Further Evidence on International Accounting Differences and Their Relationship to Share Prices

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Abstract

Past studies find differences in the demand for accounting earnings releases, a timeliness issue, that may be specific to Code-law countries (i.e., Germany, France, Japan, China) versus Common-law countries (i.e., US, UK, Canada). This difference may be attributed to structural information asymmetry in these countries. For example, in Code-law countries, stakeholder governance rests in a few hands (i.e., the government or lending institutions). In Common-law countries the stakeholder governance is more diverse and dispersed. In addition, prior studies also show that accounting earnings disclosures in foreign countries (when grouped in regions) have a different correlation to security returns than domestic earnings disclosures and returns, a value-relevance issue. This study extends extant literature by using a more contemporaneous study period (2001-2012) and focusing on countries that have created the most economic growth during this period, namely; the US, UK (Common-law countries), and Germany, Japan, and China (Code-law countries). In addition, this study also incorporates findings regarding the above issues by eight major industries and across nations, something not attempted heretofore. Study findings suggest that regardless of the country, each nation studied contains a relatively high degree of demand for earnings timeliness. In addition, when assessing the timeliness issue by industry, each industry displays a high degree of earnings timeliness with the Healthcare and Utilities industries at the lower end. With respect to the value of earnings disclosure relative to security returns, findings suggest no significant difference across the nations studied. With respect to industry analysis, each industry values the relevance of earnings disclosures, at differing significance levels.

JEL Classification: FM

Key Words: accounting earnings, relevance of earnings, information in earnings, earnings disclosures, International reporting of earnings

1.0. Introduction

1.1. Relevance of Earnings Timeliness, Code Versus Common-Law Countries

Properties of reported earnings differ from an international perspective (Ball, Kothari and Robin 1998). Differences may be attributed to institutional factors affecting the ways in which firms in varying countries report earnings. The most basic difference in international accounting standards and practices is associated with the concept of the public (i.e. codified law) versus the private (i.e., common law) sectors. Common law emerged in England more than 1,000 years ago and is predicated on the concept of individual action in the private sector, rather than from collective planning in the public sector. At its heart is following legal procedure over rules (Posner 1996). Common laws, which would include accounting standards, become commonly (i.e., generally) accepted over time until becoming a common law because a reasonable person would rely on accounting information based on its commonly-accepted use. Common law use is found predominantly in the United States (US) and the United Kingdom (UK). Much like the UK has an Accounting Standards Board to codify generally accepted accounting rules, the US, likewise has a similar body. Coded law is attributed to the Roman Empire, under Justinian in the sixth century AD. Coded law prescribes regulations that range from abstract (i.e., prudent") to extremely detailed . Failure to adhere to these regulations brings about potential prosecution by the ruling authority (Nobes and Parker 1995). Most countries in continental Europe have a legally codified accounting system. Japan, borrowing primarily from France and Germany, also uses a legally codified accounting system.

A fundamental difference between common-law countries and code-law countries is the closeness of the relationship between the firm and its constituents (Ball et al 1998). Code-law corporate governance seems to be more closely supervised by a small number of agents (i.e., banks, unions, employees). These agents are informed insiders with private access to corporate information. As a result, little attention is paid to the individual investor, instead, there is a very close working relationship with these firms' lending institutions and investment houses. As a result, the demand for public earnings disclosures is not as great as in common-law countries. There is, therefore, less of a demand for time-relevant earnings data in these countries.

1.2. Valuing Time-Relevant Information in Earnings

The manner in which Ball, Kothari and Robin, 1998 assess the demand for timely earnings in contrasting Code versus Common-law countries is via a design that infers earnings properties from the way earnings incorporate changes in market value of equity. This is measured as fiscal year changes in share price (Ball and Brown 1968) and uses a sample of national and international firms from the period 1985-1995. The model identifies earnings lag and noise, which are identifiable determinants of earnings timeliness. One property of the model is that earnings incorporates changes over time, in other words, earnings reflect current and past changes in value and therefore lag returns (Ball and Brown 1968, Lambert and Morse 1980, Easton, Harris and Ohlson 1992, Kothari and Sloan 1992). Another property of the model is that earnings incorporates noise, due mainly to the imperfections associated with accounting accruals. These two notions imply:

