TMT national culture and banking profits during the 2008 global economic crisis
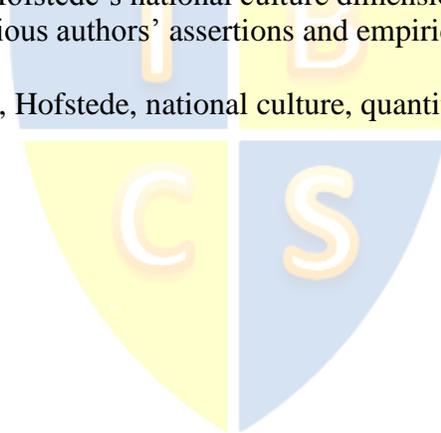
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ABSTRACT

This study examined the demographic characteristics of the 57 TMTs in the 2006 Fortune Global 500 banking sector relative to their companies' change in return-on-assets from 2007 through 2009. This population and time frame were chosen in order to investigate how global banking companies' TMTs positioned themselves prior to the recent economic meltdown and how they reacted to the ensuing crisis. The authors developed an integrated theoretical framework relating national culture to TMT intervening processes characterized by cooperation/competition. Changes in corporate profitability during this period were found to be significantly correlated with Hofstede's national culture dimensions of LTO (+), IDV (-), and MAS (-); thus validating previous authors' assertions and empirical evidence.

Keywords: TMT demography, Hofstede, national culture, quantitative analysis, upper echelons

INTRODUCTION

Frank, Hofstede, and Bond (1991) suggested that "we should view human values as serious business. Indeed, studies should be undertaken to determine whether organizations which differ in terms of these cultural characteristics also differ in economic performance" (p.172). The current authors have followed this recommendation. Although there has been an increase in cultural references within psychology journals (Triandis, 2004), attempts to directly and quantitatively measure TMT cultures and their relationship with business outcomes have resulted in few published studies (Geletkanycz, 1997; Dose & Klimoski, 1999; Barsade, Ward, Turner, & Sonnenfeld, 2000). The 2008 global financial crisis provided an opportunity to research international TMTs, working within the same industry, and facing a relatively common set of external economic conditions. This study's objective was to determine if international banking company TMTs' national culture characteristics were correlated to corporate profitability changes during the crisis. The authors have sought to widen a path for international TMT studies and encourage others to consider a similar approach.

The 2008 Global Economic Crisis

From 2005 through 2007, the world gross national product (GNP) grew at a robust rate, only to be met with a sharp downturn in the second half of 2007. From the third quarter of 2007 through the third quarter of 2008, the world GNP declined at a pace of between one and three percent. The decline was punctuated by enormous asset write-downs, bankruptcies, and government bailouts (Rakshit, 2009). In the fourth quarter of 2007 alone, the largest international banking institutions lost USD $382 billion (Norges Bank, 2008). Life was only sustained by trillions of dollars' worth of liquidity injections by government entities in the United States and European Union (Buzgalin & Kolganov, 2009).

For several years leading up to the summer of 2007, the world macroeconomic environment was marked by plentiful liquidity, accommodative interest rates, minimal losses on loans and securities, and an exuberant appetite for risk (Norges Bank, 2008). Widely asserted is that the ensuing financial contagion was caused by a collapse in the U.S. mortgage market and the use of complex financial securities and derivatives associated with U.S. mortgages (Rakshit, 2009). There was speculative mortgage lending to unqualified borrowers for overpriced housing assets in the hope that the assets would grow in value (Buzgalin & Kolganov, 2009).

This speculation was encouraged both by a relatively liaise-faire regulatory environment and globalization of the world's financial markets. Trading of financial instruments was allowed to occur across geographic and political boundaries interdependently. There was a rapid evolution in information processing and telecommunication that resulted in a proliferation of available financial information. The loan and securities markets became integrated and boundaries between real and synthetic financial assets became opaque. New methods of asset arbitrage catalyzed speculation to an unprecedented degree (Johnson, 2001). Financial assets became disconnected from physical assets. International private financial assets (bank deposits, stocks, private debt instruments) grew to be about $195 trillion USD in 2007 compared to the world GNP$_{2007}$ of $55 trillion USD. In comparison, international private financial assets in 1980 were about equal to world GNP$_{1980}$ ($12 trillion vs. $10 trillion USD respectively). This financial-physical incongruity was unprecedented and created a perilous situation (Buzgalin & Kolganov, 2009).

TMTs at the largest international banks attempted to reduce their mortgage exposure by collecting mortgages into portfolios and using these mortgage portfolios as collateral for the issuance of bonds and financial derivatives. Securitization of mortgages allowed banks to sell their mortgage portfolios to other banks, presumably spreading the risk into manageable pieces. Off-balance-sheet Special Purpose Vehicles (SPVs) and Special Investment Vehicles (SIVs) financed and refinanced the original mortgages through multiple series of re-packagings, re-collateralizations, and trades among financial institutions (Norges Bank, 2009). A large portion of inter-institutional trades crossed national borders.

As housing prices in the United States stalled, the major international banks that owned the mortgage-backed securities began to accumulate material losses, resulting in a cyclical downward spiral. As many of these banks were operating with minimum capital reserves, they needed to immediately rebalance their portfolios by reducing lending, raising equity, repaying debt, and selling assets. Banking TMTs became wary of each other's financial situations and would no longer participate in inter-banking trades beyond a minimum extent. Investors lost confidence and dramatically reduced their purchase of mortgage-backed securities and their exposure to bank equity instruments. Global banking companies were forced to bring SPV and SIV assets back onto their balance sheets, requiring them to raise still more capital. All of this resulted in a worldwide shortage of financial liquidity (Norges Bank, 2008).

Banking TMTs managed this situation in different ways. In some cases, there were failures and enormous equity losses. Conversely, some survived and even thrived despite the same global macroeconomic conditions. Did TMT national culture help to separate winners from losers?

LITERATURE REVIEW

One of the principle responsibilities of TMTs is to make strategic decisions for their respective corporations. A high quality, participative decision making process has been linked to effective corporate performance (Eisenhardt, 1989). A highly functioning, cohesive, and interactive team is an advantage to the CEO in the process of strategic decision making (Hambrick, 1995). Eisenhardt (1989) expressed that "data support the proposition that faster decision making is associated with better performance" (p. 567). Further, "There are recurring interaction patterns among executives that also profoundly influence strategic decision making and, ultimately, firm performance" (Eisenhardt, 1989, p. 573). Hambrick and Mason's (1984) seminal article emphasized that TMTs' operated as single "upper echelon" (p.193) entities and that TMTs' strategic decision making processes are related to their collective and observable demographic characteristics. They proposed that the measurement and analysis of combined TMT demographic inputs could yield reliable information about outputs such as corporate profitability. Others disagreed. Critics of demographic input-output methodologies have advocated for the use of intervening process variable measurement as a method for improving the explicatory value of demographic studies (Lawrence, 1997, Pettigrew, 2001). Pettigrew (1992) called the lack of understanding of intervening processes a "damning indictment" (p. 175) because, with demography,

> no one has ever been anywhere near a top team in an organizational setting, either
> to directly observe a team in action, or to interview the members about the links

between their characteristics and structure, processes of communication and decision making and their impact on performance (p. 175).

