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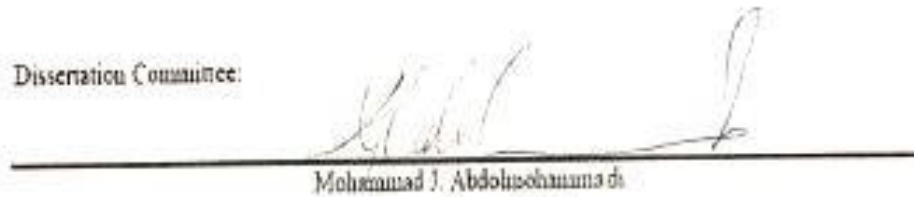
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The Impact of Cultural Time Orientation on Managerial and Financial Accounting  
Practices

Zhihong Wang

A dissertation  
submitted in partial fulfillment of the  
requirements for the degree of

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Date 05/10/2012

## DEDICATION

To my dearest MOM Janlin Jia and DAD Shenxue Wang

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## **Dissertation Abstract**

The Impact of Cultural Time Orientation on Managerial and Financial Accounting Practices

Zhihong Wang

Chair of the Supervisory Committee:  
James E. Hunton, Ph.D.

This dissertation consists of three studies investigating the influences of cultural values, specifically cultural time orientation, on internal corporate decision-making with regard to managerial and financial accounting practices.

The first study of this dissertation reviews and synthesizes the current state of empirical literature which examines the impact of cultural values on managerial accounting, financial accounting, auditing and taxation, as well as on ethical decision-making in the accounting field. This literature review concludes with a discussion of research limitations and opportunities for future investigation.

The second study examines how employees from different cultures respond to participative budgeting when the budget planning horizon is congruent or incongruent with their cultural time orientation. This study was administered via a 2x2 quasi-experiment in which cultural time orientation (short-term or long-term) was measured and budget planning horizon (short-term or long-term) was manipulated. The results indicate that satisfaction with participative budgeting is greater when participants' cultural time orientation and budget planning horizon are congruent, relative to incongruent. Also, the differential reactions between congruence and incongruence are less extreme for the Chinese participants than for the U.S. participants, which is consistent with the Confucian thought of "The Doctrine of the Mean" that teaches

individuals to maintain emotional balance by constraining their positive and negative feelings.

The third study investigates the impact of cultural time orientation on segment profitability disclosure decisions. It hypothesizes that managers with a short-term orientation are more concerned with the immediate reactions from the capital market rather than the long-term competitive reactions from potential entrants in the product market. Consequently, managers will be motivated to hide abnormally low segment profits and highlight abnormally high segment profits. Conversely, managers with a long-term orientation will focus more on the long-term effects of product market competition rather than the immediate capital market reactions. Consequently, these managers will be motivated to hide abnormally high segment profits and highlight abnormally low segment profits. This study was administered via a 2x2x2 quasi-experiment in which cultural time orientation (short-term or long-term) was measured, while segment profitability (high or low) and nature of competition (potential entrants or existing rivals) were manipulated. In general, this study finds that short-term oriented managers are more likely to adjust abnormally low segment profitability upward, relative to long-term oriented managers. On the other hand, long-term oriented managers are more likely to adjust abnormally high segment profitability downward compared to short-term oriented managers.

## Chapter 1: Dissertation Overview

The purpose of this dissertation is to investigate the impact of cultural values on corporate accounting practices. The topic of this dissertation is important for accounting operations in multinational companies, as the issues investigated herein can help managers and investors better understand how culture can influence corporate employees' judgments and decision-making, which in turn affect corporate behavior and performance. With accelerating globalization, multinational companies are expanding their business operations worldwide. According to a recent report of multinational corporations' operations published by the U.S. Bureau of Economic Analysis (Barefoot & Mataloni Jr., 2010), there are 1,321 U.S. companies operating in one to nine foreign countries, and 794 companies operating in more than ten foreign countries. Hence, examining how cultural values can affect global operations of multi-national companies is timely and relevant.

While U.S.-based multinational companies are inculcating their management control systems into foreign business operations, much evidence has shown that employees from different countries can respond dissimilarly to such systems (e.g., Frucot & Shearon, 1991; Harrison, 1992; Tsui, 2001; Brody, Lin, & Salter, 2006). As a result, the affects and behaviors of managerial accountants across diverse cultures can vary considerably when U.S.-based corporations impose the same management control systems across the globe. Furthermore, diverse cultural values can also influence nations' financial reporting practices (Gray, 1988), which has implications for the global adoption of International Financial Reporting Standard. Understanding how culture affects financial reporting is important to international investors, as they need to impound

corporate financial and non-financial information arising from different nations into their global investment decisions.

Although many definitions of national culture have been proposed in the literature (e.g., Adler, Doktor, & Redding, 1986; Child, 1981), Hofstede's cultural value dimensions have been most widely studied in contemporary business research (Bhimani 1999; Kirkman, Lowe, & Gibson 2006). Initially, Hofstede's (1980) extensive studies of 40 countries identified four cultural based social value dimensions that he classified as power distance, individualism, masculinity, and uncertainty avoidance. Each representing one aspect of national cultural values as defined and explained in Chapter 2 of this dissertation. Many studies in the accounting literature have investigated the relationships between these four cultural values and various accounting issues. For example, Gray (1988) proposed a theory of the influence of culture on the development of accounting systems across nations. His theoretical study links Hofstede's (1980) cultural values to national accounting practices and argues that there are fundamentally different accounting practice patterns in terms of the professionalism versus statutory control, uniformity versus flexibility, conservatism versus optimism, as well as secrecy versus transparency in different countries due to cultural differences. Gray (1988) concludes that cross-cultural comparability and interpretation of financial information and investment decisions are influenced by differences in national cultures.

Later, based on a survey study administrated in 23 countries, Hofstede (1991) added the fifth cultural dimension – long term orientation. This dimension recognizes differences across cultures of the relative emphasis placed on short-term vs. long-term outcomes. This notion is termed "Cultural Time Orientation" throughout this dissertation.

A partial listing of Hofstede's cultural dimension scores by Country is presented in Table 1-1.

Although cultural time orientation is an important factor that can influence employees' mental states and behaviors toward management control systems and financial information (Hofstede & Minkov 2010), there are relatively few studies that examine the potential impact of cultural time orientation in the accounting literature. This dissertation attempts to fill this gap by experimentally investigating the potential effects of cultural time orientation on managerial and financial accounting practices.

This dissertation consists of three independent studies. The first study, presented in Chapter 2, reviews and synthesizes previous cultural studies across five accounting disciplines including management control systems, financial reporting standards and practices, auditing practices, taxation issues, and ethical belief systems. I summarize previous empirical studies and propose a number of avenues for future research. I also call attention to the lack of evidence on the effects of cultural time orientation on accountants' and auditors' judgment and decision-making processes.

Chapter 3 presents the second study, which examines the impact of cultural time orientation on employees' attitudes toward participative budgeting. The topic of this chapter is important because understanding cultural differences can provide insight into why participative budgeting might not yield consistent effects across countries. By applying the participation congruence model proposed by Clinton & Hunton (2001), this study hypothesizes that participative budgeting is more effective when employees who possess a short-term (long-term) time orientation are involved with budgets with a short-term (long-term) planning horizon. A 2x2 quasi-experiment was conducted with a total

of 164 participations from China and the U.S, representing long-term vs. short-term cultural time orientation respectively. Budget planning horizon was manipulated by specifying the length of the budget setting (four months vs. four years). This study finds that employees are more satisfied with participative budgeting when their cultural time orientation and budget planning horizon are congruent. In addition, this study also finds that Chinese employees react less extremely toward their assignment in the participative budgeting process than the U.S. employees, which can be explained by the notion of “The Doctrine of the Mean” proposed by Confucius in China<sup>1</sup>. This study suggests that companies that operate in different countries should be cognizant of cultural differences when employing participative budgeting processes.

Chapter 4 addresses the issue of cross-cultural financial reporting by investigating the impact of cultural time orientation on segment profitability disclosure decisions. This is an important topic because managers from nations with different cultural values might exhibit different patterns of behavior when exercising discretion on segment reporting under IFRS 8 (2010), therefore reducing the comparability of financial information across nations even when using the same accounting standard. This study hypothesizes that long-term orientated managers and short-term oriented managers react differently to market competition conditions when segment profitability is relatively high or relatively low. A 2×2×2 between-subject quasi-experiment was designed and administered to 119 participants from China and 102 participants from the U.S. In general, results of this

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<sup>1</sup> The Doctrine of the Mean is one of the most famous Confucian thoughts, and have been widely adopted in the educational systems in Chinese society. The essence of The Doctrine of the Mean, as translated by James Legge states that “While there are no stirrings of pleasure, anger, sorrow, or joy, the mind may be said to be in the state of Equilibrium. When those feelings have been stirred, and they act in their due degree, there ensues what may be called the state of Harmony. This Equilibrium is the great root from which grow all the human actions in the world, and this Harmony is the universal path which they all should pursue.” (Legge, 1893, chapter 1-4)



study, consistent with the research hypotheses, indicate that the U.S. participants who are short-term oriented are more likely to manipulate relatively low segment profits upward, and less likely to manipulate relatively high segment profits downward than the long-term oriented Chinese participants. The results may provide a partial explanation for the mixed findings of prior segment reporting studies (e.g., Harris, 1998; Botosan & Stanford, 2005; Berger & Hann, 2007) that were conducted in international regions with different cultural background, and contributes to the segment reporting literature by considering the differences in operating segment earnings management behaviors between cultures with different time orientations.

In summary, this dissertation applies Hofstede's cultural value theory to investigate cultural effects on managerial and financial accounting practices. The literature review (chapter 2) sheds light on the paucity of studies examining the effect of cultural time orientation in various accounting disciplines. The results of two empirical studies (chapters 3 and 4) contribute to the culture literature by documenting the effects of cultural time orientation on employees' attitudes toward participative budgeting and managers' decision-making with regard to segment profitability disclosure. Hofstede & Minkov (2010) argue that cultural time orientation could be related to a variety of social, business and economic factors. Future research should extensively examine the impact of cultural time orientation on more business practices, beyond those investigated in the current dissertation.

**Table 1-1** A Partial List of Hofstede's Country Scores

<b>COUNTRY</b>	<b>PDI</b>	<b>IDV</b>	<b>MAS</b>	<b>UAI</b>	<b>LTO</b>
China	80	20	66	40	118
Hong Kong	68	25	57	29	96
Taiwan	58	17	45	69	87
Japan	54	46	95	92	80
South Korea	60	18	39	85	75
India	77	48	56	40	61
Thailand	64	20	34	64	56
Singapore	74	20	48	8	48
Netherlands	38	80	14	53	44
Sweden	31	71	5	29	33
Australia	36	90	61	51	31
Germany	35	67	66	65	31
New Zealand	22	79	58	49	30
United States	40	91	62	46	29
United Kingdom	35	89	66	35	25
Sierra Leone	77	20	46	54	16

Source: <http://geert-hofstede.com/>

### **Cultural Value Dimensions**

**PDI:** Power Distance. Higher number indicates higher level of power distance

**IDV:** Individualism. Higher number indicates higher level of individualism, and lower number indicates higher level of collectivism.

**MAS:** Masculinity. Higher number indicates more masculinity, and lower number indicates more femininity.

**UAI:** Uncertainty Avoidance. Higher number indicates higher level of uncertainty avoidance, and lower number indicates lower level of uncertainty avoidance.

**LTO:** Long-Term Orientation. Higher number indicates more long-term oriented, lower number indicates more short-term oriented.

## Chapter 2: Cultural Studies in Accounting: A Review

### Introduction

The purpose of this chapter is to synthesize cultural studies in accounting and identify directions for future research. In the ever increasing globalized business environment, culture is an important consideration when investigating the determinants of accountants' and auditors' behaviors (Chanchani & MacGregor, 1999; Harrison & Mckinnon, 1999). The nebulous culture construct is often operationalized with the distinction of cultural dimensions identified by Hofstede (1980), and later expanded by Gray (1988) and the GLOBE study conducted by House, Hanges, Javidan, Dorfman & Gupta (2004). The cultural dimensions (i.e., individualism, uncertainty avoidance, power distance, masculinity and long-term orientation) in Hofstede's *cultural value theory* reflect and measure a culture's distinguishing core values. These core values significantly influence people's mental state and consequently, their behavior (e.g., Chanchani & Macgregor, 1999; Kirkman, Lowe & Gibson, 2006). In accounting research, Hofstede's cultural dimensions have been applied to research questions associated with management control systems, financial reporting standards and practices, auditing practices, and taxation issues as well as accountants' ethical belief systems. Figure 2-1 provides a visual summarization of the cultural effects examined in the aforementioned five accounting disciplines.

[Insert Figure 2-1 about here]

The current literature review is limited to accounting cultural studies employing either Hofstede's (1980) cultural value theory, or Gray's (1988) theory<sup>2</sup> of cultural relevance, or the GLOBE study<sup>3</sup> of House et al. (2004). In total, this review includes 58 articles<sup>4</sup> categorized in the five accounting sub-fields of management control systems, financial reporting standards and practices, auditing practices, taxation issues, and accountants' ethical belief systems. The four primary insights gleaned from this review follow. First, there is evidence that Hofstede's cultural dimensions of power distance and individualism have the greatest effect on the design and implementation of management control systems. Second, in conjunction with a nation's legal and economic situation, Gray's accounting values of conservatism and secrecy have the greatest effect on financial disclosure decisions. Third, auditors' attitudes and abilities to perform audit tasks are influenced by Hofstede's cultural values of individualism, power distance and uncertainty avoidance. Finally, this synthesis of the cultural research in accounting calls

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<sup>2</sup> Gray (1988) is an extension of Hofstede (1980). Gray (1988) adds the accounting related concepts of professionalism, uniformity, conservatism and secrecy relating Hofstede's concepts of individualism, uncertainty avoidance, power distance, and masculinity to accounting values. (Hofstede 1980).

<sup>3</sup> The GLOBE study conducted by House et al. (2004) from 1994 to 1997 expands Hofstede's five cultural dimensions to nine dimensions to investigate cross-cultural differences on leadership styles. In the GLOBE study, Hofstede's power distance and uncertainty avoidance dimensions are kept unchanged; individualism dimension is expanded to institutional collectivism and in-group collectivism; masculinity dimension is also expanded to assertiveness and gender egalitarianism; long-term orientation is changed to future orientation, humane orientation and performance orientation are added to the list of cultural dimensions.

<sup>4</sup> Using ProQuest ABI Inform Global Database, I searched 44 business journals (a list of journal names and numbers of articles found in each journal are presented in Table 2-1) possessing high impact scores in the accounting field (Bonner, Hesford, Van der Stede & Young, 2006). Search terms included culture, Hofstede, Gray, the names of cultural values and their variations (e.g., individualism, collectivism, power distance, masculinity, uncertainty avoidance, long-term orientation, Confucian dynamism, professionalism, uniformity, conservatism, and secrecy.) I reviewed empirical research examining any of Hofstede's five cultural values, as well as Gray's four accounting sub-cultural values published during 1980 to 2011. All articles included in this study assess the cultural values using field interviews, surveys, experiments, and/or archival data. I categorized these articles into eight topics including management control systems, financial reporting, auditing, taxation, accounting standard, and ethics. To facilitate readers' interpretation, I organize findings by each topic using the subject headings of each category, and also summarize in a table for each topic.

attention to the paucity of studies examining the effects of cultural time orientation on accountants' judgments and decisions.

[Insert Table 2-1 about here]

This literature review chapter consists of the following sections. First, I provide a brief overview of Hofstede's cultural value dimensions and Gray's (1988) and House et al.'s (2004) extensions of Hofstede's cultural framework. This is followed by a review of cross-cultural studies in each accounting sub-field, where specific suggestions for future research are identified. I then discuss limitations of the literature as a means of identifying directions for future cross-cultural accounting studies.

### **Hofstede's Cultural Value Theory**

#### *Background*

In his role as a human resource manager at IBM, Hofstede surveyed more than 100,000 employees in 40 countries during 1967-1973 to identify behavioral patterns across cultures. Hofstede's (1980, 1991, 1994) resulting cultural values framework continues to inform contemporary business research across a wide range of disciplines (Bhimani, 1999; Chanchani & MacGregor, 1999; Harrison & McKinnon, 1999; Kirkman et al., 2006). Hofstede's cultural value theory suggests that values and beliefs held by members of a society influence their judgments and decision-making, that in turn affect the behavior of individuals, groups, and institutions within the society. A brief description of each of Hofstede's cultural dimensions follows.

#### *Power Distance*

Power distance is the extent to which individuals in a society could accept unequal distributions of power (Hofstede, 1980). In a working environment, employees who possess *high* power distance accept that higher level managers should have more power to make management decisions relative to their subordinates. Employees who possess *low* power distance need justifications when experiencing power inequities in an organization.

#### *Individualism vs. Collectivism*

Individualism refers to the degree to which individuals define the concept of *self* as “I” or “we.” (Hofstede, 1980). Individualists emphasize the concept of “I” and focus on taking care of themselves and their immediate family. In organizational settings, they focus on individual benefits as opposed to organizational benefits. In contrast, collectivists emphasize the concept of “we” and therefore integrate into strong, cohesive groups with a high degree of interdependence. They focus on the higher-level greater-good, even if it means sacrificing their own benefits.

#### *Masculinity vs. Femininity*

Masculinity refers to the distribution of roles between genders (Hofstede, 1980). In general, nations scoring high on masculinity value achievement, heroism and material success. Therefore, masculine societies are generally more competitive. In contrast, nations scoring low on masculinity tend to value relationships and enjoy life. Therefore, feminine societies are less competitive and seek consensus.

#### *Uncertainty Avoidance*

Uncertainty avoidance refers to the degree of acceptance of uncertainties and ambiguities among members of a society (Hofstede, 1980). Nations that score high on

uncertainty avoidance often use strict laws and rules to reduce uncertainties and ambiguities. In contrast, nations that score low on uncertainty avoidance are more likely to accept differing opinions and tend to have fewer rules to restrict their activities.

#### *Long- time Orientation*

Fourteen years after his seminal study, Hofstede added a fifth cultural dimension, long-term orientation or Confucian Dynamism, which refers to differences in the “time horizon” of thinking between the eastern and western countries (Hofstede, 1991, 1994). Based on the Chinese value survey conducted across 23 countries, Hofstede (1991, 1994) concludes that nations that score high on long-term orientation hold values that are oriented toward the future, while nations that score low on long-term orientation possess values that are oriented toward the present.

#### *Summary of Cultural Dimensions*

Although researchers have criticized Hofstede’s cultural framework for overly simplifying cultures with four or five dimensions (Sivakumar & Nakata, 2001) and ignoring within-country cultural heterogeneity (Sivakumar & Nakata, 2001), Hofstede’s work clearly contributes to cross-cultural literature by developing more refined variables beyond simple categories based on nationality. Hofstede’s cultural value dimensions allow researchers to identify and measure general cultural attributes that may offer insights into understanding patterns of behaviors within and across cultures.

#### *Gray’s Framework*

Gray (1988) applies Hofstede’s cultural value dimensions to national accounting systems and practices presumed to reflect degrees of professionalism, uniformity, conservatism, and secrecy. Gray’s framework proposes that cultures’ societal values

shape the values of accounting-related professions (Gray, 1988). As such, accountants' values influence their judgments and decisions regarding financial reporting systems, information disclosure and similar issues, which in turn influence national accounting systems. Gray (1988) proposes that accountants' professionalism is closely associated with individualism and uncertainty avoidance, suggesting that nations with weaker uncertainty avoidance and more emphasis on individual judgments possess higher level of professionalism in their accounting systems. Uniformity is also proposed to be associated with individualism and uncertainty avoidance but towards the opposite direction. Specifically, nations with stronger uncertainty avoidance would prefer to have more specified rules and regulations to reduce levels of uncertainty, and a lower level of individualism will ensure the acceptance of such rules and regulations in a society. Similarly, conservatism is most closely related to uncertainty avoidance because nations that score high on uncertainty avoidance could utilize conservative judgments and behaviors to minimize unexpected variances under uncertainty environments. Last, Gray (1988) proposes that secrecy is closely linked with uncertainty avoidance, power distance and individualism, suggesting that nations that score high on uncertainty avoidance and power distance, and low on individualism and masculinity tend to withhold information from outsiders.

Salter and Niswander (1995) empirically test Gray's (1988) theory using data from 29 nations. The results confirm the links between Hofstede's cultural dimensions and Gray's accounting subcultural values as proposed by Gray (1988). Salter and Niswander (1995) also found that Gray's (1988) theory possesses high explanation power with regard to national financial reporting practices. Therefore, it is important to include



accounting studies applying both Hofstede's and Gray's frameworks in this literature review in order to fully capture all of the accounting studies examining cultural variables and their effects on accounting and auditing judgments and decisions.

*The GLOBE study by House et al. (2004)*

As one of the major cultural studies in business, the GLOBE study, conducted by House and many other scholars from different nations, collected survey and interview data from 62 societies from 1994-1997. This study expands Hofstede's original five cultural dimensions into nine to investigate the relationships between societal cultural values and organizational leadership style acceptance and effectiveness. House et al. (2004) keep the names and meanings of power distance and uncertainty avoidance. The authors (2004) also classify individualism into two parts, societal collectivism and in-group collectivism. Societal collectivism is consistent with Hofstede's individualism dimension; in-group collectivism reduces the societal value to organizational value to reflect individuals' self-identity as members of and adherence to the organization they belong to. Similarly, House et al. (2004) separates masculinity into two dimensions, gender egalitarianism and assertiveness. The former refers to the existence of social role differences between males and females, and the later refers to individuals' preferences of assertive and dominant relationships among societal members. Furthermore, House et al. (2004) renames Hofstede's long-term orientation cultural dimension to future orientation, and then adds two more dimensions, humane orientation and performance orientation, to better grasp societies' preferences regarding reward systems. Specifically, future orientation encourages members of a society to be long-term oriented even at the cost of sacrificing short-term benefits. Humane orientation promotes greater good and

rewards generous behaviors. Finally, performance orientation encourages performance excellence and rewards those who continuously strive to improve performance.

Drawing qualitative and quantitative data from 62 societies, the Globe study clusters the societies into ten groups based on their cultural values and links these cultural groups with different preferences and acceptances of leadership styles, providing the first empirical evidence that societal cultural values affect leaders' behaviors and organizational practices. The current literature review will also incorporate studies that incorporate the GLOBE study cultural dimensions to examine cultural effects on accounting issues.

### **Review of Cross-Cultural Accounting Studies**

#### *Management Control Systems*

With the growing trend of corporations expanding into foreign markets, knowing whether or not a corporation's management control systems (MCSs) can be equally effective in foreign locations is an important question (Chow, Kato, & Merchant, 1996; Chow, Shields & Wu, 1999). MCSs may include participative budgeting systems, compensation systems, and systems of controls.

