.0241	0.0117	-0.0489*	-0.0283	-0.0153
	(-0.43)	(-0.49)	(-0.51)	(-0.50)	(-0.18)	(-0.47)	(-0.37)	(0.41)	(-1.92)	(-0.43)	(-0.30)
40.SIC2	0.0520	0.0554	0.0383	0.0482	0.0609	-0.00942	0.0501	0.0811**	0.0150	0.0520	0.0610
	(0.53)	(0.55)	(0.38)	(0.48)	(0.63)	(-0.08)	(0.51)	(1.99)	(0.38)	(0.52)	(0.80)
41.SIC2	0.0165	0.0143	0.0120	0.0108	0.0223	0.0199	0.0211	0.0631**	-0.00447	0.0162	0.0218
	(0.23)	(0.20)	(0.17)	(0.15)	(0.30)	(0.24)	(0.29)	(2.07)	(-0.16)	(0.23)	(0.40)
42.SIC2	0.0435	0.0393	0.0399	0.0386	0.0160	0.0447	0.0514	0.110***	0.0327	0.0433	0.0433
	(0.70)	(0.63)	(0.64)	(0.62)	(0.24)	(0.61)	(0.82)	(4.07)	(1.36)	(0.70)	(0.91)
44.SIC2	0.0205	0.0158	0.0161	0.0147	0.0188	0.0104	0.0254	0.0812***	-0.00496	0.0206	0.0377
	(0.33)	(0.25)	(0.26)	(0.23)	(0.28)	(0.14)	(0.41)	(3.00)	(-0.21)	(0.33)	(0.79)
45.SIC2	0.0174	0.0171	0.0173	0.0157	0.0121	0.0110	0.0182	0.0937***	0.0187	0.0176	0.0285
	(0.26)	(0.25)	(0.25)	(0.23)	(0.17)	(0.14)	(0.27)	(3.23)	(0.72)	(0.26)	(0.55)
47.SIC2	0.0610	0.0575	0.0582	0.0569	0.00511	0.0468	0.0183	0.124***	-0.00279	0.0609	0.0670
	(0.89)	(0.83)	(0.84)	(0.82)	(0.07)	(0.58)	(0.26)	(4.22)	(-0.10)	(0.88)	(1.27)
48.SIC2	-0.0111	-0.0180	-0.0161	-0.0170	-0.00426	-0.0110	-0.00350	0.0576**	-0.0203	-0.0111	-0.00315
	(-0.18)	(-0.29)	(-0.26)	(-0.27)	(-0.06)	(-0.15)	(-0.06)	(2.16)	(-0.86)	(-0.18)	(-0.07)
49.SIC2	-0.0130	-0.0177	-0.0174	-0.0173	-0.0164	-0.0219	-0.00939	0.0393	-0.0272	-0.0130	-0.00926
	(-0.21)	(-0.29)	(-0.28)	(-0.28)	(-0.25)	(-0.31)	(-0.15)	(1.48)	(-1.15)	(-0.21)	(-0.20)
50.SIC2	-0.0163	-0.0206	-0.0202	-0.0222	-0.0108	-0.0179	-0.0139	0.0288	-0.0216	-0.0163	-0.00327
	(-0.27)	(-0.34)	(-0.34)	(-0.37)	(-0.17)	(-0.26)	(-0.23)	(1.10)	(-0.93)	(-0.27)	(-0.07)
51.SIC2	0.00330	0.00123	0.000251	-0.000273	0.0169	-0.000600	0.00670	0.0498*	0.00777	0.00323	0.00785
	(0.05)	(0.02)	(0.00)	(-0.00)	(0.26)	(-0.01)	(0.11)	(1.86)	(0.33)	(0.05)	(0.17)
52.SIC2	-0.196	-0.194	-0.196	-0.207	-0.0769	-0.420	-0.204	-0.177	-0.413***	-0.195	-0.0667
	(-0.52)	(-0.51)	(-0.51)	(-0.54)	(-0.23)	(-0.82)	(-0.55)	(-1.23)	(-2.91)	(-0.51)	(-0.30)
53.SIC2	-0.00190	-0.00406	-0.00754	-0.00647	0.0179	0.00110	-0.000295	0.0609**	0.0166	-0.00189	-0.00640
	(-0.03)	(-0.06)	(-0.11)	(-0.09)	(0.23)	(0.01)	(-0.00)	(2.07)	(0.62)	(-0.03)	(-0.12)
54.SIC2	0.0252	0.0205	0.0199	0.0189	0.0370	0.0255	0.0292	0.0748***	0.0443*	0.0252	0.0231
	(0.39)	(0.31)	(0.31)	(0.29)	(0.53)	(0.33)	(0.45)	(2.66)	(1.76)	(0.39)	(0.46)
55.SIC2	0.00882	0.00211	0.00477	-0.00125	0.00535	-0.00225	0.0124	0.0586*	0.0159	0.00871	0.0172
	(0.12)	(0.03)	(0.06)	(-0.02)	(0.07)	(-0.03)	(0.17)	(1.86)	(0.55)	(0.12)	(0.30)
56.SIC2	-0.00181	-0.00643	-0.00600	-0.00823	-0.0119	-0.00570	0.00217	0.0429	-0.0106	-0.00183	0.00736
	(-0.03)	(-0.10)	(-0.09)	(-0.13)	(-0.17)	(-0.08)	(0.03)	(1.56)	(-0.43)	(-0.03)	(0.15)
57.SIC2	-0.0269	-0.0313	-0.0297	-0.0306	-0.0421	-0.0256	-0.0231	0.0191	-0.0584**	-0.0268	0.00283
	(-0.36)	(-0.41)	(-0.40)	(-0.40)	(-0.47)	(-0.29)	(-0.31)	(0.60)	(-2.01)	(-0.36)	(0.05)
58.SIC2	0.0113	0.00610	0.00463	0.00526	0.0166	0.00510	0.0181	0.0779***	-0.0116	0.0112	0.0127
	(0.17)	(0.09)	(0.07)	(0.08)	(0.21)	(0.06)	(0.27)	(2.70)	(-0.45)	(0.17)	(0.25)
59.SIC2	0.00169	-0.00144	-0.000843	-0.00169	0.00228	-0.00151	0.00542	0.0701**	0.00688	0.00161	-0.00229
	(0.03)	(-0.02)	(-0.01)	(-0.03)	(0.03)	(-0.02)	(0.08)	(2.52)	(0.28)	(0.03)	(-0.05)