Hambrick and Mason (1984) noted that socio-economic background (with its associated beliefs and values) had not been used as a demographic variable in upper echelon studies because most corporate executives' backgrounds were similar – this was true at the time since most management research was directed toward and conducted by North Americans and was, therefore, quite parochial in nature (Adler, 1983). This gap was seen as research opportunity. The current authors' pre-supposition was that executives' values go much further than the classically used TMT demographic variables in providing explanation for TMT behaviors, decisions, and actions. Values are ingrained from the earliest stages of life and are carried forward despite different professional and personal experiences (Geletkanycz, 1997; Dose & Klimoski, 1999). Whitely and England (1977) related values to personality, behaviors, and actions. Values are socially and culturally related (Gharajedaghi, 2006; Lankau, Ward, Amason, Ng, Sonnenfeld, & Agle, 2007). Finally, classically-used demographic variables alone are not sufficient to describe TMT members' values (Dose & Klimoski, 1999). All of this said, direct measurement of TMT members' values has been quite limited (Geletkanycz, 1997) in TMT strategic management studies.

Executives develop limited views, make strategic choices, and take action based at least partially on the values and beliefs inherent in their national culture. Therefore, the strategic decision making process is inseparable from national cultural values (Schneider, 1989; Geletkanycz, 1997). Hofstede's (2001) national culture dimensions, developed using large matched data sets from the IBM company, provide a framework for measuring and explaining how TMT members may undertake the decision making process. While various researchers have expressed skepticism (Spector, Cooper, & Sparks, 2001; McSweeney, 2002; Orr & Hauser, 2008), Hofstede's work retains its shine across a multitude of studies. As of 1994, there were 61 replications of Hofstede's work that had been found in peer reviewed journals (Sondergaard, 1994). Hofstede wrote that there were "140 sources of data external to IBM that statistically validate the IBM indexes–studies that only in rare cases had been related to each other in the past" (Hofstede, 2001, p. 503).

It is generally accepted that Hofstede's national cultural dimensions have been repeatedly tested against reasonable standards for reliability and validity with passing results (Geletkanycz, 1997) and, therefore, serve as an academic standard for the measurement of culture across nations. Hofstede's cultural taxonomy has been viewed by researchers as one that has particular applicability to business settings (Hayton, George, & Zahra, 2002). In the current research, the authors used Hofstede's dimensions as a way to explain the influence of culture on international TMTs' strategic decision making. Using Hofstede's work in this way is not without significant precedent. In 1994, Sondergaard noted that there were at least 274 citations where the national culture dimensions were used as cross-cultural comparators without challenge or additional validation.

One of the key strengths in demographic studies is their ability to relate TMT characteristics directly to the objective financial performance measures over which they have the most control (Pfeffer, 1983; Cohen & Bailey, 1997). Since national culture is strongly connected to socioeconomic background and values (Whitely & England, 1977, 1980; Triandis, 1982), it was hypothesized that using national culture as an independent variable in TMT studies would be a logical extension of upper echelon theory. Hambrick (2001) endorsed using cross-cultural

lines of inquiry, but also warned about the criticism likely to be directed toward researchers that chose this path. The authors believed that enhancing the input variable set with information about executives' values would lead to more meaningful correlations with objective output measures.

THEORY

Well after the initial publication of the original "upper echelon" work, Hambrick (2007) noted that some TMTs did not function as consolidated, single entities as he first believed. In his post-1984 field research, he observed a lack of "behavioral integration" (p. 336) within some TMTs, evidenced by the formation of fragmented sub-groups between the CEO and certain other members, depending on the topic or decision to be taken. He also noted (citing Hambrick, 1998, Li & Hambrick, 2005, Lubatkin, Simsek, Ling, & Veiga, 2006), however, that, when TMTs were well integrated, organizational performance was superior. Incorporating Hambrick's more recent observations, the current authors constructed a theoretical framework relating national culture, intervening TMT processes, and organizational results.

Deutsch (2001) stated that characteristic social processes, broadly categorized as cooperative or competitive, are created by group members who possess a correlated set of values and beliefs. Reflexively, the social processes reinforce the group members' characteristics and vice-versa. So, if one understands the effects of cooperative and competitive processes, then one will have knowledge of the group members' values and behaviors that gave rise to these processes. According to Deutsch (2001), cooperation induces and is induced by beliefs and attitudes such as helpfulness, open communication, trust, friendliness, sensitivity, and an orientation toward enhancing mutual power rather than enhancing power differences. On the other hand, competitive environments increase the power differential between members, degrade communication, minimize value similarity, accentuate opposing interests, increase hostility and suspicion, and emphasize the gravity of conflicting issues. Johnson and Johnson (1989) showed empirically that achievement and productivity are higher in cooperative situations than in competitive or individualistic situations. In cooperative situations, there existed a higher level of strategic reasoning, more frequent generation of ideas and solutions, and a greater transfer of learning. So, in the business context, cooperative environments are hypothetically enablers of positive results, including favorable financial performance over time.

French's (1956) theoretical construct explained interpersonal relation patterns and their influences on small group processes. French related individual power, information sharing, and social relationships to group outcomes based on three relationship patterns: (a) power relations among the group members, (b) communication networks and patterns of interaction among the group members, and (c) evolution and strength of group members' opinions as compared to those of other group members. French's construct demonstrated that consensus and decisions are reached more effectively and in shorter amounts of time when communication networks are well established and power is shared without hierarchy. The reliability of the networked relationships is determined by the overall cohesiveness of the group.

Following the logic of Deutsch (2001), high levels of friendly behavior, collaboration, communication, cohesion, along with low levels of power distance, competitiveness, and aggressiveness are not only the characteristics of a cooperative work environment, but are also characteristic of the people who create and comprise it. Applying French's (1956) theory, the characteristics shown in Figure 1 (Appendix) to be associated with cooperative and competitive

environments drive very different approaches to power sharing, hierarchal structures, decision making, and communication within an organization. In a relatively cooperative environment, influence/communication vectors are bidirectional and the communication networks more matrixed with a relatively higher percentage of direct communication. TMTs are likely to benefit from a cooperative shared power structure with low hierarchy, bi-directional communication, fast decision making, and high consensus around final decisions. It was reasoned that relatively cooperative TMT environments are similar to those described by Hambrick (2007) as being well integrated, and that these environments would have produced correspondingly positive changes in profitability during the 2008 crisis.

