Update: TMT national culture, demographic heterogeneity, and profit change using LTO-WVS

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ABSTRACT

Previously published work has discussed how TMT national culture and heterogeneity were related to corporate profit change in the global banking industry during the recent financial crisis. This paper extends the previous work by incorporating Long-Term Orientation (LTO) data from the World Values Survey (WVS), a more comprehensive dataset for LTO than the originally used Chinese Value Survey (CVS). The relationships of LTO-CVS and LTO-WVS with change in corporate profitability were calculated for the population. The Revised Hofstede National Culture Index (LTO-WVS) was recalculated for the population. LTO from the WVS was examined against original data from the CVS for its relationship with the TMT Demographic Heterogeneity Index. Finally, the relationship between the Revised Hofstede National Culture Index (LTO-WVS) and Demographic Heterogeneity Index was compared against results from the original TMT study. References contain both theory and mathematical details associated with these analyses. Conclusions remain that highly cooperative banking industry TMTs produced relatively positive changes in profits during the crisis. These same TMTs were again confirmed to be more demographically homogeneous than their peers using LTO-WVS.

Keywords: Hofstede, TMT Demographic Heterogeneity Index, Revised Hofstede National Culture Index, LTO-WVS

INTRODUCTION

Gerecke and House (2012a) used Top Management Team (TMT) heterogeneity and national culture as independent variables to study their relationships with Fortune Global 500 banking industry profit change before and during the 2008 economic crisis. Their hypothesis was that TMT members' national culture, and therefore, deeply ingrained values and beliefs, would influence the TMTs' processes of cooperation/competition, communication, conflict resolution, and strategic decision making more so than other demographic characteristics. They hypothesized that highly cooperative TMT interactions were directly related to favorable changes in profits during the crisis. Their hypothesis was supported. Hofstede's (2001) work was used to characterize the TMTs' national culture attributes. Long-Term Orientation (LTO) was viewed as an important contributor to TMT cooperation because high LTO cultures tend to foster strong, positive, relationships and horizontal networks with colleagues (Hofstede, Hofstede, & Minkov, 2010).

Gerecke and House used indices (2012c) to discover relationships between demographic heterogeneity and national culture (2012b), as well as national culture and percent change in corporate profitability for the years 2007-2009 ($\%\Delta PPA_{(2007\text{-}2009)}$) (2012a). The indices enabled the discovery of key relationships due to (a) the use of comprehensive, composite TMT variables, and (b) the improvement in statistical power due to the minimization of independent variables with a TMT population of $n = 57$. Their original work used LTO data from the Chinese Value Survey (CVS) (Hofstede, 2001). This paper expands upon their propositions using more complete data for LTO from the World Value Survey (WVS) (Hofstede et al., 2010).

BACKGROUND AND EVOLUTION OF THE LTO DIMENSION

The cultural dimension of LTO was originally discovered by interpreting results from the CVS, an instrument developed by Michael Bond in collaboration with Chinese researchers. LTO had not been identified previously in surveys written by Westerners, including the instrument that Geert Hofstede used within the IBM Company. However, three other CVS national culture dimensions were congruent with those found in the IBM data (IDV, MAS, and PDI). Since high levels of LTO are desirable and virtuous in Chinese culture, and since the CVS was written and interpreted through a Chinese lens, it was not surprising that China's national culture embodied the highest levels of LTO across all nations included in the CVS (Hofstede, 2001).

Conversely, the WVS was developed and interpreted by Westerners. It is a very large database and is updated continually. Three items in the WVS were found to be inter-correlated and also strongly correlated with LTO-CVS items: (a) value for thrift in children, (b) value for national pride (negative), and (c) the value for service to others. Perhaps as a result of its origination and interpretation, the WVS contains some LTO country values that are remarkably different than those found in the CVS. As related to the original TMT study, significant changes in LTO values were noted in the cases of China, Germany, Great Britain, Australia, and Brazil. Hofstede (2012, September 27) suggested to the current authors that the TMT results be recalculated using the LTO-WVS data. This paper follows his advice.