70.SIC2	0.00601	0.00726	0.00620	0.00788	0.00350	-0.00243	0.0109	0.0602**	-0.00735	0.00590	0.00572
	(0.09)	(0.11)	(0.09)	(0.12)	(0.05)	(-0.03)	(0.17)	(2.14)	(-0.29)	(0.09)	(0.11)
72.SIC2	-0.0251	-0.0297	-0.0296	-0.0297	0.0300	-0.0270	-0.0183	0.0427	-0.0392	-0.0251	-0.0161
	(-0.30)	(-0.36)	(-0.36)	(-0.36)	(0.24)	(-0.28)	(-0.22)	(1.24)	(-1.23)	(-0.30)	(-0.25)
73.SIC2	-0.0249	-0.0304	-0.0288	-0.0309	-0.0361	-0.0302	-0.0207	0.0222	-0.0500**	-0.0249	-0.0102
	(-0.41)	(-0.50)	(-0.47)	(-0.51)	(-0.53)	(-0.42)	(-0.34)	(0.83)	(-2.12)	(-0.41)	(-0.22)
75.SIC2	0.0334	0.0280	0.0322	0.0308	0.0277	0.0303	0.0385	0.107***	0.0205	0.0333	0.0371
	(0.43)	(0.36)	(0.41)	(0.39)	(0.33)	(0.33)	(0.49)	(3.24)	(0.68)	(0.43)	(0.62)
76.SIC2	-0.00245	-0.00861	-0.00297	-0.00600	0.00181	-0.00172	0.000446	0.0474	0.0118	-0.00230	0.00100
	(-0.02)	(-0.09)	(-0.03)	(-0.06)	(0.02)	(-0.01)	(0.00)	(1.15)	(0.31)	(-0.02)	(0.01)
78.SIC2	-0.0216	-0.0284	-0.0226	-0.0272	-0.0339	-0.0310	-0.0387	0.0331	-0.108***	-0.0219	-0.00895
	(-0.27)	(-0.36)	(-0.28)	(-0.34)	(-0.42)	(-0.33)	(-0.47)	(0.98)	(-3.52)	(-0.27)	(-0.14)
79.SIC2	0.00553	0.00139	0.00283	0.000615	-0.00357	0.00589	0.0124	0.0503*	-0.0221	0.00546	0.00465
	(0.08)	(0.02)	(0.04)	(0.01)	(-0.05)	(0.08)	(0.19)	(1.77)	(-0.86)	(0.08)	(0.09)

80.SIC2	-0.0159	-0.0190	-0.0186	-0.0192	-0.000502	-0.0172	-0.0103	0.0224	-0.0303	-0.0159	-0.00234
	(-0.23)	(-0.27)	(-0.27)	(-0.28)	(-0.01)	(-0.21)	(-0.15)	(0.76)	(-1.13)	(-0.23)	(-0.04)
82.SIC2	0.00185	-0.00280	-0.00350	-0.00383	0.0186	-0.00482	0.00710	0.0529	0.00143	0.00176	-0.00178
	(0.02)	(-0.03)	(-0.04)	(-0.05)	(0.21)	(-0.05)	(0.09)	(1.54)	(0.04)	(0.02)	(-0.03)
87.SIC2	-0.0185	-0.0210	-0.0212	-0.0227	-0.00198	-0.0301	-0.0155	0.0426	-0.0194	-0.0184	-0.0130
	(-0.29)	(-0.32)	(-0.33)	(-0.35)	(-0.03)	(-0.40)	(-0.24)	(1.52)	(-0.78)	(-0.29)	(-0.26)
96.SIC2	-0.0344	-0.0394	-0.0423	-0.0423	-0.0352	-0.0252	-0.0333	-0.000470	-0.0546	-0.0341	-0.0200
	(-0.27)	(-0.30)	(-0.33)	(-0.32)	(-0.28)	(-0.17)	(-0.26)	(-0.01)	(-1.09)	(-0.26)	(-0.20)
2003.year	-0.00893	-0.0109	-0.00890	-0.0103	-0.0134	-0.00775	-0.00695	-0.0130**	-0.0240***	-0.00902	-0.00866
	(-0.62)	(-0.76)	(-0.62)	(-0.71)	(-0.85)	(-0.50)	(-0.47)	(-2.27)	(-4.29)	(-0.62)	(-0.80)
2004.year	-0.00477	-0.00683	-0.00518	-0.00632	-0.00736	-0.00556	-0.00298	-0.0145***	-0.0159**	-0.00484	-0.00358
	(-0.34)	(-0.49)	(-0.37)	(-0.45)	(-0.48)	(-0.37)	(-0.21)	(-2.60)	(-2.92)	(-0.34)	(-0.34)
2005.year	0.0342*	0.0234	0.0247*	0.0237	0.0229	0.0213	0.0267*	-0.00379	-0.00939*	0.0251*	0.0207*
	(1.71)	(1.59)	(1.69)	(1.60)	(1.44)	(1.36)	(1.79)	(-0.68)	(-1.72)	(1.71)	(1.89)
2006.year	0.0101	0.00722	0.00841	0.00717	0.00976	0.00878	0.0118	0.00280	0.00776	0.00997	0.0110
	(0.71)	(0.51)	(0.60)	(0.50)	(0.63)	(0.58)	(0.81)	(0.49)	(1.40)	(0.70)	(1.02)
2007.year	0.00483	0.00147	0.00269	0.00125	0.00542	0.00357	0.00656	-0.000648	0.00427	0.00475	0.00259
	(0.34)	(0.10)	(0.19)	(0.09)	(0.35)	(0.23)	(0.45)	(-0.11)	(0.77)	(0.33)	(0.24)
2008.year	0.000151	0.000141	0.000583	0.000733	-0.00225	-0.0256*	0.00110	-0.00169	-0.00924*	0.0000832	-0.00128
	(0.01)	(0.01)	(0.04)	(0.05)	(-0.15)	(-1.70)	(0.08)	(-0.31)	(-1.75)	(0.01)	(-0.12)
2009.year	-0.0269*	-0.0281**	-0.0275*	-0.0281**	-0.0386***		-0.0257*	-0.0239***	-0.0461***	-0.0270*	-0.0303***