#### Participative Budgeting

Using survey data from the United States and Mexico, Frucot & Shearon (1991) find that the cultural values of uncertainty avoidance and power distance interact with individuals' locus of control and affected their satisfaction with participative budgeting processes. Leach-Lopex, Stammerjohan & McNair (2007) survey managers from the U.S. and Mexico and find that the extent to which budget participation affects performance

varied between U.S. and Mexican managers due to cultural differences in uncertainty avoidance, power distance and individualism. Specifically, budget participation helps Mexican managers who cannot effectively communicate in English, and/or subordinates of U.S. managers, gain the most job-relevant information to improve their performance. However, job-relevant information does not mediate the participation-performance relationship for the U.S. managers. Similarly, Harrison (1992) and Ueno & Wu (1993) find that power distance and individualism influenced employees' willingness to participate in the budgeting process, and practices of participative budgeting. Results of these studies (Harrison, 1992; Ueno & Wu, 1993) suggest that companies in low power distance and high individualism societies used participative budgeting more extensively, are more likely to build budget slack, and are less likely to use long-term performance evaluation. Lau & Buckland (2000) survey 71 Norwegian managers and compare their survey results with two previous cultural studies conducted in Australia and Singapore respectively, and find that Norwegian managers' low power distance, and moderate individualism cultural value are associated with higher level of managers' participation in budgeting process in Norway. With regard to the effect of budgetary participation on managerial performance, Tsui (2001) surveys 51 Chinese managers and 38 Caucasian managers in Hong Kong. She find Chinese managers, who are collectivist, possessed higher level of power distance and are long-term orientated, performed worse than the short-term oriented individualistic Caucasian managers who possess lower level of power distance, when the level of budget participation is high. Although Tsui (2001) adopts long-term orientation (Confucian dynamics) to support for the research hypotheses, she does not focus on managers' planning time horizon. Instead, she argues for two unique

aspects of this concept – respect for authority and acceptance of unequal relationships between people, which are conceptually the same as power distance cultural value – based on another Confucian thought of “Wu lun” that orders relationships of members in a group according to their authorities.

### Compensation systems

Cross-cultural differences in compensation systems have also been widely studied in the accounting literature during the past two decades. Merchant, Chow & Wu (1995) find a weak link between national culture and firms’ performance evaluation and reward practices. However, other studies document that national cultural significantly influences the design and practices of companies’ compensation systems. For instance, Harrison (1993) examines the relationships between accounting-based performance evaluation and work-related attitudes by surveying employees in Singapore and Australia companies. The results suggest that measures of power distance and individualism significantly influenced employees’ tension and job satisfaction when using different evaluation styles (Harrison 1993). Specifically, high reliance on accounting-based performance evaluation methods reduces work tension and increased job satisfaction in Singapore which scores relatively high on power distance and low on individualism. In contrast, greater reliance on accounting-based performance evaluations leads to higher tension and lower job satisfaction in Australia, with its relatively low power distance and high individualism. Similarly, Chow, Lindquist & Wu (2001) and Awasthi, Chow & Wu (2001), find that measures of power distance and individualism influence employees’ satisfaction with imposed performance evaluation and rewards. Their results suggest that it would be easier for managers to impose high-stretch performance standards to employees in China

which is a high power distance / low individualism society, relative to the U.S. which is a low power distance / high individualism society. More recently, Brody, Lin & Salter (2006) examine managers' preferences for "merit pay" as one component of employees' compensation in the U.S. (individualist) and Taiwan (collectivist), and find that U.S. managers are less likely to provide merit pay to underperforming employees than managers from Taiwan.

### Systems of controls

More broadly, previous studies also investigate how cultural values influenced the design of complicated management control systems. Studies suggest that Hofstede's cultural dimensions are associated with companies' preferences for general control systems, including participative budgeting, decentralization, reward systems, group-centered decision-making, and activity based costing systems (Efferin & Hopper, 2007; Chow, Shields & Wu, 1999; Chow, Kato & Merchant, 1996; Chow, Shields, & Chan, 1991; Harrison, McKinnon, Panchapakesan, & Leung, 1994; Chow, Kato, & Shields, 1994; Brewer, 1998.) In general, these studies indicate that MCSs do not transfer easily across countries, and therefore, should be adapted to the local cultural environment.

### Summary and Avenues for Future Research

As summarized in Table 2-2, studies have found that three out of five of Hofstede's cultural dimensions significantly influence the design and applications of corporate management control systems across the globe. Specifically, cultural values of uncertainty avoidance, power distance and individualism affect employees' attitudes toward participative budgeting, as well as its outcomes (Frucot & Shearon, 1991; Harrison, 1992; Ueno & Wu, 1993; Lau & Buckland, 2000; Tsui, 2001; Leach-Lopez,

Stammerjohan & McNair, 2007). Power distance and individualism influence corporate compensation systems, including performance evaluation and rewards practices (Merchant, Chow & Wu, 1995; Harrison 1993; Chow, Lindquist & Wu, 2001; Awasthi, Chow & Wu, 2001; Brody, Lin & Salter, 2006). These findings emphasize the fit between national culture and management practices, and suggest that management control systems need to be culturally sensitive in order to be successful in the globalized business environment.

Summarizing the MCS studies above sheds light on areas in need of future research. A significant area of MCS research is cost estimation and allocation which has not been associated with culture in extant literature. For example, patterns of cost estimation and allocation might be influenced by the costing managers' cultural values of individualism and long term orientation, and consequently affect corporate financial reporting. Collectivist department managers might accept having more costs allocated to their own department for the benefit of the company, but individualist managers might not concur. On the other hand, long-term oriented managers might be more likely to sacrifice short-term profits in order to gain benefits in the long-run. Future studies should examine the cultural effects on managers' cost estimation and allocation decisions to add to the current research on management control systems.

[Insert Table 2-2 about here]

### *Financial reporting behaviors and Standards*

Empirical studies of financial reporting have used both Hofstede's cultural dimensions and the Gray's framework to hypothesize and test for differences in

disclosure and financial reporting decisions across cultures. In a sample of 256 corporate annual reports drawn from the U.S., France, Germany, Norway, Hong Kong and Japan, Zarzeshi (1996) provides the first evidence that the culture's *secretiveness* (Gray, 1988) influence corporate disclosure practices. Specifically, Zarzeshi (1996) finds that local enterprises in a country with higher levels of cultural secretiveness disclose less financial information than local enterprises in a country with lower levels of cultural secretiveness. However, international enterprises (e.g. multinational companies) disclose higher levels of information than expected compared to their local culture (Zarzeshi, 1996). Also, based on Gary's secrecy hypothesis, Tsakumis (2007) finds that accountants from the more secretive society of Greece are less likely to disclose information relative to accountants from the less secretive U.S.

Many other studies (e.g., Hussein, 1996; Archambault & Archambault, 2003; Salter, 1998; and Ho & Taylor, 2007) utilize four out of the five Hofstede's dimensions to examine corporate disclosure behaviors in different nations. In general, these studies provide evidence that firms' financial disclosures are influenced by national culture, sometimes in combination with other variables. Jaggi & Low (2000) and Hope (2003) find that Hofstede's original four national cultural values interact with a society's legal environment to influence companies' financial disclosure decision-making. Specifically, they find that cultural values possessed more impact in nations with more strict statutory laws relative to nations that rely more heavily on common law regimes. In code law countries, higher level of individualism is positively associated with higher levels of financial disclosure (Jaggi & Low 2000).

In addition to financial disclosure practices, empirical studies in financial accounting examine accounting estimates, analysts' forecasts, and earnings management. Clement, Rees & Swanson (2003) examine analysts' earnings forecasts data from 24 countries as recorded in the I/B/E/S database and find that individualism interacts with corporate governance and analysts' experiences to influence forecasts accuracy. Using an experiment to investigate judgments made by accountants in France, Germany, and the United States, Schultz Jr. & Lopez, (2001) find that uncertainty avoidance significantly influenced accounting estimates. More recently, Douppnik (2008) examines the influence of individualism and uncertainty avoidance on corporate earnings management in 31 countries. The findings indicate that cultural values significantly influence earnings management, especially earnings smoothing activities (Douppnik, 2008).

Studies based on Hofstede and Gray theories have also found that cultural values explain some of the diversity in financial accounting standards worldwide. Douppnik & Salter (1995) develop a general model to explain accounting standard development and change. Their preliminary empirical test of the model indicates that culture and other environmental factors influence countries' accounting practices, and therefore should be important factors in evaluating accounting standards across the globe. Chow, Chau & Gray (1995) argue that Chinese cultural values which support statutory control, uniform practices, conservatism and secrecy in disclosure, constrained accounting reforms towards a more internationally focused financial reporting system in China. More recently, Ding, Jeanjean & Stolowy (2005) and Zeghal & Mhedhbi (2006), examine the impact of national culture on the adoption of IFRS in different nations. Both studies find that Hofstede's cultural values possessed significant explanatory power regarding the



divergence of local and international accounting standards. To identify the determinants of accounting practitioners' attitudes toward uniform accounting standards, Roberts & Salter (1999) survey auditors in 23 countries and find that auditors generally prefer uniform accounting standards, and their degree of support for uniformity is determined by both the general culture and economic condition in their country.

Through source documentation and personal interviews, McKinnon & Harrison (1985) investigate the setting of accounting standards in a single country – Japan. They find that Japanese cultural values help maintain a harmonious relationship between companies and governments and help solve conflicts in accounting standards in Japan. Sudarwan & Fogarty (1996) investigate the impact of culture on accounting in Indonesia. They find that power distance, uncertainty avoidance, and individualism significantly influence Indonesian firms' financial reporting practices and accounting standards in that country.

#### Summary and Avenues for Future Research

Hofstede and Gray cultural frameworks have been widely used to examine the financial reporting behaviors and the diversification of accounting standards across a variety of cultures. As summarized in Table 2-3, the empirical findings indicate that conservatism and secrecy interact with national legal systems and economic situations to influence companies' financial disclosures. In addition, disparities between national accounting standards and IFRS can be explained by four out of the five Hofstede's cultural factors, indicating that national culture constrains the adoption of IFRS.

Although research suggests that a relationship exists between culture and corporate financial reporting, it is not known if global investors attempt to account for

different patterns of financial reporting behavior and adjust their investment decisions accordingly. Future research could address this question using experimental studies to investigate investors' reaction to cross-cultural differences in financial reporting.

[Insert Table 2-3 about here]

### *Auditing*

Most cross-cultural research in auditing examines cultural effects on auditors' attitudes and abilities to perform audit tasks. For example, Gul & Tsui (1993) find that Hong Kong auditors with lower levels of uncertainty avoidance are more likely to issue a "subject to" qualification than Australian auditors who have higher level of uncertainty avoidance. Gul & Tsui (1993) argue that Hong Kong auditors are less likely to feel threatened at the thought of losing a client because of their lower level of uncertainty avoidance, therefore, are more likely to resist client pressure and provide clients with unfavorable audit reports, relative to Australian auditors. Ho & Chang (1994) examine the cross-cultural differences of auditors' diagnostic probability with two cases<sup>5</sup> using a sample of 51 auditors and 101 students in Taiwan to represent experienced and inexperienced auditors. The results suggest that Hofstede's original four cultural dimensions significantly influence auditors' diagnostic probability judgments in the medical case but not in the audit case where auditors' professional experiences assist their judgments (Ho and Chang 1994).

Regarding auditors' abilities to perform their tasks, Arnold, Bernardi & Neidermeyer (2001) experimentally examine 181 auditors' materiality estimates in seven European countries with differing levels of uncertainty avoidance. The results

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<sup>5</sup> one case presented an auditing related scenario, the other one presented a medical related scenario

demonstrate a positive relationship between auditors' materiality estimates and their levels of uncertainty avoidance (Arnold et al., 2001). In a similar experimental setting, Hughes, Sander, Higgs & Cullinan (2009) find that power distance, uncertainty avoidance and individualism affect auditors' risk assessments and abilities to predict changes in certain accounts. Sim (2010) tests the impact of individualism on auditors' belief revisions when performing internal control evaluations. He finds that Taiwanese auditors revise their beliefs more favorably than Australian auditors when the additional audit evidence is more favorable. According to Sim (2010), these results imply that Taiwanese auditors' have a greater propensity to keep the client happy because of their collectivist cultural value, thus reducing auditors' independence and ability to make impartial judgments. Chan, Lin & Mo (2003) investigate auditors' ability to detect accounting errors by examining a private archival database from 80 clients of audit firms in Mainland China. These 80 audit clients are all multinational companies operating in Mainland China. Chan et al. (2003) find that power distance and individualism significantly influence the accounting errors detected by auditors. Specifically, companies originally from a high power distance society tend to have larger accounting errors if they used power centralization management strategy. Companies from individualist nations also tend to have larger errors (Chan, Lin & Mo 2003). Drawing from a sample of 93 auditors from the United Kingdom and China, Lin & Fraser (2008) find that auditors from the United Kingdom are less likely to alter their decisions when experiencing pressure from clients in audit conflict situations, relative to Chinese auditors. Therefore, they conclude that Hofstede's original four national culture values

should be an important factor influencing auditors' ability to withstand client pressure (Lin & Fraser, 2008).

Furthermore, companies' auditor choice has also been found to be associated with national culture. Hope, Kang, Thomas & Yoo (2008) create a novel measure of secretiveness to test companies' auditor choices across nations. Using a large sample of companies from 37 nations, they find that companies in nations with higher levels of secretiveness are less likely to hire a Big 4 audit firm. Hope et al. (2008) argue that companies from a less secretive nation are more likely to pursue high quality financial reporting, and therefore tend to choose Big 4 accounting firms which provide higher quality audit service, and vice versa.

Last, Abdolmohammadi & Sarens (2011) adopt cultural dimensions proposed by House et al.'s (2004) GLOBE study to examine the cultural effects of internal auditors' perceived use of and compliance with Internal Auditing Standards. Using the Common Body of Knowledge in Internal Auditing Database (CBOK), this study clusters 19 sample countries into 5 cultural groups – Anglo, East Europe, German Europe, Latin America and Latin Europe. Results indicate significant differences of the perceived “use” of and “compliance with” Internal Auditing Standards across cultural groups. Specifically, uncertain avoidance is negatively related to both the use of and compliance with Internal Auditing Standards, indicating a lack of use of the relatively new standards (introduced by IIA at 2008) in high uncertainty avoidance societies. In addition, assertiveness and human orientation have also been found to be positively associated with internal auditors' perceived compliance with Internal Auditing Standards.

#### Summary and Avenues for Future Research

As summarized in Table 2-4, a great deal of evidence has demonstrated that auditors' attitudes and abilities to perform audit task are influenced by their cultural values – primarily individualism, power distance and uncertainty avoidance. However, previous studies focusing on cross-country comparisons have not addressed certain problems faced by contemporary international audit firms. For example, according to a census conducted by the Department of Labor and the Census Bureau, more Asian auditors are working in Big 4 accounting firms in the United States (Kahan, 2006). How these Asian auditors' mental states and behavior differ from American auditors remains an unanswered question for future research.

[Insert Table 2-4 about here]

### *Taxation*

Richardson (2007) develops a theoretical model linking culture to key values of a nation's tax systems (i.e., equity, simplicity, neutrality, and visibility) using the cultural frameworks of Hofstede (1980) and Gray (1988). Archival data from 43 countries suggests a significant positive association between individualism and all of the tax system values that include tax equity, neutrality, simplicity and visibility. Power distance is negatively related to tax system values of equity, neutrality, and visibility. Uncertainty avoidance is also negatively associated with tax system values of simplicity, neutrality, and visibility (Richardson, 2007).

Tsakkumis, Curatola & Porcano (2007) and Richardson (2008) investigate cross-cultural differences in companies' tax evasion behaviors using archival data from 47 and 50 countries respectively. Results of both studies suggest that tax evasion is more likely

in nations that score high on uncertainty avoidance, high on power distance, low on individualism, and low on masculinity.

### Summary and Avenues for Future Research

A nation's tax system is presumed to be highly localized and influenced by social and political issues (Richardson, 2007). As shown in Table 2-5, national tax system values may also be influenced by the cultural values of power distance and uncertainty avoidance (Richardson, 2007). Moreover, tax evasion behavior may also be influenced by four out of five Hofstede's cultural dimensions (Tsakkumis, Curatola & Porcano, 2007; Richardson, 2008). Tax evasion behavior might also be associated with national tax systems because a relatively loose tax system might generate a higher level of tax evasion behavior. Therefore, future research opportunities exist around the interaction of culture values and national tax systems and their effects on tax evasion.

[Insert Table 2-5 about here]

### *Ethics*

Most ethics research involving cultural differences has examined the impact of cultural values on accountants' or auditors' perceptions of aggressive or fraudulent behavior and ethical decision-making processes. By surveying accountants and auditors from different nations, studies have found that Hofstede's cultural dimensions are associated with accounting professionals' ethical perceptions (Cohen, Pant & Sharp, 1995; Arnold, Bernardi, Neidermeyer & Schmee, 2007; Smith & Hume, 2005) and moral choices (Schulz, Johnson, Morris & Dyrnes, 1993; Roxas & Stoneback, 1997; Ge & Thomas, 2008). Two experimental studies (Tsui, 1996; Tsui & Windsor, 2001) compare

moral choices of accountants and auditors between western and eastern countries. Results suggest that accounting professionals from nations with individualistic cultures possess higher ethical values than those from nations with collectivistic cultures. Tsui (1996) and Tsui & Windsor (2001) explain that individualists are more likely to stay with personal beliefs about social justice and therefore have higher level of cognitive ethical reasoning, which result in higher level of ethical judgments.

With regard to the attribution of observed fraudulent behavior, Wing & Lui (2007) apply Implicit Theory<sup>6</sup> to investigate differences in causal judgments between American and Chinese accounting students. Results suggest that Chinese students are more sensitive to situational factors and less likely to attribute fraudulent behavior to individuals relative to American students.

Studies have also examined the implementation of international code of ethics for professional accountants. Cohen, Pant & Sharp (1992) argue that different cultural values and levels of economic development might preclude the local implementation of an international code of conduct because these international codes might be irrelevant to the local needs. Using archival data from 104 International Federation of Accountants (IFAC) member companies, Clements, Neil & Stovall (2009) empirically examine the adoption of the IFAC Code of Ethics and find that companies from individualist and high uncertainty avoidance societies are less likely to adopt the International Code of Ethics because these companies are less likely to follow outsiders' ethical standards by giving up their own beliefs of social justice.

#### Summary and Avenues for Future Research

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<sup>6</sup> Implicit theory reflect individuals' beliefs and stances, and provide a means to describe differences across groups and individuals (Wing & Lui 2007, 222)

As shown in Table 2-6, cross-cultural ethical studies have comprehensively examined the impact of cultural values on accounting related ethical perceptions, decision-making and moral behavior. However, most studies in this subfield only test the differences in ethical judgments across nations. Future research might address intervention techniques designed to regulate ethical decision-making toward normative standards. For instance, designing control mechanisms to improve collectivistic accountants' moral judgments in accounting related conflict situations should greatly contribute to this literature.

[Insert Table 2-6 about here]

### **Conclusion**

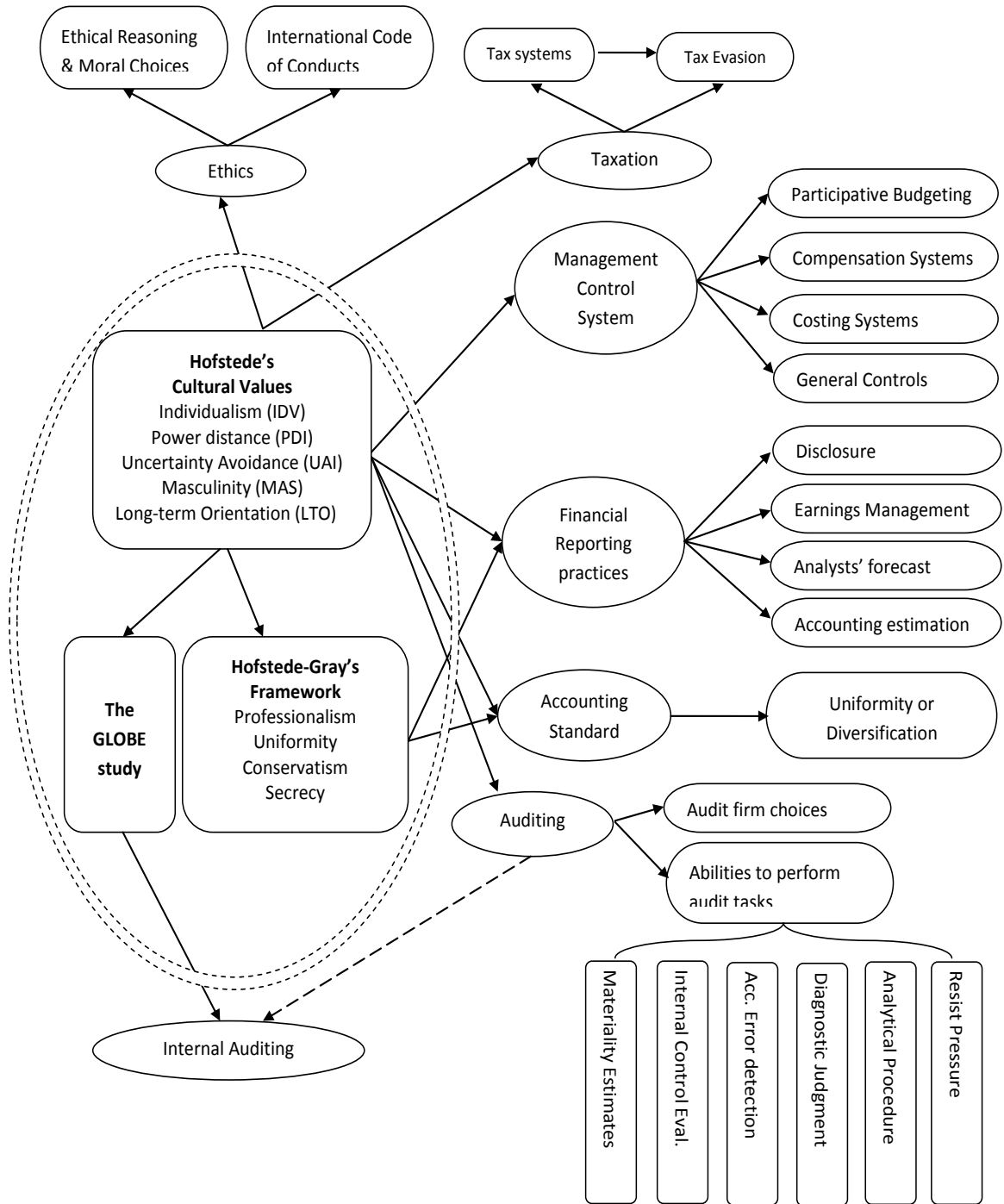
This paper reviews and categorizes cultural studies in accounting research across five accounting disciplines. This is a timely topic because culture has been identified as an important factor influencing the adoption of international accounting practices in the globalized business environment (Doupnik & Tsakumis, 2004). Additionally, more corporations are expanding their operations across the world (Barefoot & Mataloni Jr., 2010). Despite the abundance of research in this area, this paper has identified a number of opportunities for future research. Beyond the specific suggestions for future research included in each sub-section above, this synthesis sheds light on the paucity of studies examining the effect of societies' time horizon on accountants' or auditors' judgments and decisions. The other four dimensions have been widely studied in accounting literature, however, the current literature review only identified five articles (Harrison, McKinnon, Panchapakesan & Leung, 1994; Cohen, Pant & Sharp, 1995; Tsui, 1996;



Tsui, 2001; Ge & Thomas, 2008) examining the effects of time horizon on accounting practices.