METHODOLOGY

The CVS included a relatively limited number of countries (n = 23) and therefore there was significant use (24.5%) of mean substitution for LTO in the original TMT analysis – a necessary, but undesirable, remedy for missing data. The current authors recalculated the Revised Hofstede National Culture Index according to the methodology proposed by Gerecke and House (2012c, p.14) using LTO scores from the 1995-2008 World Values Survey (Hofstede et al., 2010, pp.255-258). This procedure involved a straightforward substitution of LTO-CVS values with those from LTO-WVS and a recalculation of the Revised Hofstede National Culture Index along with correlation statistics according to previous methodologies (2012c). The World Value Survey (WVS) included 93 countries, and no mean substitution was necessary for the current TMT analyses. The Revised Hofstede National Culture Index (LTO-WVS) is abbreviated as $I_{H(\text{revised LTO-WVS})}$ throughout this paper. The current authors also examined the relationship between LTO-WVS and the Demographic Heterogeneity Index (HI_D; see Gerecke & House, 2012c, p.11), as well as its relationship with $\%\Delta PPA_{(2007\text{-}2009)}$. (See Note 2 Table 1, Appendix, for definition of the profit change variables.)

RESULTS

LTO-WVS and Corporate Profitability

Observing the linear relationship in Figure 1 (Appendix), the concentration of data at LTO-CVS = 45 (mean population value) serves as a pivot point allowing strong negative influence from the United States and German banks upon $\%\Delta PPA_{(2007\text{-}2009)}$, while at the same time allowing strong positive influence from the Chinese banks. Using LTO-WVS data removed this artificial pivot point and provided a more evenly distributed LTO spectrum. Having a more complete set of LVO values from the WVS, and also with some significant changes in country LTO-WVS scores, LTO was no longer significantly correlated with change in profitability (r=0.026, p=0.845; see Figure 2, Appendix). From the original study (Gerecke & House, 2012a), other Hofstede national culture dimensions retain their influence – most notably Masculinity (MAS; r = -0.316, p = 0.017), Power Distance (PDI; r = 0.385, p = 0.003), and Individualism (IDV; r = -0.328, p = 0.013). $I_{H(\text{revised LTO-WVS})}$, therefore, maintained its directional relationship with change in profitability during the years 2004 through 2006 (preceding the crisis) and 2007-2009 (during the crisis). Figures 3 and 4 (Appendix) depict the nature of these relationships, which remain largely driven by the national cultures of China and the United States.

LTO-WVS and TMT Demographic Heterogeneity

Gerecke and House (2012b) did not initially hypothesize a demographic heterogeneity – national culture relationship. The serendipitous discovery of this relationship was made upon calculation of inter-correlation values for the independent variable indices in their profitability study. Further analysis revealed that LTO-CVS (r = 0.510, p < 0.001) and IDV (r = .530, p < 0.001) correlated strongly with the HI_D in the original study. As an update to the original analysis, Figures 5 and 6 (Appendix) show how the relationship between LTO and the TMT HI_D was changed using the more complete data set from the WVS. This was most notably caused by the negative (leftward) shifting of China in the WVS, and by the elimination of the LTO-CVS

mean substitution artifacts. Nevertheless, the correlation between LTO-WVS and the HI_D remained significant (r = -0.323, p = 0.014) and congruent with the findings made using the CVS data. Consequently, the significant relationship between the HI_D and $I_{H(\text{revised LTO-WVS})}$ remained consistent (see Table 1, Appendix); This is due to the general nature of the composite indices as they are used for the measure of population attributes. $I_{H(\text{revised LTO-WVS})}$ maintained its statistical relationship with the TMT HI_D on the strength of the other Hofstede cultural dimensions, most notably IDV.

DISCUSSION

LTO and Banking Corporate Profitability Changes

The explanation for the national culture vs. change in profitability relationship has evolved from what was originally proposed. In Gerecke and House (2012a), LTO was hypothesized to have been positively related to $\%\Delta PPA_{(2007\text{-}2009)}$ based on two factors: (1) High LTO cultures favor mutual support and cooperation; (2) High LTO cultures are characterized by conservative investment choices, a relatively high marginal propensity to save, overall thriftiness, building market relationships, and perseverance (that is, not sacrificing the sustainable future for record-breaking current quarter profits and exorbitantly lucrative TMT annual bonuses). This hypothesis was supported in the original study.