$$Y_t = f(\Delta V_t, \Delta V_{t-1}, \Delta V_{t-2}, \Delta V_{t-3}.....v_t)$$

Where Y, V and v denote net income, market value of equity and accounting-induced noise. With the assumption that ΔV is independent over time, the above equation is simplified to:

$$Y_t = f(\Delta V_t, \epsilon_t)$$

The variable ϵ_t incorporates two earnings components: old information that is value-relevant (i.e., lagged changes in market values, ΔV_t, ΔV_{t-1}, ΔV_{t-2}, ΔV_{t-3}.....) and accounting-induced noise(i.e., v_t).

The independent variable (i.e., ΔV_t , annual change in market value of equity) is relatively free of short–term mispricing effects. When scaled by opening market value, the variables become annual rate of return ($R_t = \Delta V_t / V_{t-1}$) and earnings yield ($NI_t = Y_t / V_{t-1}$) or:

$$NI_t = \alpha + \beta_1 R_t + \epsilon_t$$

If timely information was the sole property demanded of accounting information, then ΔV_t (change in market value of equity) would be the optimal earnings variable Y_t. But, because there is demand for reported earnings with properties other than timeliness, accountants incorporate only a subset of value-relevant information in current earnings. For example, the Revenue Realization Principle incorporates only verifiable sales, with no regard to future sales, new product announcements, or product loyalty. Thus, accountants do not include all value-relevant information into earnings, and therefore, earnings lag market prices. The second earnings property is accounting noise. Accounting accruals are negatively correlated with the effects on cash flows of operating, investing, and financing decisions, but the correlation is not perfect because accounting is costly, therefore, earnings do not remove all the noise in operating cash flows.

Specifying earnings as the dependent variable allows for differentiation between accounting-induced noise and lags in incorporating value-relevant information in earnings. An accounting rule or practice may "smooth" value-relevant information ΔV_t by incorporating an amount $L^{-1}\Delta V_t$ in earnings Y_t evenly over L periods (e.g., a change in an intangible that generates changes in future cash flows and earnings over time). In a regression of NI_t on R_t the predicted slope then is L^{-1}. This measures the inverse of the lag in earnings incorporating value-relevant information (i.e., the degree of income smoothing). Lags also reduce the earnings-returns, thus a low slope and earnings-returns implies a low demand for timeliness in incorporating information and a high demand for earnings volatility reduction. In contrast, earnings noise is a component of the disturbance ϵ_t and therefore reduces the earnings-returns, but it does not reduce β_1, the slope on the scaled ΔV_t. Earnings timeliness is reduced both by lags (which smooth value changes over time) and noise (which takes time to reverse).

1.3. Earnings Relevance

Ball, Kothari and Robin 1998 posit that because of institutional factors in Coded-law countries, there exists less of a demand for timely earnings disclosure. It then follows that, for many of the same reasons, earnings disclosures in these countries would be less value-relevant. The relevance of earnings disclosures have been shown in numerous studies. Lundholm and Meyers 2002, show that firms with relatively more earnings disclosures have the effect of reflecting more future earnings in current returns. Banker and Chen 2006 indicate that additional earnings releases reduce forecast errors and bring about greater market efficiency. Francis, Schipper, and Vincent 2002 analyze a broader number of firms and earnings announcements and find that increased disclosures explain increases in the market reaction. Lansford, Lev and Tucker 2011 find that larger number of disclosures improves a firm's information environment, and helps managers align analyst expectations. Firms that lack the additional disclosures tend to be punished in the market more severely by investors.

All of the above studies assess US (i.e. Common-law country) firms, but are silent on earnings relevance regarding firms outside the US or in Coded-law countries. Joliet and Muller 2009 address value-relevance of earnings in firms outside the US. They assess firms in Europe, Asia, and Latin America, along with the US. The authors conclude that there is a significant correlation between the value of earnings disclosures and abnormal market returns when foreign regions are aggregated by region (i.e., North America, Latin America, Asia, Europe, etc). The results of this study tend to directly conflict with results of Ball, Kothari and Robin 1998 study.