Hofstede & Minkov (2010) re-emphasize the importance of time orientation and argue that a culture's time orientation is related to societal, business, and economic as well as environmental results. Thus, cultural time orientation could also be an important factor influencing corporate accounting practices. For example, employees' satisfaction with management control systems might be increased if the design of the control system is congruent with their cultural time orientation. On the other hand, corporate financial reporting might generate different patterns if managers place different concerns on quick results in the capital markets or long-term benefits in the product markets. The next two chapters of this dissertation address these hypotheses by empirically examining the impact of cultural time orientation on management control systems and financial reporting decisions.

**Figure 2-1** An Overview of Cultural Effects on five accounting disciplines



**Table 2-1 List of Journals**

Journal Name	# of Articles identified in each journal
Accounting Auditing Accountability Journal	0
Australian Accounting Review	0
Abacus	2
Accounting and Business Research	2
Accounting Education	0
Accounting and Finance	0
Accounting Horizons	1
Auditing: A Journal of Practice and Theory	1
Accounting, Organizations and Society	9
Administrative Science Quarterly	0
Australian Tax Forum	0
Australian Tax Review	0
Behavioral Research in Accounting	0
British Accounting Review	0
Contemporary Accounting Research	3
Decision Sciences	0
Harvard Business Review	0
International Journal of Accounting	18
Journal of Accountancy	0
Journal of Accounting, Auditing and Finance	1
Journal of Accounting and Economics	0
Journal of Accounting Literature	0
Journal of Accounting and Public Policy	2
Journal of Accounting Research	1
Journal of the American Taxation Association	0
Journal of Business Ethics	5
Journal of Business, Finance and Accounting	0
Journal of Finance	0
Journal of Financial Economics	0
Journal of Financial and Quantitative Analysis	0
Journal of International Accounting Auditing and Taxation	3
Journal of International Accounting Research	1
Journal of International Financial Management & Accounting	5
Journal of Management Accounting Research	1
Journal of Taxation	0
Management Accounting Research	1
Managerial Auditing Journal	1
National Tax Journal	0
Review of Accounting Studies	0
Review of Quantitative Finance and Accounting	0
The Accounting Review	1
Total	58

**Table 2-2 Summary of Cultural Studies in Managerial Control Systems**

Authors	Year	DVs	Cultural values	Methods	Findings
Chow, Shields, & Chan	1991	general controls	IDV	experiment	Cultural individualism and management controls independently influence manufacturing performance.
Frucot & Shearon	1991	participative budgeting	UA; PDI	survey	Culture values moderate the relationship between individuals' locus of control and satisfaction with participation in the budgeting processes.
Harrison	1992	participative budgeting	PD; IDV	survey	Power distance and individualism influence employees' participation in the budgeting processes.
Ueno & WU	1993	budget control practices	IDV	survey	Individualism influences corporate practices in participative budgeting.
Harrison	1993	compensation system	PD; IDV	survey	Culture influences the relationship between superiors' reliance on accounting performance measures and subordinates' work-related attitudes.
Chow, Kato, & Shields	1994	general controls	UA; PDI; IDV	experiment	Culture influences corporate systems of controls with regard to organizing, planning and rewarding.
Harrison, McKinnon, Panchapakesan, & Leung	1994	general controls	PD, IDV, LTO	survey	Culture influences organizational design and management planning and control systems.
Merchant, Chow, & Wu	1995	compensation system	measuring, evaluating & rewarding	field study	Weak link between culture and firms' performance evaluation and reward practices.
Chow, Kato, & Merchant	1996	general controls	four factors	survey	Japanese profit center managers use tighter procedural controls relative to the U.S. managers.

Brewer	1998	ABC systems	five factors	case study	Cultural values influence ABC implementation process, and consequently influence ABC outcomes.
Chow, Shields & Wu	1999	general controls	four factors	survey	National culture affects firms' design of and employees' preference for 7 management controls.
Lau & Buckland	2000	participative budgeting	PD; IDV	survey	Low power distance and moderate individualism culture are associated with higher level of managers' participation.
Tsui	2001	participative budgeting	PD; IDV; LTO	survey	Culture values moderate the effect of management accounting systems and budgetary participation on managerial performance.
Chow, Lindquist & Wu	2001	compensation system	PD;IDV	experiment	Power distance and individualism influence employees' acceptance of imposed performance standards.
Awasthi, Chow & Wu	2001	compensation system	PD;IDV	experiment	IDV and PD cultural values influence employees' decisions under, as well as satisfaction with, imposed performance evaluation and rewards.
Brody, Lin & Salter	2006	compensation system - Merit pay	IDV	experiment	Individualist evaluators provide less merit to poor performers than the collectivist evaluators.
Leach-Lopez, Stammerjohan & McNair	2007	participative budgeting	UA,PD,IDV	survey	Cultural values moderate the relationship between budget participation and performance
Efferin & Hopper	2007	general controls	five factors	field study	Chinese culture prefers low budget participation, centralization, subjective controls, and few rewards tied to results and the use of group rewards.

**Table 2-3 Summary of Cultural Studies in Financial Reporting Standards and Practices**

Authors	Year	DVs	Cultural values	Methods	Findings
McKinnon & Harrison	1985	settings of accounting standards	General	Documentation and interview	Cultural determinants influence Accounting policy determination
Doupnik & Salter	1995	accounting practice	Hofstede & Gray	archival	Cultural values explain existing accounting diversities worldwide
Chow, Chau & Gray	1995	accounting reforms practices	Hofstede & Gray	Argument	Chinese culture is likely to constrain the implementation of accounting reforms in China.
Zarzeshi	1996	accounting disclosure practices	Secrecy,	archival	Local enterprises in a country with higher level of cultural secretiveness disclose less financial information than local enterprises in country with lower level of cultural secretiveness.
Hussein	1996	financial reporting	General	archival	A uniform accounting standards may not be achieved because of the differences of social, cultural, and political values across countries.
Salter	1998	financial disclosures	UA	archival	Levels of uncertainty avoidance influence firm's financial disclosure practices.
Roberts & Salter	1999	attitudes toward uniform reporting practices	four factors	survey	Cultural values influence auditors' attitudes toward a single mandated financial reporting treatment.
Jaggi & Low	2000	financial disclosures	four factors	archival	Cultural values interact with law systems influenced firm's financial disclosure.

Schultz Jr. & Lopez	2001	accounting estimates	UA	experiment	Experienced accountants with higher level of uncertainty avoidance are more sensitive to framing effects than accountants with lower level of uncertainty avoidance.
Clement, Rees & Swanson	2003	analysts' forecast accuracy	IDV	archival	Individualism interacts with corporate governance and analysts' experience influence their forecast accuracy.
Archambault & Archambault	2003	determinants of disclosure	four factors,	archival	Disclosure is influenced by culture (all four factors), national systems, and corporate systems.
Hope	2003	firm-level disclosure	four factors	archival	Both legal origin and culture are important factors in explaining firm disclosure.
Ding, Jeanjean and Sttolowy	2005	divergence of national GAAP from IAS	Hofstede and Schwartz	archival	Culture matters more than legal origin in explaining divergences from IAS.
Zeghal and Mhedhbi	2006	adoption of IFRS	Anglo-American group	archival	Developing countries that have an Anglo-American culture are most likely to adopt IFRS
Tsakumis	2007	application of reporting rules	Secrecy	archival	Greek accountants who are high on secretiveness are less likely to disclose information than U.S. accountants who are low on secretiveness.
Ho, & Taylor	2007	triple bottom-line disclosure	General	archival	National culture is one determinant factor of firms' triple bottom-line (TBL) disclosure practice.
Douppnik	2008	earnings management	UA, IDV	archival	Cultural values are significantly related to earnings management.

**Table 2-4 Summary of Cultural Studies in Auditing**

Authors	Year	DVs	Cultural values	Methods	Findings
Gul & Tsui	1993	auditors' attitudes to uncertainty qualifications	UA	survey	Auditors who are low on uncertainty avoidance are more likely to issue a "subject to" qualification to clients.
Ho & Chang	1994	diagnostic probability judgments	four factors	experiment	National culture influences auditors' diagnostic probability judgments
Arnold, Bernardi & Neidermeyer	2001	materiality estimates	UA	experiment	When UA increased, materiality estimates also increased.
Chan, Lin & Mo	2003	audit-detected accounting errors	PD; IDV	archival	Power distance and individualism explain the differences in the relative magnitude of errors.
Lin & Fraser	2008	auditors' ability to resist client pressure	PD; IDV	experiment	National culture influences auditors' ability to withstand client pressure in audit conflict situations
Hope, Kang, Thomas & Yoo	2008	firms' auditor choice	Secrecy	archival	Firms in "more secretive" countries are less likely to hire big 4 auditors.
Hughes, Sander, Higgs & Cullinan	2009	abilities to perform analytical procedures	PD; UA; IDV	experiment	Cultural differences affect auditors' risk assessments and abilities to predict changes in balance sheet accounts.
Sim	2010	groups evaluating internal control	IDV	experiment	Taiwanese auditors revise their beliefs more favorably than Australian auditors when the additional audit evidence is more favorable.
Abdolmohammadi & Sarens	2011	Perceived use of and compliance with Internal audit Standards	9 dimensions by GLOBE	Archival	Uncertainty avoidance is negatively correlated with use and compliance; assertiveness and human orientation were positively related to compliance.



**Table 2-5 Summary of Cultural Studies in Taxation**

Authors	Year	DVs	Cultural values	Methods	Findings
Richardson	2008	tax evasion	UA; IDV	archival	Tax evasion is associated with high uncertainty avoidance and low individualism.
Tsakumis, Curatola & Porcano	2007	tax evasion	four	archival	Tax evasion is associated with high uncertainty avoidance, low individualism, low masculinity, and high power distance.
Richardson	2007	key values of tax system	IDV, PD, UA	archival	Individualism is related to all of the tax values; power distance is related to equity, neutrality, and visibility; uncertainty avoidance is related to simplicity, neutrality, and visibility.

**Table 2-6 Summary of Cultural Studies in Ethics**

Authors	Year	DVs	Cultural values	Methods	Findings
Wing & Lui	2007	causal judgment about fraudulent behavior	four factors	survey	Chinese students are more sensitive to situational factors and less likely to attribute fraudulent behavior to individuals relative to American students.
Cohen, Pant & Sharp	1995	ethical perceptions and evaluations	five factors	survey	Culture influences ethical perceptions and evaluations.
Roxas & Stoneback	1997	Moral choice and ethical perceptions	four factors	Survey	Culture affects ethical decision-making process
Tsui	1996	ethical reasoning and behavior	IDV, PD and LTO	experiment	U.S. subjects possess higher level of ethical values. (cultural differences affect levels of ethical reasoning)
Schulz, Johnson, Morris & Dyrnes	1993	Reporting of questionable acts	PD, UA	Survey	National culture and specific circumstance influence decision-making of reporting questionable acts.
Clements, Neil & Stovall	2009	convergence of international Code of Ethics	IDV, PD	archival	Nations with high individualism and uncertainty avoidance cultural values are less likely to adopt the IFAC code.
Ge & Thomas	2008	ethical reasoning and decisions	five factors	Survey	Cultural differences influence accounting students' ethical reasoning and decisions.
Arnold, Bernardi, Neidermeyer & Schmee	2007	perceptions of ethical actions	four factors	Survey	Individualism and Masculinity influence accountants' perceptions of ethicality.
Smith & Hume	2005	ethical beliefs	IDV and PD	Survey	Individualism influence accountants' ethical belief systems.
Cohen, Pant & Sharp	1992	constraints on Code of Ethics	four factors	argument	Cultures values and economic situations influence local implementation of the international Code of Ethics.
Tsui & Windsor	2001	ethical reasoning P score	four factors	experiment	Australian auditors have higher ethical reasoning scores than those from China

## Chapter 3: The Impact of Cultural Time Orientation on Participative Budgeting

### Introduction

Participative budgeting has been widely studied in the management accounting literature. It refers to a management control system that enables affected employees to provide input into the budgetary process. The seminal work of Argyris (1952, 1953) recommends participative budgeting as a method to reduce the dysfunctional effects caused by budget-achieving pressure arousal. Many prior studies (see Brownell, 1982; Birnberg, Shields, & Young, 1990 for review) have investigated the effects of participative budgeting on individuals' cognitions, attitudes, motivations, and behaviors; however, these studies have not produced unified findings. The purpose of the current study is to experimentally investigate the impact of the national cultural dimension, time orientation, on employees' attitudes toward participative budgeting, as understanding cultural differences can provide insight into why participative budgeting might not yield consistent effects.

National culture has been referred to as a learned trait that influences individuals' thoughts and decisions, and time orientation is one facet of national culture (Hofstede, 1980, 1991). According to Hofstede (1994), nations that score high on long-term orientation hold values that are focused on the future, while nations that score low on long-term orientation possess values that are focused on the present. By applying the participation congruence model (Clinton, & Hunton, 2001), this study hypothesizes that participative budgeting will be more effective when employees who possess a short-term (long-term) time orientation are involved with budgets with a short-term (long-term) planning horizon. To test the hypothesis, we conducted a quasi-experiment with 87

participants from China and 77 participants from the U.S., wherein time orientation (long-term or short-term) was measured and budget planning horizon (long-term or short-term) was manipulated. The results suggest that when cultural time orientation and budget planning horizon are congruent (incongruent), the participants' satisfaction with the participative budgeting process was relatively positive (negative).

Study results also reveal that participants from China, who indicated a relatively long-term time orientation, reacted less extremely to budget horizon congruence and incongruence, compared to participants from the U.S., who expressed a relatively short-term time orientation. This finding is consistent with the Confucian thought of “The Doctrine of the Mean”, which is taught throughout China, and emphasizes the moderation in expression of feelings and actions as a way to maintain internal equilibrium and foster a harmonious society.

This study extends the participative budgeting literature by helping to explain prior conflicting findings of participative budgeting from a cultural perspective, and suggests that managers who work for global organizations should be sensitive to different cultural time orientations when designing participative budgeting processes in different nations. The remainder of this paper is organized as follows. The next section reviews relevant background literature and develops the research hypothesis. The subsequent two sections present the research method and study results. The final section discusses the findings and offers suggestions for future research in this area.

## **Background and Hypothesis**

### *Participative Budgeting*

Participative budgeting is one of the most widely studied areas in management accounting research. Many prior empirical studies have investigated the effects of participative budgeting on individuals' mental states and performance, and have argued that budget participation can enhance employees' acceptance of and commitment to budget goals (Argyris, 1952, 1953; Hofstede, 1967; also see Brownell, 1982; Birnberg et al., 1990 for review). For example, Argyris' (1952, 1953) seminal and influential studies recommend participative budgeting as a method to reduce the dysfunctional effects caused by budget-achieving pressure arousal. Following Argyris' suggestions, many recent studies conduct surveys and experiments to investigate the function of participative budgeting. These studies show that participative budgeting is positively associated with budget goal commitment (Hofstede, 1967; Milani, 1975; Chong & Chong, 2002), organizational commitment (Milani, 1975), job satisfaction (Milani, 1975), as well as job performance (Schuler, 1980). Wentzel (2002) conduct a comprehensive field study regarding these effects of participative budgeting at a single large hospital. She finds that increased participation during budgeting increased managers' fairness perceptions, which in turn increased budget goal commitment and enhanced job performance.

Although many of the prior studies suggest positive relationships between participative budgeting and individual outcomes, the results of some studies have not been consistent with the "more participation is better" thesis (e.g., Cherrington, & Cherrington, 1973; Merchant, 1981; Brownell & McInnes, 1986; Libby, 1999), as some studies have found that certain contextual factors intervene in the relationship between participative budgeting and employee outcomes. These contextual factors include the

design of reward systems (Cherrington & Cherrington, 1973), centralization of the organizational structure (Merchant, 1981), and employees' perceptions of their influence on the final budget decision (Libby, 1999).

As indicated, prior studies have not produced a coherent or unified conclusion about the individual effects of budget participation, as contextual factors such as incentives, organizational culture, and procedural justice perceptions can moderate or nullify the influence of participative budgeting on employees' cognitions, affects, motivations, and behaviors. The current study adds to the contextual stream of participative budgeting literature by examining how cultural time orientation differences can produce both positive and negative effects of budget participation, depending on whether the budget planning horizon is congruent or incongruent with the employees' time orientation.

### *Cultural Time Orientation*

Long-term orientation is one dimension of Hofstede's culture framework. This dimension is based on the Chinese Confucian philosophy. According to Hofstede (1994), nations that score high on long-term orientation hold values that are oriented toward the future, while nations that score low on long-term orientation possess values that are oriented toward the present. Using a standard questionnaire about business goals, Hofstede (2004) surveys MBA students from 15 countries or international territories around the world to study time orientation. Hofstede's long-term orientation index scores range from a high of 118 (China) to a low of 16 (Ghana, Nigeria & Sierra Leone, all tied). The U.S. ranks fairly low at 29, indicating a relatively short-term time orientation, as compared to China.

The aforementioned cultural difference suggests that employees who are raised and work in the U.S. are likely to be relatively short-term orientated, thus place more emphasis on short-term over long-term results. On the other hand, employees who are raised and work in China are likely to be more long-term oriented, hence be more concerned about long-term than short-term results. This difference in time orientation across cultures raises the question as to the attitudinal effect of mismatching employees' cultural time orientation with the planning horizon (long-term or short-term) of the budget on which they have been asked to participate.

#### *Budget Participation Congruence*

Contingency theory suggests that there is no best way to design a management control system. Instead, the applicability of a specific management control system depends on the “congruence” or “fit” between the system and its environment. For example, Lau & Chong (2002) investigate the three way interaction effect of budget participation, budget emphasize and manager's organizational commitment on managers behavior. Their findings suggest that managers' reaction toward budget emphasis in performance evaluation depend on the budget participation environment. Specifically, highly committed managers who are likely to strive for organizational goals reacted more favorably toward high budget emphasis in a high budget participation environment; however, highly committed managers also reacted more favorably toward low budget emphasis when the organizational environment is low budget participation.

Previous congruence research suggests a “fit” or “matching” construct as a congruence factor in the design of an effective participative decision making process. For example, Tushman & Nadler (1978) find that the most effective participative strategy is

when the individuals' participation requirements are congruent with the degree of participation they are allowed, resulting in an effectively designed participation strategy. At the individual level, the congruence between the perceived need for participation and the actual participation is positively associated with individual outcomes, such as satisfaction with participation (Doll & Torkzadeh, 1991). When individuals experience a lower level of participation than they expect, they likely will experience a state of deprivation. Further, participation congruence is a critical success factor in designing an effective participative budgeting strategy (Clinton & Hunton, 2001). These previous studies suggest that the effectiveness of a participation strategy is likely influenced by the fit between individuals' perceived need for participation the actual level of participation they are allowed.

Consistent with Clinton & Hunton's (2001) congruence framework, we propose a disordinal interaction between cultural time-orientation (long-term or short-term) and budget planning horizon (long-term or short-term), as next articulated. When employees who have been raised and work in a culture that emphasizes a long-term time orientation are assigned to participate on a long-term (short-term) budget team, they should perceive the task more (less) important and hold more (less) positive affects toward the participative process. On the other hand, when employees who have been raised and work in a culture that reinforces a short-term time orientation are assigned to participate on a long-term (short-term) budget team, they are expected to perceived the task as less (more) important and hold less (more) positive affects toward the participative process.

The above discussions lead to the following interaction hypothesis:



*H<sub>1</sub> Employees who hold a long-term (short-term) cultural time orientation will be more satisfied with and will attribute more importance to their assignment on a long-term (short-term) budget planning team, relative to a short-term (long-term) budget planning team.*

### *The Doctrine of the Mean*

Hofstede's cultural time orientation is rooted in the teaching of Confucian philosophy. According to Hofstede, most eastern countries (e.g. China, Japan, Hong Kong, Taiwan, and South Korea), which have been deeply influenced by Confucian philosophy, possess a relatively long-term time orientation, while cultures that have not been as influenced by Confucian philosophy (e.g. the U.S. and almost all European countries) possess a relatively short-term time orientation. One particular stream of Confucian thought, The Doctrine of the Mean, is closely related to cultural time orientation. The Doctrine of the Mean suggests that individuals should consider the long-term implications of their expressions and behaviors, as over-reacting to an immediate situation can create internal stress and social disharmony. The Doctrine of the Mean is a very influential stream of Confucian thought—one that emphasizes conflict avoidance and harmonious balance through moderation (Du, 2008).

The Doctrine of the Mean focuses on the power of self-constraint. The goal is to maintain balance and harmony by directing the mind to a state of constant equilibrium (Legge, 1893). The first chapter of the Doctrine of the Mean, as translated by Du (2008, 2), states the following: “Before the feelings of pleasure, anger, sorrow, and joy are aroused, it is called centrality. When the feelings are aroused and each and all attain due

measure and degree, it is called harmony. Centrality is the great foundation of the world, and harmony is its universal path.” In essence, The Doctrine of the Mean teaches individuals to think about long-term repercussion when processing both positive and negative stimuli, and to react with judicious restraint.

In contrast, the notion of individualism that appears to be prevalent in western cultures seems to encourage relatively unrestrained affective and behavioral reactions to immediate stimuli (Hofstede, 1980; Bookchin, 1995). For instance, as described by the American social philosopher Bookchin (1995), individualists tend to express opposition in uniquely personal forms, which can become manifest in fiery tracts and outrageous behavior. The Doctrine of the Mean suggests that people who possess a long-term cultural time orientation (which is based in Confucian philosophy), relative to a short-term orientation, will indicate more moderation in their responses to congruence or incongruence with the budget planning horizon, as stated in the following hypothesis:

*H<sub>2</sub> Employees who hold a long-term cultural time orientation will react less extremely to congruence and incongruence with the budgetary planning horizon, relative to employees who hold a short-term cultural time orientation.*

## **Research Methods**

### *Participants*

Initially, there were 101 participants from China; however, 14 participants did not completely respond to the dependent variable items, thus they were dropped from the study. The remaining sample is comprised of 87 participants from China and 77 participants from the U.S., for a total usable sample size of 164.

