

IMPLICATIONS OF SUPPLIERS AND CUSTOMERS AND INDUSTRY COMPETITION DENSITY ON ACCOUNTING CONSERVATISM

Hui-Sung Kao, Feng Chia University
Ming-Jiun Tsai, Feng Chia University

ABSTRACT

Accounting conservatism is often used to measure an enterprise's earnings quality. This study adopted the accounting conservatism indicator of C-Score proposed by Khan and Watts (2009) to explore the correlation between the number of suppliers and customers and accounting conservatism and to further analyze whether the number of suppliers and customers and accounting conservatism produce differences due to the industry competition density. According to the empirical research results, as the number of suppliers and customers increases, earnings conservatism turns higher. The empirical evidence also showed that when the Industry Competition Density is higher, as the number of suppliers and customers increases, earnings conservatism becomes more significant. Different from the previous literature that only discussed industry competition and earnings quality from the perspective of the company, this study considered the number of important suppliers and customers having contract relationships with the company, which is also the main contribution of this research. Therefore, the findings of this study are conducive to understanding that the number of suppliers and customers is an important factor affecting accounting policy in the market competition market. The findings can be used by firm management as a reference to handle relationships between suppliers and customers.

JEL: M41, M110

KEYWORDS: Number of Suppliers and Customers, Accounting Conservatism, C-Score, Industry Competition Density

INTRODUCTION

This paper delves into the correlation between accounting conservatism and the number of suppliers and customers, in order to analyze whether accounting conservatism and the number of suppliers and customers exhibit any difference as a result of industry competitive density. Accounting conservatism is measured with the C-Score model proposed by Khan and Watts (2009). Most supply chains in the past were much longer and cumbersome. It was necessary to place orders with a large number of suppliers, and the maintenance of good relationships was key to the long-term stability of supply chains. However, the revolution of short supply chains has prompted many industries to in-source instead of out-source for components. The shrinking of supply chains in fact highlights the importance of key suppliers. As most components come from a small number of suppliers, it is essential to retain these suppliers in order to mitigate the risk associated with supply disruptions. The heavier reliance on major suppliers means that suppliers must keep a closer eye on their corporate customers. In this regard, the stability of earnings quality is critical. The importance of fewer customers has also increased, as the business environment is conducive to a shorter supply chain. The change in global trade over recent years means the ball is in the court of customers. Shipment speed and service quality generally affect the effectiveness of the cooperation. Thus, maintaining the loyalty of major customers is key to higher profitability. The higher customer loyalty is, the greater is the importance of accounting conservatism to retain customer relationships and avoid profit erosion. Li, Li, and Feng (2015) suggest that a high concentration of suppliers and customers implies high switching costs. In other words, companies do not seek to expand the list of suppliers or customers in order to prevent negative effects on the existing supplier-customer relationships.

This paper hence argues that compared to high industry concentration, the number of key suppliers and customers is a greater factor on the sustainability and profitability for a company. Hui, Klasa, and Yeung (2012) posit that the bargaining power of suppliers and customers is highly relevant to the timeliness of loss recognition. In fact, suppliers and customers both like to see their dealing counterparties adopt accounting conservatism and maintain reporting quality. It is thus safe to infer that monitoring from suppliers and customers can effectively ensure the robustness of profits and loss recognition, and therefore accounting conservatism preserves the harmony of the overall supply chain.

Dhaliwal, Huang, Khurana, and Pereira (2009) contend that the higher the industry concentration is, the longer the delay is for companies to release bad news. As a result, accounting conservatism is compromised. This paper incorporates the concept developed by Porter (1980) that profitability is subject to the level of industry competitiveness. Sustainable growth rates (SGR) and the Herfindahl-Hirschman Index (HHI, a metric for industry concentration) are used to measure industry competitive density as a variable. The level of industry competitiveness also indicates whether market demand is upward or downward. At the same time, the reliance on suppliers and loyalty to customers also affect earnings quality. In sum, the number of key suppliers and customers and the level of industry competitive density are important factors of earnings reporting reliability. The measurement of the number of the important customers and suppliers is to add up the suppliers and customers with purchases or sales reaching 10% of the goods. Unlike previous studies that used the purchase and sales amount or the proportion of the purchase and sales amount in the total amount, this study considered the supervising effect using the number of important customers and suppliers. If the scale of the sample enterprises differs greatly, the biased phenomenon occurs when the purchase or sales amount is used. Therefore, with greater numbers of important customers and suppliers, it means that the loyalty of important customers or suppliers is high and the supervising power is greater. The empirical findings of this paper indicate that the greater the number of key suppliers and customers is, the stronger is the reliability of earnings quality. Conversely, a high level of industry competitive density signals a shrinkage in market demand and a shortening of the supply chain. At this juncture, the robustness of financing reporting helps stabilize the supply chain. The empirical evidence suggests that the higher the industry density or the larger the number of suppliers and customers is, the better is the reliability of earnings. The subsequent sections of this paper are arranged as follows. Literature Review summarizes the literature review and research hypotheses. Methodology describes the research methodology. Empirical Results explains the empirical results. Conclusion presents the conclusions and suggestions.

LITERATURE REVIEW

Accounting Conservatism

Accounting conservatism often serves as an indicator of earnings quality (Dechow, Ge, and Schrand, 2010). Watts (2003a) says that external users of financial reports for contractual, litigation, control, and taxation purposes place a heavy emphasis on accounting conservatism. In the context of contractual relationships, corporate governance and financial reporting reliability can reduce agency costs due to a misalignment of interest between shareholders and managers (Lara, Osmá, and Penalva, 2009; LaFond and Roychowdhury, 2008; LaFond and Watts, 2008). If a company is a borrower, then a high degree of financial reporting reliability provides assurance to lenders (e.g. banks) and protection of debt covenants. This will lower the cost of debt (Beatty, Weber, and Yu, 2008; Zhang, 2008; Ahmed, Billings, Morton, and Harris, 2002; Beneish and Press 1993). Financial reporting conveys information regarding salaries and compensations, as part of the remuneration contracts, by disclosing cash distributions, stock options, and restricted stocks. The sensitivity to unrealized earnings is relevant to ex-post costs (Leone et al., 2006). In the context of litigations, companies in countries with healthy juridical systems tend to adopt accounting conservatism, by not seeking to withhold bad news. They in fact recognize losses and inform internal and external investors early to avoid the probability of lawsuits (Bushman and Piotroski, 2006). As far as management and control is concerned, the selection of accounting standards affects earnings quality, but it is not the only factor. Issues such as restrictions in the investment environment and the considerations taken by auditors are all drivers for the adoption of accounting conservatism. Ball and Shivakumar (2005) sample UK companies to examine the factors that influence earnings quality. The results indicate that companies not

listed on the mainboard and the junior board opt for the same accounting principles. However, the earnings quality of private companies is lower than that of public companies. In other words, accounting standards are not an overriding factor. Issues such as investment environments and market demand carry a much heavier weight in the equation.