LTO-CVS was strongly correlated with economic growth from 1965-1995 and has been viewed as an explanation for the emergence of East Asian countries during this period (Hofstede, 2001). Using the LTO-CVS data, it could have been argued that the economic emergence of the East Asian countries was the main factor for the relationships found in the study, and that the Chinese banks were beneficiaries of the overall macroeconomic trends (factor 2) more so than supportive and cooperative TMT interactions (factor 1). However, given LTO-WVS – $\%\Delta PPA_{(2007\text{-}2009)}$ relationship, and in the absence of other information, the hypothesized influence of global macroeconomic trends on the study's results is not supported by the data.

IDV and MAS continue to play prominent roles in national culture's relationship with banking profit changes during the crisis. Relating national culture to cooperation/competition, the contribution of IDV has become more important in light of the LTO-WVS data. Highly collective national cultures are more likely to act in the interests of the entire group, forming relatively cooperative TMT units; therefore, producing favorable changes in profitability during the banking crisis. Masculinity retains its significance as a driver of the cooperation/competition dynamics within TMTs, as discussed in the original study. Cultures low in MAS place individual recognition and career advancement secondary to a highly cooperative working environment and relationships with their TMT peers. Altogether, congruencies exist among low IDV, low MAS, and high LTO in their tendency toward cooperation and mutual support within collegial social groups (Gerecke and House, 2012a).

LTO and TMT Demographic Heterogeneity

LTO-WVS retained its influence on TMT demographic heterogeneity. LTO, from Confucianism, portrays the family as being foundational in any social relationship – a person is not an individual, but rather a member of a family and/or an analogous group. In this context, LTO sets the basis for the study's empirical TMT relationships: High LTO cultures favor closer

familial type relationships in the work group. As previously discussed, IDV also plays a prominent role in the work-group-as-family relationship. In collective cultures, personal relationships take precedence over the task at hand when making hiring decisions. Highly collective cultures view in-group-as-family members as having higher value to their work group organizations. Highly collective cultures tend to place more trust in individuals who are personally related to the employer or to other prominent members of their organization. The collectivist cultures' view is that relatives will be concerned about their work-group-as-families' reputation and will work hard to avoid shame. Peer pressure from family members upon the individual is a motivator for strong performance (Hofstede et al., 2010). High LTO and low IDV cultures tend to form relatively homogeneous work groups, maximizing trust and minimizing risk to poor performance.

CONCLUSIONS

Indexing in TMT studies remains an intriguing option for those researchers choosing the demographic input-output approach. As with other social science indices, the TMT $I_{H(\text{revised LTO-WVS})}$ and the TMT HI_D measured comprehensive and composite attributes of the population. Importantly these indices were not overly dependent on any one of the underlying measurements. Using the WVS values provided significant additional country data for the LTO dimension in the $I_{H(\text{revised LTO-WVS})}$. $I_{H(\text{revised LTO-WVS})}$ continued to provide a clear view of the relationship between national culture and $\%\Delta PPA_{(2007\text{-}2009)}$. Further, the $I_{H(\text{revised LTO-WVS})}$ also maintained its relationship with TMT demographic heterogeneity findings. PDI, IDV, LTO, and MAS worked together within $I_{H(\text{revised LTO-WVS})}$ to enable the visualization of national culture, demography, and profit change relationships. Given the wealth of information about deeply-held values and beliefs provided by Hofstede's characterization, this is not surprising.

The two versions of the Revised Hofstede National Culture Index (using LTO-CVS and LTO-WVS) remained highly correlated according to Table 1 (Appendix). There is no doubt, however that the more complete WVS data provide analytical advantage in global studies, due to the minimization of mean substitution. It is recommended, therefore, that additional TMT studies construct the Revised Hofstede National Culture Index (Gerecke & House, 2012c, p.14) with LTO-WVS values. (A remaining question is what LTO results would be found through the administration and interpretation of the CVS across the 93 country WVS population – perhaps this is an opportunity for future LTO research.)