HYPOTHESES

French (1956), Deutsch (2001), and Hambrick (2007), when viewed as a whole, theoretically and empirically highlighted the importance of TMT intervening social processes. Therefore, understanding intervening processes is, no doubt, beneficial. As such, the current authors decided to use upper echelon theory, combined with small group social science theory, to build hypotheses relating national culture to change in corporate profitability during the financial crisis. This study used a "black box" (Lawrence, 1987, p.2) approach, necessitated by the constraints imposed via a backward-looking investigation. Quite simply, working with the data that were available retrospectively, only TMT inputs and outputs could be directly measured. This approach will almost certainly be criticized for not directly measuring TMT intervening processes. The authors accept this criticism as a consequence of moving forward and calling attention to the importance of national culture in demographic TMT studies. The authors hypothesized that TMT national culture would be related to corporate profitability using the model shown in Figure 2 (Appendix) and explained below.

Power Distance

Low power distance has been related to willingness to question authority, independence of thought processes (Hofstede, 1984), consultative decision making, and an open sharing of information (Hofstede, 2001). These are characteristics of cooperative environments where fast decisions are made with high consensus. According to the above integrated theory, cooperative environments should have led to positive changes in profitability during the crisis.

Hypothesis 1: Power Distance Index (PDI) was negatively related to the change in global banking profit as a percentage of assets between 2007 and 2009.

Uncertainty Avoidance

Executives from high UAI cultures will tend to experiment and innovate only within established rules and regulations, will be involved in both operations and strategy, and will make decisions based on cooperative fact-based debate (Hofstede, 2001). The current authors have hypothesized that careful TMT deliberation, fact-based risk-taking, and respect for rules, principles, and precedent should have led to higher profitability during the crisis.

Hypothesis 2: Uncertainty Avoidance Index (UAI) was positively related to the change in global banking profit as a percentage of assets between 2007 and 2009.

Individualism

People from high IDV cultures tend not to have emotional commitments to their groups, tend to perform best as individuals, and tend to believe in individual decisions as opposed to group decisions. Low IDV cultures have a high value for personal trust and close relationships (Hofstede, 1984), and believe that organizational success comes about as a result of information sharing, self-commitment, strong co-worker alliances, and collective decision making (Hofstede, 2001). These characteristics are embodied in the cooperative work environments that are hypothesized to lead toward robust strategic decision making within TMTs.

Hypothesis 3: Individualism (IDV) was negatively related to the change in global banking profit as a percentage of assets between 2007 and 2009.

Masculinity

Relatively high MAS cultures are competitive in nature. People from masculine cultures possess a desire for high personal earnings, a high amount of individual recognition, the opportunity for career advancement, and the opportunity to take on challenging tasks. People from relatively feminine cultures seek to have a very good working relationship with their manager, a highly cooperative working environment, and the resolution of conflict through compromise and negotiation (Hofstede, 2001). The current authors hypothesized that relatively feminine characteristics are embodied in cooperative work environments and that cooperation (not competition) among TMT members will produce more highly profitable strategies.

Hypothesis 4: Masculinity (MAS) was negatively related to the change in global banking profit as a percentage of assets between 2007 and 2009.

Long-Term Orientation

LTO, with its roots in Confucian Dynamism, is culturally linked to the belief that social and economic activities are based on cooperation and mutual support, not competition and survival of the fittest (Yan & Sorenson, 2004). Long-term orientation is identified with national cultures that tend to favor perseverance, thrift, conservative investments, market and relationship building, and a strategic view. Short-term orientation cultures tend to favor a high value for the past and present, immediate gratification, respect for tradition, fulfillment of social obligations, and the preservation of face (Hofstede, 2001). Assuming that avoiding excessive financial damage during the crisis required a long-range strategic view based in thrift and conservatism with less emphasis on short-term trends, the current authors hypothesized that those TMTs with an overall long-term orientation will have generated higher profitability during the crisis. Since relatively high LTO cultures also favor cooperation, TMT interactions are hypothesized to be more productive as LTO scores increase.

Hypothesis 5: Long-Term Orientation (LTO) was positively related to the change in global banking profit as a percentage of assets between 2007 and 2009.

METHODOLOGY

The banking industry was at the heart of the financial crisis (Rakshit, 2009); which became visible in the summer of 2007 with precipitating events taking place in the preceding few years (Rao, 2009). It was decided to use banking TMTs that were incumbent during the year 2006 as the study population. These TMTs had significant influence on how they positioned their companies in the years preceding 2007 and were, therefore, likely responsible for financial outcomes from 2007 through 2009. A population of the largest revenue-generating firms from the banking sector was chosen as opposed to selecting another market segment of the banking industry. The rationale was that the largest firms were those most likely to be involved in trading activities that spanned continental boundaries; therefore, global economic conditions were most likely to have affected them in similar ways, independent of their home countries. The authors extracted a list of TMT members directly from the Fortune Global 500 database; the generic TMT members' functional titles were: CEO, CFO, Human Resources, Technology, Communications, Marketing, Legal, and Business Development.

Demographic data were gathered from primary sources including company press releases, company web sites, news articles, regulatory filings, and third party websites. TMT job titles were somewhat different across companies. Consistent with other demographic input-output studies, it was not possible to determine exactly the functional responsibilities of each of the TMT members, nor was it possible to determine their interaction patterns. Most TMT member data included in the study were stated objectively and clearly in the primary source documents. At certain times, however, the authors found it necessary to triangulate information from several sources in order to arrive at a data point. If no reasonably certain triangulation was possible, the data fields were left blank. Overall, an 80 percent individual TMT member data inclusion rate (SD = 16%) was achieved by searching publicly available data.

Dependent and Control Variables

The dependent variable used in the study was the percent change in profit as a percentage of assets from 2007 through 2009. Profit as a percentage of assets (PPA) was calculated as follows in Equation 1. PPA is provided as a calculated variable in the Fortune Global 500 database.

$$\text{PPA} = \frac{\text{Profit}}{\text{Assets}} * 100 \qquad (1)$$

Further, percent change in PPA was calculated for the purposes on the current study as shown in Equation 2 below.

$$\%\Delta\text{PPA}_{\text{F-I}} = \frac{(\text{PPA}_F - \text{PPA}_I)}{|\text{PPA}_I|} * 100 \qquad (2)$$

Prior profitability has been shown to be related to TMT communication, conflict, risk-taking, and decision making (Amason & Mooney, 1999) and was presumed to explain some of the expected variance in the dependent variable. The percent change in PPA for the years 2004 through 2006 (%ΔPPA $_{2004-2006}$) was used as the control variable and was assumed to have a relationship with later changes in our dependent variable, percent change in PPA from 2007 through 2009 (%ΔPPA $_{2007-2009}$).   The data for the dependent and control variables were gathered from the 2004 Fortune Global 500 database, the 2006 Fortune Global 500 database and the Fortune commercial website (years 2007 and 2009). There were four name changes and two legal entity changes over the period extending from 2004 through 2009. For name changes, the data were examined to ensure consistency. When banks were purchased, consolidated, or dropped from the Fortune database, audited financials were used from the most relevant corresponding time period.