For taxation purposes, a delay in earnings recognition reduces the tax burden for the company. This provides incentives to management to adopt accounting conservatism (Qiang, 2007). Beaver and Ryan (2005) believe that accounting conservatism can be further divided into conditional conservatism and unconditional conservatism. As these two types of conservatism have different emphases, the correlations also change over time (Roychowdhury and Watts, 2007). Conditional conservatism refers to an asymmetric approach to the recognition of profits and losses. Bad news is immediately reflected in earnings, but good news is channeled through earnings recognition with latency. Unconditional conservatism means consistency in accounting treatments, as the nature of news and the timing of recognition are not directly linked. The literature addressing conditional conservatism often uses the measurement model developed by Basu (1997) based on reverse regressions.

Basu (1997) refers to the change of share prices for the definition of good news and bad news when looking at the correlation with earnings during a time period. The model can shed light as to whether the earnings of sampled companies exhibit the characteristics of conditional conservatism. Many scholars (Beaver, Landsman, and Owen, 2012; Ball, Kothari, and Nikolaev, 2010; Khan and Watts 2009; Francis and Wang 2008; Francis, LaFond, Olsson, and Schipper, 2004) conduct follow-up studies by using the Basu (1997) model and seek to resolve the issue in which the original model cannot deal with the conservatism of the individual companies by year. Cross-company and multi-year models have been created. For instance, Khan and Watts (2009) construct C-Score as a new metric for accounting conservatism, which allows the calculation of the firm-year values with the model proposed by Basu (1997). It also overcomes the issue associated with more than one cross-multiplying term for each additional research variable in the original model. A number of academic papers in Taiwan has also appeared during the past few years (Liao, Tang, and Lee, 2016; Chen and Hsu, 2014; Lee and Liu, 2014; Wang, Pan, and Chi, 2012; Cheng, Wu, and Shiue, 2011) that use the C-Score constructed by Khan and Watts (2009) to measure accounting conservatism.

Suppliers, Customers, and Requirements for Accounting Conservatism

The relationship with suppliers and customers is pivotal to the health of company operations (Kale and Meneghetti, 2014). Brito, Brito, and Hashiba (2014) indicate that good cooperation with suppliers and customers helps to increase company performance and profitability. Many studies examine the relationship from the perspective of relationship-specific investments. Suppliers or customers seek to strengthen the relationship with dealing counterparties through relationship investments. As such investments entail a certain degree of risk (Gu, Sanders, and Venkateswaran, 2017), any factors in relation to earnings quality (Minnick and Raman, 2016) and company performances will result in an increase in the volatility of the value of relationship-specific investments. This is likely to affect the relationship with suppliers and customers. The reason for this phenomenon is the information asymmetry between investors and companies. It is not easy to access information on the relationship with suppliers and customers. Therefore, the relationship with suppliers and customers is even more important to the disclosure of earnings information, in order for investors to reach investment decisions. Madsen (2016) mentions that earnings announcements by suppliers help to alleviate information asymmetry, and allow investors to understand the relationship with suppliers and customers. At the same time, any negative behavior of earnings management can alter how suppliers and customers view the company. This is detrimental to supplier and customer relationships (Graham, Harvey, and Rajgopal, 2005; Raman and Shahrur, 2008).

Past studies on companies with stronger supplier and customer relationships indicate that their suppliers and customers operate in the industry with a high degree of concentration (Krolikowski and Yuan, 2017). The high concentration of suppliers and customers implies high switching costs. As a result, companies do not seek to expand the list of suppliers and customers in order to avoid negative effects on supplier and

customer relationships (Li, Li, and Feng, 2015). In addition, Hui, Klasa, and Yeung (2012) posit that the bargaining power of suppliers and customers is a key factor to the timely recognition of losses. According to their study, suppliers and customers prefer that their business partners adopt accounting conservatism.

In summary, there is a correlation between supplier and customer relationships and firm profitability and operations. To maintain stable supplier and customer relationships, companies seek to enhance earnings quality and reduce the magnitude of negative earnings management. The oversight from suppliers and customers is conducive to a stringent approach in the recognition of profits and losses. In fact, companies even resort to accounting conservatism to sustain the harmony of the whole supply chain. Therefore, this paper explores the influence of the concentration of key suppliers and customers (measured by the numbers) on accounting conservatism. This paper defines key suppliers and customers as those that account for at least 10% of purchases and sales. In the annual reports for U.S. and Taiwanese companies, customers that contribute to at least 10% of sales are important to the investment decisions of the public.

Key customers are an important source of profitability. The higher the number of key customers is, the greater is their loyalty. It is necessary to adopt accounting conservatism in order to retain key customers and avoid profit erosion. On the other hand, the sourcing of components depends on key suppliers. The larger the number of key customers is, the stronger is the reliance on them. As suppliers make decisions by referring to the accounting information of customers, they urge the customers to adopt accounting conservatism. Based on these statements, this paper develops the following hypotheses.

H1a: There is a correlation between a large number of key customers and accounting conservatism.

H1b: There is a correlation between a large number of key suppliers and accounting conservatism.

Industry competition is an important factor of supplier and customer relationships and also affects earnings quality (Chang et al., 2016). Porter (1980) suggests that profitability is subject to the influence of industry competitive density, measured with sustainable growth rates (SGR) and the Herfindahl-Hirschman Index (HHI, a metric for industry concentration). High competitive density implies that market demand is shrinking. In this environment, the reliance on suppliers and the loyalty of customers are essential. Accounting conservatism is beneficial to the stability of the supply chain. Dhaliwal, Huang, Khurana, and Pereira (2009) contend that the higher the industry concentration is, the more likely there is latency of bad news disclosure and hence weaker accounting conservatism.

Kuo (2009) suggests that the lower the industry growth is, the less attractive the market is to new entrants and existing players. This implies a lower degree of competition among organizations and hence a lower industry competitive density. The Herfindahl-Hirschman Index (HHI) measures industry concentration. The smaller the index is, the lower is the industry concentration and the higher the competitive density. This paper refers to the industry growth rate developed by Prescott et al. (1986) and HHI proposed by Rhoades (1993) as popular metrics for industry competition. The research hypotheses are as follows.