	(-1.91)	(-1.99)	(-1.96)	(-1.99)	(-2.60)		(-1.80)	(-4.40)	(-8.61)	(-1.91)	(-2.85)
2010.year	-0.0111	-0.0126	-0.0118	-0.0128	-0.0159	-0.0101	-0.0105	-0.0160***	-0.0175***	-0.0111	-0.0137
	(-0.84)	(-0.96)	(-0.90)	(-0.97)	(-1.12)	(-0.74)	(-0.79)	(-3.06)	(-3.42)	(-0.84)	(-1.36)
_cons	-0.795***	-0.786***	-0.900***	-0.859***	-1.293***	-0.866***	-0.848***	-2.796***	-1.797***	-0.794***	-0.479**
	(-3.22)	(-3.18)	(-3.62)	(-3.41)	(-5.04)	(-3.06)	(-3.36)	(-39.20)	(-23.82)	(-3.21)	(-2.49)
number of observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.9. Regression results – Uncertainty Avoidance dimension (GLOBE)

	(10) Base model	(93) Ownership Concentration	(94) Rule of Law	(95) Common Legal Origin	(96) ex USA	(97) ex Crisis	(98) Outliers - Size	(99) Outliers - Cash Flow	(100) Outliers - CAPEX	(101) Cash Flow Volatility	(19) Interaction
L.CAPEXF_TA	0.00136	0.00139	0.00140	0.00133	0.00169	0.00132	0.00133	0.00413	0.00559**	0.00161	0.00309
	(0.20)	(0.21)	(0.21)	(0.20)	(0.27)	(0.18)	(0.20)	(1.34)	(2.01)	(0.22)	(0.69)
MV_BV_t1	0.00722	0.00691	0.00651	0.00812	0.00853	0.00952	0.00732	0.00345	-0.0151***	0.00722	0.00424
	(0.66)	(0.62)	(0.59)	(0.74)	(0.62)	(0.64)	(0.65)	(0.68)	(-3.31)	(0.66)	(0.58)
FCF_TA	-0.576	-0.471	-0.522	-0.674	1.948	-1.414	-0.546	-12.14***	-0.967	-0.574	-0.375
	(-0.23)	(-0.19)	(-0.21)	(-0.28)	(0.88)	(-0.44)	(-0.22)	(-12.43)	(-1.02)	(-0.23)	(-0.22)
L.Ln_TA	0.00262	0.00470	0.00457	0.00377	0.00261	0.00236	0.00407	-0.00984**	-0.0179***	0.00259	-0.00444
	(0.26)	(0.46)	(0.45)	(0.38)	(0.21)	(0.19)	(0.37)	(-2.16)	(-4.28)	(0.25)	(-0.53)
Leverage	0.195*	0.189*	0.189*	0.198**	0.289***	0.236*	0.187*	0.380***	0.533***	0.195*	0.237**
	(1.93)	(1.86)	(1.86)	(1.97)	(2.58)	(1.85)	(1.81)	(8.51)	(13.09)	(1.93)	(2.50)
DIV_FCF	0.000161	0.000173	0.000178	0.000149	0.0000270	0.000555	0.000261	0.000612	0.00145*	0.000158	0.0000565
	(0.08)	(0.09)	(0.09)	(0.07)	(0.02)	(0.25)	(0.13)	(0.68)	(1.80)	(0.08)	(0.06)
L.Cash_TA	0.127	0.134	0.136	0.128	0.0970	0.128	0.134	0.198***	0.131**	0.126	0.213**
	(0.99)	(1.04)	(1.06)	(1.01)	(0.77)	(0.81)	(1.02)	(3.36)	(2.52)	(0.98)	(2.45)
CF_Vol										-0.000349	
										(-0.08)	
UAIN	-0.00166	-0.00346	-0.0120	-0.0115	0.0325	-0.00905	-0.00194	-0.220***	-0.0260	-0.00157	0.0124
	(-0.03)	(-0.07)	(-0.23)	(-0.24)	(0.72)	(-0.15)	(-0.04)	(-11.06)	(-1.35)	(-0.03)	(0.47)
UAIN_FCF	0.358	0.332	0.344	0.383	-0.111	0.593	0.358	3.300***	0.933***	0.357	0.278
	(0.63)	(0.58)	(0.60)	(0.67)	(-0.22)	(0.80)	(0.63)	(14.54)	(4.26)	(0.63)	(0.94)
Size_FCF											0.0670
											(0.86)
Leverage_FCF											-0.850
											(-0.77)
DIVfcf_FCF											0.292
											(0.98)
Cash_FCF											-2.372***
											(-3.55)
Anti_FCF											-1.790**
											(-2.50)
Stock_FCF											0.000236
											(0.18)
Credit_FCF											0.00755***
											(3.01)
Log_GDP_Capita	-0.00431	-0.00518	-0.00223	-0.00779	-0.000626	-0.00382	-0.00447	-0.00738	0.0107*	-0.00428	0.00471
	(-0.29)	(-0.35)	(-0.14)	(-0.53)	(-0.04)	(-0.22)	(-0.30)	(-1.08)	(1.72)	(-0.29)	(0.47)
Credit_GDP	0.000130	0.0000877	0.000126	0.000148	0.000317**	0.000162	0.000117	0.0000905	0.000112*	0.000130	-0.000384*
	(0.93)	(0.58)	(0.90)	(1.06)	(2.14)	(0.99)	(0.82)	(1.40)	(1.92)	(0.93)	(-1.92)
Stock_mkt_GDP	0.0000375	0.0000102	0.00000478	0.0000537	-0.0000101	0.0000686	0.0000335	0.0000853**	0.0000335	0.0000376	0.00000625