It is noted here that the dependent and control variables are difference scores. Difference scores are often not used in social science research because pretest and posttest components of the difference scores are frequently unreliable, and/or significantly correlated (Edwards, 1994). Since the difference scores for change in profitability over the two time periods were objectively calculated from audited financial statements, the question of reliability was not at issue. The use of difference scores in the current study is consistent with their prominent use in industrial and agricultural research (Dimitrov & Rumrill, 2003). In the case of the dependent variable, %ΔPPA $_{2007-2009}$, there was no significant correlation found between PPA_{2007} and PPA_{2009} ($r = .243$, $p = .069$); nor was there a significant correlation between PPA_{2007} and %ΔPPA $_{2007-2009}$ ($r = .164$, $p = .223$). Therefore, the issue of relatedness between the difference score components is not of concern in the study.

Job-Related Demographic Heterogeneity Variables

Demographic heterogeneity variables were collected for the 57 banks listed in the 2006 Fortune Global 500 Index. There is evidence that demographic heterogeneity variables were significantly related to both TMT intervening processes (Wiersema & Bantel, 1992; Watson, Kumar, & Michaelsen, 1993; Smith, Smith, Sims Jr., O'Bannon, Scully, & Olian, 1994; Pelled, Eisenhardt, & Xin, 1999) and financial outcomes (Smith et al., 1994; Certo et al., 2006). In particular, Smith et al. (1994) provided evidence that demographic heterogeneity variables (professional experience and education) contributed significant explanatory value when related to return-on-investment, and Certo et al. (2006) showed meta-analytically that functional and positional tenure heterogeneity were significantly related to return-on-assets. Pelled (1996) recommended using visible and job-related variables in demographic studies. With this as a basis, the current authors used TMT tenure heterogeneity, company tenure heterogeneity, years of education heterogeneity, education specialization heterogeneity, and functional heterogeneity as independent variables.

National Culture Variables

Knowing TMT members' country of birth enabled the determination of numerical values for national culture variables using Hofstede (2001, pp. 500-502) and supplemental data from other studies. Importantly, Hofstede (2001) described the problem of "ecological fallacy" (p.16) as applying mean attribute scores from a country-level analysis to all individuals from that

country. Within-country variability leads to error when assigning country-level mean attribute scores to individuals from that country. It is acknowledged that ecological fallacy may have contributed error to the current study, since TMT members may have varied somewhat from their mean national culture values. Schaffer and Riordan (2003) recommended characterization of culture differences within a country grouping prior to the application of Hofstede's dimensions. While this may have merit in some designs, it was not possible with the current retrospective demographic study, and the authors followed precedent (Jackofsky, Slocum Jr, & McQuaid, 1988; Geletkanycz, 1997) in assigning cultural dimensions to individual executives based on nationality alone. Lastly, it is acknowledged that there are numerous cultural characterization frameworks available to researchers. Selecting a single set of cultural dimensions will no doubt subject the current methodology to what Hambrick (2001) calls "attacks from those who claim to abhor cultural oversimplification and characterization" (p.44).

DATA ANALYSIS

TMT Tenure and Composition

The mean 2006 TMT tenure was 4.5 years (SD = 2.5) and no statistically significant relationship was found between TMT tenure and the dependent variable, $\%\Delta PPA_{(2007-2009)}$ ($r = .147$; $p = .274$). Therefore, 2006 TMTs were in-place long enough to be held accountable, and the variation in their tenures was not influential on $\%\Delta PPA_{2007-2009}$. The current study's Cultural Heterogeneity Index measured national culture dispersion to be quite low within each TMT. Most of the TMTs were comprised of executives with nationalities that coincided with the banks' headquarters locations. No significant relationship was found between the Cultural Heterogeneity Index and $\%\Delta PPA_{(2007-2009)}$ ($r = .108$; $p = .423$). Two additional indices, the Demographic Heterogeneity Index and the Hofstede Cultural Index, were constructed from the individual independent demographic and national culture variables for the purpose of decreasing the number of independent variables and improving the statistical power of the study. The equations and characteristics of all three indices are found in Tables 1 and 2 (Appendix).

Consolidated Company Data Descriptive Statistics

Individual level descriptive statistics are displayed in Table 2 (Appendix). The individual national culture variables represent the mean values, calculated across each company, as determined by each TMT member's country of birth. The Demographic Heterogeneity and Hofstede Cultural indices were approximately normally distributed with similar variability and ranges, making them suitable for regression analyses.

Variable Correlations

Using SPSS, the authors calculated the control variable and independent variable correlations (Table 3, Appendix). There were several significant inter-correlations which are noted in the table and they are discussed later in this article. The dependent variable was found to be approximately normally distributed with a coefficient-of-variation = 1.78; thus, it met the requirements for linear regression. Table 4 (Appendix) contains Pearson's correlation

coefficients and probabilities for the independent variables as they are related to %ΔPPA (2007-2009).

In order to test the supposition that national culture provided additional information about the banks' change in profitability between the years 2007 and 2009 over and above that provided by classic demographic heterogeneity analysis, regression was performed in SPSS using three steps. The results are shown in Table 5 (Appendix). Since it did not show a significant relationship with the dependent variable (as indicated by Sig. F-change = 0.160), the Demographic Heterogeneity Index was eliminated in the model which is summarized in Table 6 (Appendix). Since the control variable did not contribute to the explanation of the dependent variable, it was eliminated as well.

Understanding the empirical importance of national culture effects from the above stepwise regression analysis, MAS, LTO, PDI, and IDV were used as independent variables to develop regression equations in order to explain the behavior of the dependent variable %ΔPPA (2007-2009) (UAI was not significantly correlated to %ΔPPA (2007-2009) and was therefore eliminated). However, the model using these four variables showed significant collinearity in the tolerance statistics for PDI and IDV (tolerances of .391 and .167 respectively as compared to a model limit of $\geq$ .651) in that they were found to be strongly and significantly inter-correlated with LTO. This finding of inter-correlation required that variable(s) be eliminated from the model. Since LTO and MAS were statistically significant ($p = 0.001$ and $p = .017$ respectively), and not inter-correlated, they were retained in the model summarized in Table 7 (Appendix). The result was a parsimonious model that explained a large proportion of the variation in the dependent variable with $p < .001$ and a large effect size. Further, the coefficients for LTO (3.5) and MAS (- 3.9) directionally match the integrated theory derived from French (1956) and Deutsch (2001). All model diagnostics for collinearity were shown to be satisfactory. A plot of the model residuals showed an approximately normal distribution.

The finding of a correlation between demographic heterogeneity and national culture was an unanticipated, yet significant, outcome of the study. Since this relationship requires significant discussion beyond the current scope and context, it is the subject of a separate article (Gerecke & House, 2012, in press).

DISCUSSION

Independent Variable Inter-correlations

The inter-correlations among the national cultural variables highlighted some relationships previously found by Hofstede. The significantly negative linear relationships between LTO and IDV have been noted in other empirical studies ($r = -0.61$, $p = 0.05$; as discussed in Hofstede (2001, p. 356)) and is confirmed by this study's findings ($r = - 0.902$, $p < 0.001$). Regarding PDI and IDV, Hofstede (2001, p. 216) reports that these two dimensions are correlated across 53 countries and regions ($r = - 0.68$, $p = 0.001$) as compared to our current study where $r = - 0.756$, $p < 0.001$. Hofstede also noted that PDI and IDV loaded on the same factor, with opposite signs, in his analysis of the IBM data.