H2a: There is a positive correlation between the number of key customers and accounting conservatism if industry competitive density is high.

H2b: There is a positive correlation between the number of key suppliers and accounting conservatism if industry competitive density is high.

METHODOLOGY

Data Sources and Sample Selection

This paper samples companies listed on the Taiwan Stock Exchange and the Taipei Exchange in 2009-2016, sourcing the data from Taiwan Economic Journal. In total, 12,986 companies are in the sampling pool for 2009-2016. After the deletion of 1,171 financial institutions, TDR listings, and F shares, there are 11,815

sampled companies remaining. An analysis on the suppliers and customers of the sampled companies was conducted, removing a total of 2,410 companies as customers due to missing values. Therefore, 9,405 companies were sampled as customers and a total of 4,616 companies as suppliers removed due to missing values. Therefore, 7,199 companies were sampled as suppliers. Below is the summary of the sample selection process.

Measurement of Conservatism (C-SCORE)

The demand from users of financial reports can be classified into four purposes: contracts, litigations, control, and taxations (Watts, 2003a). An extensive body of empirical evidence suggests that conservatism influences management and financial report users (Lara, Osma, and Penalva, 2009; LaFond and Roychowdhury, 2008; LaFond and Watts, 2008; Beatty, Weber, and Yu, 2008; Zhang, 2008; Leone et al., 2006; Bushman and Piotroski, 2006; Ball and Shivakumar, 2005; Ahmed, Billings, Morton, and Harris, 2002; Beneish and Press 1993). Based on the timing of recognition, accounting conservatism can be divided into conditional and unconditional (Beaver and Ryan, 2005). Unconditional conservatism adopts a consistent set of accounting rules in the timing of recognition, regardless of the nature of news. Conditional conservatism recognizes good news and bad news at different timings, i.e. an asymmetric approach (Basu, 1997). The conservatism model constructed by Basu (1997) examines the correlation between good/bad news and accounting conservatism. The Basu (1997) model is expressed as follows: $EARN_{i,t} = \rho_1 + \rho_2 NEG_{i,t} + \rho_3 \times RET_{i,t} + \rho_4 NEG_{i,t} \times RET_{i,t} + \gamma_{i,t} \cdot \rho_3$, to measure the sensitivity of accounting earnings to good news. ρ_4 denotes the incremental sensitivity of accounting earnings to bad news. Although While this paper was applied extensively in older literature, there were many limitations. For example, the model does not measure the degree of conservatism for individual firms in different years. In other words, the model assumes that the degree of conservatism of all companies is homogeneous or does not change over time. This paper uses the C-Score, a measurement of accounting conservatism, developed by Khan and Watts (2009) by expanding the Basu (1997) model and incorporating variables such as firm scale, price/book multiple, and debt ratio. As the Khan and Watts (2009) model is able to calculate C-Score to measure the firm-year level of accounting conservatism, it has overcome the restriction of the Basu (1997) model. The Khan and Watts (2009) model is expressed as follows:

$$\begin{aligned}
 EARN_{i,t} = & \rho_{1,t} + \rho_{2,t}NEG_{i,t} + (\mu_{1,t} + \mu_{2,t}SIZE_{i,t} + \mu_{3,t}MB_{i,t} + \mu_{4,t}LEV_{i,t}) \times RET_{i,t} \\
 & + (\lambda_{1,t} + \lambda_{2,t}SIZE_{i,t} + \lambda_{3,t}MB_{i,t} + \lambda_{4,t}LEV_{i,t}) \times NEG_{i,t} \times RET_{i,t} + \delta_{1,t}SIZE_{i,t} \\
 & + \delta_{2,t}MB_{i,t} + \delta_{3,t}LEV_{i,t} + \delta_{4,t}SIZE_{i,t} \times NEG_{i,t} \\
 & + \delta_{5,t}MB_{i,t} \times NEG_{i,t} + \delta_{6,t}LEV_{i,t} \times NEG_{i,t} + \varepsilon_{i,t}
 \end{aligned}
 \tag{1}$$

where EARN is the accounting earnings, defined as post-tax profits of continuing operations and deflected by the market capitalization at the beginning of the period; RET denotes annualized return of share prices, NEG is a dummy variable with negative NEG (1) and positive NEG (0); SIZE is the firm size, measured with the logarithm of the assets at the end of the period; MB is the price/book multiple, calculated with the market capitalization at the end of the period divided with the book value at the end of the period; LEV is the leverage ratio, estimated with the total debts divided by total assets at the end of the period.

The coefficients $(\lambda_{1,t}, \lambda_{2,t}, \lambda_{3,t}, \lambda_{4,t})$ estimated with the abovementioned equation indicate the conservatism parameters for different years. Firm size (SIZE), price to book multiple (MB), and leverage ratio (LEV) of individual companies for specific years are incorporated into the equation below, in order to derive firm-year conservatism C-Scores to measure the incremental sensitivity of accounting earnings to bad news for individual companies in a given year. This approach is different from the measurement with the Basu (1997) model for the overall level of conservatism.

$$C_SCORE_{i,t} = \lambda_{1,t} + \lambda_{2,t}SIZE_{i,t} + \lambda_{3,t}MB_{i,t} + \lambda_{4,t}LEV_{i,t}$$

Empirical Model

This paper measures H1a with the empirical model (1). H1a: There is a correlation between a large number of key customers and accounting conservatism. The model is expressed as follows:

$$C_SCORE_{i,t} = \alpha_0 + \alpha_1 KEY_CUSTOMER_{i,t} + \alpha_2 CASHFLOW_{i,t} + \alpha_3 DO_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 AGE_{i,t} + \alpha_6 SALES_GROWTH_{i,t} + \alpha_7 INVCYCLE_{i,t} + \alpha_8 LEV_{i,t} + \alpha_9 SIZE_{i,t} + \alpha_{10} MB_{i,t} \quad (1)$$

where C-SCORE is accounting conservatism, measured with the Khan and Watts (2009) model; KEY_CUSTOMER denotes key customers, defined as those that account for at least 10% of total sales; CASHFLOW denotes operating cash flows, and DO is a dummy variable for the purchase of director/supervisor liability insurance (1 if purchased, 0 if not); ROA is return on assets, calculated by (post-tax earnings of continuing operations + interest expenses * (1-tax rate)) divided average total assets; BIGX represents the dummy variable of being audited by the Big Four firms (i.e. Deloitte, PwC, KPMG, and Ernst & Young). It is 1 if audited by any of the Big Four, and 0 if not; AGE denotes firm history, measured by the number of years from inception toward the end of the current year; SALES_GROWTH represents sales growth, calculated from net sales of the current year less net sales of the prior year and divided by net sales of the prior year; INVCYCLE indicates the investment cycle, estimated from the sum of depreciation and amortization divided by total assets at the end of the period; LEV represents the leverage ratio, defined as the total debts divided by total assets at the end of the period; SIZE denotes firm size, calculated from the natural logarithm of total assets at the end of the period; MB is the price to book multiple, which is a ratio of the market capitalization to book value at the end of the year. The empirical model (2) conducts tests on H1b: There is a correlation between a large number of key suppliers and accounting conservatism.