1.4. The European Union and Asia

The European Union (EU)was set up with the aim of ending the frequent and bloody wars between neighbors which culminated in the Second World War. As of 1950, the European Coal and Steel Community began to unite European countries economically and politically in order to secure lasting peace in Europe. The six founders are Belgium, France, Germany, Italy, Luxembourg and the Netherlands. In 1957, the Treaty of Rome created the European Economic Community (EEC), or 'Common Market'. With the collapse of communism across central and eastern Europe, Europeans become closer neighbors. In 1993 a Single Market (i.e., free-flow of trade across European borders) was constructed with the 'four freedoms' of: movement of goods, services, people and money. Additional countries continued to join the EU. In 1999, the euro was adopted as the official currency of the EU. The use of the Euro as a national currency is optional, not mandatory for an EU member country. Only 16 of the current 27 EU member countries use the Euro and a further 4 non-member countries use the Euro. Britain, the largest EU member not to adopt the Euro, has stuck with its traditional currency of the Pound Sterling possibly as a matter of political expediency, or maybe as a long term economic plan, or both.

The British Pound is still a major component of the world's money markets. The two most significant member nations of the EU are Germany and Britain. They are numbers one and two respectively in GDP and industrial growth in Europe over the past ten years (History of the European Union 2012). While Germany represents a Code-law nation (like most of the EU member nations), Britain represents a Common-law nation (like the US). Thus, the two member nations of the EU that drive a significant portion of the whole body utilize different accounting approaches. Utilizing the study period of 1985-1995, Ball, Kothari, and Robin 1998 find that there exists significant difference between these two leading European nations with respect to demand for earnings timeliness. This also should lead to the conclusion that a significant difference should exist between these nations with respect to earnings relevance, but Joliet and Muller 2009 find no significant difference between the two (when Germany is considered a part of the European sample). Joliet and Muller utilize the study period 1993-2006.

The People's Republic of China (PRC) is the world's second largest economy after the United States.It is the world's fastest-growing major economy, with growth rates averaging 10% over the past 30 years (US/China Institute 2011). China is also the largest exporter and second largest importer of goods in the world. On a per capita income basis, China ranked 90th by nominal GDP and 91stby GDP in 2011, according to the IMF. The provinces in the coastal regions of China tend to be more industrialized, while regions in the hinterland are less developed. As China's economic importance has grown, so has attention to the structure and health of the economy. The Shanghai Stock Exchange (SSE) is a stock exchange that is based in the city of Shanghai, China. It is one of the two stock exchanges operating independently in the People's Republic of China.

The other exchange is the Shenzhen Stock Exchange. Shanghai Stock Exchange is the world's 5th largest stock market by market capitalization at $2.3 trillion as of Dec 2011 (World Exchanges Information, 2011). Unlike the Hong Kong Stock Exchange, the Shanghai Stock Exchange is still not entirely open to foreign investors due to tight capital account controls exercised by the Chinese mainland authorities. The SSE was established on November 26, 1990 and was in operation on December 19 of the same year. It is a non-profit organization directly administered by the China Securities Regulatory Commission (CSRC). Prior to the first week of 1995, trading on the SSE was not very active and information disclosure requirements were rather poor. By the mid 2000s, the SSE was in the midst of a stock market frenzy that saw volumes of trades second only to the New York Stock Exchange. China would best be described as a Code-law nation similar to Japan and most of Europe. To date, there have been no empirical studies that have assessed both the demand for timeliness of accounting earnings and the value-relevance of accounting earnings of Chinese firms on a consistent year-to-year basis.