	(0.46)	(0.15)	(0.07)	(0.72)	(-0.12)	(0.66)	(0.41)	(2.26)	(0.99)	(0.47)	(0.06)
Anti_Self_Dealing	-0.0331				-0.00398	-0.0425	-0.0305	-0.0627***	-0.0759***	-0.0332	0.0775
	(-0.83)				(-0.09)	(-0.87)	(-0.76)	(-3.43)	(-4.54)	(-0.83)	(1.40)
concentration		-0.0182									
		(-0.49)									
rule_law			-0.00984								
			(-0.58)								

common_legal				-0.0217							
				(-1.62)							
2.SIC2	-0.0364	-0.0253	-0.0276	-0.0372	-0.0216	-0.0535	-0.0357	-0.112**	-0.0884*	-0.0364	-0.0234
	(-0.32)	(-0.23)	(-0.25)	(-0.33)	(-0.17)	(-0.39)	(-0.32)	(-2.03)	(-1.90)	(-0.32)	(-0.31)
8.SIC2	-0.00522	0.00248	-0.0000186	-0.00822	-0.0313	-0.0374	-0.00343	-0.0573	-0.0565	-0.00527	-0.00647
	(-0.05)	(0.02)	(-0.00)	(-0.07)	(-0.26)	(-0.27)	(-0.03)	(-1.04)	(-1.20)	(-0.05)	(-0.09)
10.SIC2	0.000145	0.00194	0.00507	0.000326	-0.0111	-0.0197	-0.00447	-0.108**	-0.0702*	0.000150	0.0188
	(0.00)	(0.02)	(0.05)	(0.00)	(-0.11)	(-0.17)	(-0.05)	(-2.20)	(-1.73)	(0.00)	(0.29)
12.SIC2	0.0117	0.0217	0.0154	0.00778	-0.0244	-0.0145	0.0136	-0.171***	-0.142***	0.0117	0.0433
	(0.09)	(0.17)	(0.12)	(0.06)	(-0.17)	(-0.09)	(0.10)	(-2.71)	(-2.62)	(0.09)	(0.50)
13.SIC2	0.0270	0.0310	0.0324	0.0275	-0.00682	0.00939	0.0299	-0.0716	-0.129***	0.0270	0.0361
	(0.31)	(0.35)	(0.37)	(0.31)	(-0.07)	(0.09)	(0.34)	(-1.62)	(-3.55)	(0.31)	(0.61)
14.SIC2	-0.0189	-0.0131	-0.0109	-0.0238	-0.0464	-0.0259	-0.0175	-0.104*	-0.0614	-0.0190	-0.00472
	(-0.16)	(-0.11)	(-0.09)	(-0.20)	(-0.37)	(-0.18)	(-0.15)	(-1.81)	(-1.26)	(-0.16)	(-0.06)
15.SIC2	-0.0485	-0.0420	-0.0384	-0.0546	-0.0716	-0.0883	-0.0483	-0.0804	-0.0823*	-0.0485	-0.0367
	(-0.49)	(-0.43)	(-0.39)	(-0.56)	(-0.71)	(-0.74)	(-0.49)	(-1.63)	(-1.93)	(-0.49)	(-0.56)
16.SIC2	-0.0204	-0.0113	-0.0122	-0.0252	-0.0323	-0.0347	-0.0187	-0.100**	-0.0612	-0.0204	-0.00722
	(-0.21)	(-0.12)	(-0.13)	(-0.26)	(-0.31)	(-0.29)	(-0.19)	(-2.05)	(-1.47)	(-0.21)	(-0.11)
17.SIC2	-0.0137	-0.00640	-0.00731	-0.0126	-0.0250	-0.0262	-0.00492	-0.104*	-0.0406	-0.0136	-0.00551
	(-0.13)	(-0.06)	(-0.07)	(-0.12)	(-0.18)	(-0.20)	(-0.05)	(-1.96)	(-0.92)	(-0.13)	(-0.08)
20.SIC2	-0.0172	-0.00765	-0.00781	-0.0205	-0.0357	-0.0298	-0.0160	-0.112**	-0.0782**	-0.0172	-0.00579
	(-0.20)	(-0.09)	(-0.09)	(-0.24)	(-0.38)	(-0.28)	(-0.18)	(-2.53)	(-2.17)	(-0.20)	(-0.10)
22.SIC2	-0.0218	-0.0109	-0.00947	-0.0251	-0.0335	-0.0296	-0.0199	-0.0824*	-0.0793**	-0.0219	-0.0134
	(-0.25)	(-0.12)	(-0.11)	(-0.29)	(-0.35)	(-0.28)	(-0.22)	(-1.83)	(-2.15)	(-0.25)	(-0.23)
23.SIC2	-0.0203	-0.0119	-0.0145	-0.0214	-0.0242	-0.0295	-0.0188	-0.0968**	-0.0731*	-0.0203	-0.00965
	(-0.22)	(-0.13)	(-0.16)	(-0.23)	(-0.24)	(-0.26)	(-0.20)	(-2.07)	(-1.89)	(-0.22)	(-0.15)
24.SIC2	-0.0175	-0.0119	-0.0133	-0.0195	-0.0265	-0.0301	-0.0163	-0.0862*	-0.0704*	-0.0176	-0.0118
	(-0.18)	(-0.13)	(-0.14)	(-0.21)	(-0.26)	(-0.26)	(-0.17)	(-1.81)	(-1.78)	(-0.18)	(-0.19)
25.SIC2	-0.0314	-0.0246	-0.0251	-0.0333	-0.0313	-0.0410	-0.0299	-0.124***	-0.0764*	-0.0314	-0.0263
	(-0.33)	(-0.26)	(-0.27)	(-0.36)	(-0.30)	(-0.36)	(-0.32)	(-2.62)	(-1.95)	(-0.33)	(-0.42)
26.SIC2	-0.0152	-0.00552	-0.00590	-0.0210	-0.0321	-0.0285	-0.0136	-0.0925**	-0.0687*	-0.0152	-0.00737
	(-0.17)	(-0.06)	(-0.07)	(-0.24)	(-0.34)	(-0.27)	(-0.16)	(-2.08)	(-1.89)	(-0.17)	(-0.13)
27.SIC2	-0.0308	-0.0232	-0.0236	-0.0351	-0.0368	-0.0450	-0.0298	-0.115**	-0.0874**	-0.0309	-0.0193