$$C_SCORE_{i,t} = \alpha_0 + \alpha_1 KEY_SUPPLIER_{i,t} + \alpha_2 CASHFLOW_{i,t} + \alpha_3 DO_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 AGE_{i,t} + \alpha_6 SALES_GROWTH_{i,t} + \alpha_7 INVCYCLE_{i,t} + \alpha_8 LEV_{i,t} + \alpha_9 SIZE_{i,t} + \alpha_{10} MB_{i,t} \quad (2)$$

where KEY_SUPPLIER denotes key suppliers, defined as those that account for at least 10% of the total purchase in a single customer. The dependent variables and the control variables are the same as Eq. (1). Companies that generate low operating cash flows (CASHFLOW) will find it relatively difficult to adhere to accounting conservatism, as the adoption of accounting conservatism may have an adverse effect on operating cash flows. Therefore, this paper anticipates a positive correlation between operating cash flows CASHFLOW and C-SCORE. The purchase of directors/supervisors liability insurance affects the legal liability borne by the board and hence accounting conservatism. The higher the value of the insurance policy (DO) is, the greater is the earnings reliability (Liao et al., 2016). Hence, this paper expects a positive correlation between directors/supervisors liability insurance (DO) and C-SCORE. Conditional conservatism is accompanied by an asymmetric timing of earnings recognition and the timely reporting of bad news. Therefore, return on assets (ROA) declines due to the enhancement of accounting conservatism. This paper expects an inverse correlation between ROA and C-SCORE.

The Big Four accounting firms (BIGX) impose a robust and fair set of auditing procedures and provide a greater level of auditor independence (Chi, Liu, and Wang, 2009). Therefore, investors trust that companies audited by the Big Four and hence demand a lower degree of accounting conservatism. The shorter the firm history (AGE) is, the more difficult it will be for investors to get a full grasp on firm information. This will make investors more demanding of accounting conservatism. Therefore, this paper anticipates a positive correlation between firm history (AGE) and C-SCORE. The longer the investment cycles (INVCYCLE) are, the stronger is investors' demand for accounting conservatism given the greater level of information asymmetry (Liao et al., 2016). Therefore, this paper anticipates a positive correlation between investment cycles (INVCYCLE) and C-SCORE. Debt covenants are subject to the influence of accounting conservatism, i.e. the timely reporting of debts and losses. Thus, this paper expects a positive correlation between leverage (LEV) and C-SCORE. The larger the firm size measured by assets (SIZE) is, the greater is the supervision from the market and regulators, and the more information that needs to be disclosed. This paper expects a negative correlation between firm size (SIZE) and C-SCORE.

The next step is to examine whether high competitive density affects the correlation between the number of key suppliers and customers and accounting conservatism. This paper measures the degree of industry concentration with SGR developed by Prescott (1986) and HHI proposed by Rhoades (1993). Sustainable growth rate (SGR) is a key factor to the market attractiveness to new entrants and existing players (Chang et al., 2016). $SGR_{j,t} = (NetSales_{j,t} - NetSales_{j,t-1}) / NetSales_{j,t-1}$. $NetSales_{i,t}$ denotes net annual sales of a given industry during the current year, and $NetSales_{i,t-1}$ is net annual sales of the industry during the previous year. Industry concentration (HHI) is indicative of market competitiveness (Chang et al., 2016), measured by $HHI_{i,t} = \sum_{i=1}^n (X_{ijt} / X_{jt})^2$; $HHI_{i,t} = \sum_{i=1}^n X_{ijt}$. X_{ijt} denotes the net sales of the main business of individual companies in a given industry, and X_{jt} is net sales of the industry. These two indicators serve as the basis for sub-grouping. A total of four groups are established: high HHI and high SGR; high HHI and low SGR; low HHI and high SGR; and low HHI and low SGR. The empirical models are the same as Eq. (1) and Eq. (2) for the validation of H2a and H2b.

RESULTS

Descriptive Statistics

The mean/median of the C-Score for earnings reliability is 0.224 (0.084) and that for key customers is 1.816 (2.000). This suggests that the sampled companies have approximately two customers on average that account for 10% of annual sales. The mean of HHI is 0.152 (0.107) and the mean of SGR is 0.048 (0.020). On average, industry sales increased by 4.8% from the previous year. The mean of C-SCORE is 0.283 (0.091), and the mean of key suppliers is 1.791 (2.000). This indicates that the sampled companies have approximately two customers on average that account for 10% of annual sales. The mean of HHI is 0.150 (0.106) and the mean of SGR is 0.015 (0.013). On average, industry sales increased by 1.5% from the prior year.

Empirical Results

This paper seeks to explore how the number of key suppliers (KEY_SUPPLIERS) and/or the number of key customers (KEY_CUSTOMERS) affect C-Score, an earnings reliability measurement, with variables such as corporate governance and firm characteristics controlled. This is followed by tests on the sample of key suppliers (KEY_SUPPLIERS) and key customers (KEY_CUSTOMER). The purpose is to examine the influence of the number of suppliers and customers on earnings reliability (C-SCORE) by taking into account industry competitive density (measured from HHI and SGR). This paper sub-groups the samples by referring to medians. The first, second, third, and fourth columns of Table 3 and Table 4 are the sub-groups with high HHI and high SGR, high HHI and low SGR, low HHI and high SGR, and low HHI and low SGR, respectively. There is a positive correlation between a large number of key customers and accounting conservatism. Table 1 shows the empirical model (1) that examines earnings reliability C-Score as the explained variable. The F value is 25.956, suggesting the goodness of fit. Adjusted R² is 0.028. In this model, there is a significant and positive correlation between key customer suppliers (KEY_SUPPLIER, with a coefficient of 0.124, p-value < 0.01) and earnings reliability C_SCORE. In summary, the greater the number of key customers is, the higher is the C-Score, and the stronger is earnings reliability. H1a is thus supported. In terms of control variable, there is a significant and negative correlation between operating cash flows (CASHFLOW, coefficient of -1.104, p-value < 0.01) and earnings reliability (C-Score). Kao, Chen, and Chen (2011) indicate that the higher the free cash flows are, the weaker is accounting conservatism. The capital market in Taiwan does not provide incentives for companies to adopt conservatism in financial reporting. As free cash flows are a summation of operating cash flows and investing cash flows, an increase in the net operating cash flows may slack off the investors' demand for conservatism. There is a significant and positive correlation between return on assets (ROA) and earnings reliability (C-Score), which runs contrary to expectation. This paper further analyzes the regression results of the sub-groups. The significant and positive correlation between price to book multiple (M/B) and earnings reliability (C-Score) is consistent with research expectations.