Conclusions about the overall relationships among national culture, demography, and profitability were not changed from those in the underlying original study. The evidence continues to support that banking industry TMTs tending toward cooperative, collective, trusting interpersonal working relationships had relatively positive financial outcomes during the recent economic crisis. Perhaps it was the duress of the crisis that highlighted the advantages of TMTs having these tendencies; or perhaps, TMTs with these tendencies have a competitive advantage independent of environmental circumstances. With these same characteristics, the banking TMTs tended to form relatively homogeneous leadership groups – the evidence suggesting that TMTs form themselves demographically as guided by their cultural beliefs. Of course, the observations and conclusions made in this paper and in the preceding series have been based on a single population, within a single industry, facing a collective economic crisis. Future work with additional TMT populations is required to determine if they can be generalized. This is a recommended area for future research.

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APPENDIX

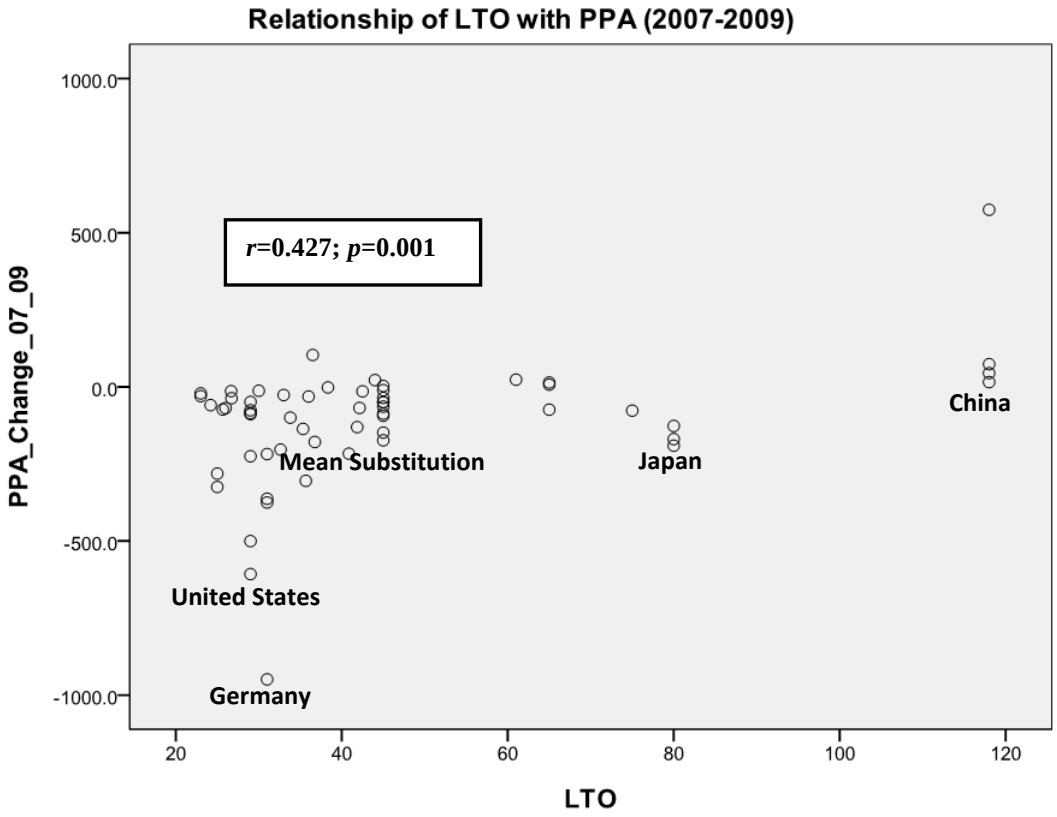

Figure 1. LTO-CVS vs. $\%\Delta PPA_{(2007\text{-}2009)}$ for the 2006 Fortune Global 500 Banks (n=57), as adapted from Gerecke and House (2012a)