The economy of Japan is the third largest in the world after the United States and the People's Republic of China and is the world's second largest developed economy. According to the International Monetary Fund, the country's per capita GDP was at $34,362 or the 24th highest in 2011 (Doing Business in Japan 2012).Japan is the world's 3rd largest automobile manufacturing country, has the largest electronics goods industry, and is often ranked among the world's most innovative countries leading several measures of global patent filings. Facing increasing competition from China, manufacturing in Japan today now focuses primarily on high-tech and precision goods, such as optical equipment, hybrid cars, and robotics. Japan is the world's largest creditor nation, generally running an annual trade surplus and having a considerable net international investment surplus. As of 2011, Japan possesses 13.7% of the world's private financial assets (the 2nd largest in the world) at an estimated $14.6 trillion. As of 2011, 68 of the Fortune 500 companies are based in Japan.

The Tokyo Stock Exchange (TSE**)** is a stock exchange located in Tokyo, Japan. It is the third largest stock exchange in the world by aggregate market capitalization of its listed companies. It had 2,292 listed companies with a combined market capitalization of US$3.3 trillion as of Dec 2011. Like China, Japan is a Code-law country. In their 1998 study, Ball, Kothari, and Robin find no significant demand for timeliness of accounting earnings in Japan. However, in the 2009 study by Joliet and Muller, Japanese firms were found to contain significant earnings-relevancy.

1.5. Purpose of Study

The purpose of this study is to extend previous research in the areas of accounting earnings with respect to both timeliness of earnings releases (Ball, Kothari, and Robin 1998) and relevance of earnings releases (Joliet and Muller 2009). In addition, this study contributes to a growing literature base on international accounting issues ([Jacobsen and Aaker 1993], [Harris et al. 1993], [Bodnar and Weintrop 1997], [Barth and Clinch 1996], and [Bodnar et al 2003]). Prior research is conflicting regarding these issues, particularly when Code-law countries are evaluated in comparison with Common-law countries. This study will compare the dominant world economies, namely; the US, UK, Germany, China, and Japan, and encompass a more current time period, 2002-2012. It will evaluate the extent to which these nations value both timeliness of earnings disclosures and relevance of earnings disclosures, and assess any differences among them.

2.0. Hypotheses

2.1. Hypothesis Regarding Timeliness of Earnings Disclosures

The most basic difference in international accounting standards and practices is the extent to which how these standards and practices evolved in various countries, that is, did they originate from the public sector, in which case the nation is categorized as a Code-law country, or did they originate from the private sector, in which case the nation is viewed as a Common-law country (David and Brierley 1985). Ball, Kothari and Robin 1998 conclude that Code-law countries exhibit a lower demand for timely earnings information since the corporate governance in these countries is driven by a small number of agents. To assess this finding, the first hypothesis, stated in the null form, is as follows:

H1: There exists no significant difference in the demand for timely accounting earnings information among the firms, and across nations, in the selected sample.

2.2. Hypothesis Regarding Relevance of Earnings Releases

Joliet and Muller 2009 find that when evaluating foreign nations by regions (i.e., Europe, Asia, North America, etc.) accounting earnings are significantly reflected in firm values in various regions of the world. This current study will follow up on Joliet and Muller 2009 to more closely assess specific nations over a more current time frame. In order to assess this, the second hypothesis, stated in the null form, is:

H2: There exists no significant difference in accounting earnings relevance among firms, and across nations, in the selected sample.

3.0. Sample Selection and Data Description

Disclosure of earnings is crucial to investors because it allows investors to better understand the performance of the firm, and therefore, to better estimate firm value (Khurana 2003). In the US, the Statement of Financial Accounting Standards (SFAS) No. 131, requires firms to disclose financial information in total and by segment. International Accounting Standards (IAS) No. 14 imposes similar rules for reporting financial information by total and segment. The point of these rules is to help investors better understand financial reports. Given that there still exist some differences between FASB and IAS, rulings with regard to earnings releases seem to be moving in a similar, if not identical, direction. Following Joliet and Muller 2009, and Bodnar et al 2003, earnings releases are measured by annual changes in operating earnings deflated by the firm's market value at the beginning of the year. Accounting earnings are derived from the *Thomson Worldscope* database. For the periods 2001-2012 annual earnings measures are computed for each individual firm and each specific year in the sample.