	(-0.34)	(-0.26)	(-0.26)	(-0.39)	(-0.38)	(-0.42)	(-0.33)	(-2.54)	(-2.35)	(-0.34)	(-0.32)
28.SIC2	-0.0282	-0.0185	-0.0186	-0.0326	-0.0409	-0.0429	-0.0272	-0.119***	-0.0892**	-0.0282	-0.00998
	(-0.33)	(-0.22)	(-0.22)	(-0.38)	(-0.44)	(-0.41)	(-0.32)	(-2.72)	(-2.50)	(-0.33)	(-0.17)
29.SIC2	-0.00374	-0.00306	-0.00280	-0.00680	-0.0291	-0.0247	-0.00918	-0.0655	-0.00621	-0.00373	0.0141
	(-0.04)	(-0.03)	(-0.03)	(-0.07)	(-0.25)	(-0.21)	(-0.09)	(-1.34)	(-0.15)	(-0.04)	(0.21)
30.SIC2	-0.0122	-0.00245	-0.00321	-0.0174	-0.0229	-0.0308	-0.0106	-0.113**	-0.0784**	-0.0122	-0.000454
	(-0.14)	(-0.03)	(-0.04)	(-0.20)	(-0.24)	(-0.29)	(-0.12)	(-2.54)	(-2.15)	(-0.14)	(-0.01)
31.SIC2	-0.0229	-0.0213	-0.0179	-0.0179	-0.0506	-0.0353	-0.0217	-0.0863	-0.0985*	-0.0230	-0.0208
	(-0.16)	(-0.15)	(-0.12)	(-0.12)	(-0.36)	(-0.20)	(-0.15)	(-1.26)	(-1.65)	(-0.16)	(-0.22)
32.SIC2	-0.0228	-0.0126	-0.0144	-0.0276	-0.0444	-0.0379	-0.0221	-0.116***	-0.0907**	-0.0228	-0.0103
	(-0.26)	(-0.14)	(-0.17)	(-0.32)	(-0.48)	(-0.36)	(-0.25)	(-2.61)	(-2.50)	(-0.26)	(-0.18)
33.SIC2	-0.0224	-0.0138	-0.0143	-0.0274	-0.0327	-0.0304	-0.0218	-0.0979**	-0.0585	-0.0224	-0.00936
	(-0.26)	(-0.16)	(-0.17)	(-0.32)	(-0.35)	(-0.29)	(-0.25)	(-2.23)	(-1.63)	(-0.26)	(-0.16)
34.SIC2	-0.0199	-0.0106	-0.0109	-0.0253	-0.0353	-0.0304	-0.0186	-0.106**	-0.0739**	-0.0199	-0.00876
	(-0.23)	(-0.12)	(-0.13)	(-0.29)	(-0.37)	(-0.29)	(-0.21)	(-2.39)	(-2.03)	(-0.23)	(-0.15)
35.SIC2	0.0583	0.0678	0.0678	0.0544	0.0599	0.0619	0.0605	-0.115***	-0.0738**	0.0585	0.0476
	(0.66)	(0.78)	(0.78)	(0.62)	(0.63)	(0.58)	(0.69)	(-2.60)	(-2.05)	(0.67)	(0.81)
36.SIC2	-0.0318	-0.0234	-0.0228	-0.0348	-0.0351	-0.0453	-0.0303	-0.123***	-0.0891**	-0.0317	-0.0153
	(-0.37)	(-0.27)	(-0.27)	(-0.41)	(-0.38)	(-0.44)	(-0.35)	(-2.80)	(-2.50)	(-0.37)	(-0.27)
37.SIC2	-0.0139	-0.00536	-0.00513	-0.0204	-0.0373	-0.0306	-0.0126	-0.103**	-0.0712**	-0.0139	-0.00225
	(-0.16)	(-0.06)	(-0.06)	(-0.24)	(-0.41)	(-0.29)	(-0.15)	(-2.35)	(-2.00)	(-0.16)	(-0.04)

38.SIC2	-0.0302	-0.0197	-0.0203	-0.0316	-0.0319	-0.0472	-0.0263	-0.131***	-0.0915**	-0.0302	-0.0169
	(-0.33)	(-0.22)	(-0.22)	(-0.35)	(-0.31)	(-0.43)	(-0.29)	(-2.83)	(-2.40)	(-0.33)	(-0.28)
39.SIC2	-0.0488	-0.0394	-0.0399	-0.0490	-0.0556	-0.0691	-0.0478	-0.170***	-0.138***	-0.0488	-0.0321
	(-0.51)	(-0.41)	(-0.42)	(-0.52)	(-0.51)	(-0.60)	(-0.50)	(-3.53)	(-3.47)	(-0.51)	(-0.50)
40.SIC2	0.0430	0.0514	0.0431	0.0314	0.0316	-0.0274	0.0413	-0.0169	-0.0276	0.0431	0.0613
	(0.30)	(0.36)	(0.30)	(0.22)	(0.23)	(-0.16)	(0.29)	(-0.25)	(-0.45)	(0.30)	(0.64)
41.SIC2	0.0181	0.0288	0.0258	0.00861	-0.00161	0.00872	0.0205	-0.0779	-0.0543	0.0180	0.0181
	(0.18)	(0.28)	(0.25)	(0.08)	(-0.02)	(0.07)	(0.20)	(-1.52)	(-1.26)	(0.17)	(0.26)
42.SIC2	0.0161	0.0254	0.0258	0.0120	-0.0333	0.00366	0.0197	-0.0699	-0.0690*	0.0160	0.0222
	(0.18)	(0.29)	(0.29)	(0.13)	(-0.34)	(0.03)	(0.22)	(-1.55)	(-1.86)	(0.18)	(0.37)
44.SIC2	-0.00381	0.00474	0.00441	-0.00733	-0.0308	-0.0319	-0.00259	-0.119***	-0.118***	-0.00380	0.0183
	(-0.04)	(0.05)	(0.05)	(-0.08)	(-0.32)	(-0.29)	(-0.03)	(-2.61)	(-3.17)	(-0.04)	(0.30)
45.SIC2	-0.0129	-0.0113	-0.0115	-0.0179	-0.0474	-0.0373	-0.0145	-0.113**	-0.0808**	-0.0128	0.0127
	(-0.13)	(-0.12)	(-0.12)	(-0.18)	(-0.45)	(-0.31)	(-0.15)	(-2.31)	(-1.99)	(-0.13)	(0.19)