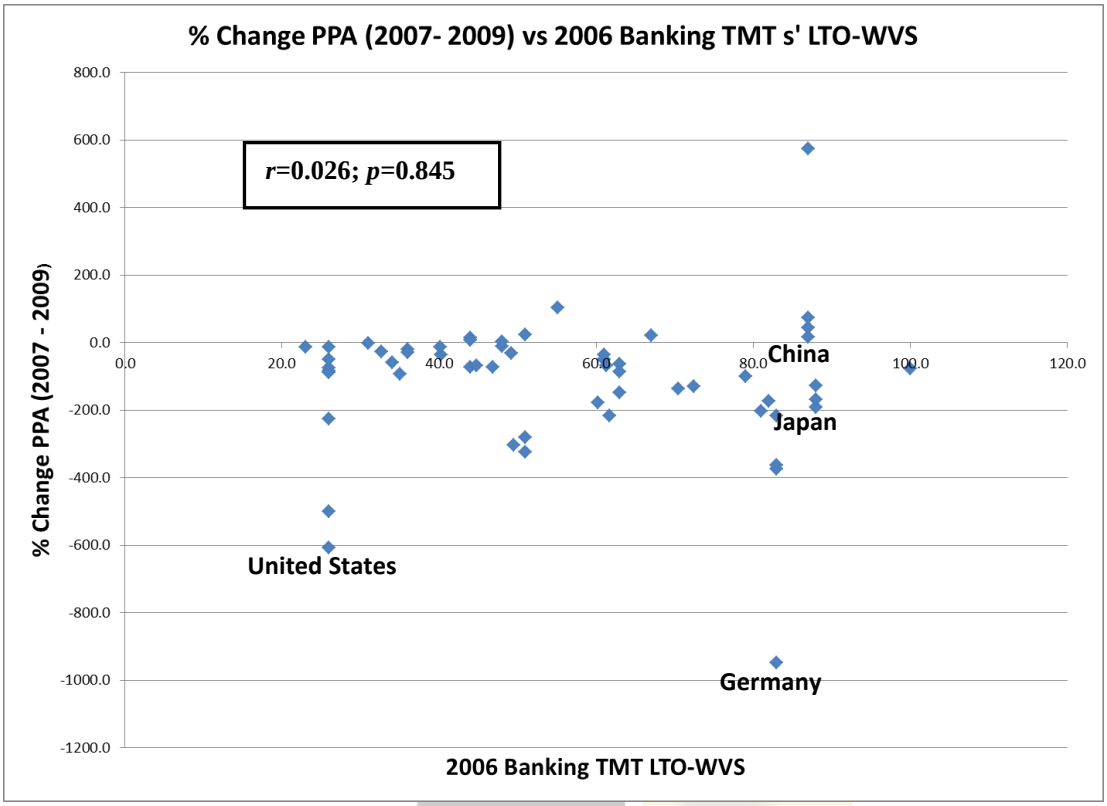

Figure 2. LTO-WVS vs. $\%\Delta PPA_{(2007\text{-}2009)}$ for the 2006 Fortune Global 500 Banks (n=57)