Table 1: No. of Key Customers and Accounting Conservatism

H1a: A High Number of Key Customers Is Positively Correlated with Accounting Conservatism (N=9,405)				
	Expected Sign	Coefficient	(p value)	VIF
(Constant)		-0.028	(0.854)	
KEY_CUSTOMER	+	0.124***	(0.000)	1.009
CASHFLOW	+	-1.104***	(0.000)	1.104
DO	+	0.046	(0.237)	1.165
ROA	-	0.940***	(0.000)	1.104
BIGX	-	-0.129*	(0.076)	1.039
AGE	+	0.002	(0.152)	1.006
SALESGROWTH	?	0.000	(0.978)	1.001
INVCYCLE	+	0.003	(0.205)	1.015
Lev	+	0.022	(0.435)	1.159
Size	-	-0.007	(0.115)	1.316
M/B	+	0.119***	(0.000)	1.038
R ²			0.030	
Adj – R ²			0.028	
F value			25.956***	

This table shows that the results of H1a: A high number of key customers is positively correlated with accounting conservatism (N=9,405).

Notes: 1. Variable definitions: C-SCORE is accounting conservatism, measured with the Khan and Watts (2009) model; KEY_CUSTOMER denotes key customers, defined as those that account for at least 10% of total sales; "CASHFLOW" denotes operating cash flows, and "DO" is a dummy variable for "the purchase of director/supervisor liability insurance (1 if purchased, 0 if not); ROA is return on assets, calculated by (post-tax earnings of continuing operations + interest expenses * (1-tax rate)) divided average total assets; BIGX represents the dummy variable of being audited by the Big Four firms (i.e. Deloitte, PwC, KPMG, and Ernst & Young). It is 1 if audited by any of the Big Four, and 0 if not; AGE denotes firm history, measured by the number of years from inception toward the end of the current year; "SALESGROWTH" represents sales growth, calculated from net sales of the current year less net sales of the prior year and divided by net sales of the prior year; INVCYCLE indicates the investment cycle, estimated from the sum of depreciation and amortization divided by total assets at the end of the period; LEV represents the leverage ratio, defined as the total debts divided by total assets at the end of the period; SIZE denotes firm size, calculated from the natural logarithm of total assets at the end of the period; MB is the price to book multiple, which is a ratio of the market capitalization to book value at the end of the year. 2. Inside the bracket are p values. The asterisk signs *, **, and *** represent 10%, 5%, and 1% significance levels in a two-tail test, respectively.

There is a positive correlation between a large number of key suppliers and accounting conservatism. Table 2 shows the empirical model (2) that examines the earnings reliability C-Score as the explained variable. The F value is 91.363, suggesting goodness of fit. Adjusted R² is 0.121. The empirical results indicate a significant and positive correlation between key customer suppliers (KEY_SUPPLIER, with a coefficient of 0.079, p-value=0.003) and earnings reliability C_SCORE. These statistics suggest that the greater the number of key suppliers is, the higher is the C-Score, and the stronger is earnings reliability. H1b is thus supported. In terms of control variable, there is a significant and negative correlation between operating cash flows (CASHFLOW, coefficient of -1.104, p-value<0.01) and earnings reliability (C-Score). In terms of another control variable, there is a significant and negative correlation between operating cash flows (CASHFLOW) and earnings reliability (C-Score). This is contrary to expectation, probably due to the same reason in the analysis of the empirical model (1). The argument for return on assets (ROA) is the same as that for H1a. At the same time, earnings reliability (C-Score) is significantly and positively correlated with directors/supervisors liability insurance (D&O), debt ratio (Lev), and price to book multiple (M/B). There is a significant and inverse correlation between firm size (SIZE) and earnings reliability (C-Score), which is in line with research expectation.

There is a positive correlation between the number of key customers and accounting conservatism if industry competitive density is high. Table 3 shows the sub-groups on the basis of the median of HHI and the median of SGR. Empirical model (1) examines earnings reliability C-Score as the explained variable. The F values of the four sub-groups, from left to right, are 5.404, 8.932, 131.470, and 10.413, respectively. These numbers indicate goodness of fit. Adjusted R², from left to right, are 0.018, 0.048, 0.459, and 0.037, respectively. The empirical findings suggest that the sub-group with low HHI and low SGR demonstrates the strongest statistical significance. In this model, there is a significant and positive correlation between key suppliers (KEY_SUPPLIER, with a coefficient of 0.180, p-value<0.01) and earnings reliability C_SCORE. This suggests that in a high competitive industry, the greater is the number of key suppliers, the higher is the C-Score and the better is earnings reliability. Hence, H2a is supported.

Table 2: No. of Key Suppliers and Accounting Conservatism

HIb: A High Number of Key Suppliers Is Positively Correlated with Accounting Conservatism (N=7,199)				
(Constant)		0.197	(0.197)	
KEY_SUPPLIER	+	0.079***	(0.003)	1.004
CASHFLOW	+	-1.015***	(0.000)	1.082
DO	+	0.148***	(0.010)	1.154
ROA	-	1.128***	(0.000)	1.090
BIGX	-	-0.134*	(0.064)	1.037
AGE	+	-0.001	(0.297)	1.006
SALESGROWTH	?	0.000	(0.765)	1.003
INVCYCLE	+	0.000	(0.491)	1.019
Lev	+	0.306***	(0.010)	1.134
Size	-	-0.027***	(0.000)	1.286
M/B	+	0.286***	(0.000)	1.053
R ²			0.123	
Adj - R ²			0.121	
F value			91.363***	

This table shows that the results of A high number of key suppliers is positively correlated with accounting conservatism (N=7,199).
 Notes: 1. KEY_SUPPLIER denotes key suppliers, defined as those that account for at least 10% of the total purchase in a single customer. Other variable definitions are detailed in Table 1. 2. Inside the bracket are p values. The asterisk signs *, **, and *** represent 10%, 5%, and 1% significance levels in a two-tail test, respectively.