The average (standard deviation) age of the Chinese participants was 30.65 (5.35); their average (standard deviation) years of work experience was 8.60 (5.79); there were 58 (67%) female and 29 (33%) male participants; 53 (61%) held a bachelor's degree, 18 (21%) held a master's degree and 16 (18%) held other degrees. Among the U.S. participants, their mean (standard deviation) age was 34.43 (5.99); their average (standard deviation) years of work experience was 9.36 (5.92); there were 33 (43%) female and 44 (57%) male participants; 29 (37%) held a bachelor's degree, 44 (57%) held a master's degree and 5 (6%) held a PhD degree.

Between the two countries, mean ages were significantly different ( $t = 4.26, p < .01$ ); mean years work experience were not significantly different ( $t = 0.84, p = .40$ ); gender distribution was significantly different ( $X^2 = 9.34, p < .01$ ); and level of degree held distribution was significantly different ( $X^2 = 23.86, p < .01$ ). Since the two populations differed on several demographics, all of the demographic variables will be included as possible covariates in upcoming hypotheses tests, thereby statistically controlling for potential systematic effects on the dependent variables.

### *Experimental Design*

We employed a two (cultural time orientation: long-term, short-term) by two (budget planning horizon: long-term, short-term) between participant, quasi-experimental design in which cultural time orientation was measured, and budget planning horizon was randomized. Participants were instructed to assume that they were accounting managers who worked for a large national company. The company recently launched an enterprise-wide budgeting project, in which they were asked to participate in developing budgets relevant to their area of responsibility. They were told that there will be two budget

teams—one that will develop a one-year financial budget and another that will develop a four-year financial budget. The budget planning horizon treatment manipulated the budget planning horizon by indicating that the participant was assigned to a one-year financial budget (short-term) team or a four-year financial budget (long-term) team. The description of the one-year budget was that the budget would be subdivided into four quarterly financial budgets for 2010, and the description of the four-year budget was that the budget would be subdivided into four annual financial budgets for 2010 through 2013. Time orientation of the participants was reflected by Chinese participants (long-term cultural time orientation) and U.S. participants (short-term cultural time orientation).

### *Procedure*

#### Consent Form and Case Materials

All participants confirmed their voluntary participation in the experiment by reading and signing a voluntary consent form. The consent form explained that the purpose of the study was to investigate decision-making processes. The form also explained that the participants needed to complete a reading task, after which they would be asked to respond to some questions. They were told that the survey was strictly anonymous and confidential.

The case materials, shown in the Appendix, were written in Chinese and English. We used the back translation procedure to translate the case material into Chinese. One of the authors translated the English version into Chinese, and another PhD student translated the Chinese version back into English. Both translators were bilingual native Chinese speakers. The two English versions were then compared, and the Chinese version was revised and agreed upon by the two translators.

### Budget Planning Horizon Manipulation

Participants in the short-term budget planning horizon condition read the following statement:

*You have been assigned to the one-year budget team, which is responsible for preparing four quarterly financial budgets for the year 2010. The budget team consists of 20 team members who come from different departments. The whole budgeting project will last for two months.*

Participants in the long-term budget planning horizon condition read the following statement:

*You have been assigned to the four-year budget team, which is responsible for preparing four annual financial budgets for the years 2010 through 2013. The budget team consists of 20 team members who come from different departments. The whole budgeting project will last for two months.*

After reading the case materials, participants were asked to complete a questionnaire related to the dependent variables, manipulation checks, and demographics.

#### *Response Items*

Dependent variables were measured using an 11-point scale (see the Appendix). The questionnaire consists of two parts. The first part is designed to test participants' overall satisfaction with and perceived important of being assigned to the budget team. We adapted and used items from the Mehrabian & Russell (1974) PAD (Pleasure, Arousal, and Dominance) scales to design the dependent variables for the current study. The PAD scales have been widely used and reported high reliability in previous

psychology and marketing research. For example, Mehrabian & Russell (1974) report internal consistency reliability of 0.72, 0.69, and 0.77 for pleasure, arousal, and dominance, respectively. Holbrook Chestnut, Oliva, & Greenleaf (1984) study the impact of emotions on the enjoyment of games using PAD scales. They report coefficient alpha estimates of 0.89, 0.89, and 0.88 for each of the three dimensions. We selected satisfaction and happiness item from the Pleasure dimension (dependent variable response items 1.1 and 1.2 in the Appendix). We used three items from the Arousal dimension to test the participants' perceived commitment, motivation, and respect (dependent variable response items 1.3, 1.4, and 1.5 in the Appendix). Finally, we chose the item of importance (dependent variable response item 2 in the Appendix) from the Dominance dimension.

We designed a manipulation check questionnaire for both of the independent variables in the experiment. With regard to cultural time orientation, we assumed that the Chinese (U.S.) participants would be more oriented toward the long-term (short-term). To test this assumption, we measured the participants' cultural time orientation using scale that was created by Bearden, Money, & Nevins (2006). We used only four items of the original eight items, as a factor analysis conducted by Bearden et al. indicated that these four items comprise a "planning" factor, which is related to the budget project in the case (manipulation check response items 3.1 through 3.4 in the appendix).

Budget planning horizon was checked in two ways. First, to confirm the randomized budget participation status, we asked the participants to choose which budget team, one-year or four-year, they were assigned (manipulation check response item 4). Then we asked the participants to rate their perceptions of the length of the budget to

which they were assigned on a seven point (1 = very short, 4 = medium length, 7 = very long) (manipulation check response item 5).

We also designed two additional debriefing items for use as potential covariates. First, we asked subjects how much effort they think it will take for the team to develop the financial budget (1 = very little effort, 4 = medium effort, 7 = very much effort) (manipulation check response item 6). Second, we asked them to rate how they felt about the length of the two month time period that would be spent on the project (1 = too short, 4 = about right, 7 = too long) (manipulation check response item 7). Finally, the participants were asked to provide some demographic information.

### Administration

For the Chinese sample, we created two survey questionnaires, one for the long-term budget planning horizon and the other for the short-term budget planning horizon, using SurveyMonkey.com. We published the SurveyMonkey links in a Chinese accounting forum (bbs.chinaacc.com) and solicited volunteers. For those who volunteered, the short-term and long-term budget links were randomly sequenced in emails that were sent to the forum participants. Further, we emailed the links to personal contacts, some of whom also emailed the links to their personal contacts.

The U.S. participants completed the experimental materials via pencil and paper. The participants were solicited from professional training/education classes that were being taught by one of the authors. To test for possible response order effects, we developed two versions of the experimental materials for each treatment, wherein the order of the dependent variable responses was randomized. The treatments and versions were randomly sequenced and stacked together. The instructor handed-out the materials

from the top to the bottom of the stack. Three training classes are represented in the U.S. sample.

## Results

### *Manipulation Checks*

For the cultural time orientation construct, theory suggests that the Chinese participants will have a longer time orientation than the U.S. participants; hence, we chose these two countries as surrogates for the long-term and short-term orientations. To confirm the appropriate use of the surrogates, we asked the participants four items related to their time-orientation. The four items, shown in the appendix, were used in a long-term orientation questionnaire by Bearden et al. (2006), which is found to have a high reliability (the average coefficient  $\alpha$  value for planning factor of LTO in seven different studies conducted by Bearden et al., 2006 was 0.76).

In the current study, the standardized Cronbach alpha statistic was relatively high (.79), thus, we averaged the four items into a composite index for analysis purposes. The index is oriented such that a higher value suggests a longer-term orientation. The means (standard deviations) of the time orientation index for the Chinese and U.S. participants, respectively, were as follow: 5.16 (1.15) and 3.91 (1.39). The means are significantly different ( $t = 6.31, p < .01$ ). Based on the results of manipulation check testing, the selection of relatively long- and short-term orientations is deemed successful.

To check the budget planning horizon (long-term or short-term) manipulation, we asked participants to indicate the budget team to which they had been assigned (one-year or four-year). Among the Chinese sample, three participants in the one-year budget planning horizon did not answer this question, one participant in the short-term condition



incorrectly indicated that he/she was assigned to the long-term budget planning horizon, and two participants in the long-term condition incorrectly indicated that they were assigned to the short-term budget planning horizon. Among the U.S. sample, all participants correctly responded in accordance with their randomized condition.

To further examine the budget planning horizon manipulation, participants were asked to describe the length of the budget to which they had been assigned (1 = very short, 4 = medium length, and 7 = very long). The means (standard deviations) of the short-term and long-term conditions were as follow, respectively: 3.52 (1.09) and 5.11 (1.31). The means were significantly different ( $t = 8.455, p < .01$ ). We checked individual responses to this item for the Chinese participants who did not answer or incorrectly answered the budget horizon manipulation check question. The responses were either on the expected side of the mid-point of the scale (4), consistent with their budget horizon treatment, or at the mid-point of the scale. A robustness test (not tabulated) indicated that excluding these participants from the upcoming results strengthened the power of the statistical tests. Hence, for the sake of conservatism, all participants were retained in the sample.

#### *Potential Covariates*

Aside from demographic factors, we measured two additional potential covariates. One covariate focused on the amount of effort participants thought it would take for the team to develop the financial budgets (1 = very little effort, 4 = medium effort, 7 = very much effort). We asked this question because participants in the four-year budget condition might consider the task to be more effortful than the one-year team. Additionally, due to cultural differences, perceived effort might differ between the two

countries. Using country as one independent variable and budget planning horizon as the other independent variable, we analyzed the effort item using ANOVA. The country variable was not significant ( $F = 0.45, p = .50$ ), the budget planning horizon factor was significantly different ( $F = 8.96, p < .01$ ) and the interaction term was non-significant ( $F = 0.71, p = .40$ ). The mean (standard deviations) for the long-term budget planning horizon was 6.15 (1.04) and for the short-term budget planning horizon was 5.56 (1.43). The effort variable will be used as a covariate when testing the hypotheses.

The other potential covariate asked participants about the length of time their team was allotted to complete the budget, which was held constant at two months in both conditions (1 = too short, 4 = about right, 7 = too long). This question was asked because participants in the four-year budget condition might consider the time period to be too short, relative to the one-year team. Cultural differences might also lead to differences between the two countries. Using country as one independent variable and budget planning horizon as the other independent variable, we analyzed the effort item using ANOVA. The country variable was not significant ( $F = 0.21, p = .65$ ), the budget planning horizon factor was significantly different ( $F = 18.04, p < .01$ ), and the interaction term was non-significant ( $F = 0.35, p = .55$ ). The means (standard deviations) for the long-term budget planning horizon was 3.61 (1.30) and for the short-term budget planning horizon was 4.52 (1.43). The time variable will be also used as a covariate when testing the hypotheses.

#### *Preliminary Analyses*

We used factor analysis to determine the number of factors reflected by the six dependent variable responses. Descriptive statistics for the six items and the factor

analysis results are shown in Table 3-1. As indicated, all six items loaded on a single factor, with a Cronbach's alpha of .91. Thus, the items were averaged to form a single "participative budgeting satisfaction" index, with a mean (standard deviation) of 2.12 (2.14).

[Insert Table 3-1 about here]

Analyzing only the U.S. sample, an ANCOVA was run using participative budgeting satisfaction as the dependent variable, budget planning horizon as the independent variable, and session number and version number as covariates. Budget planning horizon was significant ( $F = 92.35$ ,  $p < .01$ ), session number was non-significant ( $F = 0.62$ ,  $p = .44$ ), and version number was non-significant ( $F = 1.44$ ,  $p = 0.24$ ). Thus, responses from the U.S. sample did not differ based on the educational session they were attending or the instrument version.

### *Hypotheses Testing*

The first hypothesis ( $H_1$ ) posits that participants with a long-term cultural time orientation will be more satisfied with their participative budgeting assignment when they are assigned to a long-term budgeting project, relative to a short-term project; and participants with a short-term cultural time orientation will be more satisfied when they are assigned to a short-term, relative to a long-term, budgeting project. We test the hypothesis using ANCOVA, the results of which are shown on Table 3-2.

[Insert Table 3-2 about here]

Table 3-2 Panel A presents descriptive statistics by treatment condition. Table 3-2 Panel B shows the results of ANCOVA testing. As indicated on Panel B, the only (marginally) significant covariate is gender ( $p = .09$ ). The main effect of budget planning

horizon is significant ( $F = 16.59, p < .01$ ), the main effect of cultural time orientation is not significant ( $F = 0.19, p = .67$ ), and the interaction term is significant ( $F = 71.09, p < .01$ ). The least square means are plotted on Figure 3-1 for visual representation of the results. As indicated in Table 3-2 Panel C, all means are significantly different from one another.

[Insert Figure 3-1 about here]

As suggested by the significant interaction term and depicted in Figure 3-1, when there is congruence between cultural time orientation and budget planning horizon, satisfaction is significantly higher than when there is incongruence. This effect is consistent in both cultures. Thus,  $H_1$  is supported.

The second hypothesis ( $H_2$ ) posits that participants with a long-term orientation will react less extremely when the budget planning horizon is congruent or incongruent with their long-term orientation, as compared to participants with a short-term orientation. Panel D (Table 3-2) shows the results of a planned contrast designed to test for a difference-in-differences between the congruent and incongruent conditions between the U.S. and China. As indicated, the extremity of responses is significantly greater ( $p < .01$ ) for the U.S. employees (short-term orientation), relative to the Chinese employees (long-term orientation), which is consistent with The Doctrine of the Mean and supportive of  $H_2$ .

### *Mediator-Moderator Analyses*

As suggested by Baron & Kenny (1986), we conduct a mediator-moderator analysis to determine the influential nature of cultural time orientation on participative budgeting satisfaction, under conditions of congruence and incongruence with the budget

planning horizon. To conduct the analyses, rather than using a dichotomous variable to represent long-term and short-term time orientation, as reflected by participants from China and the U.S., we use the manipulation check results from the long-term orientation scale; also, rather than using a dichotomous variable to represent long-term and short-term budget planning horizon, we use the manipulation check results from the scaled item that measured the participants' perceptions of the long-term or short-term nature of the budget team to which they were assigned.

First, we regress budget planning horizon on cultural time orientation and the results are non-significant ( $\beta = -.02$ ,  $t = -.023$ ,  $p = .82$ ). Second, we regress budget planning horizon on participative budgeting satisfaction and the results are marginally significant ( $\beta = -.013$ ,  $t = -1.68$ ,  $p = .10$ ). Third, we regress both cultural time orientation and budget planning horizon on participative budgeting satisfaction, and the results are significant for cultural time orientation ( $\beta = .248$ ,  $t = 3.28$ ,  $p < .01$ ) and marginally significant for budget planning horizon ( $\beta = -.013$ ,  $t = -1.67$ ,  $p = .10$ ). Since the first regression is non-significant, and the effect of budget planning horizon is unchanged from the second and third regressions, cultural time orientation does not appear to mediate the relationship between budget planning horizon and participative budgeting satisfaction. Instead, considering the significant interaction term in the ANCOVA model (Table 3-2 Panel B), which is also significant in a regression model using the same scaled independent variables as employed in the three regressions above (interaction term:  $\beta = 1.52$ ,  $t = 7.68$ ,  $p < .01$ ), cultural time orientation moderates the relationship between budget planning horizon and participative budgeting satisfaction. The nature of the moderation is depicted in Figure 3-1.

## Summary and Conclusion

The purpose of the current study is to examine how cultural differences can yield dissimilar responses to participative budgeting in organizations; specifically, we study how congruence between cultural time orientation and budget planning horizon affects employees' overall satisfaction with participative budgeting. This is an important topic because managers in global firms need to understand how and why cultural differences can yield unintentional negative consequences when employees are required to participate in the budgeting process. Through such understanding, managers can develop various interventions aimed at creating alignment between cultural orientations and job assignments, thereby enhancing individual and organizational outcomes.

A total of 164 participants took part in a quasi-experiment, where cultural time orientation (relatively long-term and short-term) was measured and budget planning horizon (relatively long and short) was randomly manipulated. There were 87 participants from China and 77 from the U.S., where the countries served as proxies for long-term and short-term cultural time orientation (Hofstede, 1991, 1994), as validated by a time orientation scale. Participants were assigned to short-term (one-year) and long-term (four-year) budget teams, which reflected the budget planning horizon treatment. The dependent variable reflected the participant's satisfaction with the participative budgeting team to which they were assigned. The findings revealed a significant interaction effect between budget planning horizon and time orientation, such that long-term (short-term) time orientation participants were more satisfied being assigned to a long-term (short-term) budget team, relative to a short-term (long-term) budget team. We also found that participants from the U.S. were more extreme in their positive reaction to congruence and

negative reaction to incongruence than participants from China, which is consistent with Confucian philosophy; specifically The Doctrine of the Mean.

This study contributes to the budget participation literature by examining a particular contextual factor, cultural time orientation, which can negatively impact the presumed positive relationship between participative budgeting and individual outcomes. The results shed insight into the mixed findings of prior studies that were conducted in international regions with different cultural backgrounds; for instance, some of these studies reported that participative budgeting increased job satisfaction (Milani, 1975; Wentzel, 2002; Chong, & Chong, 2002), while other research reported negative correlation or mixed results (Kenis, 1979; Cherrington, & Cherrington, 1973; Merchant, 1981; Libby, 1999). To our knowledge, this is the first study to explain previous inconsistent results through the lenses of cultural differences and contingency theory.

The current study is limited in several ways. Participants were not asked to actually participate in developing a budget; rather, they were asked how they felt, *a priori*, about being assigned to a long-term or short-term budget project team. Perhaps their satisfaction would be different after participation. Future studies should develop behavioral tasks to test for the consistency and persistence of our results. Another limitation involves the web-based administration of the experiment in China and the paper-based administration in the U.S. While we do not know the extent to which these method differences might have affected the participants' responses in the current study, Bryant, Hunton & Stone (2004) suggest that web-based and paper-based administrations of the same experiment or survey typically do not yield differential responses. Sample selection limitations should also be noted. Some of the Chinese participants were selected

from personal contacts and the others were users of an internet-based accounting forum. Participants in the U.S. sample were attending educational seminars held by an international training firm. Thus, we do not know how self-selection of the sample might have biased the results. Nevertheless, study results confirmed a cultural difference in time orientations between countries, which was the essence of one of the independent variables in our study. Accordingly, we suggest that from a theoretical perspective, the sample appears to be a reasonable proxy for cultural time orientation.

Further, a concept known as “response style” could be confounding the results reported herein. As defined by Cronbach (1946, 1950), response style refers to the systematic tendency to choose certain portions of a rating scale. Previous psychological research has identified two predominate response styles – acquiescence and extreme. The acquiescence response style, which has also been referred as directional bias (Hui & Triandis, 1985) or positivity bias (Baumgartner & Steenkamp, 2001), refers to an individual’s preference to choose “true” or “yes” over “false” or “no” when answering a questionnaire. Some studies have indicated that the acquiescence response style is associated with impression management and self-presentation bias (Lenski, & Leggett, 1960; Landsberger, & Saavedra, 1967; Johnson, O’Rourke, Chavez, Sudman, Warnecke, & Lacey, 1997). Other studies have suggested that the acquiescence response style is related more to cognitive limitations than impression management or self-presentation concerns (Knowles, & Nathan, 1997; Zhou, & McClendon, 1999). The fairly extensive literature on the acquiescence response style has not provided evidence of a cultural link to such acquiescence; however, cultural factors have been attributed to the extreme response style.



The extreme response style refers to the tendency to choose the farthest points of rating scales when answering a questionnaire (Berg & Collier, 1953). Previous studies have documented different levels of the extreme response style across ethnic and cultural groups. For example, Chen, Lee, & Stevenson (1995) examine cross-cultural differences in response styles with 5,162 high school students from Japan, Taiwan, Canada, and the U.S. They find that the U.S. students are more likely to use the extreme values, whereas the Japanese and Taiwanese students are more likely to select the mid-point values. Chen et al. (1995) attribute the differences to Hofstede's cultural dimension of individualism/collectivism. A collectivistic culture fosters restraint in the expression of self-feelings out of respect for others and to maintain a harmonious society; in contrast, an individualistic culture encourages individuals to maintain their independence from others and express their unique emotional reactions. Prior literature reviews also support this view (e.g., Markus, & Kitayama, 1991; Mesquita & Hrijda, 1992).

There is also evidence suggesting that the extreme response style might be attributable to factors other than individualism/collectivism, as differences in extreme response styles have also been revealed across different social groups within an individualist culture. For instance, Berg & Collier (1953) find different extreme response styles between males and females, as well as between black and white Americans. Hui & Triandis (1989) find that Hispanics had a stronger tendency for extreme responses than non-Hispanics. More recently, Herk, Poortinga, & Verhallen (2004) collect data from six countries (Greece, Italy, Spain, France, Germany, and the United Kingdom) in Europe. The results of their study show that people in Mediterranean Europe respond more extremely than people in Northwestern Europe. Hence, the extent to which response style

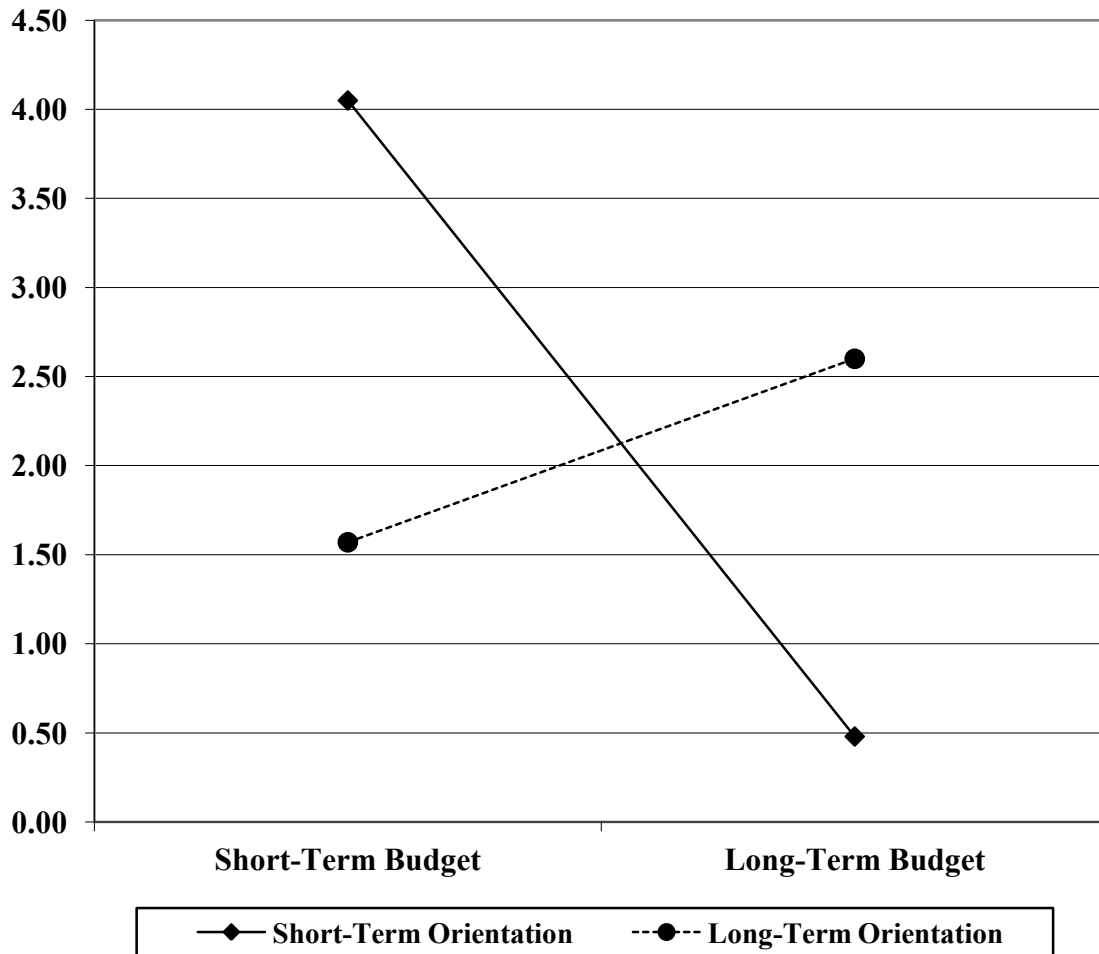
can explain the study findings is unclear, as the extreme response style can be found within individualistic cultures, as well as across individualistic and collectivist cultures. Future research in this area is warranted to disentangle the individual and joint effects of response style and The Doctrine of the Mean on the more tempered responses from the Chinese participants, relative to the U.S. participants, indicated in the current study.