47.SIC2	0.0376	0.0441	0.0443	0.0323	-0.0441	0.0112	-0.00593	-0.0690	-0.105**	0.0376	0.0517
	(0.38)	(0.44)	(0.45)	(0.33)	(-0.41)	(0.09)	(-0.06)	(-1.40)	(-2.51)	(0.38)	(0.78)
48.SIC2	-0.0397	-0.0340	-0.0325	-0.0421	-0.0560	-0.0556	-0.0365	-0.152***	-0.135***	-0.0397	-0.0268
	(-0.45)	(-0.38)	(-0.37)	(-0.48)	(-0.59)	(-0.52)	(-0.41)	(-3.38)	(-3.66)	(-0.45)	(-0.45)
49.SIC2	-0.0313	-0.0245	-0.0239	-0.0351	-0.0661	-0.0543	-0.0308	-0.132***	-0.118***	-0.0313	-0.0194
	(-0.35)	(-0.28)	(-0.27)	(-0.40)	(-0.70)	(-0.51)	(-0.35)	(-2.96)	(-3.23)	(-0.35)	(-0.33)
50.SIC2	-0.0351	-0.0264	-0.0262	-0.0397	-0.0497	-0.0456	-0.0345	-0.131***	-0.0846**	-0.0351	-0.0179
	(-0.40)	(-0.31)	(-0.30)	(-0.46)	(-0.53)	(-0.44)	(-0.40)	(-2.96)	(-2.35)	(-0.40)	(-0.31)
51.SIC2	-0.0165	-0.00794	-0.00855	-0.0211	-0.0251	-0.0289	-0.0150	-0.0923**	-0.0506	-0.0165	-0.00586
	(-0.19)	(-0.09)	(-0.10)	(-0.24)	(-0.26)	(-0.27)	(-0.17)	(-2.06)	(-1.38)	(-0.19)	(-0.10)
52.SIC2	-0.0484	-0.0491	-0.0543	-0.0442	-0.0208	-0.183	-0.0726	-0.137	-0.347	-0.0477	-0.0582
	(-0.09)	(-0.09)	(-0.10)	(-0.08)	(-0.04)	(-0.23)	(-0.13)	(-0.55)	(-1.56)	(-0.09)	(-0.21)
53.SIC2	-0.0285	-0.0229	-0.0245	-0.0343	-0.0369	-0.0357	-0.0287	-0.0803	-0.0506	-0.0285	-0.0203
	(-0.29)	(-0.23)	(-0.25)	(-0.35)	(-0.33)	(-0.30)	(-0.29)	(-1.62)	(-1.22)	(-0.29)	(-0.30)
54.SIC2	-0.00952	-0.000107	-0.000281	-0.0166	-0.0209	-0.0241	-0.00792	-0.0994**	-0.0431	-0.00954	0.00112
	(-0.10)	(-0.00)	(-0.00)	(-0.18)	(-0.21)	(-0.21)	(-0.08)	(-2.10)	(-1.11)	(-0.10)	(0.02)
55.SIC2	-0.0189	-0.00976	-0.00905	-0.0259	-0.0322	-0.0324	-0.0180	-0.119**	-0.0686	-0.0189	-0.00124
	(-0.18)	(-0.09)	(-0.08)	(-0.24)	(-0.28)	(-0.25)	(-0.17)	(-2.24)	(-1.53)	(-0.18)	(-0.02)
56.SIC2	-0.0278	-0.0182	-0.0187	-0.0303	-0.0476	-0.0431	-0.0272	-0.126***	-0.104***	-0.0278	-0.0127
	(-0.30)	(-0.20)	(-0.21)	(-0.33)	(-0.46)	(-0.39)	(-0.30)	(-2.72)	(-2.73)	(-0.30)	(-0.21)
57.SIC2	-0.0457	-0.0389	-0.0379	-0.0469	-0.0885	-0.0598	-0.0450	-0.169***	-0.142***	-0.0457	-0.00793
	(-0.42)	(-0.36)	(-0.35)	(-0.43)	(-0.68)	(-0.45)	(-0.41)	(-3.13)	(-3.14)	(-0.42)	(-0.11)
58.SIC2	-0.0215	-0.0102	-0.0112	-0.0215	-0.0319	-0.0443	-0.0193	-0.136***	-0.145***	-0.0215	-0.0131
	(-0.22)	(-0.11)	(-0.12)	(-0.22)	(-0.29)	(-0.38)	(-0.20)	(-2.80)	(-3.62)	(-0.22)	(-0.20)
59.SIC2	-0.0290	-0.0225	-0.0218	-0.0330	-0.0457	-0.0454	-0.0283	-0.112**	-0.0931**	-0.0290	-0.0223
	(-0.31)	(-0.24)	(-0.24)	(-0.36)	(-0.46)	(-0.41)	(-0.31)	(-2.39)	(-2.42)	(-0.31)	(-0.36)
70.SIC2	-0.0200	-0.0144	-0.0143	-0.0202	-0.0505	-0.0461	-0.0184	-0.135***	-0.118***	-0.0200	-0.0122
	(-0.21)	(-0.15)	(-0.15)	(-0.21)	(-0.50)	(-0.40)	(-0.19)	(-2.84)	(-2.99)	(-0.21)	(-0.19)
72.SIC2	-0.0540	-0.0454	-0.0459	-0.0550	-0.0281	-0.0731	-0.0515	-0.165***	-0.162***	-0.0540	-0.0378
	(-0.45)	(-0.38)	(-0.38)	(-0.46)	(-0.16)	(-0.51)	(-0.43)	(-2.85)	(-3.26)	(-0.45)	(-0.47)
73.SIC2	-0.0443	-0.0353	-0.0349	-0.0467	-0.0755	-0.0633	-0.0425	-0.157***	-0.136***	-0.0442	-0.0233
	(-0.50)	(-0.40)	(-0.40)	(-0.53)	(-0.77)	(-0.59)	(-0.48)	(-3.51)	(-3.72)	(-0.50)	(-0.40)
75.SIC2	0.0104	0.0173	0.0189	0.00853	-0.0159	0.00158	0.0116	-0.0853	-0.0814*	0.0104	0.0250
	(0.09)	(0.15)	(0.17)	(0.08)	(-0.13)	(0.01)	(0.10)	(-1.54)	(-1.74)	(0.09)	(0.33)
76.SIC2	-0.0306	-0.0271	-0.0234	-0.0346	-0.0349	-0.0413	-0.0289	-0.118*	-0.0486	-0.0305	-0.0240