Table 3: No. of Key Customers and Accounting Conservatism Sub-grouping based on HHI and SGR

	Selection Model	HHI > Median	HHI > Median	HHI < Median	HHI < Median
		SGR > Median	SGR < Median	SGR > Median	SGR < Median
Independent Variables	Expected Sign	N=2,814	N=1,853	N=1,883	N=2,855
		Coefficients	Coefficients	Coefficients	Coefficients
		(p value)	(p value)	(p value)	(p value)
Constant		0.517 (0.196)	0.660** (0.024)	0.296 (0.416)	-0.461 (0.225)
KEY_CUSTOMER	+	0.029 (0.319)	0.055 (0.109)	0.090* (0.064)	0.180*** (0.000)
CASHFLOW	+	-1.299*** (0.002)	-1.324*** (0.005)	2.287*** (0.000)	-0.790* (0.072)
DO	+	-0.135 (0.172)	0.123* (0.097)	-0.085 (0.255)	0.038 (0.374)
ROA	-	1.293*** (0.000)	-1.453*** (0.008)	-0.657 (0.344)	-1.356** (0.014)
BIGX	-	-0.288 (0.171)	-0.059 (0.649)	-0.410** (0.027)	-0.030 (0.851)
AGE	+	0.007* (0.064)	-0.001 (0.327)	0.007* (0.054)	0.000 (0.469)
SALESGROWTH	?	0.004 (0.893)	0.025 (0.551)	0.000 (0.849)	-0.016 (0.301)
INVCYCLE	+	0.000 (0.482)	-0.007 (0.275)	-0.030 (0.123)	0.000 (0.464)
Lev	+	-0.768*** (0.005)	0.717*** (0.000)	2.815*** (0.000)	-0.396** (0.042)
Size	-	-0.000 (0.500)	-0.048*** (0.000)	-0.092*** (0.000)	0.028** (0.040)
M/B	+	-0.073*** (0.001)	-0.043*** (0.000)	0.494*** (0.000)	0.215*** (0.000)
R ²		0.022	0.054	0.463	0.041
Adj - R ²		0.018	0.048	0.459	0.037
F value		5.404***	8.932***	131.470***	10.413***

This table shows that the results of No. of Key Customers and Accounting Conservatism Sub-grouping based on HHI and SGR.
 Notes: 1. Variable definitions are detailed in tables. 2. Inside the bracket are p values. The asterisk signs *, **, and *** represent 10%, 5%, and 1% significance levels in a two-tail test, respectively.

This paper infers that low industry concentration (as shown with a low HHI) results in a high level of competition, making it difficult for a small group of players to dominate the economic activities. A low sustainable growth rate (SGR) implies that market demand is slowing down or flattening out. As a result,

industry density will increase (Kuo, 2009). In a highly competitive industry, companies maintain a certain percentage of sales to key customers (10% defined in this paper), in order to ensure survival in the heated competitive landscape. With regards to control variables, there is a significant and negative correlation between operating cash flows (CASHFLOW) and earnings reliability (C-Score). This runs contrary to expectation, probably due to the same reason in the analysis of the empirical model (1). There is also a significant and inverse correlation between return on assets (ROA) and earnings reliability (C-Score), which is consistent with expectations. A significant and positive correlation is also found in the groups with high HHI and high SGR, which explains the results for H1. When industry competitive density is low, the oversight on companies is relatively weak. Hence, it is less likely for companies to adhere to accounting conservatism. There is a significant and negative correlation between debt ratio (Lev) and earnings reliability (C-Score), running contrary to expectations. This is probably due to a not overly high mean/median of 0.270 (0.266), as shown in the descriptive statistics of debt ratios (Lev). As the financial system in Taiwan is relatively healthy, creditors do not have to impose extra requirements for conservatism. There is a significant and positive correlation between firm size (SIZE) and earnings reliability (C-Score), which is not in line with expectations. This paper infers that investors demand a greater level of accounting conservatism in order to compare peers in a highly competitive industry.

Table 4: No. of Key Suppliers and Accounting Conservatism Sub-grouping based on HHI and SGR

Independent Variables	Selection Model	Expected Sign	HHI > Median	HHI > Median	HHI < Median	HHI < Median
			SGR > Median	SGR < Median	SGR > Median	SGR < Median
			N=2,814	N=1,853	N=1,883	N=2,855
			Coefficients	Coefficients	Coefficients	Coefficients
			(p value)	(p value)	(p value)	(p value)
Constant			1.202*** (0.000)	0.855*** (0.007)	0.401 (0.300)	-0.835* (0.081)
KEY_SUPPLIER		+	-0.017 (0.309)	-0.049 (0.149)	-0.035 (0.287)	0.367*** (0.000)
CASHFLOW		+	-1.148*** (0.000)	-1.344*** (0.008)	3.129*** (0.000)	-1.060* (0.057)
DO		+	-0.005 (0.474)	0.167** (0.048)	0.008 (0.474)	0.169 (0.137)
ROA		-	1.329*** (0.000)	-1.489*** (0.008)	-3.558*** (0.000)	-1.022 (0.132)
BIGX		-	-0.239** (0.040)	-0.009 (0.948)	-0.288 (0.118)	-0.052 (0.801)
AGE		+	-0.004* (0.06)	-0.001 (0.421)	0.008** (0.043)	0.001 (0.447)
SALESGROWTH		?	0.003 (0.939)	0.018 (0.691)	-0.020 (0.741)	-0.015 (0.499)
INVCYCLE		+	-0.003 (0.498)	-0.007 (0.290)	-0.016 (0.273)	-0.000 (0.473)
Lev		+	-0.140 (0.181)	0.879*** (0.000)	2.441*** (0.000)	-0.673** (0.014)
Size		-	-0.037*** (0.000)	-0.048*** (0.000)	-0.087*** (0.000)	0.034** (0.044)
M/B		+	0.071*** (0.000)	-0.119*** (0.000)	0.591*** (0.000)	0.233*** (0.000)
R ²			0.084	0.067	0.600	0.056
Adj - R ²			0.079	0.060	0.597	0.050
F value			14.899***	10.084***	193.033***	10.352***

This table shows that the results of No. of Key Suppliers and Accounting Conservatism Sub-grouping based on HHI and SGR. Notes: 1. Variable definitions are detailed in tables. 2. Inside the bracket are p values. The asterisk signs *, **, and *** represent 10%, 5%, and 1% significance levels in a two-tail test, respectively.