Future research on cultural differences in participative budgeting should also consider examining other cultural dimensions as well. Perhaps employees who possess different perceptions of “power distance” between themselves and their superiors will be more or less willing to engage in participative budgeting (Lee, Pillutla, & Law, 2000). For instance, lower power distance employees might feel offended if they are not asked to participate in the budget setting process because they expect that their opinions should be impounded into their superiors’ decisions, whereas higher power distance employees might feel offended if they are asked to participate because they believe that it is their superiors job to make such decisions. Another potentially fruitful area of research in participative budgeting involves the cultural spectrum of “individualism/collectivism” (Hofstede, 1980) with regard to small groups. For example, in a team budgeting environment, individualists might withhold critical pieces their personal knowledge as a way to protect their private information advantage, whereas collectivists might be willing to share everything they know about the budget area as a way to enhance of overall organization. By further investigating the impact of cultural differences on participative budgeting outcomes, future research can help to improve the efficacy participative budgeting practices in multinational companies.

Based on the results of this study, managers should be cognizant of national differences when assigning employees from different cultures to participative budgeting teams. Naturally, managers cannot assign long-term orientation employees only to long-term budgeting projects and vice versa. We suggest, though, that if managers are about to assign, say, a long-term orientation employee to a short-term budgeting project, the manager should carefully explain to the employee the importance of participating on such a project and perhaps explain why the employee was chosen (e.g., based on the employees experience, skills, education, and so on). Through such cultural sensitivity, there is a greater likelihood that the employee will feel valued, be motivated, and be pleased with the assignment.

**Figure 3-1 Interaction Effect of Cultural Time Orientation by Budget Planning Horizon on Participative Budgeting Satisfaction**

(Least-Square Means are reflected on the Y-axis)



**Table 3-1 Descriptive Statistics and Factor Loadings**

Response Item	Mean	Standard Deviation	Factor Loading*
Satisfied	1.44	2.39	.88
Happy	1.64	2.49	.83
Committed	2.74	2.54	.80
Motivated	2.52	2.57	.82
Respected	1.88	2.49	.87
Important	2.15	2.56	.81

\*Varimax Rotation, only factors with Eigenvalues  $\geq 1.00$  are retained. Only one factor obtained, with an Eigenvalue of 4.18 and a percent of variance explained of 69.75%. Standardized Cronbach's alpha = .91.

**Table 3-2 Results of Participative Budgeting Satisfaction**

*Panel A: Least Square Means (Standard Deviations) and {Sample Sizes}*

Cultural Time Orientation	Budget Planning Horizon		Main Effect: Culture
	Short-Term	Long-Term	
Short-Term	4.05 (0.94) {37}	0.48 (2.09) {40}	2.19 (2.43) {77}
Long-Term	1.57 (1.72) {47}	2.60 (1.88) {40}	2.05 (1.85) {87}
Main Effect: Budget Planning Horizon	2.67 (1.88) {84}	1.54 (2.24) {80}	2.12 (2.14) {164}

*Panel B: ANCOVA Model Results*

	Sum of Squares	df	Mean Square	F-Ratio	p-value
Intercept	6.77	1	6.77	2.27	.13
Age	0.17	1	0.17	0.06	.81
Experience	0.01	1	0.01	0.01	.97
Gender	8.55	1	8.55	2.87	.09
Degree Held	2.47	1	2.47	0.83	.37
Perceived Effort	0.86	1	0.86	0.29	.59
Time Period	0.13	1	0.13	0.04	.84
Budget Planning Horizon	49.49	1	49.49	16.59	< .01
Cultural Time Orientation	0.56	1	0.56	0.19	.67
Horizon x Orientation	212.02	1	212.02	71.09	< .01
Error	459.28	154	2.98		
Total	1479.00	164			

Adjusted R<sup>2</sup> = .347

**Table 3-2** Results of Participative Budgeting Satisfaction (continued)

*Panel C: Multiple Pairwise Comparisons*

Short-Term Time Orientation and Short-Term Budget Horizon	Long-Term Time Orientation and Long-Term Budget Horizon	Long-Term Time Orientation and Short-Term Budget Horizon	Short-Term Time Orientation and Long-Term Budget Horizon
Congruence	Congruence	Incongruence	Incongruence
4.05	2.60	1.57	0.48

$4.05 > 2.60 > 1.75 > 0.48$

Bonferroni at  $\alpha = .05$ , F-ratio = 30.30, p-value < .01

*Panel D: Contrast Test for H2*

Short-Term Time Orientation (U.S.)		Long-Term Time Orientation(China)	
Short-Term Budget	Long-Term Budget	Long-Term Budget	Short-Term Budget
4.05	0.48	2.60	1.57

$(4.05 - 0.48) > (2.60 - 1.57)$

t-statistic = 4.73, p-value < .01

### **Appendix – Case Materials**

Assume you work for a large nation-wide company that operates in most regions in your nation. The company's business is the manufacturing and selling of home appliances. The company is well operated and makes a very good profit.

Your position in the company is an accounting manager, and your main responsibilities are described below:

1. Prepare month-end balancing and journal entries
2. Prepare monthly balance sheet reconciliations
3. Participate in process design and process audits

The company has just launched an enterprise-wide budget management project. This project encourages employees to participate in the budget making process relevant to their main responsibilities. There are two budget teams—one that will develop a one-year financial budget and another that will develop a four-year financial budget.

You have been assigned to the one-year (four-year) budget team, which is responsible for preparing four quarterly (annual) financial budgets for the year 2010 (years 2010 through 2013). The budget team consists of 20 team members who come from different departments. The whole budgeting project will last for two months.



### ***Dependent Variable Response Items***

*(The numbering 1.1 through 1.5 did not appear in the experimental materials. They are included herein for clarity purposes)*

1. How do you feel about being assigned to the one-year (four-year) budget team, rather than four-year (one-year) budget team? (circle one number on each of the scales below):

#### ***Item 1.1***

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Unsatisfied                          Unsatisfied                          Satisfied                          Satisfied

#### ***Item 1.2***

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Unhappy                          Unhappy                          Happy                          Happy

#### ***Item 1.3***

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Uncommitted                          Uncommitted                          Committed                          Committed

#### ***Item 1.4***

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Unmotivated                          Unmotivated                          Motivated                          Motivated

#### ***Item 1.5***

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Disrespected                          Disrespected                          Respected                          Respected

2. The team to which I have been assigned is:

5      4                  3                  2                  1                  0                  1                  2                  3                  4                  5  
Very                          Somewhat                          Neutral                          Somewhat                          Very  
Unimportant                          Unimportant                          Important                          Important

### ***Manipulation Check Response Items: Cultural Time Orientation***

*(The numbering 3.1 through 3.4 did not appear in the experimental materials. They are included herein for clarity purposes)*

3. How would you describe yourself?

#### ***Item 3.1***

I usually plan my life for the:

1                  2                  3                  4                  5                  6                  7  
Short                          Intermediate                          Long  
Term                          Term                          Term

*Item 3.2* I am working very hard now to gain success in the future.  
 1 2 3 4 5 6 7  
 Strongly Disagree Strongly Agree

*Item 3.3* I don't mind giving up today's fun for success in the future.  
 1 2 3 4 5 6 7  
 Strongly Disagree Strongly Agree

*Item 3.4* Persistence is very important to me.  
 1 2 3 4 5 6 7  
 Strongly Disagree Strongly Agree

***Manipulation Check Response Items: Budget Planning Horizon***

4. For the case scenario you just read, what is the budget period of the budget team to which you were assigned? (Check one)

One-year ( ) Four-years ( )

5. For the case scenario you just read, how would you describe the length of the budget period?

1 2 3 4 5 6 7  
 Very Short Medium Length Very Long

6. For the case scenario you just read, how much effort do you think it will take for the team to develop the financial budgets?

1 2 3 4 5 6 7  
 Very Little Effort Medium Effort Very Much Effort

7. For the case scenario you just read, I think that the two month period during which my team will develop the financial budgets is:

1 2 3 4 5 6 7  
 Too Short About Right Too Long

## Chapter 4: The Impact of National Cultural Time Orientation on Segment Profitability Disclosure

### Introduction

The purpose of this chapter is to investigate the potential impact of national cultural value differences on managers' discretion on segment profitability disclosure practices. Specifically, the cultural dimension of *time orientation* (Hofstede and Minkov 2010) is investigated in this paper. The study is motivated by the standards promulgated by the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB). Specifically, IASB issued IFRS 8 (2006), entitled Operating Segments, which is effective on or after 1 January 2009 for public companies that have adopted IFRS. IFRS 8 has converged with FASB Statement No. 131 (SFAS 131, 1997), entitled Disclosures about Segments of an Enterprise and Related Information. IFRS 8 allows for considerable managerial discretion when determining what could be included in segment profit or loss reporting (Berger & Hann, 2007; Deloitte 2006).

A purpose of IFRS is to enhance comparability of financial information across nations. However, because accounting professions develop differently in different cultural settings (Gray, 1988), one could argue that managers from nations with different cultural values will have dissimilar patterns when exercising discretion on segment reporting, which would be contrary to the comparability objective of IFRS 8.

Prior studies (e.g., Botosan & Stanford, 2005; Berger & Hann, 2007) suggest that managers' segment profitability disclosure decisions are primarily constrained by two costs: proprietary and agency. The argument is that managers tend to withhold relatively high segment profits in less competitive product markets to protect their proprietary

advantages from existing and potential competitors; and managers tend to conceal relatively low segment profits to hide unresolved agency problems, thereby avoiding heightened monitoring from shareholders. Several studies support the argument that managers tend to conceal relatively high segment profits to protect their company's proprietary advantage (cf., Harris, 1998; Botosan & Stanford, 2005). These results are not consistently found in the literature because other studies (e.g., Berger & Hann, 2007) do not find results consistent with the proprietary cost argument. Similarly, findings of prior studies regarding the agency cost argument are also mixed, with some studies supporting (e.g., Berger & Hann, 2007) while other studies disconfirming (e.g. Botosan & Stanford, 2005) the agency cost argument. This literature suggests a need for studies to potentially explain the mixed findings.

The current study investigates how managers' cultural values of time orientation influence their reaction toward competitions from the product market (proprietary cost hypothesis) and the capital market (agency cost hypothesis). The capital markets' reaction toward value-relevant information is normally much more prompt than the product market, where existing rivals might need more time to adjust their marketing strategies and potential entrants would need an even longer time to launch their business plans and enter into the product market. The current study hypothesizes that managers from nations with a short-time orientation would care more about the immediate reaction from the capital markets than competition from potential entrants in the product market, and therefore, they would be motivated to hide relatively low segment profit information. On the contrary, concerns about product market competition should dominate managers' decision-making for those from nations with a long-time orientation because they would

care more about protecting a company's proprietary advantage, which would influence profitability in the long-run. Therefore, they would be more likely to hide relatively high segment profits from competitors in the product market. To the best of the authors' knowledge, this study is the first to investigate the impact of cultural values on managers' segment profitability disclosure decision-making by considering threats from the potential entrants and the existing rivals.

The current study employs the experimental method to test the research hypotheses. A sample of 211 managers participated in the experiment. Of these, 109 were from China representing long-time orientation, and 102 were from the U.S. representing short-time orientation. Participants from the two countries were randomly arranged into four experimental treatment conditions and were asked to make decisions on segment reporting. In support of Cultural Value Theory, the results shows that in comparison to the Chinese participants, the U.S. participants were more likely to manipulate relatively low segment profits upward, and less likely to adjust relatively high segment profits downward.

The remainder of this paper is organized as follows. The second section reviews relevant literature and develops the research hypotheses. The third section introduces the research methods and sample selection for the experiment, followed with the statistical results in the fourth section. This paper concludes with implications and suggestions for future study.

## **Theory and Hypotheses**

### *Segment reporting*

With the publication of IFRS 8 in 2006, U.S. GAAP has been converged with IFRS in terms of segment reporting with a similar core principle, scope and definition of operating segments<sup>7</sup>. IFRS 8 defines an operating segment as (IFRS 8.5, page A243-244):

*An operating segment is a component of an entity:*

- 1. that engages in business activities from which it may earn revenues and incur expenses (including revenues and expenses relating to transactions with other components of the same entity);*
- 2. whose operating results are reviewed regularly by the entity's chief operating decision maker to make decisions about resources to be allocated to the segment and assess its performance; and,*
- 3. for which discrete financial information is available.*

Consistent with SFAS 131, IFRS 8 requires an entity to disclose segment financial information so that users can evaluate companies' financial situation and economic environments through the eyes of management.

Previous empirical studies in the U.S. primarily focus on SFAS 131, and its predecessor statement SFAS 14, to investigate the stock market reactions to segment reporting. The literature generally suggests that segment profitability information is value relevant to the stock market. For example, Ronen & Livnat (1981) argue that segment information provides investors opportunities to monitor a large set of outcomes, and therefore investors' assessment and pricing of the company value is different from those where no segment information is disclosed. Furthermore, using the geographic segment

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<sup>7</sup> There are still small differences between SFAS 131 and IFRS 8. For example, SFAS 131 requires companies to disclose the organizational chart, but IFRS 8 does not; IFRS 8 requires companies to include intangible assets in noncurrent assets, but SFAS 131 does not.

earnings data under SFAS 14, Thomas (2000) find that the three-year leading period abnormal stock return is related to the unexpected segment earnings, which suggests that stock market participants do value the geographic segment earnings information in setting security prices.

When the FASB shifted the segment disclosure requirement from the line-of-business method of SFAS 14 to the more strict management approach of SFAS 131, managers generally had less discretion to manipulate the segment aggregation or disaggregation. For instance, Ettredge, Kwon & Smith (2002) identify companies who concealed segment information by aggregation under SFAS 14, but had to reveal such information under the management approach of SFAS 131. Ettredge et al.'s (2002) results suggest that the stock market reacts significantly to companies' segment profit information that had previously been concealed. Similarly, Berger, Hann & Piotroski (2003) compare the restated SFAS 131 segment information and the historical SFAS 14 segment information. They find that SFAS 131 reveal more information about companies' diversification strategies, and the stock markets readily impound such information into stock prices. More recently, Ettredge, Kwon, Smith & Zarowin (2005) investigate the stock market's ability to anticipate firms' earnings upon adoption of SFAS 131. They use the forward earnings response coefficient (FERC) to measure the market's prediction ability, and find that FERC significantly increased for multi-segment firms. The results suggest that SFAS 131 provide the stock market value-relevant segment information to evaluate a firm's future profitability and to predict future earnings. As Ettredge et al. (2005) indicates, firms' segment profitability information is integral to investors' investment decision-making processes, and financial analysts as well as other

financial information users generally favor finer segment information. Therefore, managers should be in favor of segment information disclosure to enhance their companies' competitiveness in the capital market. However, previous studies argue that managers might choose to conceal segment level profit information when they are motivated to protect their firms' proprietary advantages from competitors or avoid excessive external monitoring because of any agency problem revealed by relatively low profitability.

Previous studies investigating managers' motivations and objectives to conceal segment information generally focus on two hypotheses – the proprietary cost hypothesis and the agency cost hypothesis. As explained by Berger & Hann (2007), the proprietary cost hypothesis suggests that managers tend to withhold segment profitability information when a segment earns relatively high profits relative to its industry peers to avoid competition from the product market in which the segment operates. On the other hand, the agency cost hypothesis suggests that managers tend to withhold segment profitability information when a segment earns relatively low profits relative to its industry peers to avoid sending negative signals to the capital market.

Using data from 929 firms under SFAS 14 from 1987 through 1991, Harris (1998) examines the impact of industry competition on managers' segment reporting decisions. He adopts two measures – the four-firm concentration ratio and the speed of profit adjustment – as proxies of industry competition, and find that managers are more likely to conceal segment information in less competitive industries in order to protect relatively high profits and market shares. His study provides the first evidence supporting the proprietary cost hypothesis. With the implementation of SFAS 131 (1996), more studies



begin to target firms that initiated new segment disclosure after adoption of the new standard, some of which attempt to investigate managers' intentions to withhold segment information under the previous regulation of SFAS 14. For example, Botosan & Stanford (2005) find that firms withhold information regarding profitable segment operations under SFAS 14 to protect profits in less competitive industries. However, they do not find evidence that managers mask poor segment performance under SFAS 14. Similarly, Berger & Hann (2007) examine both the proprietary cost and agency cost hypotheses by testing the change in companies' segment reporting along with the change of regulations from SFAS 14 to SFAS 131. Using a hand-collected sample consisting of the data on segment reporting of 796 firms that restated segment reporting in the lag adoption year of SFAS 131, they compare the restated SFAS 131 segment reporting and the historical SFAS 14 segment reporting. They find supportive evidence for the agency cost hypothesis that managers withheld information on segments with relatively low abnormal profits. However, they do not find evidence that managers reduce segment's abnormally high profits when proprietary costs are managers' primary motive.

As indicated by the above discussion, prior studies on segment reporting have not provided coherent and consistent results for either the proprietary cost hypothesis or the agency cost hypothesis. This suggests that other factors (e.g., types of competition, nature of competition, cultural values) might be influencing managers' segment disclosure choices. The current study examines how one dimension of cultural values, time orientation (Hofstede & Minkov, 2010), might produce different patterns of segment disclosure activities when managers from different nations face competition from both the capital market and the product market.

### *Market Competition*

Public companies generally face two types of market competition – competition from the capital market and competition from the product market. On one hand, companies compete in the capital market for obtaining limited capital, and thus are motivated to disclose good news that signal companies' future profitability and managerial capabilities to the public in order to reduce cost of capital and increase firms' valuation. On the other hand, companies compete with each other in the product market for obtaining limited production resources and expanding products' market share, and thus are motivated to conceal good news to protect their proprietary advantage (Berger & Hann 2007). Therefore, managers face trade-offs between short-term capital benefits and long-term proprietary advantages when they make public disclosure decisions. Segment profitability disclosure designed to favorably influence short-term capital market effects may adversely harm companies' competitiveness in the product market. In contrast, withholding favorable segment results to protect the company's position in the product market may harm competitiveness in the capital market.

Li (2010) suggests that companies in the product market are generally facing threats from two sources of competition – potential entrants and existing rivals – and the two sources of competition affect managers' decision-making on both the quantity and quality of private information disclosure. Companies are likely to face relatively strong competition from potential entrants when they are the first supplier of certain products in certain product markets. Companies need to disclose good news to the capital markets in order to enhance their stock valuation and reduce the cost of capital, however, the disclosure of good news might also motivate potential entrants to enter the specific

product markets that the segments operate in. Although potential entrants might take a relatively long time to launch a successful entry project, incumbent managers still need to make strategic disclosure decisions by fully considering the trade-offs between immediate capital market benefits and long-term proprietary costs.

In a typical post entry Duopoly game (see Clinch & Verrecchia, 1997 for detailed explanations), companies competing with existing rivals in a product market possess private information about the aggregate demand for the production. These companies are aiming to increase their market share and gain more profit. If companies disclose more favorable private information about the market demand for the product, their existing rivals might be induced to produce more goods and services, which could reduce the price of the product<sup>8</sup> and consequently influence companies' profitability. As a result, companies are motivated to withhold private information on market demand to protect their market share and future profitability.

Prior analytical studies (e.g. Clinch & Verrecchia 1997) conclude that companies chose to disclose less information when there were more existing rivals competing in a product market. Li (2010) conduct an empirical study to test the influence of existing rivals with archival data from the U.S. markets. Consistent with the theoretical propositions, Li (2010) find that competition from existing rivals was negatively associated with companies' profit and investment disclosures, suggesting that companies tended to disclose less information when there are more existing rivals in the product market.

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<sup>8</sup> The economic Supply and Demand Theory states that: if supply increases and demand remains unchanged, then it leads to lower equilibrium price and higher quantity.  
(source: [http://en.wikipedia.org/wiki/Supply\\_and\\_demand](http://en.wikipedia.org/wiki/Supply_and_demand))

Analyzing these two sources of competition in the product market from the time perspective, potential entrants might need a longer time to implement their business plans and compete with the incumbent companies in response to the positive information disclosed by the incumbent; however, existing rivals normally need less reaction time because companies could change their production plan and/or business strategies in a shorter time period, especially in this fast-changing global economy. The current study argues that these time differences might generate different corporate segment profitability disclosure behaviors across nations with different cultural values.

#### *Cultural Time Orientation*

Hofstede (1994: 627) define culture as a collective programming of the mind distinguishing the members of one group or category of people from others. Hofstede's (1980, 1991, & 1994) cultural value theory suggests that values and beliefs held by members of cultures influence individuals' mental states and, consequently, the behaviors of individuals, groups, and institutions within the cultural society. By surveying 116,000 employees of the IBM Corporation in 72 countries, Hofstede (1980) unpackaged national culture into four independent dimensions – Individualism, Power distance, Masculinity and Uncertainty avoidance. These four cultural dimensions address basic problems with which all societies must cope (Kirkman et al., 2006).

The notion of cultural time orientation is introduced by Hofstede & Bond (1988) and later incorporated into Hofstede's culture framework as the fifth dimension (Hofstede & Minkov 2010). According to Hofstede (1994, 2001), nations that score high on long-time orientation hold values that emphasize future rewards, such as perseverance and thrift; while nations that score low on long-time orientation possess values related to the

past and present, and therefore place emphasis on quick results. Hofstede's long-time orientation index scores range from a high of 118 (China) to a low of 29 (the United States) and 0 (Pakistan).