	(-0.21)	(-0.19)	(-0.16)	(-0.24)	(-0.25)	(-0.24)	(-0.20)	(-1.70)	(-0.81)	(-0.21)	(-0.25)
78.SIC2	-0.00612	0.00375	0.00655	-0.00825	-0.0611	-0.0328	-0.00868	-0.101*	-0.193***	-0.00622	0.000183
	(-0.05)	(0.03)	(0.06)	(-0.07)	(-0.52)	(-0.23)	(-0.07)	(-1.77)	(-4.07)	(-0.05)	(0.00)
79.SIC2	-0.0200	-0.0117	-0.0119	-0.0203	-0.0523	-0.0393	-0.0176	-0.123***	-0.139***	-0.0201	-0.0116
	(-0.21)	(-0.12)	(-0.13)	(-0.21)	(-0.49)	(-0.34)	(-0.18)	(-2.58)	(-3.51)	(-0.21)	(-0.18)

80.SIC2	-0.0365	-0.0283	-0.0289	-0.0349	-0.0273	-0.0571	-0.0290	-0.164***	-0.114***	-0.0366	-0.0162
	(-0.36)	(-0.28)	(-0.29)	(-0.35)	(-0.21)	(-0.47)	(-0.29)	(-3.30)	(-2.74)	(-0.36)	(-0.24)
82.SIC2	-0.0235	-0.0120	-0.0120	-0.0278	-0.0355	-0.0393	-0.0209	-0.109*	-0.0734	-0.0235	-0.0175
	(-0.20)	(-0.10)	(-0.10)	(-0.24)	(-0.28)	(-0.27)	(-0.18)	(-1.88)	(-1.47)	(-0.20)	(-0.22)
87.SIC2	-0.0366	-0.0285	-0.0287	-0.0399	-0.0470	-0.0545	-0.0355	-0.108**	-0.0734*	-0.0366	-0.0250
	(-0.39)	(-0.31)	(-0.31)	(-0.43)	(-0.46)	(-0.48)	(-0.38)	(-2.28)	(-1.89)	(-0.39)	(-0.40)
96.SIC2	-0.0549	-0.0451	-0.0454	-0.0639	-0.0704	-0.0652	-0.0551	-0.166*	-0.129*	-0.0548	-0.0311
	(-0.29)	(-0.24)	(-0.24)	(-0.34)	(-0.39)	(-0.29)	(-0.29)	(-1.87)	(-1.66)	(-0.29)	(-0.25)
2003.year	-0.00510	-0.00346	-0.00322	-0.00495	-0.00673	-0.00609	-0.00406	-0.0250***	-0.0338***	-0.00515	-0.00794
	(-0.24)	(-0.16)	(-0.15)	(-0.24)	(-0.30)	(-0.26)	(-0.19)	(-2.59)	(-3.88)	(-0.24)	(-0.58)
2004.year	0.000222	0.00186	0.00216	0.0000239	-0.000893	-0.00106	0.00155	-0.0132	-0.0146*	0.000179	-0.00214
	(0.01)	(0.09)	(0.11)	(0.00)	(-0.04)	(-0.05)	(0.08)	(-1.40)	(-1.72)	(0.01)	(-0.16)
2005.year	0.0386	0.0406*	0.0409*	0.0380*	0.0374	0.0333	0.0397*	-0.00797	-0.0157*	0.0386*	0.0261*
	(1.82)	(1.93)	(1.94)	(1.81)	(1.61)	(1.43)	(1.85)	(-0.84)	(-1.84)	(1.82)	(1.89)
2006.year	0.0107	0.0130	0.0132	0.0100	0.0107	0.00922	0.0112	-0.00520	0.0118	0.0107	0.0102
	(0.52)	(0.63)	(0.64)	(0.49)	(0.47)	(0.40)	(0.53)	(-0.54)	(1.36)	(0.51)	(0.75)
2007.year	0.00152	0.00394	0.00432	0.000552	0.00611	-0.00121	0.00254	-0.00994	-0.00278	0.00147	-0.000250
	(0.07)	(0.19)	(0.21)	(0.03)	(0.27)	(-0.05)	(0.12)	(-1.03)	(-0.32)	(0.07)	(-0.02)
2008.year	0.00127	0.00169	0.00200	0.00118	-0.00324		0.000946	-0.0150*	-0.0199**	0.00123	-0.000204
	(0.06)	(0.08)	(0.10)	(0.06)	(-0.15)		(0.05)	(-1.64)	(-2.43)	(0.06)	(-0.02)
2009.year	-0.0293	-0.0283	-0.0284	-0.0297	-0.0399*	-0.0334	-0.0304	-0.0663***	-0.0866***	-0.0294	-0.0323**
	(-1.43)	(-1.37)	(-1.38)	(-1.45)	(-1.83)	(-1.46)	(-1.46)	(-7.25)	(-10.54)	(-1.43)	(-2.39)
2010.year	-0.0118	-0.0108	-0.0105	-0.0121	-0.0141	-0.0128	-0.0121	-0.0236***	-0.0261***	-0.0118	-0.0143
	(-0.62)	(-0.56)	(-0.55)	(-0.64)	(-0.69)	(-0.62)	(-0.63)	(-2.67)	(-3.29)	(-0.62)	(-1.13)
_cons	0.000116	-0.0102	-0.000346	0.0598	-0.237	0.0235	-0.00822	1.084***	0.0416	-0.000209	-0.120
	(0.00)	(-0.03)	(-0.00)	(0.18)	(-0.79)	(0.06)	(-0.03)	(7.74)	(0.32)	(-0.00)	(-0.58)
number of observations	13059	13059	13059	13059	9639	10157	12816	12788	12802	13059	13059

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. The number of observations is lower for models applying GLOBE cultural dimensions than those applying Hofstede dimensions, as GLOBE scores were not available for Belgium, Chile, Norway, Peru, and the United Kingdom. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.