The first sample selection step searches for all firms for the study years on the available markets, specifically, data verifiability is made for US firms (S&P 500), UK firms (FTSE 100), German firms (MDAX 50), Japanese firms (Nikkei 225), and Chinese firms (FXI [China 25]).Following Bodnar et all 2003, Financial services companies are excluded from the sample. Data requirements result in a sample of 53,586 firm-year observations sorted into eight different industry sectors (i.e., consumer cyclical, consumer non-cyclical, energy, healthcare, industrials, materials, technology, and utilities). Table 1 provides a breakdown by firm-years, country, and industry.

Table 1- Sample Breakdown

Country of Origin	**Firm-years**
US	28,255
UK	7,923
Germany	4,435
Japan	10,518
China	2,455
Total	**53,586**

Industry of Origin	**Firm-years**
Consumer cyclical	10,862
Consumer non-cyclical	6,517
Energy	3,620
Healthcare	2,896
Industrials	9,413
Materials	5,069
Technology	13,034
Utilities	2,175
Total	**53,586**

4.0. Tests

4.1. A Model of Timeliness of Earnings Disclosures

Similar to Ball, Kothari and Robin 1998, this study incorporates a research design that associates accounting earnings to changes in market values of equity (Ball and Brown 1968, Beaver, Lambert and Morse 1980, Basu 1997). The model assesses earnings lags and noise which are identifiable determinants of earnings timeliness. Earnings incorporate changes over time. As a result, earnings reflect both current and past changes, and thus lag security returns (Easton, Harris and Ohlson 1992). In addition, accounting earnings contain noise due to the imperfections of the accounting accrual process (Ball, Kothari and Robin 1998). These features imply:

$$Y_t = f(\Delta V_t, \Delta V_{t-1}, \Delta V_{t-2}, \Delta V_{t-3}.....v_t) \quad (1)$$

Where Y, V and v denote net income, market value of equity and accounting-induced noise. With the assumption that ΔV is independent over time, the above equation is simplified to:

$$Y_t = f(\Delta V_t, \epsilon_t) \quad (2)$$

The variable ϵ_t incorporates two earnings components: old information that is value-relevant (i.e., lagged changes in market values, ΔV_t, ΔV_{t-1}, ΔV_{t-2}, ΔV_{t-3}.....) and accounting-induced noise(i.e., v_t)

The independent variable (i.e., ΔV_t , annual change in market value of equity) is relatively free of short –term mispricing effects. When scaled by opening market value, the variables become annual rate of return ($R_t = \Delta V_t/V_{t-1}$) and earnings yield ($NI_t = Y_t/ V_{t-1}$) or:

$$NI_t = \alpha + \beta_1 R_t + \epsilon_t \quad (3)$$

If timely information was the sole property demanded of accounting information, then ΔV_t (change in market value of equity) would be the optimal earnings variable Y_t. But, because there is demand for reported earnings with properties other than timeliness, accountants incorporate only a subset of value-relevant information in current earnings. For example, the Revenue Realization Principle incorporates only verifiable sales, with no regard to future sales, new product announcements, or product loyalty. Thus, accountants do not include all value-relevant information into earnings, and therefore, earnings lag market prices.

The second earnings property is accounting noise. Accounting accruals are negatively correlated with the effects on cash flows of operating, investing, and financing decisions, but the correlation is not perfect because accounting is costly, therefore, earnings do not remove all the noise in operating cash flows. Specifying earnings as the dependent variable allows for differentiation between accounting-induced noise and lags in incorporating value-relevant information in earnings.