Previous empirical studies have examined the influence of a society's cultural time orientation on its members' business related decision-making and revealed some interesting findings. For example, Harrison, Chow & Wu (1999) conduct an experimental study to investigate the cross-cultural differences of managers' project evaluation decisions. A sample of 230 American and Taiwanese MBA students shows that participants from a long-time oriented society (e.g., China) are less susceptible to escalation of commitment to a failing project than participants from a short-time oriented society (e.g., U.S.). Furthermore, using a standard questionnaire about business goals, Hofstede (2004) surveys MBA students from 15 countries or international territories around the world to study the relationship between cultural time orientation and business goals. He finds that China and the United States clearly fell into different clusters. Specifically, Chinese students rate profits to be made 10 years in the future as more important than students from other nations, while the U.S. students only focus on the current year's profits. These findings are consistent with the proposition that Hofstede's cultural construct of time orientation significantly influences business decisions. More recently, Wang & Hunton (2011) examine the impact of cultural time orientation on employees' satisfaction with participative budgeting. They hypothesize and find that employees from nations with long-time (short-time) orientations are more satisfied with their participative budgeting assignment when they are assigned to a long-time (short-

term) budgeting project because the project length is congruent with their cultural time orientation.

The aforementioned cultural differences suggest that managers who are raised and work in nations with a short-time orientation are likely to place more emphasis on short-term over long-term results. On the other hand, managers who are raised and work in nations with a long-time orientation are likely to be more concerned about long-term than short-term results.

National cultural time orientation also seems likely to influence managers' decision-making in segment reporting. As discussed earlier, there are trade-offs between short-term capital market benefits and long-term product market costs when making segment profitability disclosure decisions. More disclosure of positive segment profitability information would be beneficial in the capital market, but might be harmful to a company's proprietary advantage. When companies that generate relatively high segment profits are facing threats from potential entrants in the product market, the capital market could react more promptly toward the favored segment profitability information than the potential entrants in the product market who need more time to analyze the feasibility of playing an entry game, building up production lines, implementing appropriate strategies and entering the incumbents' product market. Therefore, managers from a short-term oriented society should place more weight on the prompt reaction of the capital markets; whereas, managers from the long-term oriented society might be more concerned about the long-term competitive advantage in the product market. However, existing rivals in the product markets might react much faster toward positive financial information than potential entrants because existing rivals could

utilize their existing business resources to alter production plans and/or follow successful market strategies. This might turn the attention of managers from a short-time oriented society back to the product market.

On the other hand, disclosure of negative segment profitability information might decrease companies' stock valuation in the capital markets. However, negative financial information might not signal anything attractive that could motivate competitors to compete in the product market regardless of the nature of competition. Therefore, managers from a short-time oriented society might simply focus on avoiding the negative reaction from the capital markets; meanwhile, managers from a long-time oriented society might concern more about the cost of manipulating financial information in the long-run<sup>9</sup>, relative to the short-term loss in the capital markets.

### *Hypotheses*

#### Hypotheses about the Potential Entrants

As theory suggests, managers from nations with short-time orientation will care more about the capital market's prompt reaction toward segment profits than the slower entry game in the product market. As a result, these managers likely will truthfully report relatively high segment profits to maximize benefits in the capital market. Conversely, managers from nations with long-time orientation should place more attention on potential entrants' entry game that might threaten companies' profitability in the long run by reducing the incumbents' market share in the product markets. Thus, they likely will

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<sup>9</sup> Using archival data from the United States, Stein (1989) find that managers engaged in myopic behavior to manipulated earnings upward in the current accounting period to increase their stock price at the expense of losing long-term benefits. Similarly, Sloan (1996) find that earnings of those firms where engage in large amount of earnings management behavior tend to decrease in the future years.

manage relatively high segment profits downward to protect the company's proprietary advantage. This argument leads to the following hypotheses:

*H1a: When facing competition from potential entrants, managers with a short-time orientation will not manipulate relatively high segment profitability downward.*

*H1b: When facing competition from potential entrants, managers with a long-time orientation will manipulate relatively high segment profitability downward.*

If companies generate relatively low segment profits, potential entrants will not be attracted to enter into the product market because there is no potential benefit of doing so. However, managers from a short-time oriented society should care more about the quick results from the capital market, and thus will likely hide the relatively low segment profits information to avoid signaling bad news to the capital markets. One way to hide such information is to manage the relatively low profits upward. On the other hand, managers from a long-time oriented society might not engage in myopic behavior to manage relatively low segment profits upward, as immediate approval from the capital market would sacrifice companies' long-run interests (Stein, 1989; Sloan, 1996, also see note 3 for explanations). This discussion leads to the second hypothesis:

*H2a: When facing competition from potential entrants, managers with a short-time orientation will manipulate relatively low segment profitability upward.*

*H2b: When facing competition from potential entrants, managers with a long-time orientation will not manipulate relatively low segment profitability upward.*



### Hypotheses about the Existing Rivals

In a post entry game, companies face competition from existing rivals in the product markets. Compared to potential entrants in an entry game, existing rivals can react more promptly by simply using their existing resources to follow the industry leaders. Disclosing positive information to the existing rivals in the product markets might quickly harm a company's leading position. Therefore, managers with a short-time orientation are likely to care about the impact of the competition from the existing rivals when making segment disclosure decisions to protect their proprietary advantage. Similarly, managers from a long-time orientated society might also conceal relatively high segment performance for the purpose of securing the segment's profitability in the long run. This leads to the following hypothesis:

*H3a: When facing competition from existing rivals, managers with a short-time orientation will manipulate relatively high segment profitability downward.*

*H3b: When facing competition from existing rivals, managers with a long-time orientation will manipulate relatively high segment profitability downward.*

When companies generate relatively low segment profits, managers from a short-time orientation society should care about the negative impact of the bad news on the capital markets, and therefore should manipulate low profits upward. However, the upward adjustment tendency for managers with a long-time orientation might be restrained by their concern over the ability to smooth earnings in the future; thus, they are not expected to manipulate relatively low profits upward. The final hypothesis is thus presented:

*H4a: When facing competition from existing rivals, managers with a short-time orientation will manipulate relatively low segment profitability upward.*

*H4b: When facing competition from existing rivals, managers with a long-time orientation will not manipulate relatively low segment profitability upward.*

The expected results are depicted in Figure 4-1.

[Insert Figure 4-1 about here]

## **Research Method**

### *Participants*

Initially the experiment had 119 participants from China and 102 participants from the U.S.; however, ten of the participants from China did not complete the dependent variable questions, and therefore were dropped from the sample. The remaining 109 participants from China and 102 participants from the U.S. comprised the total usable sample size of 211.

The U.S. sample was obtained from training seminars held by a major international consulting firm. The seminars were held in four major cities across the U.S. The topic of the seminars was "Information Technology Risks and Controls," and the seminar was part of a larger program for mid- to senior-level accounting and finance managers. At the beginning of the seminar, participants were asked to participate in an academic study. The participation of 102 attendees was solicited, all of whom voluntarily agreed to take part in the study.

The Chinese sample was obtained from both a professional training seminar and one of the author's personal contacts. The training seminar was held by the local Financial Bureau in a major city in China. The purpose of this seminar was to give

accounting professionals who hold the middle-level Chartered Accountant Certificate issued by the Ministry of Finance an update of changes in the current financial and accounting regulations and standards. Eighty volunteers from among more than 200 seminar attendees took part in the study at the end of the training seminar. All of the other Chinese participants reflected middle-level accounting managers throughout China.

The average (standard deviation) years of work experience of the U.S. participants was 12.40 (5.20); 69 percent were male and 31 percent were female managers; and 25 percent held bachelor's degrees and 75 percent hold master's degrees. Among the Chinese participants, the average (standard deviation) years of work experience was 9.14 (6.71); 62 percent were female and 38 percent were male managers; and 57 percent held bachelor's degrees, 41 percent held master's degrees, and 2 percent held doctorate degrees. Statistical tests indicated that there were significant differences between participants from the two countries with regard to gender ( $X^2 = 18.831$ ,  $p < 0.001$ ), mean years of work experience ( $t = 3.813$ ,  $p < 0.001$ ), and college degree ( $t = 4.329$ ,  $p < 0.001$ ). Therefore, all of the demographic variables will be included as possible covariates in the hypotheses tests.

#### *Overview of the Experiment Design*

This study was administered via a  $2 \times 2 \times 2$  between-subject quasi-experiment, with two manipulated variables [segment profitability (relatively high, relatively low) and nature of competition (potential entrants, existing rivals)] and one measured variable [cultural time orientation (China representing long-time orientation, the United States representing short-time orientation)]. The dependent variable reflected the discretionary

allocation of a special expense across three operating segments. Higher allocation of the expense to a particular segment would lower reported profitability and vice versa.

Participants were asked to assume that they were the Chief Financial Officer for a large multinational company. First, they were given some basic information related to IFRS 8, after which they read some background information about each segment's business line and profitability. To heighten tension in the experiment, the background information emphasized that the future of the entire company depended largely on the segment for which relatively high or relatively low profitability was manipulated (segment C).

#### *Case Materials*

Participants started the experiment by reading and signing a consent form to confirm their voluntary participation in the experiment. The consent form, shown in the Appendix, stated that the purpose of the study is to investigate managers' decision-making processes. They were told that the survey was strictly anonymous and confidential.

The case materials, shown in the Appendix, were originally written in English. A back translation procedure was used to translate the case material into Chinese. One of the authors who were a bilingual native Chinese speaker translated the English version into Chinese, and another Ph.D. student who was also a bilingual Chinese speaker translated the Chinese version back into English. Then Chinese version was revised based on the comparison of the original and the translated English versions, and agreed upon by the two translators.

#### *Independent Variables and Covariates*

Segment profitability was manipulated by providing pre-allocation accounting numbers in a table, as shown in the Appendix. Participants in the relatively high profitability treatment condition read that the return on sales (ROS) of segment C (0.42) was 40% higher than segment A (0.30) and B (0.31). Participants in the relatively low profitability treatment condition read that the ROS of segment C (0.18) was 40% lower than segment A (0.30) and B (0.31). The sales revenue was kept constant and changed general expenses to reach a targeted net income for segment C that would result in the manipulated ROS.

For the nature of competition treatment, subjects were informed that there were many (no) existing rivals for segment C's business by saying that. For example, participants in the potential entrants condition read the following statement:

*“Segment C produces a unique product that no other company produces, thus there are no existing rivals.”*

Participants in the existing rivals condition read the following statement:

*“Segment C produces a product that many other companies also produce, thus there are many existing rivals.”*

The study also designed two manipulation check questions. To test the manipulation of the nature of competition, participants were asked to choose one out of the two types of competition – potential entrants and existing rivals – that they think should be the company's primary concern. Participants were also asked to rate the profitability of segment C compared with segment A and B before allocation of the special expense on a 7-point scale from 1 (lower) to 7 (higher) to test the manipulation of segment profitability.

With regard to the cultural time orientation, Hofstede's Cultural Country Scores were adopted to assume that China (the United States) is a nation with a long-time (short-time) orientation. To test this assumption, this study also measured the participants' individual time orientation by using the scales created by Bearden, Money, and Nevins (2006). A pilot study with some master's students from a major university was used to test the viability of these scales. Some recommended changes regarding the wording of the questions were made, and the last item (*persistence is important to me*) was also deleted based on responses from the pilot group.

In addition, this study also designed nine debriefing items to assess participants' reasoning processes of their decision-making with regard to the segment profitability reporting. First, three questions were created to identify subjects' general concern about the reaction of the capital market and the product market were they to make a segment allocation decision as described in the case. Then subjects expressed their opinions about how the capital market and the product market would respond to relatively high or relatively low segment profitability. Last, subjects stated what they would prefer to do if they were a CEO of a company with relatively low or relatively high segment profitability. All these questions used 7-point scales, as shown in the Appendix. Finally, participants were asked to provide some demographic information.

#### *Dependent Variable*

In the case material, participants were asked to allocate a special expense of \$250 million across three operating segments in any manner they desire. The dependent variable was calculated using the following formula:

Pre-to-Post Percent Change in ROS for Segment C =  $\frac{\text{Post-ROS of Segment C} - \text{Post-ROS Average for Segments A, B and C}}{\text{Post-ROS Average for Segments A, B and C}}$  -

$\{(Pre\text{-}ROS \text{ of Segment C} - Pre\text{-}ROS \text{ Average for Segments A, B and C}) / Pre\text{-}ROS \text{ Average for Segments A, B and C}\}$

Where:

1. Post-ROS of Segment C was calculated as net income divided by sales revenue after allocation of the \$250 million expense across segments A, B and C
2. Post-ROS Average for Segments A, B and C was calculated as the average of net income divided by sales revenue for all three segments after allocation of the \$250 million expense across segments A, B and C
3. Pre-ROS of Segment C was calculated as net income divided by sales revenue before allocation of the \$250 million expense across segments A, B and C
4. Pre-ROS Average for Segments A, B and C was calculated as the average of net income divided by sales revenue for all three segments before allocation of the \$250 million expense across segments A, B and C

## Results

### *Manipulation Checks*

According to Hofstede's Cultural Value Theory, China is a nation with a longer time orientation than the U.S.; therefore, participants from these two countries were used to represent long-time and the short-time orientations. To confirm the appropriate use of these representatives, this study adapted Bearden et al.'s (2006) long-time orientation questionnaire to test collective cultural time orientation. The original time orientation questionnaire, developed by Bearden et al. (2006), included eight items that loaded on two factors – tradition and planning. Based on feedback from a pilot study, some of the items were reworded to improve understandability and one item was deleted (*persistence is important to me*).

Factor analysis of the remaining seven items, as shown in Panel A of Table 4-1, indicates that the seven items load on one single factor, with Cronbach's alpha of 0.87. The seven items were averaged into a composite "Cultural Time orientation" index to calculate the collective cultural values of the U.S. and China, with a mean of 3.61 for the U.S. and 5.00 for China (see Panel B of Table 4-1). The index was oriented in a way that a higher value suggested a longer-time orientation. Results of a t-test indicates that the U.S. participants are significantly more short-time oriented than the Chinese participants ( $t = -9.21, p < 0.001$ ), which is consistent with theory.

[Insert Table 4-1 about here]

While Bearden *et al.* (2006) find two factors (tradition and planning), analysis of the U.S. and Chinese samples in the current study suggested a single factor as indicated by Panel A of Table 4-1. However, the three items of the Planning factor identified by Bearden *et al.* (2006) are more related to managers' time horizon regarding financial reporting than the "Tradition" factor, therefore, are more appropriate to represent managers' time orientation. The three items shown on Panel C of Table 4-1 present the results of factor analysis on the three planning items from the Bearden *et al.* scale. As indicated, the percent of variance explained is 65.14%, which was higher than the factor analysis that includes all seven items (see Panel A). The analysis on Panel D of Table 4-1 suggests that the U.S. managers ( $m = 3.63$ ) are relatively more short-time oriented than the Chinese managers ( $m = 5.25$ ), which again is consistent with theory.

To check the nature of competition faced by segment C, participants were asked to choose one of two types of competition – existing rivals and potential entrants. Three participants from the U.S. and three participants from China made incorrect choices, and



thus failed this manipulation check. A robustness test (not reported) indicates that excluding these six participants from the upcoming results did not change the power of the statistical tests; hence, for the sake of statistical conservatism, they were retained in the sample.

For the segment profitability, participants were asked to describe the level of segment C's profitability relative to segments A and B in the pre-allocation stage from 1 (lower) to 7 (higher). The means (standard deviations) were 2.22 (0.885) for the low profitability condition and 5.93 (0.782) for the high profitability condition. A t-test indicated a significant difference regarding the segment profitability between the low and high profitability conditions ( $t = 32.26, p < 0.001$ ). An examination of individual responses to this question indicated that responses were either on the expected side of the mid-point or at the mid-point of the scale (4). Therefore, the manipulation of the segment profitability is deemed successful.

#### *Preliminary Analyses*

Because the U.S. participants were attending four different educational sessions, the U.S. sample was analyzed first using an analysis of covariance (ANCOVA) for potential differential effects across sessions. The dependent variable reflects the pre-to-post difference in the ROS of segment C relative to the average ROS of all three segments. The independent variables represent the nature of competition (existing rivals or potential entrants) and level of segment C's profitability (relatively high or relatively low). The U.S. session number (1 through 4) was included as the covariate. Results of the ANCOVA model reveal a significant two-way interaction between the two independent variables ( $F = 8.038, p < 0.001$ ), and the covariate was marginally significant ( $F = 4.059,$

$p = 0.47$ ). Next, ANOVA model without the covariate were used and the two way interaction was still significant ( $F = 7.018, p < 0.001$ ) and the pattern of means was nearly identical to the pattern when the covariate was included. Therefore, the training sessions did not differentially influence responses from the U.S. subjects, and thus were excluded from the model when the samples from both nations were combined for hypotheses testing.

### *Descriptive Statistics*

Panel A (B) of Table 4-2 presents the percent difference in post-allocation ROS of segment C relative to the average ROS for all three segments when the pre-allocation percentage was relatively higher (lower). The overall post-allocation relative difference in the high condition (+33.34%) is higher than the pre-allocation relative difference of 22.63%. The overall post-allocation relative difference in the low condition (-24.88%) also is higher than the pre-allocation relative difference of -33.47%.

[Insert Table 4-2 about here]

Table 4-3 presents the percent difference in post-allocation ROS of segment C relative to the average ROS for all three segments (i.e. the means shown in Table 4-2) minus the pre-allocation relative percent difference that is manipulated in the case (22.63% in the high condition and -33.47% in the low condition). Panel A of Table 4-3 present descriptive statistics of the means (standard deviations) by each treatment condition when the ROS for segment C is relatively high. As indicated, short-time oriented managers increase the pre-to-post relative profitability of segment C (+26.65%) while long-time oriented managers decrease the pre-to-post relative profitability of segment C (-3.88%). Panel B offered descriptive statistics when the ROS for segment C

was relatively low. In this condition, short-time oriented managers increase the pre-to-post relative profitability of segment C (+12.30%) and long-time oriented managers decrease the pre-to-post relative profitability of segment C (-12.91%). The cell means are graphically depicted in Figure 4-2.

[Insert Table 4-3 and Figure 4-2 about here]

Panel C of Table 4-3 presents the ANCOVA results aim at testing the potential significance of demographic covariates. As indicated in this table, none of the covariates are significant except for the functional area in which the managers currently work (accounting/finance, general management, sales/marketing, operations, human resources or other). The main effects of segment profitability and nature of competition are non-significant ( $p > .10$ ), while the main effect of country is significant ( $F = 77.058, p < 0.001$ ). The two-way interactions involving profitability by country is significant ( $F = 6.797, p = .010$ ); the two-way interaction involving competitors by country is marginally significant ( $F = 2.945, p = .088$ ); and the three way interaction is marginally significant ( $F = 2.813, p = 0.095$ ).

Panel D of Table 4-3 depicts the ANCOVA results when only the significant covariate of “area” is included. Significance of the main effects and interactions were essentially the same as Panel C. Finally, results of the ANOVA model without any covariates are presented in Panel E. Once again, significance of the main effects and interactions follow the same pattern as indicated in Panels C and D.

### *Hypotheses Testing*

H1a predicts that managers with a short-time orientation will not manipulate the relatively high pre-adjusted profitability of segment C downward in light of potential

competitors. Indeed, the difference in pre-to-post ROS of +33.62% was greater than zero ( $t = 17.738, p < .01$ ). While H1a is supported, unexpectedly, managers with a short-time orientation adjusted the relatively high profitability of segment C even higher, suggesting that they are attempting to elicit a strong reaction from the capital market.

H1b posits that managers with a long-time orientation will manipulate the relatively high pre-adjusted profitability of segment C downward in light of potential competitors. The difference in pre-to-post ROS of -3.37% is less than zero ( $t = -2.712, p < .01$ ), which supports H1b. This evidence indicates that these managers are trying to discourage the product market from competing with segment C.

H2a predicts that managers with a short-time orientation will manipulate the relatively low pre-adjusted profitability of segment C upward in light of potential competitors. The difference in pre-to-post ROS of +29.46% is greater than zero ( $t = 61.558, p < .01$ ), and thus H2a is supported.

H2b posits that managers with a long-time orientation will not manipulate the relatively low pre-adjusted profitability of segment C upward in light of potential competitors. The difference in pre-to-post ROS of -14.70% is less than zero ( $t = -2.90, p < .01$ ), and thus H2b was supported. As these results indicate, managers with a long-time orientation attempted to make segment C look even worse after the adjustment, the motive of which seems to be sending a discouraging signal to the product market.

H3a predicts that managers with a short-time orientation will manipulate the relatively high pre-adjusted profitability of segment C downward in light of existing rivals. However, the difference in pre-to-post ROS of +19.12% is greater than zero ( $t = 3.811, p < .01$ ). Therefore, H3a was not supported. Interestingly, managers with a short-

time orientation again adjust the relatively high profitability of segment C even higher, seemingly in an attempt to elicit a strong reaction from the capital market.

H3b posits that managers with a long-time orientation will manipulate the relatively high pre-adjusted profitability of segment C downward in light of existing rivals. The difference in pre-to-post ROS of -1.40% is not less than zero ( $t = -0.526$ ,  $p = .60$ ); thus, H3b is not supported.

H4a predicts that managers with a short-time orientation will manipulate the relatively low pre-adjusted profitability of segment C upward in light of existing rivals. The difference in pre-to-post ROS of +29.16% is greater than zero ( $t = 58.545$ ,  $p < .01$ ), and hence H4a is supported.

Finally, H4b posits that managers with a long-time orientation will not manipulate the relatively low pre-adjusted profitability of segment C upward in light of existing rivals. The difference in pre-to-post ROS of -11.43% is less than zero ( $t = -2.882$ ,  $p < .01$ ). This result supported H4b. Once again, managers with a short-time orientation attempt to make segment C look even worse after the adjustment to discourage the product market.

A summary of the hypotheses and findings is presented in Table 4-4. Next, some post-experiment debriefing items would be analyzed.

[Insert Table 4-4 about here]

#### 4.5 Debriefing Items

Participants responded to nine debriefing items. The purpose is to better understand their underlying decision processes. Wording of the items and the results of statistical tests are shown in Table 4-5.

[Insert Table 4-5 about here]

The responses to item one indicate that managers with a short-time orientation are more concerned about the capital market reaction to segment reporting than managers with a long-time orientation. Results from item two suggest that managers with a long-time orientation are more concerned about the product market reaction than managers with a short-term orientation. When asked to trade-off which market was of most concern (capital or product), responses to item three indicate that managers with a short-time orientation are more concerned with the capital market and managers with a long-time orientation are more concerned with the product market reaction. These results are consistent with the underlying theory that cultural time orientation coincides with differential emphases on the capital and product markets.

Results from item four (five) suggest that managers with both time orientations realize that the capital market would react positively (negatively) to an operating segment that reports abnormally high (low) profitability, although managers with a short-time orientation hold stronger beliefs in this regard. Results from item six (seven) indicate that managers with both time orientations realize that when an operating segment reports abnormally high (low) profitability, more (fewer) competitors would be attracted to the industry, although managers with a long-time orientation hold stronger beliefs in this regard. As indicated by items four through seven, the relative emphasis of managers with a short-time (long-time) orientation was more on the capital (product) market.