Table A.10. Regression results – All Hofstede dimensions simultaneously included

	(5) All Hofstede Basic	(20) All Hofstede Interaction
L.CAPEXF_TA	0.00466** (2.44)	0.00462** (2.33)
MV_BV_t1	0.0112*** (3.63)	0.0110*** (3.38)
FCF_TA	-2.197*** (-2.95)	-2.762*** (-3.09)
L.Ln_TA	-0.000654 (-0.23)	-0.00587* (-1.68)
Leverage	0.149*** (5.38)	0.141*** (3.46)
DIV_FCF	0.0000723 (0.23)	0.0000525 (0.18)
L.Cash_TA	0.0782** (2.34)	0.0891** (2.39)
MAS	-0.00224*** (-6.29)	-0.00161*** (-4.65)
UAI	-0.000259 (-1.06)	-0.000338 (-1.12)
PDI	0.000250 (0.60)	-0.000116 (-0.29)
IDV	0.000337 (0.86)	0.000533 (1.39)
LTO	-0.000490 (-1.53)	-0.000259 (-0.86)
IVR	-0.000473 (-1.26)	-0.000648 (-1.53)
MAS_FCF	0.0380*** (7.68)	0.0294*** (6.06)
UAI_FCF	0.00971*** (3.35)	0.0108*** (2.77)
PDI_FCF	-0.00436 (-0.70)	0.00229 (0.39)
IDV_FCF	-0.00926* (-1.72)	-0.0119** (-2.27)
LTO_FCF	0.00901** (2.19)	0.00554 (1.41)
IVR_FCF	0.00489 (0.90)	0.00780 (1.27)
Size_FCF		0.0618* (1.90)
Leverage_FCF		0.205 (0.44)
DIVfcf_FCF		0.182 (1.49)
Cash_FCF		-0.720** (-2.36)
Anti_FCF		-0.212 (-0.45)
Stock_FCF		-0.000248 (-0.33)
Credit_FCF		0.00517*** (3.64)
Log_GDP_Capita	-0.00185 (-0.56)	-0.00123 (-0.36)

Credit_GDP	0.0000830*	-0.000267**
	(1.73)	(-2.41)
Stock_mkt_GDP	-0.0000317	-0.00000266
	(-1.10)	(-0.04)
Anti_Self_Dealing	0.0134	0.0243
	(1.00)	(0.67)
2.SIC2	-0.00149	-0.00739
	(-0.05)	(-0.22)
8.SIC2	0.00765	0.00467
	(0.24)	(0.14)
10.SIC2	0.0278	0.0241
	(1.00)	(0.83)
12.SIC2	0.0469	0.0442
	(1.35)	(1.23)
13.SIC2	0.0848***	0.0698***
	(3.31)	(2.62)
14.SIC2	0.000840	-0.00564
	(0.02)	(-0.16)
15.SIC2	-0.0315	-0.0318
	(-1.12)	(-1.09)
16.SIC2	-0.000459	-0.00560
	(-0.02)	(-0.19)
17.SIC2	0.00113	-0.00283
	(0.04)	(-0.09)
20.SIC2	0.00387	-0.00149
	(0.16)	(-0.06)
22.SIC2	0.0000315	-0.00526
	(0.00)	(-0.20)
23.SIC2	-0.00855	-0.00854
	(-0.32)	(-0.30)
24.SIC2	0.00195	-0.00301
	(0.07)	(-0.11)
25.SIC2	-0.0152	-0.0207
	(-0.56)	(-0.74)
26.SIC2	-0.000607	-0.00459
	(-0.02)	(-0.18)
27.SIC2	-0.00242	-0.0103
	(-0.09)	(-0.38)
28.SIC2	-0.00311	-0.00820
	(-0.13)	(-0.32)
29.SIC2	0.0287	0.0265
	(1.02)	(0.91)
30.SIC2	0.00738	0.00267
	(0.29)	(0.10)
31.SIC2	-0.00989	-0.0128
	(-0.24)	(-0.30)
32.SIC2	0.00146	-0.00433
	(0.06)	(-0.17)
33.SIC2	-0.00594	-0.0102
	(-0.24)	(-0.39)
34.SIC2	-0.00417	-0.00988
	(-0.16)	(-0.38)
35.SIC2	0.0176	0.0158
	(0.69)	(0.60)
36.SIC2	-0.00748	-0.00966
	(-0.30)	(-0.38)
37.SIC2	-0.00768	-0.0107
	(-0.31)	(-0.41)
38.SIC2	-0.0115	-0.0161
	(-0.44)	(-0.59)

39.SIC2	-0.0199	-0.0239
	(-0.73)	(-0.84)
40.SIC2	0.0621	0.0572
	(1.50)	(1.32)
41.SIC2	0.0268	0.0191
	(0.91)	(0.63)
42.SIC2	0.0484*	0.0390
	(1.87)	(1.46)
44.SIC2	0.0311	0.0281
	(1.20)	(1.05)
45.SIC2	0.0219	0.0246
	(0.77)	(0.83)
47.SIC2	0.0374	0.0366
	(1.35)	(1.27)
48.SIC2	0.000122	-0.00842
	(0.00)	(-0.32)
49.SIC2	-0.0189	-0.0231
	(-0.74)	(-0.88)
50.SIC2	-0.00819	-0.0116
	(-0.33)	(-0.45)
51.SIC2	-0.000618	-0.00624
	(-0.02)	(-0.24)
52.SIC2	-0.0432	-0.0378
	(-0.74)	(-0.66)
53.SIC2	-0.00577	-0.00977
	(-0.20)	(-0.33)
54.SIC2	0.0155	0.00848
	(0.58)	(0.31)
55.SIC2	-0.000947	-0.00409
	(-0.03)	(-0.13)
56.SIC2	0.00479	0.000417
	(0.18)	(0.02)
57.SIC2	-0.00970	-0.00380
	(-0.31)	(-0.12)
58.SIC2	0.00696	-0.000491
	(0.25)	(-0.02)
59.SIC2	-0.00348	-0.0116
	(-0.13)	(-0.42)
70.SIC2	0.00449	-0.00178
	(0.16)	(-0.06)
72.SIC2	-0.00536	-0.0136
	(-0.17)	(-0.42)
73.SIC2	-0.0203	-0.0214
	(-0.80)	(-0.82)
75.SIC2	0.0514	0.0394
	(1.63)	(1.20)
76.SIC2	0.00401	-0.00578
	(0.10)	(-0.13)
78.SIC2	0.0188	0.0299
	(0.58)	(0.89)
79.SIC2	-0.00910	-0.0128
	(-0.33)	(-0.45)
80.SIC2	-0.0100	-0.0118
	(-0.35)	(-0.40)
82.SIC2	-0.0178	-0.0244
	(-0.52)	(-0.69)
87.SIC2	-0.0173	-0.0192
	(-0.65)	(-0.70)
96.SIC2	-0.0640	-0.0579
	(-1.19)	(-1.03)

2003.year	-0.00182	-0.00423
	(-0.32)	(-0.72)
2004.year	-0.00108	-0.00346
	(-0.19)	(-0.60)
2005.year	0.0156***	0.0125**
	(2.66)	(2.09)
2006.year	0.0113**	0.00810
	(1.99)	(1.38)
2007.year	0.00578	0.00132
	(1.01)	(0.22)
2008.year	0.00529	0.00128
	(0.98)	(0.23)
2009.year	-0.0198***	-0.0244***
	(-3.54)	(-4.19)
2010.year	-0.0136***	-0.0150***
	(-2.59)	(-2.73)
_cons	0.156**	0.194***
	(2.30)	(2.61)
number of observations	13815	13815

Each model is one-step system General Method of Moments (system GMM) dynamic panel data regression with capital expenditure divided by total assets as dependent variable. Israel was excluded from the sample as its IVR score was not available. ***,**, and * denote statistical significance at the 1%, 5%, and 10% respectively.