An accounting rule or practice may "smooth" value-relevant information ΔV_t by incorporating an amount $L^{-1}\Delta V_t$ in earnings Y_t evenly over L periods (e.g., a change in an intangible that generates changes in future cash flows and earnings over time). In a regression of NI_t on R_t the predicted slope then is L^{-1}. This measures the inverse of the lag in earnings incorporating value-relevant information (i.e., the degree of income smoothing). Lags also reduce the earnings-returns, thus a low slope and earnings-returns implies a low demand for timeliness in incorporating information and a high demand for earnings volatility reduction. In contrast, earnings noise is a component of the disturbance ϵ_t and therefore reduces the earnings-returns, but it does not reduce β_1, the slope on the scaled ΔV_t. Earnings timeliness is reduced both by lags (which smooth value changes over time) and noise (which takes time to reverse).Using the sample of firm-years by country, the earnings level variable is calculated as $NI_t = Y_t/(N_tP_{t-1})$, where Y is net income , N is adjusted number of shares and P is share price. Earnings change ΔNI_t is $NI_t - NI_{t-1}$.The security return, R, is the holding period consisting of the firm's fiscal year. Table 2 contains sample descriptive statistics.

Table 2-Sample Descriptive Statistics

Panel A- Statistics by Nation							
	N	**NI**			**R**		
		μ	**Med**	**σ**	**μ**	**Med**	**σ**
US	28,255	2.7	5.7	12.6	11.5	5.8	38.5
UK	7,923	5.4	6.8	9.3	10.9	7.2	36.2
Germany	4,435	4.1	5.2	7.0	9.1	5.1	29.3
Japan	10,518	3.5	4.9	3.8	5.9	2.7	30.1
China	2,455	5.8	8.0	9.7	12.1	6.2	35.7
Panel B- Statistics by Industry							
		μ	**Med**	**σ**	**μ**	**Med**	**σ**
Cons-c	10,862	3.8	7.1	10.6	7.2	4.0	39.1
Cons- nc	6,517	4.9	8.5	9.9	10.4	5.1	32.6
Energy	3,620	5.8	11.1	7.7	11.9	6.0	31.5
Healthcare	2,896	2.2	4.6	12.3	2.8	4.4	42.0
Industrials	9,413	8.3	10.1	8.1	9.9	5.2	28.7
Materials	5,069	3.6	7.3	9.7	5.1	2.8	32.4
Technology	13,034	5.7	4.8	7.7	12.2	5.9	38.5
Utilities	2,175	1.8	.8	6.3	2.9	3.7	32.1
*Variables:*N denotes the number of firm-year observation, NI denotes annual earnings per share, R denotes security return over the fiscal year.							

Panel A of Table 2 indicates that earnings for all nations are negatively skewed (i.e., all medians exceed means). This is the exact finding of Ball, Kothari and Robin 1998. In addition, all countries rank greater volatility (i.e., σ) in returns than earnings (again, similar to Ball, Kothari, Robin 1998). China is shown to out-perform each of the nations with respect to both earnings and returns. Panel B of Table 2 provides more detailed information by industry. Energy and Industrials lead the way in both earnings and return categories, while Healthcare and Utilities bring up the rear.

Ball, Kothari and Robin 1998 find that Code-law countries' earnings are less timely than Common-law countries. They asses this by comparing the R^2 from individual countries to the coefficient representing returns for each country. The higher the R^2 and associated return, the more timeliness of earnings is valued. The lower the R^2 and associated return, the less timeliness of earnings is valued. In sum, their study shows low R^2s (and returns)for Code-law countries and high R^2s (and returns) for Common-law countries. Panel A of Table 3 indicates that for the study period sample, each country (regardless of whether Code or Common law) values timeliness of earnings releases, with the US and China indicating the highest value of timeliness of earnings. This result is contrary to previous findings. It indicates that users of accounting earnings information place a relatively high degree of value on these releases, regardless of whether they are Code-law or Common-law countries. Panel B assesses the value of earnings releases cross-sectionally across both country and industry. Findings suggest a relatively high degree of value placed on earnings disclosures in each industry with the exception of Healthcare and Utilities (R^2 of 4.25, 5.01 respectively).Based upon these findings, the H1 hypothesis that there exists no significant difference in the demand for timely accounting earnings information among the firms, and across nations, in the selected sample, cannot be rejected.