National Culture and Profitability

Importantly, the Hofstede Cultural Index provided significantly more explanatory value than the Demographic Heterogeneity Index when related to %Δ PPA $_{(2007-2009)}$. The relationship between national culture and change in return-on-assets was predicted in the study's hypotheses, based on the aforementioned integrated theory of social behavior. Refining the national culture ⇔ business results relationship further, regression analysis using LTO and MAS was found to predict 27 percent of the variability of return-on-assets change with a large effect size (R = .540) and significant probability level (p< .001). The fact that LTO and MAS were shown to be significant predictors of profitability has a basis in the empirical findings of Hofstede and others as explained below.

LTO addresses both how individuals relate to others and also how they relate to their environment. High LTO cultures favor cooperation and mutual support within themselves, not competition and survival of the fittest. It was reasoned that the highly cooperative TMTs produced a higher level of profitability due to superior interactions, strategy, and decision making before and during the crisis. It is logical that LTO was positively correlated with corporate profitability, given its relationship with TMT cooperation and strategic decision making.

In terms of how high LTO cultures manage themselves within the external economic environment, Hofstede (2001, p. 358) cited several empirical studies. LTO has been negatively and strongly related (r = - 0.51, p = 0.05) to leisure time importance, emphasizing the value of hard work and diligence. LTO has been positively and strongly correlated to both thrift (r = 0.70, p = 0.01) and marginal propensity to save (r = 0.58, p = 0.01) in separate empirical studies. Investing in high LTO cultures tends to be conservative. Investments in mutual funds (considered risky) was negatively correlated to LTO (rho = - 0.66, p = 0.01), whereas investment in real estate (considered less risky) was positively correlated to LTO (rho = 0.43) although the correlation was only marginally significant with p = 0.054.

Long-Term-Orientation data were not available for all cultures represented by the TMT members used in this study. In these cases, the authors chose to use mean substitution for LTO. With this stipulation, LTO alone was found to explain 17 percent of the variance in the dependent variable, %ΔPPA $_{(2007-2009)}$, with r = .427 and p = .001. Thus, hypothesis five was supported in this study. This significant relationship between long-term orientation and profitability was further validated by an examination of the relationship between long-term orientation and the control variable. Approximately 19% of the variance in the control, %ΔPPA $_{(2004-2006)}$, was explained by the TMTs' collective LTO; LTO was positively related to %ΔPPA $_{(2004-2006)}$ with r = .449 and p < .001. Therefore, this relationship existed immediately before and during the crisis, even though there was no significant correlation found between the control variable and the dependent variable (r = .053, p = .696).

A statistical outlier analysis relative to %ΔPPA $_{(2007-2009)}$ revealed one high-side outlier (Agricultural Bank of China, TMT LTO = 118) and three low-side outliers (Bayerische Landesbank, TMT LTO = 31; Wachovia Corporation, TMT LTO = 29; and Washington Mutual, TMT LTO = 29) relative to %ΔPPA $_{(2007-2009)}$. The extremes of the culture ⇔ profit relationship found in the current study were strongly influenced by LTO in general and by the Chinese and U.S. banks most prevalently. This relationship is shown in Figure 3 (Appendix). The finding of a significant positive relationship between LTO and change in return-on-assets is consistent with

the broader study of multinational GNP growth by Hofstede and Bond (1988) in which they predicted China's economic dominance well before it was foreseen as being likely.

The integrated theory of French (1956) and Deutsch (2001) requires that a high level of cooperation and helpfulness be present in the workplace social structure in order to drive effective decision making, strong communication, high cohesion, high trust, as well as effective conflict resolution and problem solving. The MAS dimension speaks directly to the theoretical relationship between social environments and their resultant processes of communication, power, and decision making. Using this study's theoretical construct, low MAS favorably affected the social interactions within the TMTs studied. According to Hofstede (2001, p. 318) cultures relatively low on the MAS dimension tend to focus on the building of social relationships, all the while helping others to be successful. Low MAS cultures believe in the resolution of problems through compromise and negotiation. Conversely, in high MAS cultures, individuals place relative importance on personal victories, even at the expense of others. Characteristically, high MAS cultures will fight "until the best man wins" (Hofstede, 2001, p. 318). Favorable TMT interactions were hypothesized to yield favorable profit trends, and this was supported by our data. Hypothesis four was supported by the data.

Individualism was found to be negatively correlated to change in profitability during the crisis. This was the expected result, based on the fact that high individualism is marked by lack of identification with colleagues, lack of loyalty, lack of collaboration, the withholding of information, and lack of commitment (Hofstede, 2001, p.244). Using the study's construct, high IDV was theoretically related with relatively poor TMT interactions and decisions; and therefore, relatively unfavorable emergent change in profitability. Hypothesis three was supported.

The time frame and industry chosen for the study were intended to highlight the importance of UAI. It was hypothesized that low UAI cultures would tend to favor investment in risky assets with relatively less diligence; Conversely, TMTs from high UAI cultures would spend more time on fact-based strategic planning and execution, thus bypassing the apparent short-term gains from riskier investments. Nonetheless, UAI was not shown to be significant in the study for the prediction of the banking companies' profitability. Hypothesis two was not supported. These findings are somewhat congruent to those of Hsu and Huang (2011), who noted no significant relationship between risk propensity and strategic decision quality within TMTs.

It was predicted that PDI would correlate negatively to corporate profit trends in light of the French/Deutsch theoretical framework, since high organizational hierarchy and extremely formal role definition and communication mechanisms were thought to be counter-indicated for effective TMT interaction processes. The opposite was, in fact, supported by the data: in contrast to hypothesis one, high PDI was shown to be significantly and positively correlated to corporate profit. Smith, Houghton, Hood, and Ryman (2006) also found a positive relationship between uneven TMT power distribution and corporate performance; thus, the current unexpected results supported their findings.

Limitations and Sources of Error in the Study

There were several limitations and error sources inherent in the current methodology. (a) The analyses performed were limited by the use of a non-random population within a particular segment of a particular industry and potentially cannot be generalized. (b) One premise of regression analysis is that the TMTs behave independently of each other. TMTs within a single industry are known to collaborate and share information and perspectives. Therefore, it is

possible that TMTs did influence each other over the timeframe of this study, violating the assumption of independence. (c) It was not possible to completely isolate the variables included in the independent variable data set from the countless other variables affected by the companies' internal and external environments and emergent financial results. (d) Most importantly, the authors did not measure intervening process directly, and only have the theoretical framework to underpin the conclusions.