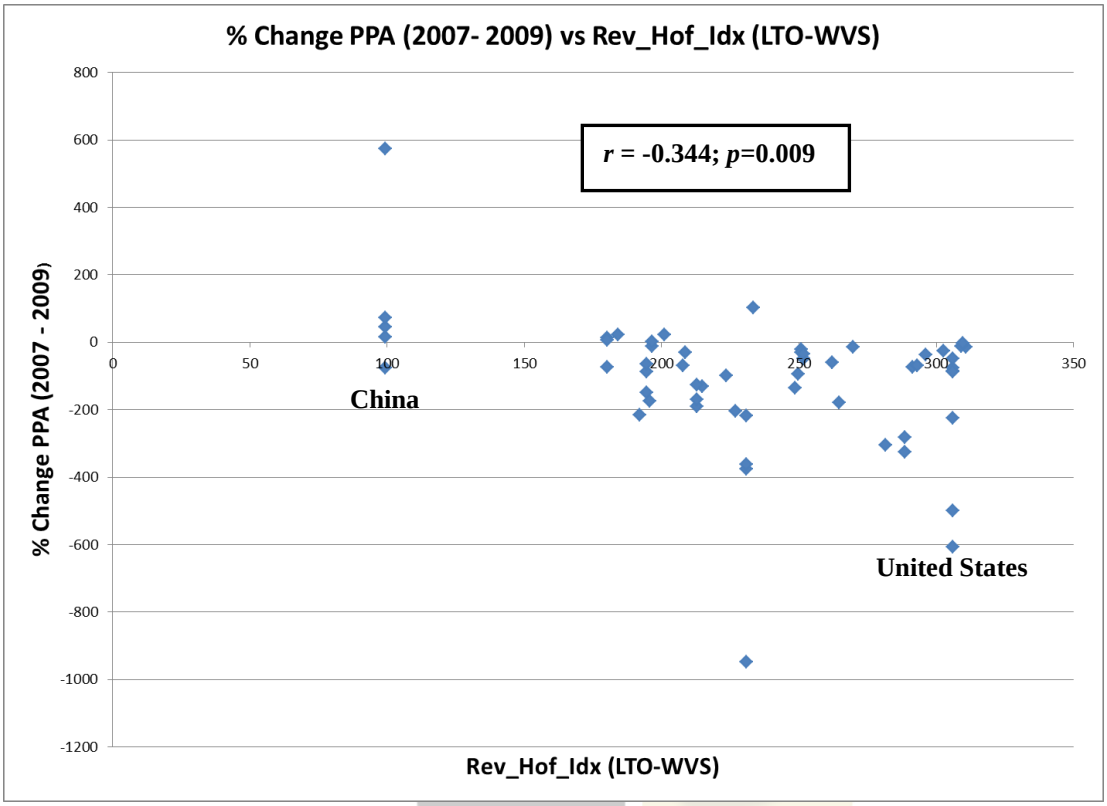

Figure 3. Revised Hofstede National Culture Index (LTO-WVS) vs. $\%\Delta PPA_{(2007\text{-}2009)}$ for the 2006 Fortune Global 500 Banks (n=57)