Debriefing item eight asks what the participating managers would do if they were CEO of a company with an operating segment with abnormally high profitability. Although managers with a short-time orientation say they would essentially report the

high profits, in our experiment they actually boost the high profitability even higher. Managers with a long-term orientation say that they would reduce the profitability a little, which is consistent with their behaviors in the experiment. The final debriefing item asks what the participating managers would do assuming they were CEO of a company with an operating segment with abnormally low profitability. Managers with a short-time orientation say they would report considerably higher profits, as they did in the experiment. Managers with a long-time orientation say that they would enhance profitability slightly; however, in the experiment they did not significantly alter the abnormally low profitability. On the whole, responses to items eight and nine were generally consistent with the experimental behaviors.

#### 4.6 Sensitivity Testing

A regression analysis is conducted to test for the robustness of using a binary variable in the ANCOVA and ANOVA models to reflect short-time (U.S. managers) and long-time (Chinese managers) orientations. To facilitate this sensitivity test, the three-item scale representing the “planning” dimension of time orientation are averaged to represent managers’ time orientation, since this dimension seemed more appropriate to the task than the “tradition” dimension (see Table 4-1, Panel C). All possible covariates are included as control variables in the regression model, the results of which are shown in Table 4-6.

[Insert Table 4-6 about here]

As indicated on Table 4-6, the overall regression model is significant ( $F = 11.567$ ,  $p < .001$ ). Significance of the three-way interaction ( $p = .024$ ) is greater than the ANOVA approach ( $p = 0.80$ ). Interpretation of the three-way interaction is consistent with the

ANOVA model. Hence, using country (U.S. or China) to reflect cultural time orientation is consistent with continuous measure of cultural time orientation used in the regression model.

### **Summary and Conclusion**

The current study investigates whether and how national cultural time orientation interacts with the relative level of each segment's profitability and the nature of competition. This is an important topic because managers have considerable discretion over segment profitability disclosure choices under IFRS 8, as suggested by a report from Deloitte (2006). Managers from nations with different cultural values might exhibit different patterns of behavior when exercising discretion on segment reporting, therefore reducing the comparability of financial information across nations even when using the same accounting standard. Only by fully understanding the potential impact of national cultural values on corporate financial reporting can top level executives of multinational companies, international investors, financial analysts and other report users properly compare financial information worldwide for their business decisions.

This study conducted a controlled quasi-experiment with a total of 211 participants from the United States and China, where the two countries serve as proxies for short-time and long-time orientation, respectively. Participants were randomly assigned to four experimental treatment conditions – relatively low segment profitability in light of existing rivals; relatively low segment profitability in light of potential entrants; relatively high segment profitability in light of existing rivals; and relatively high segment profitability in light of potential entrants. The case allowed participants to leave alone, adjust upward or adjust downward the profitability (as represented by return



on sales (ROS)) of a key company segment with relatively high or low unadjusted ROS. Once participants decided the ROS they would like to report to the public, the dependent variable reflected the pre-to-post adjustment in ROS for the key segment.

Managers with a short-time orientation change a relatively low pre-adjusted ROS to a relatively high post-adjusted ROS, and change a relatively high pre-adjusted ROS to an even higher post-adjusted ROS. When these behaviors are combined with the results of debriefing questions, it appears as though managers with a short-time orientation want to signal to the capital market that the company's key segment is highly successful, relative to the other segments, thereby hoping to be rewarded by a higher stock price.

Managers with a long-time orientation change a relatively low pre-adjusted ROS to be slightly lower, and change a relatively high pre-adjusted ROS to be lower. When these behaviors are considered in conjunction with the debriefing items, managers with a long-time orientation seemed to be signaling to the product market that the company's key operating segment was not as profitable as the other segments in an attempt to ward off existing competitors and potential rivals.

The results also suggest that how managers respond to existing rivals and potential competitors differs depending on their cultural time orientation. Specifically, managers with a short-time orientation reacted about the same to either type of competitor, while managers with a long-time orientation lower the relative profitability of the company's key operating segment considerably more in light of potential competitors, relative to existing rivals. Theory suggests that this finding is due to the fact that existing rivals can respond more quickly than potential competitors, and thus long-time orientated

managers want to stress the relatively poor performance of the key operating segment more so when potential entrants are lurking in the product market.

This study contributes to segment reporting literature by considering the differences in operating segment earnings management behaviors between cultures with different time orientations. The results shed light on the mixed findings of prior segment reporting studies that are conducted in international regions with different cultural backgrounds; for instance, some studies find supportive evidence for the proprietary cost hypothesis (Harris, 1998; Botosan & Stanford, 2005) and agency cost hypothesis (Berger & Hann, 2007), while the same studies also report negative correlations or mixed results for the proprietary cost hypothesis (Berger & Hann, 2007) or agency cost hypothesis (Botosan & Stanford, 2005). To our knowledge, this is the first study to partially explain previous inconsistent results through the lens of cultural differences and concerns about the competition from the capital and product markets.

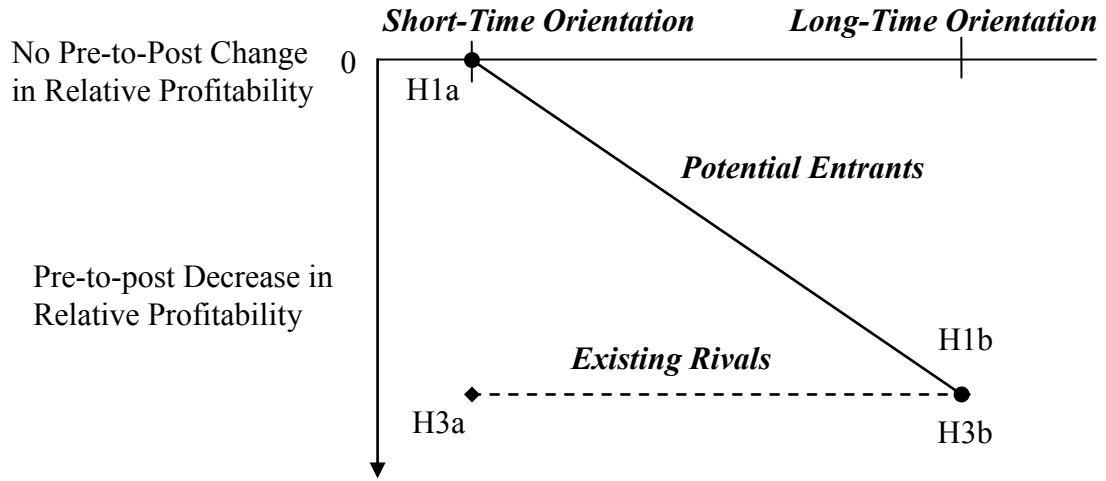
The current study is limited in several ways. First, the experiment manipulated segment profitability by changing the relative ROS for each segment. The results might be different had other measures (e.g., Return on Assets and/or Earnings per Share) been used. Another limitation involves the sample selection process. Some of the Chinese participants were selected from one of the researchers' personal contacts, and the others were volunteers from an accounting professional education seminar. Participants from the U.S. were attending educational seminars held by an international training firm. Therefore, there were different self-selection biases with regard to the country samples, the influence of which is unknown. The next potential limitation was using China as a proxy for long-time orientation and the U.S. as a proxy for short-time orientation. Yet,

this limitation is mostly offset by statistical analyses of three cultural time-orientation measures, the results of which are consistent with time orientation theory.

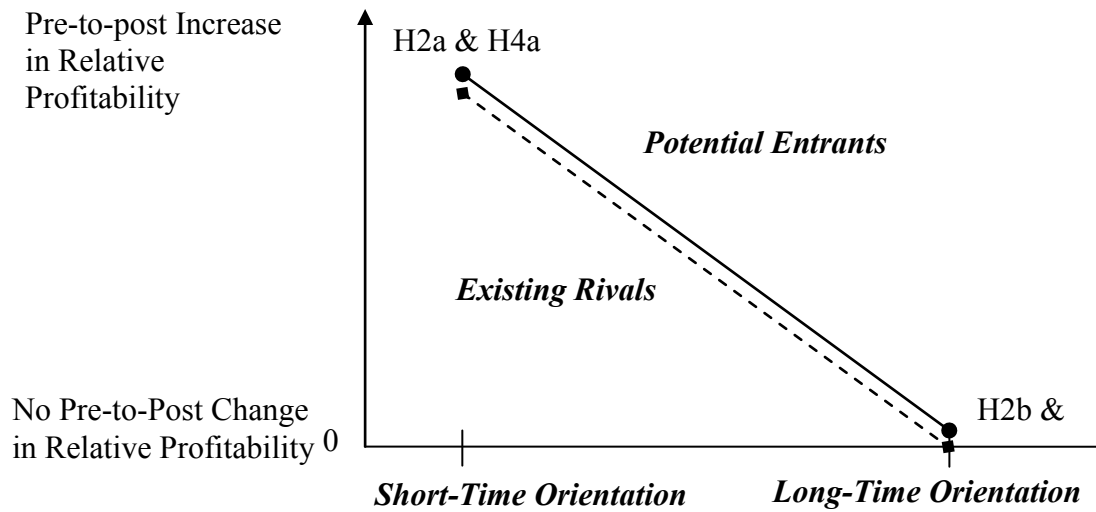
The current study only focuses on one aspect of Hofstede's cultural value dimensions. However, four other dimensions (e.g., individualism, power distance, uncertainty avoidance and masculinity) might also influence managers' decision-making on segment profitability disclosure. For example, when each segment in a company forms various supply and distribution relationships, segment managers who are collectivists might prefer to sacrifice their own segments' performance through related-party transactions for the good of the whole company; however, segment managers who are individualists might not want to lower their own segments' profitability to meet the business goals of the whole company. Future studies should broadly investigate possible impacts of the other cultural dimensions in the field of segment reporting to improve the comparability and understandability of segment profitability in the global environment.

**Figure 4-1 Summary of Hypotheses and Expected Results**

**Panel A:** When Profitability of the Company's Key Operating Segment is Relatively Higher than the Average Profitability of all Segments

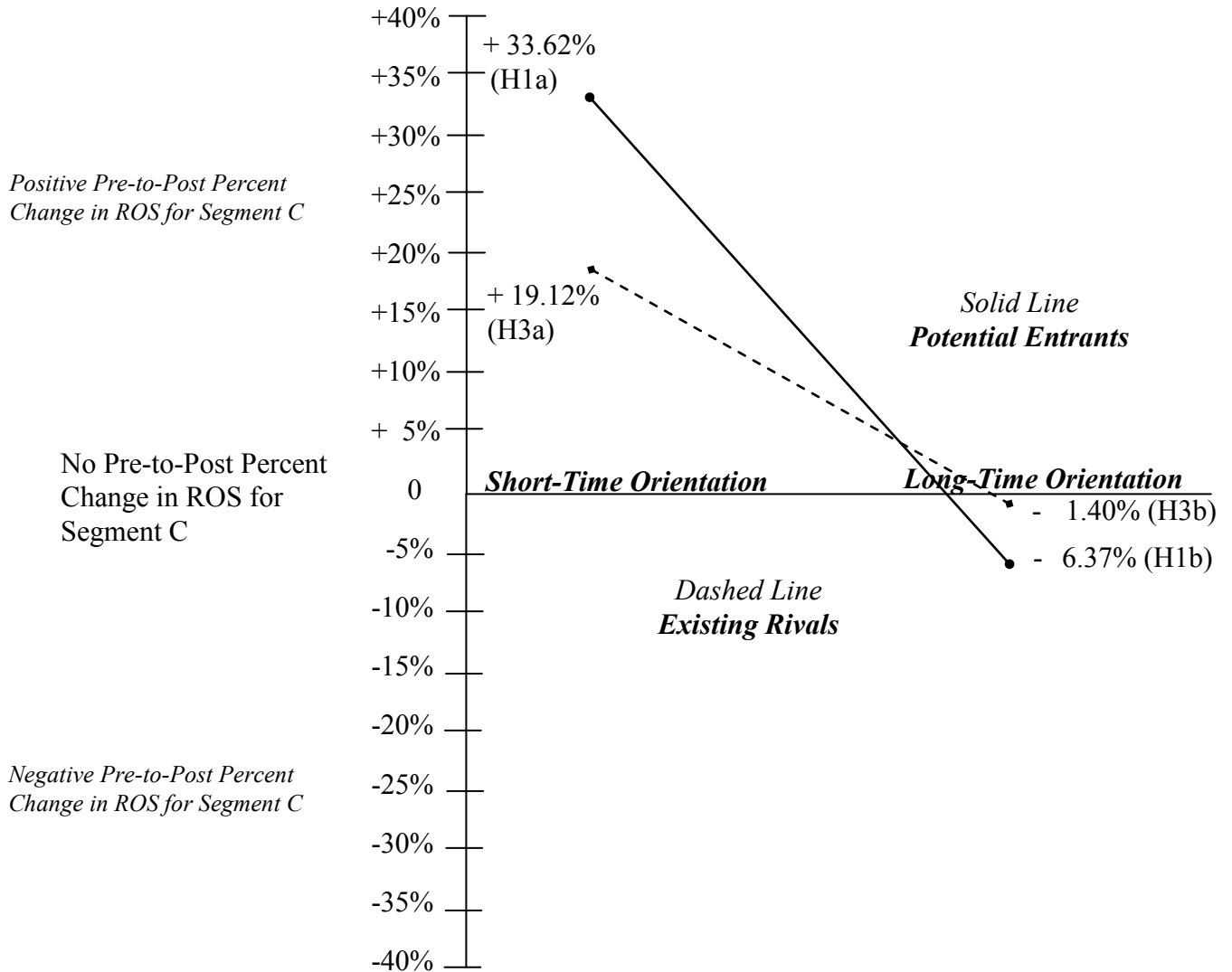


**Panel B:** When Profitability of the Company's Key Operating Segment is Relatively Lower than the Average Profitability of all Segments



**Figure 4-2 Interaction Effect of Segment Profitability, Nature of Competition and Culture Time Orientation on Managers' Segment Profitability Disclosure**

**Panel A:** When Profitability of the Company's Key Operating Segment is Relatively Higher than the Average Profitability of all Segments



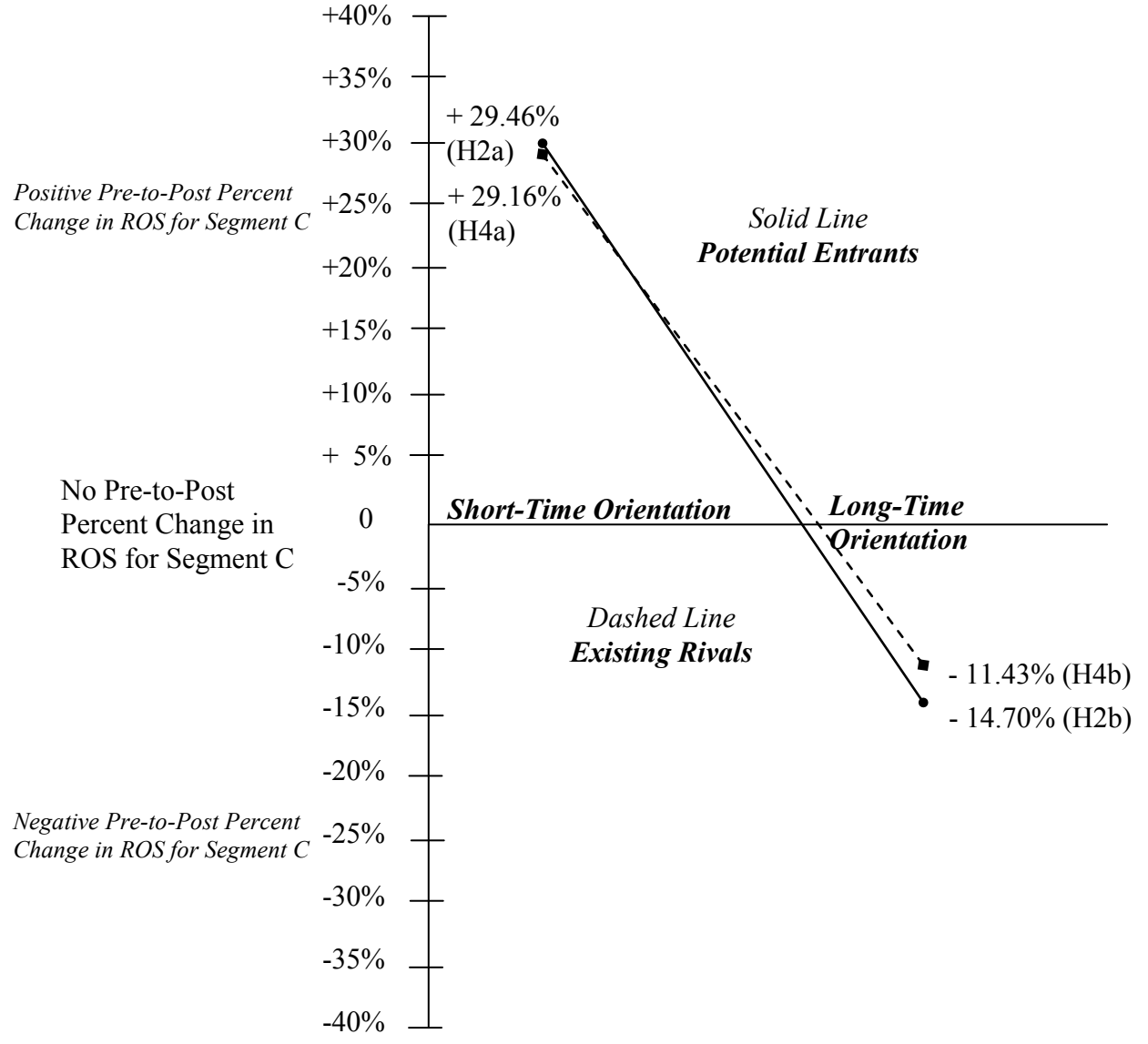
**Variable Definitions:**

ROS = Return on Sales = Net income/Sales income

Pre-to-Post Percent Change in ROS for Segment C =  $\frac{\{(Post\text{-}ROS\ of\ Segment\ C - Post\text{-}ROS\ Average\ for\ Segments\ A,\ B\ and\ C)\}}{Post\text{-}ROS\ Average\ for\ Segments\ A,\ B\ and\ C} - \frac{\{(Pre\text{-}ROS\ of\ Segment\ C - Pre\text{-}ROS\ Average\ for\ Segments\ A,\ B\ and\ C)\}}{Pre\text{-}ROS\ Average\ for\ Segments\ A,\ B\ and\ C}$

**Figure 4-3 Interaction Effect of Segment Profitability, Nature of Competition and Culture Time Orientation on Managers' Segment Profitability Disclosure**

**Panel B:** When Profitability of the Company's Key Operating Segment is Relatively Lower than the Average Profitability of all Segments



**Variable Definitions:**

ROS = Return on Sales = Net income/Sales income

Pre-to-Post Percent Change in ROS for Segment C =  $\frac{\{(Post-ROS \text{ of Segment C} - Post-ROS \text{ Average for Segments A, B and C}) / Post-ROS \text{ Average for Segments A, B and C}\} - \{(Pre-ROS \text{ of Segment C} - Pre-ROS \text{ Average for Segments A, B and C}) / Pre-ROS \text{ Average for Segments A, B and C}\}}$

**Table 4-1 Cultural Time Orientation Factor Loadings**

**Panel A:** Factor Analysis with all Seven Time-Orientation Items

Response Item	Mean	Std. Deviation	Factor Loading
1. Respect for family and social "tradition" is important to me	4.30	1.791	.861
2. When making decisions, I am most concerned about how the outcomes of such decisions will affect the	4.30	1.728	.701
3. Maintaining family "heritage" (e.g., customs and legacies that have been passed down over the generations) is important to me	4.24	1.698	.778
4. I value a strong link to my cultural tradition.	4.24	1.574	.706
5. I work hard now so that I can gain in the future	4.90	1.872	.785
6. I don't mind giving up today's fun for success in the future	4.18	1.698	.704
7. Traditional values are important to me.	4.10	1.664	.700

Varimax Rotation. Only factors with Eigenvalues  $\geq 1.00$  were retained. One factor obtained, with an Eigenvalue of 3.938 and a percent of variance explained of 56.26%. Standardized Cronbach's alpha = 0.87.

**Panel B:** Means (Standard Deviations) for U.S. and China

Country	N	Mean	Std. Deviation	t-value	p-value
U.S.	102	3.6120	1.276	-9.210	0.000
China	109	4.9960	0.875		

**Table 4-1** Cultural Time Orientation Factor Loadings (Continued)

**Panel C:** Factor analysis with Three Items Reflecting Long-Short Term Planning

Response Item	Mean	Std. Deviation	Factor Loading
2. When making decisions, I am most concerned about how the outcomes of such decisions will affect the	4.30	1.728	.786
5. I work hard now so that I can gain in the future	4.90	1.872	.812
6. I don't mind giving up today's fun for success in the future	4.18	1.698	.822

Varimax Rotation. Only factors with Eigenvalues  $\geq 1.00$  were retained. One factor obtained, with an Eigenvalue of 1.954 and a percent of variance explained of 65.14%. Standardized Cronbach's alpha =0.731.