Foreshadowing of this Study's Results

Hofstede (2009) asserted that the economic crisis of 2008 resulted "because important players, especially bankers in the USA, in pursuing their business goals, acted like sorcerers' apprentices. They unleashed forces they could not control, which in a matter of months upset virtually the entire global economy" (p.481). This was a remarkably bold, but ultimately supportable statement, given the results of the current study. In 1998, before anyone could have envisioned the crisis, Hofstede and his colleagues gathered data pertaining to business goals using a population of 1814 part-time MBA students from 16 international universities, divided into 21 groups based on national origin (Hofstede, Van Deusen, Mueller, Charles, & Business Goals Network, 2002). They analyzed the MBA students' responses to survey items as they related to what typical business leaders consider as priorities in their home countries (the typical business "tycoon" (p.791) to use their phraseology). The priorities were then standardized to reduce response bias across the national groups and to normalize for the overall attractiveness of the business goals, given the population (Hofstede et al., 2002, p.784). Hofstede then factor analyzed the database and found five almost equally strong factors that explained 78 percent of the variance in the data (2002, p.482). Correlating the national culture dimensions for those MBA students corresponding to each of the five factors, Hofstede et al. (2002, p.799) found that IDV was negatively related to the unimportance of "profits 10 years from now". LTO was positively correlated to the importance of "Profits 10 years from now" and the unimportance of "This year's profits". All correlations were significant at either $p = .05$ or $p = .01$ levels.

Hofstede, Hofstede, and Minkov (2010) stated that "the 2008 financial crisis could have been predicted from our 1998 business goals study" (p.326). Furthermore, they stated that it was the national culture of the U.S. ("strong individualism, masculinity, and short-term orientation" (p.326)), combined with the financial influence and economic dominance of the USA, that pushed the global economy to the brink. The current study's data clearly support Hofstede and his colleagues (2002, 2010). Since the study showed that change in profitability during the crisis was positively related to LTO ($r = .427$, $p = .001$) and negatively related to IDV ($r = -.328$, $p = .013$) and MAS ($r = -.316$, $p = .017$), it has effectively validated their statements. Combining the current work with the earlier work of Hofstede and his colleagues, consistent relationships have been demonstrated between national culture and profitability using different populations, different time intervals, different theoretical bases, and different methodological approaches and frameworks. The national "tycoon" values discovered and correlated to national culture by Hofstede (2004, 2009, 2010) and his colleagues in their 1998 survey of MBA students played out in the real-life actions of the international banking company tycoons featured in the current study.

IMPLICATIONS FOR THEORY AND PRACTICE

The inherent power and reliability of Hofstede's cultural dimensions was harnessed to provide insight into TMT attitudes, values, and social processes as they related to corporate profit change during the recent global economic crisis. From a practical perspective, the understanding of how to adopt and apply the concepts and idealisms found in long-term-orientation and femininity may be helpful for leaders who seek to develop a competitive edge in the marketplace, even in the absence of acute macroeconomic events. The values of thrift, conservatism, relationship building, long-term market cultivation, and careful synthesis of environmental information can be pragmatically applied as approaches for managing and gaining a competitive advantage. In the current study, these collective values were associated with banking company TMTs that avoided an otherwise global contagion and even improved their corporate financial results. The collective attributes of cooperation, helpfulness, compromise, negotiation, and teamwork are likely contributors to higher levels of TMT integration, according to the theory presented in this study. Relatively higher TMT integration levels have been shown to drive more effective strategic decisions and stronger overall performance. The above principles can be instilled into TMTs to the advantage of CEOs and organizations that purposefully and deliberately choose to do so.

Large banks are the central nervous system of the global economy. From an academic research perspective, the current study used data from the international banking industry to support the prediction by Hofstede and Bond (1988) that the cultural characteristics of China would enable it to emerge as a powerful economic national force. Chinese banks did relatively well during the 2007-2009 crisis and this study has shown that the collective national culture of their TMTs was related to their success. Although derived from a separate and distinct hypothetical framework, the current study validated Hofstede et al. (2010) in their contention that the global economic crisis could have been predicted based on the cultural characteristics of the United States, given the dominance of the U.S. in the global economic landscape.

CONCLUSIONS

It was found that the elements, as defined by Hofstede (2001), of national culture had significant explanatory value for the change in profitability across the 2006 Fortune Global 500 banking sector. Importantly, TMT national culture provided significantly more explanation about the variability of profit change than did TMT demographic heterogeneity or past company performance. The national culture ⇔ profit change correlation provided evidence that the TMT executives' values and beliefs were associated with their collective strategic decision making capabilities and overall integration levels during the 2008 financial crisis, as was hypothesized. The collective national cultures of TMTs were at the root of the banking crisis. Further, the current data and analysis provided support of work from a decade earlier that related national culture to national tycoons' business priorities. Overall, banks with TMTs having national cultures characterized by high LTO, low IDV, and low MAS, showed the ability to survive and even thrive on a relative basis during the 2008 global economic crisis. Not by chance, these particular cultural characteristics are incongruent with the cultural characteristics found in TMTs running the United States banks, where the contagion largely began.

These results are considered to be important, in that they support the use of national culture variables in demographic TMT research. National culture variables provide rich

information about the most powerful actors in the world of business – those that largely control the future of corporations and economies. The current authors believe that this information has high value to those that study strategic management behavior and results.

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APPENDIX

Tables and Figures used in the Article

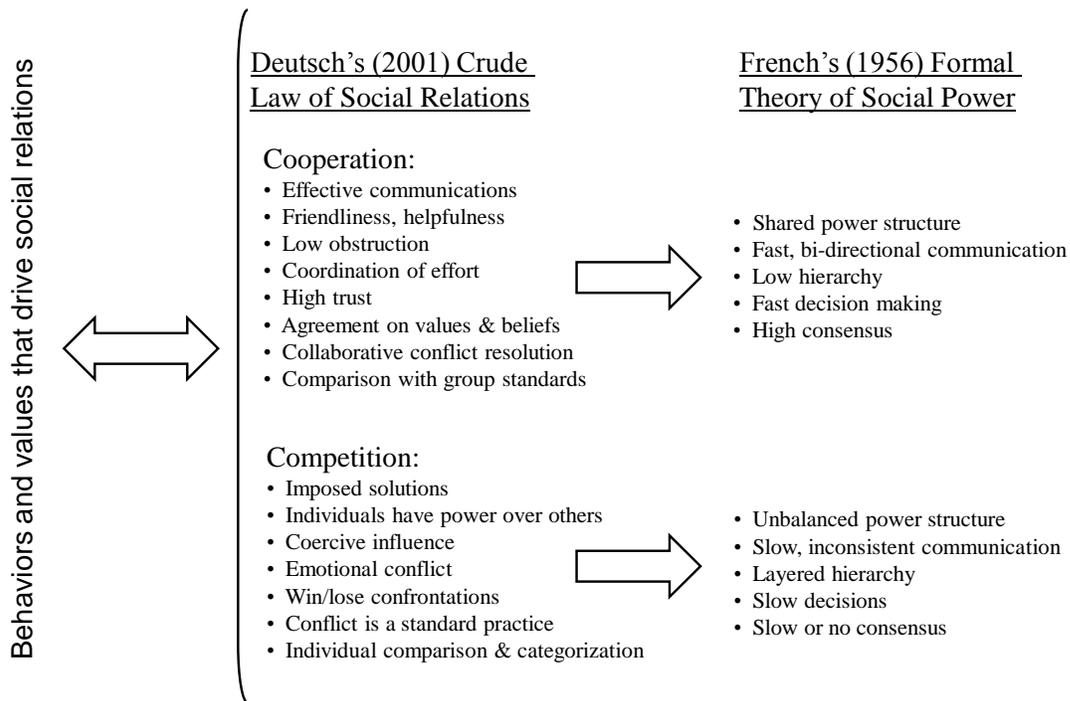Synthesized Relationship between Behaviors, Social Relations, and Power