Table 3- Association between Earnings and Returns

Panel A- Statistics by Nation

$$NI_t = \beta_1 R_t + \epsilon_t$$

	N	β1	Adj. R2
US	28,255	9.52	15.52
UK	7,923	11.02	14.87
Germany	4,435	8.63	13.71
Japan	10,518	9.01	14.01
China	2,455	12.82	15.23

Panel B- Statistics by Industry

$$NI_t = \beta_1 R_t + \beta_2 R_t + \beta_2 R_t + \beta_3 R_t + \beta_4 R_t + \beta_5 R_t + \beta_6 R_t + \beta_7 R_t + \beta_8 R_t + \epsilon_t$$

	N	β(variable)	Adj. R2
Cons-c	10,862	11.58	14.95
Cons-nc	6,517	9.48	12.83
Energy	3,620	14.59	16.28
Healthcare	2,896	3.18	4.25
Industrials	9,413	10.18	13.29
Materials	5,069	9.75	14.11
Technology	13,034	16.28	19.25
Utilities	2,175	2.98	5.01

Variables: R denotes security returns over the fiscal year, NI denotes annual earnings per share, N denotes number of firm-years
Analysis: Statistics are from regressions using pooled cross-section and time-series of firm-year observations for each country. Intercepts are not reported.
β1 = Consumer cyclical
β2 = Consumer non-cyclical
β3 = Energy
β4 = Healthcare
β5 = Industrials
β6 = Materials
β7 = Technology
β8 = Utilities

4.2. A Model of Value-Relevance of Earnings Disclosures

The purpose of this test is to assess the relative information content of the firm's unexpected earnings to security prices of the firm. Similar to Joliet and Muller 2009, stock returns are based on daily adjusted prices, they are obtained from *Downstream International*. Following Boatsman 1993, Bodnar and Weintrop 1997, Thomas 2004, and Callen 2005, annual stock returns were computed over an interval beginning and ending three months after the firm's fiscal year-end. A lag of three months is chosen to ensure that the geographically segmented earnings have been fully disclosed to investors through annual reports and other sources. The prime belief is that earnings, more specifically, "unexpected earnings," causes the stock price to move (Ball and Brown 1968). The following model is established for determining value-relevance of earnings content:

$$CAR_{it} = \alpha + \beta_1 UE_{it} + \beta_2 D_n UEit + \epsilon_{it,} \quad (4)$$

where: CAR_{it} = Cumulative abnormal return firm i, time t

a = Intercept term
D = Dummy variable equal to 1 if US, 2 if UK, 3 if

Germany, 4 if Japan,5 if China

$UE_{i\ t}$ = Unexpected earnings for firm i, time t

β_1 = Variable representing all unexpected earnings across all nations and firm-years

β_2 = Variable representing nation-specific unexpected earnings

Unexpected earnings (UE_i) is measured as the difference between the management earnings forecast (MF_i) and security market participants' expectations for earnings proxied by consensus analyst, as per Investment Brokers Estimate Service (IBES) (EX_i). The unexpected earnings are scaled by the firm's stock price (P_i) 180 days prior to the forecast:

$$UE_i = \frac{MF_i) - (EX_i)}{P_i.} \quad (5)$$

For each firm sample, an abnormal return (AR_{it}) is generated around the event dates of negative one (-1), zero, and positive one (+1), with day zero representing the day that the firm's financials were published. The market model is utilized along with the CRSP equally-weighted market index, and regression parameters are established between -180 and -91. Abnormal returns are then summed to calculate a cross-sectional cumulative abnormal return, CAR_{it}.

Table 4-Value Relevance of Earnings Disclosures

Panel A-Statistics by Nation

$$\mathbf{CAR_{it} = \alpha + \beta_1 UE_{it} + \beta_2 D_n UEit + \epsilon_{it}}$$

Nation	α	β_1	β_2 US	β_2 UK	β_2 Germany	β_2 Japan	β_2 China	Adj. R2
Composite	.26 (.89)	.19 (2.49)[b]						
US			.15 (2.38)[b]					18.75
UK				.20 (2.55)[b]				16.42
Germany					.12 (2.11)[a]			15.88
Japan						.13 (2.09)[a]		19.22
China							.18 (2.51)[b]	17.41