There is a positive correlation between the number of key suppliers and accounting conservatism if industry competitive density is high. Table 4 shows the sub-groups on the basis of the median of HHI and the median of SGR. Empirical model (2) examines earnings reliability C-Score as the explained variable. The F values of the four sub-groups, from left to right, are 14.899, 10.084, 193.033, and 10.352, respectively, indicating goodness of fit. Adjusted R², from left to right, are 0.079, 0.060, 0.597, and 0.050, respectively. The

empirical findings suggest that the sub-group with low HHI and low SGR exhibits the strongest statistical significance. In this model, there is a significant and positive correlation between key suppliers (KEY_SUPPLIER, with a coefficient of 0.367, p-value<0.01) and earnings reliability C_SCORE. This suggests that in a low competitive industry, the greater is the number of key suppliers, the higher is the C-Score and the better is the earnings reliability. Hence, H2B is supported. The reason is similar with the inference summarized in Table. In a highly competitive industry, companies maintain a certain percentage of sourcing from key suppliers (10% defined in this paper), in order to secure stable supplies in a highly competitive market. Regarding control variables, there is a significant and negative correlation between operating cash flows (CASHFLOW) and earnings reliability (C-Score). This goes against the expectation, probably due to the same reason in the analysis of the empirical model (1). There is also a significant and inverse correlation between debt ratio (Lev) and earnings reliability (C-Score), running contrary to expectations. The reason is possibly similar with those stated for Table.

CONCLUSION

As a result of the changes in the pattern of global trade over recent years, customers with strong bargaining power and suppliers that provide sourcing may have a significant influence on the effectiveness of business partnerships and may also affect company profitability, causing a risk of supply tightening. Customer loyalty and supplier reliance both affect the reliability of reported earnings. At the same time, the level of industry competitive density indicates whether market demand is shrinking or expanding, which is an important factor to supplier and customer relationships as well as to earnings quality. In summary, the influence of the number of key suppliers and customers and the degree of industry competitive density on the reporting of corporate earnings are topics worthy of attention. This paper uses C-Score constructed by Khan and Watts (2009) as a measurement for accounting conservatism in the exploration of the relationship between the number of suppliers and customers and the reliability of earnings for companies listed on the Taiwan Stock Exchange and the Taipei Exchange in 2009-2016. Industry competitive density is a critical factor to managerial decisions and supply chain dynamics. Therefore, this paper seeks to examine whether the relationship between the number of suppliers and customers and the reliability of corporate earnings is any different as a result of industry competitive density.

The empirical findings of this paper are as follows. First, profitability comes from key customers. The stronger customer loyalty is, the more necessary it is to adopt accounting conservatism in order to retain key customers and avoid profitability erosion. At the same time, the majority of product components come from key suppliers. The heavier is the reliance on key suppliers, the more likely these suppliers will push for accounting conservatism. The empirical results indicate that the greater is the number of key suppliers and customers, the higher is the reliability in earnings quality. Finally, a high level of industry competitive density suggests a weaker market demand. As far as existing players are concerned, financial reporting reliability is beneficial to the stability of supply chains. The empirical evidence shows that given a high degree of industry competitive density, the larger is the number of suppliers and customers, the more pronounced is earnings reliability. This paper makes the following suggestions to future studies. As it only explores the effects of the number of suppliers and customers and the degree of industry competitive density on earnings reliability, follow-up studies may analyze further how other factors in the supply chain affect earnings quality. On the other hand, supplier and customer relationships may evolve into strategic alliances to ensure supply chain stability. This concept may be incorporated into future studies. In terms of research limitations, companies in Taiwan often use codes (such as Company A) to disclose suppliers and customers and maintain confidentiality. Thus, it is difficult to clarify the upstream and downstream dynamics across the whole supply chain.

REFERENCES

Ahmed, A., B. Billings, R. Morton, and M. Harris. (2002) "The Role of Accounting Conservatism in Mitigating Bondholder-shareholder Conflict over Dividend Policy and in Reducing Debt Cost," *Journal of Accounting Research*, Vol. 77 (4), p. 867-890.

- Ball, R. and L. Shivakumar. (2005) "Earnings Quality in U.K. Private Firms: Comparative Loss Recognition Timeliness," *Journal of Accounting Economics*, Vol. 39 (February), p. 83-128.
- Ball, R., S. P. Kothari, and V. Nikolaev. (2010) "Econometrics of The Basu Asymmetric Timeliness Coefficient and Accounting Conservatism," Working Paper, University of Chicago.
- Basu, S. (1997) "The Conservatism Principle and the Asymmetric Timeliness of Earnings," *Journal of Accounting Economics*, Vol. 24 (1), p. 3-37.
- Beatty, A., J. Weber, and J. Yu. (2008) "Conservatism and Debt," *Journal of Accounting Economics*, Vol. 45 (2-3), p. 154-174.
- Beaver, W. and S. G. Ryan. (2005) "Conditional and Unconditional Conservatism: Concepts and Modeling," *Review of Accounting Studies*, Vol. 10 (2-3), p. 269-276.
- Beaver, W., W. Landsman, and E. Owen. (2012) "A Symmetry in Earnings Timeliness and Persistence: a Simultaneous Equations Approach," *Review of Accounting Studies*, Vol. 17 (4), p. 781-806.
- Beneish, M. D. and E. Press. (1993) "Costs of Technical Violation of Accounting-based Debt Covenants," *The Accounting Review*, Vol. 68 (April), p. 233-257.
- Brito, L.A.L., E. P. Z. Brito, and L. H. Hashiba. (2014) "What Type of Cooperation with Suppliers and Customers Leads to Superior Performance?," *Journal of Business Research*, Vol. 67(5), p. 952-959.
- Bushman, R. and J. Piotroski. (2006) "Financial Reporting Incentives for Conservative Accounting: The Influence of Legal and Political Institutions," *Journal of Accounting Economics*, Vol. 42 (1-2), p. 107-148.
- Chang, S.H., S. Y. Huang, T. S. Wang, and C.C. Kang. (2016) "Industry Competition and Earnings Management," *Journal of Management & Systems*, Vol. 23(1), p. 107-135.
- Chen, C. J. and C. Y. Hsu. (2008) "Employee Bonus, Corporate Governance, and Future Performance," *Sun Yat-Sen Management Review*, Vol. 16(4), p. 671-701.
- Cheng, C. H., P. C. Wu, and F. J. Shiue. (2011) "Accounting Conservatism and Earnings Persistence: A Consideration of Conservatism Index Components," *Journal of Accounting Review*, Vol. 52(January), p. 77-101.
- Chi, W. C., C. W. Liu, and T. C. Wang. (2009) "What Affects Accounting Conservatism: A Corporate Governance Perspective," *Journal of Contemporary Accounting and Economics*, Vol. 5(1), p. 47-59.
- Dechow, P., W. Ge., and C. Schrand. (2010) "Understanding Earnings Quality: A Review of the Proxies, their Determinants and their Consequences," *Journal of Accounting Economics*, Vol. 50(December), p. 344-401.
- Dhaliwal, D., S. Huang, I. Khurana, and R. Pereira. (2009) "Product Market Competition and Accounting Conservatism. Working Paper. University of Arizona
- Francis, J. R. and D. Wang. (2008) "The Joint Effect of Investor Protection and Big 4 Audits on Earnings Quality around the World," *Contemporary Accounting Research*, Vol. 25(1), p. 157-191.
- Francis, J. R., P. LaFond, M. Olsson, and K. Schipper. (2004) "Costs of Equity and Earnings Attributes," *The Accounting Review*, Vol. 79(4), p. 967-1010.