 Figure 1. Theoretical relationships between behaviors, social relations and social power. Summarized from (a) "Cooperation and Conflict Resolution: Implications for Consulting Psychology," by M. Deutsch, 2001, Consulting Psychology Journal: Practice and Research, 53(2), pp. 76-81. Copyright 2001 by the Educational Publishing Foundation and the Division of Consulting Psychology. (b) "A Formal Theory of Social Power," by J. French, Jr., 1956, Psychological Review, 63(3), pp. 181-194. Copyright 1956 by the American Psychological Association.

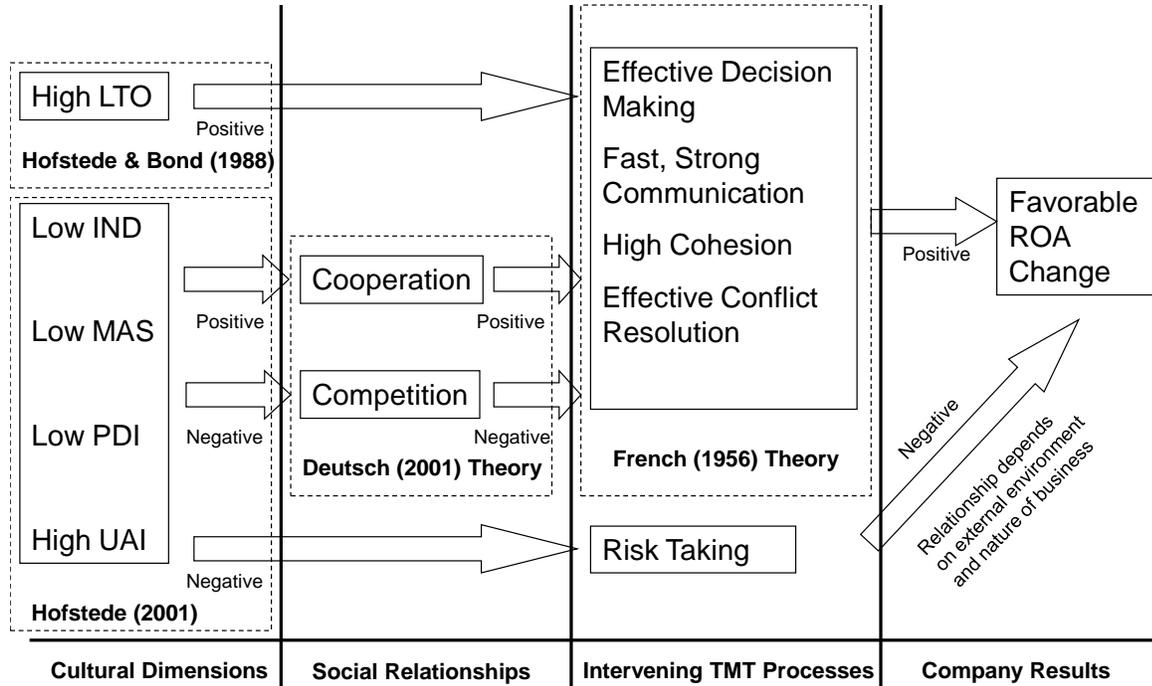Hypothetical Relationships between National Culture and Company Results

Figure 2. The relationship of TMT national culture and the dependent variable as developed from our integrated theory and hypotheses 1-5.

Table 1. Review of the Variable Definitions Used in this Study

Variables:	Definitions:
Control Variable: $\%\Delta PPA_{(2004-2006)}$	$PPA = \dfrac{Profit}{Assets} * 100$ Where F=2006 and I = 2004 $\%\Delta PPA_{F-I} = \dfrac{(PPA_F - PPA_I)}{\|PPA_I\|} * 100$
Hofstede Dimensions: LTO PDI IDV MAS UAI	Long-Term Orientation Power Distance Index Individualism Masculinity Uncertainty Avoidance Index
Demographic Heterogeneity Index	$HI_D = H_{TMT\ tenure} + H_{Company\ tenure} + H_{Years\ education} + H_{Education\ specialization} + H_{Functional\ specialization}$ Where H = COV or Teachman's Index for individual variables
Hofstede Cultural Index	$I_H = LTO(REV) + PDI + IDV + MAS + UAI(REV)$ (Per Figure 2 and Hypotheses 1-5) $LTO(REV) = 100 - LTO; UAI(REV) = 100 - UAI$ *Note:* As constructed, I_H was hypothesized to be (-) with $\%\Delta PPA_{(2007-2009)}$
Dependent Variable: $\%\Delta PPA_{(2007-2009)}$	$PPA = \dfrac{Profit}{Assets} * 100$ Where F=2009 and I = 2007 $\%\Delta PPA_{F-I} = \dfrac{(PPA_F - PPA_I)}{\|PPA_I\|} * 100$

Table 2.   Means and Standard Deviations for the Control Variable , the Demographic Heterogeneity Index, the Hofstede Cultural Dimensions, the Hofstede Cultural Index as Independent Variables; and for Change of Profit as a Percentage of Assets from the Years 2007 – 2009 as the Dependent Variable

Variables	Mean	SD	Min	Max
Independent Variables:				
Control Variable:				
$\%\Delta PPA_{(2004 – 2006)}$	226.2	1130.7	-100	8489
Hofstede Dimensions:				
LTO[a]	45.7	24.9	23	118
PDI	48.4	15.7	18	80
IDV	68.6	22.5	15	91
MAS	55.7	16.9	10	95
UAI	58.8	20.1	23	94
Demographic Heterogeneity Index	175.1	42.2	71	261
Hofstede Cultural Index	292.2	45.3	173	356
Cultural Heterogeneity Index[b]	11.8	19.8	0	79
Dependent Variable:				
$\%\Delta PPA_{(2007 – 2009)}$	-111.2	198.0	-949	575

Note 1: The above data are for N = 57 banking companies in the 2006 Fortune Global 500 Index.

Note 2: Overall, there were 439 named TMT members in the 2006 Fortune Global 500 banking companies – of the possible 4560 demographic data points, 3637 were collected and included in calculations.

[a] Mean substitution (LTO = 45) was used for 24.6% of the banks that did not have Hofstede LTO values.