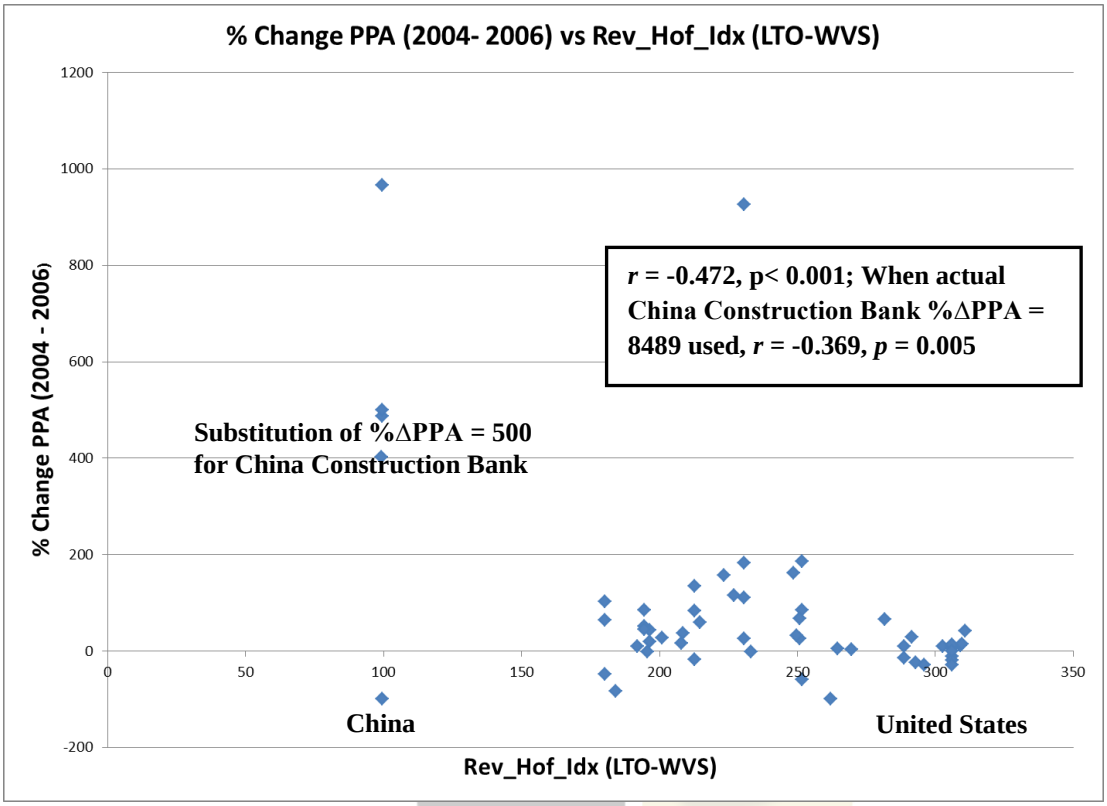

Figure 4. Revised Hofstede National Culture Index (LTO-WVS) vs. $\%\Delta PPA_{(2004\text{-}2006)}$ for the 2006 Fortune Global 500 Banks (n=57)

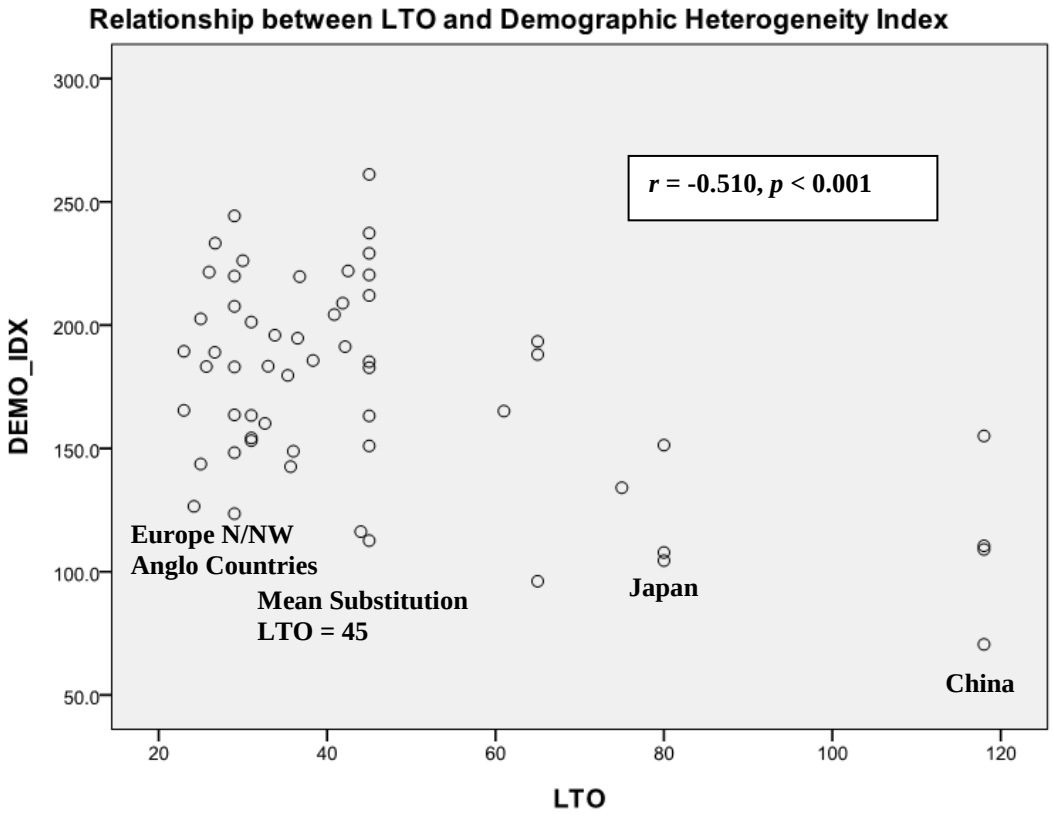

Figure 5. LTO-CVS and the Demographic Heterogeneity Index for the 2006 Fortune Global 500 Banks (*n*=57) as adapted from Gerecke and House (2012b) and Hofstede et al. (2010)