[a]Significant at the .05 level, two tailed test

[b] Significant at the .01 level, two tailed test

Panel B- Statistics by Industry

$$\mathbf{CAR_{it} = \alpha + \beta_1 UE_{it} + \beta_2 D_n UEit + \epsilon_{it}}$$

Industry	α	β_1	β_2 Con.-C.	β_2 Con.NC.	β_2 Ene.	β_2 Hlth.	β_2 Indus.	β_2 Matl.	β_2 Tech.	β_2 Util.	Adj. R2
Composite	.26 (.89)	.19 (2.49)[c]									
Cons.-C.			.13 (2.14)[b]								17.66
Cons.-N.C.				.19 (2.10)[b]							15.42
Energy					.17 (2.42)[c]						19.01
Healthcare						.12 (1.86)[a]					18.45
Industrials							.14 (2.19)[b]				16.88
Materials								.18 (2.50)[c]			15.91
Technology									.17 (2.47)[c]		17.62
Utilities										.09 (1.88)[a]	14.99

Panel A of Table 4 indicates that the composite unexpected earnings for all nations and across all firm-years (i.e., β_1 coefficient),has a value of .19 with a p-value of 2.49 which is significant at the .01 level. This finding is consistent with those from numerous previous studies which show a high degree of significance between security returns and accounting earnings. When an analysis of firm-years by nation is made (i.e.,β_2), the US has a value of .15 with a p-value of 2.38 which is significant at the .01 level. The UK has a value of .20 with a p-value of 2.55, significant at the .01 level. Germany's value is .12 with a p-value of 2.11, significant at the .05 level. Japan has a value of .13 with a p-value of 2.09, significant at the .05 level. China has a value of .18 with a p-value of 2.51, significant at the .05 level. Panel B of Table 4 lists the results for the earnings/price association by industry. Each industry possesses a significant relationship when correlating accounting earnings with security prices. Significance ranges from a p-vale of .01 (Energy, Materials, Technology), to a p-value of .05 (Consumer-cyclical, Consumer-non-cyclical, Industrials), to a p-value of .10 (Healthcare, Utilities). As a result of these findings, the H2 hypothesis that there exists no significant difference in accounting earnings relevance among firms, and across nations, in the selected sample, cannot be rejected.

5.0. Conclusions

The purpose of this study was to follow-up and extend previous research in the area of accounting earnings disclosures. Ball, Kothari and Robin 1998, which used a sample from the 1985-1995 time periods, find that Code-law countries (i.e., Japan, China, Germany) do not value timeliness of accounting earnings information in the same manner as Common-law countries (i.e., US and UK). This study used a more contemporaneous study period (i.e., 2001-2012) and assessed nations that have had the most significant economic growth during the study time period. The findings in this study indicate that there is no discernible difference in how the study nations view accounting disclosures, regardless of whether they are Code-law or Common-law countries. Each nation studied showed a high correlation between accounting earnings disclosures and security returns. In addition, no previous study has addressed the earnings timeliness issue from an industry perspective across nation, this one does. When evaluated, finding suggested that all eight industries included in the study (in all study nations) place a high correlation between earnings disclosures and security returns. The two industries demonstrating the lowest correlation are the Healthcare and Utilities industries.

Also, this study evaluated the earnings disclosure relationship to security returns to a greater degree than past studies. Joliet and Muller assess the value-relevance of accounting earnings disclosures relative to cumulative security returns by geographical regions of the world for the period 1993-2006. This study, again, extended the study period (i.e., 2001-2012) and evaluated specific countries with the greatest economic growth during this time period (i.e., US, UK, Germany, Japan, China). Findings indicate that in each nation studied, there exists significant value of earnings relevance with regard to security returns. In addition, when this methodology was again applied to eight specific industries across all nations studied, findings suggest that in each industry there exists significant value relevance of earnings disclosures with the two industries of Healthcare and Utilities possessing relevance at the .10 level (p-value significance) as opposed to the remaining industries at either .05 or .01 levels.

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