Graham J. R., C. Harvey, and S. Rajgopal. (2005) "The Economic Implications of Corporate Financial Reporting," *Journal of Accounting and Economics*, Vol. 40(1-3), p. 3-73.

Go, M. H. (2009) "Financial Statement Analysis Valuation," Taiwan: San Ming.

Gu, T., N. R. Sanders, and A. Venkateswaran. (2017) "CEO Incentives and Customer-supplier Relations," *Production and Operations Management*, Vol. 26(9), p. 1705-1727.

Hui, K. W., S. Klasa, and P. E. Yeung. (2012) "Corporate Suppliers and Customers and Accounting Conservatism," *Journal of Accounting and Economics*, Vol. 53(1-2), p.115-135.

Kale, J. R. and C. Meneghetti. (2014) "Supplier/customer Considerations in Corporate Financial Decisions," *IIMB Management Review*, Vol. 26(3), p. 149-155.

Khan, M., and R. L. Watts. (2009) "Estimation and Empirical Properties of a Firm-year Measure of Accounting Conservatism," *Journal of Accounting Economics*, Vol. 48(2-3), p. 132-150.

Krolkowski, M. and X. Yuan. (2017) "Friend or Foe: Customer-supplier Relationships and Innovation," *Journal of Business Research*, Vol. 78(September), p. 53-68.

LaFond, R. and S. Roychowdhury. (2008) "Managerial Ownership and Accounting Conservatism," *Journal of Accounting Research*, Vol. 46(1), p. 101-135.

LaFond, R. and R. L. Watts. (2008) "The Information Role of Conservatism," *The Accounting Review*, Vol. 83(2), p. 447-478.

Lara, J.M., B. Osma., and F. Penalva. (2009) "Accounting Conservatism and Firm Investment Efficiency," *Review of Accounting Studies*, Vol. 14(1), p. 161-201.

Lee, J. Z. and C. Y. Liu. (2014) "The Effect of Accounting Conservatism on Equity Financing Decisions: Empirical Study in Taiwan," *Journal of Contemporary Accounting*, Vol. 15(2), p. 159-192.

Leone, A. J., J. S. Wu, and J. L. Zimmerman. (2006) "Asymmetric Sensitivity of CEO Cash Compensation to Stock Returns," *Journal of Accounting and Economics*, Vol. 42(1-2), p. 167-192.

Liao, H. M., L. F. Tang, and J. Z. Lee. (2016) "Directors' and Officers' Liability Insurance and Earnings Conservatism," *Journal of Accounting Review*, Vol. 63(July), p. 109-150.

Li, Y., G. Li, and T. Feng. (2015) "Effects of Suppliers' trust and Commitment on Customer Involvement," *Industrial Management & Data Systems*, Vol. 115(6), p. 1041-1066.

Madsen, J. (2016) "Anticipated Earnings Announcements and the Customer-supplier anomaly," *Journal of Accounting Research*, Vol. 55(3), p. 709-741.

Minnick, K., and K. Raman. (2016) "Board Composition and Relationship-specific Investments by Customers and Suppliers," *Financial Management*, Vol. 46(1), p. 203-239.

Porter, M. E. (1980) "Competitive Strategy," New York: Free Press.

Prescott, J. E., A. K., Kohli, and N. Venkatraman. (1986) "The Market Share Profitability Relationship: An Empirical Assessment of Major Assertions and Contradictions," *Strategic Management Journal*, Vol. 7(4), p. 377-394.

Raman, K. and H. K. Shahrur. (2008) "Relationship-specific Investments and Earnings Management:

Evidence on Corporate Suppliers and Customers,” *The Accounting Review*, Forthcoming. Available at SSRN: <https://ssrn.com/abstract=1089921>.

Rhoades, S. (1993) “The Herfindahl-Hirschman Index,” *Federal Reserve Bulletin*, Vol. 79(3), p. 188-189.

Qiang, X. (2007) “The Effects of Contracting, Litigation, Regulation, and Tax Costs on Conditional and Unconditional Conservatism: Cross-sectional Evidence at the Firm Level,” *The Accounting Review*, Vol. 82 (May), p. 759-796.

Roychowdhury, S. and R. L. Watts. (2007) “Asymmetric Timeliness of Earnings, Market-to-book and Conservatism in Financial Reporting,” *Journal of Accounting Economics*, Vol. 44 (1-2), p. 2-31.

Wang, C., H. Pan, and W. Chi. (2012) “Measure of Accounting Conservatism for Taiwan Firms: Applicability of C-score,” *Review of Accounting and Auditing Studies*, Vol. 2(2), p. 1-31.

Watts, R. L. (2003a) “Conservatism in Accounting Part I: Explanations and Implications,” *Accounting Horizons*, Vol.17(September), p. 207-221.

Zhang, J. (2008) “The Contracting Benefits of Accounting Conservatism to Lenders and Borrowers” *Journal of Accounting Economics*, Vol. 45 (1), p. 27-54.

BIOGRAPHY

Hui-Sung Kao is an Associate Professor of Feng Chia University. She also serves as a Chair for the Continuing Education Bachelor's Program of Business for Feng Chia University. Her research appears in journals such as International Research Journal of Applied Finance, International Journal of Financial Research, and Journal of Chinese Economic and Business Studies.

Ming-Jiun Tsai is a Ph.D. Graduate Student of Program of Business for Feng Chia University.