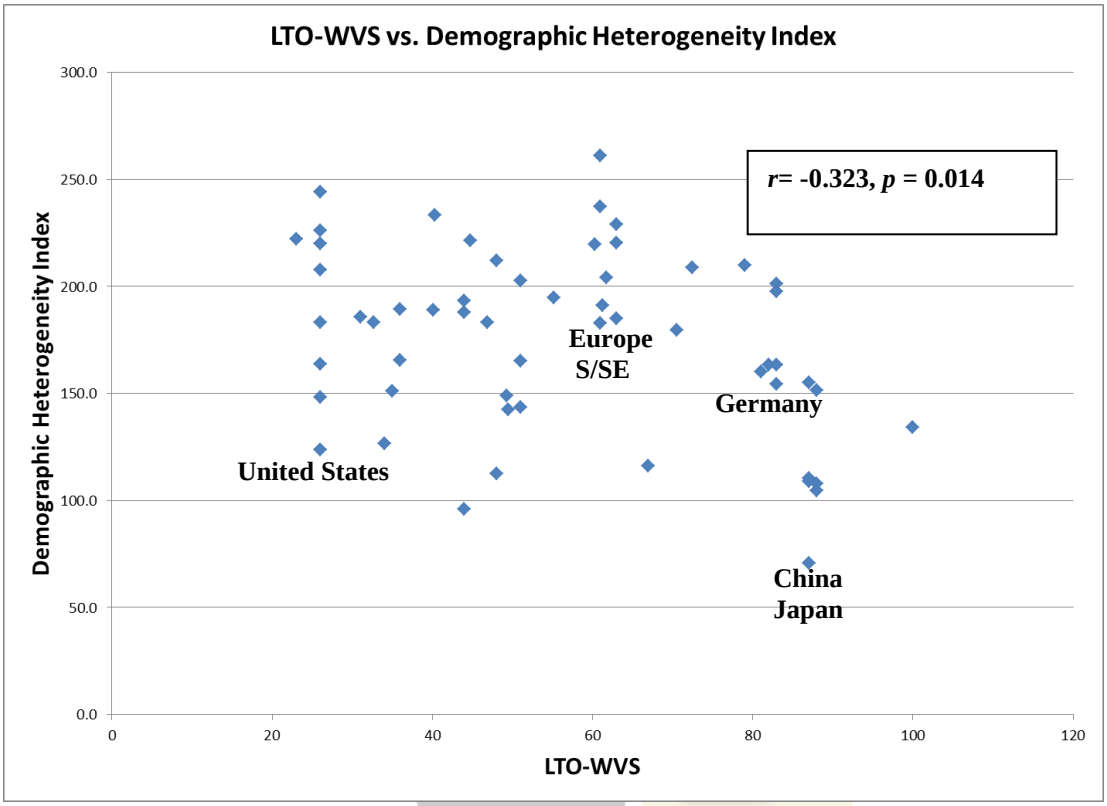

Figure 6. LTO-WVS and its relationship with the TMT Demographic Heterogeneity Index for the 2006 Fortune Global 500 Banks (*n*=57)

Table 1. Statistical relationships for the independent, control, and dependent variables discussed in the study as calculated for the 2006 Fortune Global 500 banking industry (*n*=57).

Variables	%ΔPPA (2004-2006)	HI_D	$I_{H(revised\ LTO-WVS)}$	$I_{H(revised)}$
Change in Profitability as a Percentage of Assets from 2004 through 2006 ($\%\Delta PPA_{(2004-2006)}$)				
Demographic Heterogeneity Index (HI_D)	-0.249 (0.062)			
Revised Hofstede National Culture Index with LTO-WVS ($I_{H(revised\ LTO-WVS)}$)	-0.369** (0.005)	0.459** (< 0.001)		
Revised Hofstede National Culture Index ($I_{H(revised)}$)	-0.404** (0.002)	0.493** (< 0.001)	0.948** (< 0.001)	
Change in Profitability as a Percentage of Assets from 2007 through 2009 ($\%\Delta PPA_{(2007-2009)}$)	0.053 (0.696)	-0.197 (0.142)	-0.344** (0.009)	-0.471** (< 0.001)

Note 1: Probabilities are shown in parentheses; **Correlation was significant at the 0.01 level (2-tailed); * Correlation was significant at the 0.05 level (2-tailed)

Note 2: $\%\Delta PPA_{F-I} = \frac{(PPA_F - PPA_I)}{|PPA_I|} * 100$