**Panel D:** Means (Standard Deviations) for U.S. and China

Country	N	Mean	Std. Deviation	t-value	p-value
U.S.	102	3.628	1.390	-9.985	0.000
China	109	5.247	0.927		



**Table 4-2 Percentage Difference in Post-Allocation ROS for Segment C Relative to the Average ROS for Segments A, B and C**

**Panel A:** Means (Standard Deviations) and {Sample Sizes} when the Relative Profitability of Segment C is High

Time Orientation	Competitors		<i>Main Effect of Time Orientation</i>
	Existing	Potential	
Short-term	+41.75% (25.09) {25}	+56.25% (9.85) {27}	+49.28% (19.98) {52}
Long-term	+21.23% (14.08) {28}	+16.26% (12.42) {28}	+18.74% (13.39) {56}
<i>Main Effect of Competitors</i>	+30.91% (22.37) {53}	+35.89% (23.05) {55}	+33.45% (22.75) {108}

*The pre-allocation relative profitability of segment C in the case was 22.63% in all cells.*

**Panel B:** Means (Standard Deviations) and {Sample Sizes} when the Relative Profitability of Segment C is Low

Time Orientation	Competitors		<i>Main Effect of Time Orientation</i>
	Existing	Potential	
Short-term	-3.31% (2.54) {26}	-3.00% (2.34) {24}	-3.16% (2.43) {50}
Long-term	-43.89% (21.36) {29}	-47.16% (24.83) {24}	-45.37% (22.83) {53}
<i>Main Effect of Competitors</i>	-24.71% (25.65) {55}	-25.08% (28.32) {48}	-24.88% (26.80) {103}

*The pre-allocation relative profitability of segment C in the case was -32.47% in all cells.*

**Variable Definitions:**

ROS = Return on Sales = Net income/Sales income

Post Percent Change in ROS for Segment C = (Post-ROS of Segment C – Post-ROS Average for Segments A, B and C)/Post-ROS Average for Segments A, B and C}

**Table 4-3 Difference between Reported ROS for Segment C and the Average ROS for Segments A, B and C**

**Panel A:** Means (Standard Deviations) and {Sample Sizes} when the Relative Profitability of Segment C is High

Time Orientation	Competitors		<i>Main Effect of Time Orientation</i>
	Existing	Potential	
Short-term	+ 19.12% (25.09) {25}	+ 33.62% (9.85) {27}	+26.65% (19.98) {52}
Long-term	- 1.40% (14.08) {28}	- 6.37% (12.42) {28}	-3.88% (13.39) {56}
<i>Main Effect of Competitors</i>	+8.28% (22.37) {53}	+13.26% (23.05) {55}	+10.82% (22.75) {108}

**Panel B:** Means (Standard Deviations) and {Sample Sizes} when the Relative Profitability of Segment C is Low

Time Orientation	Competitors		<i>Main Effect of Time Orientation</i>
	Existing	Potential	
Short-term	+ 29.16% (2.54) {26}	+ 29.46% (2.34) {24}	+29.30% (2.43) {50}
Long-term	- 11.43% (21.36) {29}	- 14.70% (24.83) {24}	-12.91% (22.83) {53}
<i>Main Effect of Competitors</i>	+7.75% (25.65) {55}	+7.38% (28.32) {48}	+7.58% (26.80) {103}

**Table 4-3** Difference between Reported ROS for Segment C and the Average ROS for Segments A, B and C (Continued)

**Panel C:** ANCOVA Model Results

Source	SS	df	MSE	F-value	p-value
Corrected Model	7.653	14	.547	20.356	.000
Intercept	.022	1	.022	.826	.365
Gender	.001	1	.001	.026	.872
Yearofexperience	.017	1	.017	.644	.423
Area	.084	1	.084	3.113	.079
Degree	.005	1	.005	.199	.656
Major	.026	1	.026	.965	.327
Concern_Cap	.012	1	.012	.435	.510
Concern_Pro	.041	1	.041	1.509	.221
Profitability	.034	1	.034	1.277	.260
Competitors	.000	1	.000	.001	.978
Country	2.069	1	2.069	77.058	.000
Profitability * Competitors	.062	1	.062	2.294	.131
Profitability * Country	.183	1	.183	6.797	.010
Competitors * Country	.079	1	.079	2.945	.088
Profitability * Competitors * Country	.076	1	.076	2.813	.095
Error	5.263	196	.027		
Total	14.716	211			
Corrected Total	12.916	210			

R Squared = .593 (Adjusted R Squared = .569)

**Table 4-3** Difference between Reported ROS for Segment C and the Average ROS for Segments A, B and C (Continued)

**Panel D:** ANCOVA Model Results

Source	SS	df	MSE	F-value	p-value
Corrected Model	7.559	8	.945	35.630	.000
Intercept	.213	1	.213	8.044	.005
Area	.083	1	.083	3.124	.079
Profitability	.037	1	.037	1.410	.236
Competitors	.010	1	.010	.394	.531
Country	6.573	1	6.573	247.864	.000
Profitability * Competitors	.046	1	.046	1.725	.191
Profitability * Country	.165	1	.165	6.239	.013
Competitors * Country	.184	1	.184	6.952	.009
Profitability * Competitors * Country	.090	1	.090	3.397	.067
Error	5.357	202	.027		
Total	14.716	211			
Corrected Total	12.916	210			

R Squared = .585 (Adjusted R Squared = .569)

**Table 4-3** Difference between Reported ROS for Segment C and the Average ROS for Segments A, B and C (Continued)

**Panel E:** ANOVA Model Results

Source	SS	df	MSE	F-value	p-value
Corrected Model	7.476	7	1.068	39.857	.000
Intercept	1.969	1	1.969	73.467	.000
Profitability	.051	1	.051	1.915	.168
Competitors	.014	1	.014	.527	.469
Country	6.924	1	6.924	258.407	.000
Profitability * Competitors	.051	1	.051	1.912	.168
Profitability * Country	.193	1	.193	7.189	.008
Competitors * Country	.174	1	.174	6.502	.012
Profitability * Competitors * Country	.083	1	.083	3.098	.080
Error	5.440	203	.027		
Total	14.716	211			
Corrected Total	12.916	210			

R Squared = .579 (Adjusted R Squared = .564)

**Table 4-4 Summary of Hypotheses and Results**

<b>Hypothesis</b>	<b>Status</b>	<b>Comments</b>
<b>H1a:</b> When facing competition from potential entrants, managers with a short-time orientation will not manipulate relatively high segment profitability downward.	Hypothesis Supported	There was a further upward adjustment, reflecting an attempt to boost the capital market reaction.
<b>H1b:</b> When facing competition from potential entrants, managers with a long-time orientation will manipulate relatively high segment profitability downward.	Hypothesis Supported	There was a switch from relatively high to relatively low profitability, reflecting an attempt to discourage the product market.
<b>H2a:</b> When facing competition from potential entrants, managers with a short-time orientation will manipulate relatively low segment profitability upward.	Hypothesis Supported	There was a switch from relatively low to relatively high profitability, reflecting an attempt to boost the capital market reaction.
<b>H2b:</b> When facing competition from potential entrants, managers with a long-time orientation will not manipulate relatively low segment profitability upward.	Hypothesis Supported	There was a further downward adjustment, reflecting an attempt to discourage the product market.
<b>H3a:</b> When facing competition from existing rivals, managers with a short-time orientation will not manipulate relatively high segment profitability downward.	Hypothesis Not Supported	There was no downward adjustment, but a further upward adjustment, reflecting an attempt to boost the capital market reaction.
<b>H3b:</b> When facing competition from existing rivals, managers with a long-time orientation will manipulate relatively high segment profitability downward.	Hypothesis Not Supported	There was no pre-to-post change in the relatively high profitability of segment C.
<b>H4a:</b> When facing competition from existing rivals, managers with a short-time orientation will manipulate relatively low segment profitability upward.	Hypothesis Supported	There was a switch from relatively low to relatively high profitability, reflecting an attempt to boost the capital market reaction.
<b>H4b:</b> When facing competition from existing rivals, managers with a long-time orientation will not manipulate relatively low segment profitability upward.	Hypothesis Supported	There was a further downward adjustment, reflecting an attempt to discourage the product market.

**Table 4-5 Debriefing Items**

Debriefing questions	Culture	Mean	Std. Deviation	t-value	Sig.
<b>Item 1:</b> In the case, how concern were you about how the capital market would react (1= not concerned, 7 = highly Concerned)	Short-term	5.59	1.155	-5.930	0.00
	Long-term	4.57	1.329		
<b>Item 2:</b> In the case, how concern were you about how the product market would react (1= not concerned, 7 = highly Concerned)	Short-term	3.62	1.509	9.479	0.00
	Long-term	5.36	1.143		
<b>Item 3:</b> In the case, I was most concerned about the (1=Capital market, 4 = Equally concerned about both markets, 7 = Product market).	Short-term	2.95	1.869	8.763	0.00
	Long-term	4.87	1.277		
<b>Item 4:</b> If an operating segment reports abnormally high segment profitability, how will the capital market react (-3 = strong negative, 0 = no reaction, +3 = strong positive)	Short-term	2.94	.236	-11.373	0.00
	Long-term	1.56	1.205		
<b>Item 5:</b> If an operating segment reports abnormally low segment profitability, how will the capital market react (-3 = strong negative, 0 = no reaction, +3 = strong positive)	Short-term	-2.93	.290	-14.987	0.00
	Long-term	-1.55	.887		
<b>Item 6:</b> If an operating segment reports abnormally high segment profitability, how will the product market react (-3 = fewer competitors will be attracted, 0 = no change in the number of competitors, +3 = more competitors will be attracted)	Short-term	2.81	.391	-5.661	0.00
	Long-term	2.03	1.350		
<b>Item 7:</b> If an operating segment reports abnormally low segment profitability, how will the product market react (-3 = fewer competitors will be attracted, 0 = no change in the number of competitors, +3 = more competitors will be attracted)	Short-term	-1.12	.859	-4.495	0.00
	Long-term	-1.76	1.175		

<b>Item 8:</b> If I were CEO of a company with an operating segment with abnormally high profitability, I would (-3 = decrease the segment's profitability, 0 = make no change, +3 = increase the segment's profitability)	Short-term	-.27	.529	-3.815	0.00
	Long-term	-.85	1.439		
<b>Item 9:</b> If I were CEO of a company with an operating segment with abnormally low profitability, I would (-3 = decrease the segment's profitability, 0 = make no change, +3 = increase the segment's profitability)	Short-term	3.00	.000	-18.630	0.00
	Long-term	.84	1.169		



**Table 4-6 Regression Results Using Average of the Three Item Long-Short Time Orientation Scale**

Model <sup>ab</sup>	Unstd. B	Std. Error	Std. Beta	t-value	p-value
(Constant)	.466	.132		3.531	.001
Profitability	-.359	.128	-.723	-2.811	.005
Competitors	-.409	.143	-.824	-2.853	.005
Planning(CTO)	-.084	.021	-.484	-4.064	.000
Competitors*Planning	.071	.030	.706	2.379	.018
Profitability*Planning	.075	.027	.743	2.741	.007
Profitability*Competitors	.474	.178	.836	2.664	.008
Profitability*Competitors *Planning	-.087	.038	-.728	-2.281	.024
Gender	-.033	.027	-.066	-1.207	.229
Year of experience	.005	.002	.110	1.964	.051
Area	.045	.020	.126	2.249	.026
Degree	.074	.028	.154	2.702	.008
Major	-.028	.011	-.150	-2.620	.009
Concern of Capital markets	.029	.011	.160	2.793	.006
Concern of Product markets	-.060	.010	-.383	-5.872	.000

R Squared = .454 (Adjusted R Squared = .414)

F=11.567, p=0.000

## Appendix – Case material

### Consent Form

**Bentley University and the Department of accountancy support the practice of protecting research participants' rights. Accordingly, this project was reviewed and approved by the Bentley Institutional Review Board. The information in this consent form is provided so that you can decide whether you wish to participate in the study. It is important that you understand that your participation is considered voluntary. This means that even if you agree to participate, you are free to withdraw from the study at any time, without penalty.**

This study is an investigation into how managers make decisions. For this study, you will read a scenario about a company for which you are assumed to work. You will be asked to make judgments about the scenario, answer some related questions, and provide some demographic information.

This study will be totally anonymous and your name will not be associated with the findings. Upon completion of your participation in this study, you will be provided with a brief explanation of the question this study addresses. If you have any questions not addressed by this consent form, please do not hesitate to ask. You will receive a copy of this form, which you should keep for your records.

We thank you for your time.

#### Researcher's Signature

\_\_\_\_\_  
Professor James E. Hunton  
Department of Accountancy, Bentley University

\_\_\_\_\_  
Ph.D. Student Zhihong Wang

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#### CONSENT STATEMENT:

I have read the above comments and agree to participate in this study. I give my permission to be recorded under the terms outlined above. I understand that if I have any questions or concerns regarding this project, I can contact the investigator at the above location or the Bentley Institutional Review Board at 781.891.2660

\_\_\_\_\_  
(Participant's signature)

\_\_\_\_\_  
(date)

## ***ALL PARTICIPANTS READ THE FOLLOWING***

### **Background**

On November 30, 2006, the International Accounting Standards Board issued International Financial Accounting Standard (IFRS) #8, “Operating Segments.” The core guidance of IFRS 8 is that “An entity shall disclose information to enable users of its financial statements to evaluate the nature and financial effects of the business activities in which it engages and the economic environments in which it operates.” IFRS 8 requires operating segments to be identified on the basis of internal reports about components of the entity that are regularly reviewed by the corporate management officer (e.g., CEO, CFO, and COO) for the purpose of allocating resources to the segments, and for assessing their performance. IFRS 8 does not define segment revenue, segment expense or segment result, but does require an explanation of how segment profit or loss is measured for each operating segment. According to Deloitte<sup>10</sup>, entities now have considerable discretion in determining what is included in segment profit or loss under IFRS 8, limited only by their internal reporting practices.

### **Case Materials**

Assume that you are the Chief Financial Officer (CFO) for a large multinational company. The company has three operating segments (A, B and C) reported under IFRS 8. Each segment manufactures and sells its own unique product. Sales of Segment A and B are mature and stable, but segment C is still growing and has great potential. Recently,

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<sup>10</sup> Deloitte publishes IAS Plus reports, which provide the most comprehensive information about international financial reporting. IAS Plus report of IFRS 8 was published in December 2006 in a special edition to review the segment reporting standard and analyze the effect on entities’ segment reporting (see <http://www.iasplus.com/iasplus/0612ifrs8.pdf>).

the CEO made a public announcement that future growth in profitability of the company will arise mostly from segment C.

***PARTICIPANTS IN THE RELATIVELY HIGH PROFITABILITY  
CONDITION READ THE FOLLOWING***

*The Potential Entrant treatment is presented in parentheses ( ) and the Existing Rival treatment is presented in brackets [ ]*

(Segment C produces a unique product that no other company produces, thus there are no existing rivals.) [Segment C produces a product that many other companies also produce, thus there are many existing rivals]. As reported in Table 1, the pre-audit segment report for fiscal year 2011 indicates that profitability (as measured by Return on Sales) for operating segments A, B and C, respectively, will be 0.30, 0.31 and 0.42, for a company total profitability index of 0.34.

Table 1 (in millions of dollars)

	Segment A	Segment B	Segment C	Company Level
Sales Revenue	\$1,050	\$1,005	\$820	\$2,875
General Expenses	(\$735)	(\$695)	(\$475)	(\$1,905)
Net Income	\$315	\$310	\$345	\$970
Return on Sales	0.30	0.31	0.42	0.34

\*Return on Sales = Net Income / Sales Revenue

You have carefully examined the pre-audit year-end operating segment financial information (above) and have just noticed that a one-time enterprise-wide special expense totaling \$250 million needs to be allocated across the three operating segments, the net effect of which will be to lower company level net income from \$970 million to \$720 million. As the CFO, you have the authority to reallocate this expense across the three operating segments in any manner that is justified under IFRS 8. You firmly believe that

your allocation decision can be justified to the company's board of directors and external auditors.

Please allocate the special expense of \$250 million across the three segments in any way that makes sense to you on Table 2 (below). You may use any combination of allocation to the three segments, as long as the total equals \$250 million. Once you allocate the special expense, please recalculate "Net Income" and "Return on Sales" (Net Income divided by Sales Revenue) for each segment.

Table 2 (in millions of dollars)

	Segment A	Segment B	Segment C	Company Level
Sales Revenue	\$1,050	\$1,005	\$820	\$2,875
General Expenses	(\$735)	(\$695)	(\$475)	(\$1,905)
Special Expense	(\$ )	(\$ )	(\$ )	(\$250)
Net Income	\$	\$	\$	\$720
Return on Sales*				0.25

\*Return on Sales = Net Income / Sales Revenue

***PARTICIPANTS IN THE RELATIVELY LOW PROFITABILITY  
CONDITION READ THE FOLLOWING***

*The Potential Entrant treatment is presented in parentheses ( ) and the Existing Rival treatment is presented in brackets [ ]*

(Segment C produces a unique product that no other company produces, thus there are no existing rivals.) [Segment C produces a product that many other companies also produce, thus there are many existing rivals]. As reported in Table 1, the pre-audit segment report for fiscal year 2011 indicates that profitability (as measured by Return on Sales) for operating segments A, B and C, respectively, will be 0.30, 0.31 and 0.18, for a company total profitability index of 0.27.

Table 1 (in millions of dollars)

	Segment A	Segment B	Segment C	Company Level
Sales Revenue	\$1,050	\$1,005	\$820	\$2,875
General Expenses	(\$735)	(\$695)	(\$675)	(\$2,105)
Net Income	\$315	\$310	\$145	\$770
Return on Sales	0.30	0.31	0.18	0.27

\*Return on Sales = Net Income / Sales Revenue

You have carefully examined the pre-audit year-end operating segment financial information (above) and have just noticed that a one-time enterprise-wide special expense totaling \$250 million needs to be allocated across the three operating segments, the net effect of which will be to lower company level net income from \$770 million to \$520 million. As the CFO, you have the authority to reallocate this expense across the three operating segments in any manner that is justified under IFRS 8. You firmly believe that your allocation decision can be justified to the company's board of directors and external auditors.

Please allocate the special expense of \$250 million across the three segments in any way that makes sense to you on Table 2 (below). You may use any combination of allocation to the three segments, as long as the total equals \$250 million. Once you allocate the special expense, please recalculate “Net Income” and “Return on Sales” (Net Income divided by Sales Revenue) for each segment.

Table 2 (in millions of dollars)

	Segment A	Segment B	Segment C	Company Level
Sales Revenue	\$1,050	\$1,005	\$820	\$2,875
General Expenses	(\$735)	(\$695)	(\$675)	(\$2,105)
Special Expense	(\$ )	(\$ )	(\$ )	(\$250)
Net Income	\$	\$	\$	\$520
Return on Sales*				0.18

\*Return on Sales = Net Income / Sales Revenue

**ALL PARTICIPANTS RESPONDED TO THE FOLLOWING QUESTIONNAIRE**

1. For the case scenario you just read, what type of competition do you think is the company’s **primary** concern? (please select only one answer from below)

a. Potential entrants

b. Existing rivals

2. For the case scenario you just read, how would you describe the profitability of segment C relative to segments A and B **BEFORE** you allocated the one-time special expense? (please circle one number on the scale below)

1                  2                  3                  4                  5                  6                  7  
Lower                                  The same                                  Higher

3. For the case scenario you just read, when making the operating segment allocation decision for the special expense of \$250 million, how concerned were you about how the **capital market** (e.g. analysts and investors) would react to the adjusted profitability of segment C? (please circle one number on the scale below)

1                  2                  3                  4                  5                  6                  7  
Not                                  Moderately                                  Highly  
Concerned                                  Concerned                                  Concerned



4. For the case scenario you just read, when making the operating segment allocation decision for the special expense of \$250 million, how concerned were you about how the **product market** (e.g. potential and existing competitors) would react to the adjusted profitability of segment C? (please circle one number on the scale below)

1	2	3	4	5	6	7
Not Concerned			Moderately Concerned			Highly Concerned

5. For the case scenario you just read, when making the operating segment allocation decision for the special expense of \$250, you were (please circle one number on the scale below)

1	2	3	4	5	6	7
Most Concerned about the <b>capital market</b> response			Equally concerned about the capital and product market response			Most concerned about the <b>product market</b> response

*Please mark your level of agreement with the following statements:*

1. If an operating segment reports relatively **high** profitability, relative to other operating segments, how do you think the **capital market** (e.g. analysts and investors) will react to the high profitability segment? (please circle one number on the scale below)

3	2	1	0	1	2	3
Strong Negative			Neutral			Strong Positive

2. If an operating segment reports relatively **low** profitability, relative to other operating segments, how do you think the **capital market** (e.g. analysts and investors) will react to the low profitability segment? (please circle one number on the scale below)

3	2	1	0	1	2	3
Strong Negative			Neutral			Strong Positive

3. If an operating segment reports relatively **high** profitability, relative to other operating segments, how do you think the **product market** (e.g. potential and existing competitors) will react to the high profitability segment? (please circle one number on the scale below)

3	2	1	0	1	2	3
Fewer competitors will be attracted to the segment's line of business			No change in the number of competitors to the segment's line of business			More competitors will be attracted to the segment's line of business

4. If an operating segment reports relatively **low** profitability, relative to other operating segments, how do you think the **product market** (e.g. potential and existing competitors) will react to the low profitability segment? (please circle one number on the scale below)

3	2	1	0	1	2	3
Fewer competitors will be attracted to the segment's line of business			No change in the number of competitors to the segment's line of business			More competitors will be attracted to the segment's line of business

5. If you were the CEO of a company with an operating segment with **relatively high** profitability and you could justifiably change the operating segment's profitability through various inter-segment allocations, your preference would be to: (please circle one number on the scale below)

3	2	1	0	1	2	3
Decrease the segment's profitability			Make no change in profitability			Increase the segment's profitability

6. If you were the CEO of a company with an operating segment with **relatively low** profitability and you could justifiably change the operating segment's profitability through various inter-segment allocations, your preference would be to: (please circle one number on the scale below)

3	2	1	0	1	2	3
Decrease the segment's profitability			Make no change in profitability			Increase the segment's profitability





*Demographic Items*

Your gender: Female \_\_\_ Male \_\_\_

Your native country: U.S.A \_\_\_ China \_\_\_ Other (please specify) \_\_\_\_\_

Where do you currently work? U.S.A \_\_\_ China \_\_\_

Total years of work experience in business: \_\_\_\_\_

Most of my work experience has been in the area of:

Accounting/Finance

General Management

Sales/Marketing

Operations Management

Human Resources

Other \_\_\_\_\_

Your highest degree?

Bachelor \_\_\_

Masters \_\_\_

Other (please describe) \_\_\_\_\_

Your major in your latest degree?

Accounting \_\_\_

Finance \_\_\_

Management \_\_\_

General MBA \_\_\_

Other Business \_\_\_

Other (please describe) \_\_\_\_\_

## Chapter 5 Conclusion and Perspectives

This dissertation employs Hofstede's Cultural Value Theory to investigate the impact of cultural time orientation on corporate accounting practices. As presented in Chapter 2, a literature review that synthesizes previous cultural studies in five accounting disciplines build the foundation of the two experimental studies. The first experiment, related in Chapter 3, examines the interaction effects of cultural time orientation and corporate budget planning horizon on employees' attitudes toward participative budgeting. Drawn from a sample of 164 employees from the U.S. and China, the first empirical study find that congruence between employees' time orientation and budget planning horizon is positively associated with employees' satisfaction with participative budgeting. In addition, this study also find that long-time oriented employees react less extremely to the budget setting relative to short-time oriented employees, which could be explained by Confucian thought of "The Doctrine of the Mean." In Chapter 4, the second experiment investigates a three-way interaction effect among cultural time orientation, segment profitability, and nature of competition. A total of 211 managers from the U.S. and China participated in the experiment, and exhibits different patterns of behavior when exercising discretion on segment profitability reporting. Specifically, this experimental study find that managers with a short-time orientation adjust relatively low segment profits upward, and adjust relatively high segment profits even higher in order to be rewarded by the capital market; however, managers with a long-time orientation adjust relatively high segment profits downward in order to protect companies' key operating segments from competitors in the product market.

This dissertation contributes to the cultural literature by providing evidence about the effect of cultural time orientation in managerial and financial accounting practices. As suggested by Hofstede and Monkov (2010), cultural time orientation could influence a variety of accounting judgments and decisions that include long-term versus short-term tradeoffs. Future research should address more accounting activities to investigate possible impacts of cultural time orientation in the field of management control systems, financial reporting, auditing, taxation, as well as accountant's and auditors ethical belief systems.



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