[b] Cultural Heterogeneity Index is for information only–calculated using same formula and on the same scale as Demographic Heterogeneity Index.

Table 3. Pearson Inter-correlations among the Control Variable (1), the Hofstede Cultural Dimensions (2-6), the Demographic Heterogeneity Index (7), and the Hofstede Cultural Index (8) as Independent Variables

Variables	%ΔPPA (2004 – 2006)	LTO	PDI	IDV	MAS	UAI	Demo Idx
1. %ΔPPA (2004 – 2006)							
2. LTO	.449** (<.001)						
3. PDI	.300* (.023)	.762** (<.001)					
4. IDV	-.389** (.003)	-.902** (<.001)	-.756** (<.001)				
5. MAS	-.040 (.765)	.037 (.785)	-.063 (.641)	.073 (.591)			
6. UAI	-.176 (.180)	.061 (.650)	.359** (.006)	-.215 (.108)	.219 (.101)		
7. Demo Idx	-.249 (.062)	-.510** (<.001)	-.238 (.074)	.530** (<.001)	.094 (.486)	.083 (.540)	
8. Hofstede Idx	-.299* (.024)	-.762** (<.001)	-.658** (<.001)	.910** (<.001)	.321* (.015)	-.360** (.006)	.499** (<.001)

Note: Data are the consolidated results for the N = 57 banks in the 2006 Fortune Global 500 Index. Probabilities are shown in parentheses beneath each associated correlation. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed)

Table 4. Correlations Among the Control Variable (1), the Hofstede Cultural Dimensions (2-6), the Demographic Heterogeneity Index (7), and the Hofstede Cultural Index (8) with the Dependent Variable, Change of Profit as a Percentage of Assets from the Years 2007 – 2009, %ΔPPA $_{(2007-2009)}$

Variables	Pearson's Correlation r	Probability p
1. %ΔPPA$_{(2004 – 2006)}$	.053	.696
2. LTO	.427**	.001
3. PDI	.385**	.003
4. IDV	-.328*	.013
5. MAS	-.316*	.017
6. UAI	-.139	.313
7. Demographic Heterogeneity Index	-.197	.142
8. Hofstede Cultural Index	-.351**	.008

Note: Data are the consolidated results for the N = 57 banks in the 2006 Fortune Global 500 Index. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Table 5. Hierarchal Regression of Dependent Variable, Change of Profit as a Percentage of Assets from the Years 2007 – 2009, on the Control Variable, the Demographic Heterogeneity Index, and the Hofstede Cultural Index

Step	Variables Entered	R	Adjusted R^2	R^2 Change	F Change	Sig. F Change
1	%ΔPPA (2004 – 2006)	.053	-.015	.003	.154	.696
2	Demographic Heterogeneity Index	.197	.003	.036	2.026	.160
3	Hofstede Cultural Index	.356	.077	.088	5.346	.025

Table 6. Simple Regression of Dependent Variable, Change of Profit as a Percentage of Assets from the Years 2007 – 2009, on the Hofstede Cultural Index

Independent Variable	R	Adjusted R^2	F	Sig
Hofstede Cultural Index	.351	.107	7.708	.008

Note: The regression equation is %ΔPPA $_{(2007-2009)}$ = -1.5 HOFSTEDE_IDX + 336.8; the negative slope coefficient was expected based on the construction of HOFSTEDE_IDX

Table 7. Regression of the Dependent Variable, Change of Profit as a Percentage of Assets from the Years 2007 – 2009, on LTO and MAS, Using Data from the Banking Companies in the 2006 Fortune Global 500 Index

Independent Variable	R	Adjusted R^2	F	Sig
LTO	.540	.266	11.137	< .001
MAS				

Note: The regression equation is %ΔPPA $_{(2007-2009)}$ = 3.5 LTO – 3.9 MAS + 55.0

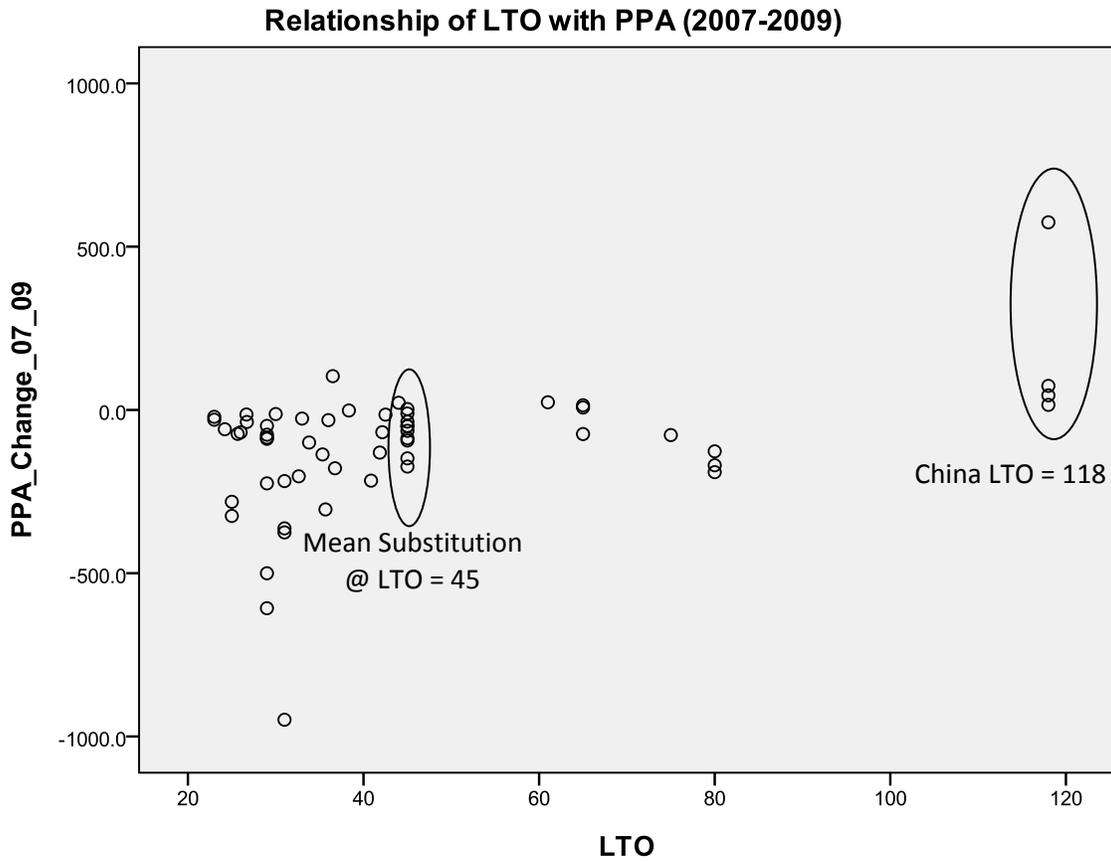**Relationship of LTO with PPA (2007-2009)**

Figure 3. The influence of China's Long –Term Orientation upon %Δ PPA $_{(2007-2009)}$ in the current study.