COMPARING CORPORATE VALUE DISCOUNTS OF U.S. AND NON-U.S. FIRMS ASSOCIATED WITH LOWER TRANSPARENCY

By

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ABSTRACT

This paper compares the association between transparency and firm value between U.S. and non-U.S. firms. I show that firm value is more sensitive to disclosure quality and corporate governance in global companies than in U.S. companies. I adopt and modify the Disaggregation Index by Chen et al. (2015), a measure of disclosure quality, and apply it towards global companies reporting under International Financial Reporting Standards (IFRS). By showing the differential effects of transparency on firm value, this paper sheds light on an important concern expressed by U.S. investors when investing in in global equities, and aims to partly explain the difference in betas between U.S. and global firms. I hypothesize U.S. equity home bias to be the main driver of the difference in coefficients, but conclude that change in U.S. ownership is not sufficient in explaining the differential effects.

Keywords: Disclosure quality, Corporate governance, International accounting, Home bias

I. INTRODUCTION

Many studies highlight the negative association between firm value and disclosure quality (Lambert et al. 2007; Botosan 1997), as well as the relationship between corporate governance and firm value (Carter et al. 2003). Low disclosure quality and poor corporate governance have been shown to discourage investments, leading to lower equity prices. This research aims to connect investor's home bias with firm value discount due to lower transparency by comparing the magnitude of discount in U.S. and non-U.S. companies. This study hypothesizes that the magnitude of stock price discount will be significantly larger in foreign companies compared to that of U.S companies. That is, although investors will pay less for less transparent firms in both markets, the punishment will be severe for global companies. There is much research on lower disclosure quality and discount in non-U.S. markets (Bradshaw et al. 2004; Zhou 2007), but this research will contribute to the literature by verifying that the magnitude of discount is different when comparing non-U.S. markets with U.S. markets. I expect that U.S. investors will be more sensitive to lower disclosure quality and poor corporate governance in foreign companies, leading to a greater degree of firm value discount. This research will address the concerns of U.S. investors on non-U.S. companies and suggest further research topics on the area.

The paper is structured as follows: section 2 reviews related literature, section 3 elaborates on the research approach and hypotheses, and section 4 discusses data and the research methods. Results are shown in section 5 followed by discussion on section 6. Section 7 concludes the paper.

II. LITERATURE REVIEW

It is generally agreed upon in international finance that home bias exists for U.S. investors. This manifests via underinvestment in foreign equities due to higher informational costs (Bradshaw et al. 2004) or corporate governance concerns (Dahlquist et al. 2003; Carter et al. 2003). In addition, emerging market discounts, attributed to low information transparency and instabilities related to each country, are known to drive down stock prices of emerging markets to lower levels than their U.S. comparables. This research will show that companies in non-U.S. markets are being discounted more heavily based on disclosure quality and corporate governance, addressing a major concern of U.S. investors when investing abroad.

Home Bias

Equity home bias is the phenomenon of individuals holding less than optimal level of foreign assets. Using CAPM, Lewis (1999) suggests that the foreign equity share in mutual funds are significantly below the level of the so-called "efficient frontier", although the amount has been increasing in time. This implies that funds are not taking the option of what the CAPM suggests should be diversifying risks away for free. Various research has given possible explanations on this observation. Investing in foreign equity can be costlier due to difficulties in acquiring information about the market and the companies (Lewis 1999). Other research focuses on the poor quality and low credibility of accounting information of foreign companies, and evaluates the correlation between US ownership and US GAAP conformity level of foreign companies' accounting information (Ahearne et al. 2004; Bradshaw et al. 2004). Dahlquist et al. (2003) links home bias with corporate governance, claiming that investor rights and ownership structure are more attributable to home bias while barrier to international investment is decreasing. Our research will focus on disclosure quality and corporate governance and how investors are more sensitive on

these issues when investing on foreign equities.

Disclosure Quality

Prior research has introduced models and indices evaluating disclosure quality of financial statements. Singhvi and Desai (1971) suggest an index of disclosure using 34 questionnaires including number of years included in summary of important financial statistics, method of inventory valuation, information on labor contracts, inventory breakdown, et cetera. A more modern approach on evaluating disclosure quality is suggested by Chen et al. (2015). They propose using the level of disaggregation of accounting data in measuring disclosure quality. By counting the number of non-missing subaccounts in the Compustat data, Chen et al. came up with a disclosure measure using the entire balance sheet and income statement, which is distinctive from previous indices such as AIMR scores or the index by Botosan (1997), which focused on voluntary disclosures or only on certain parts of the financial statements, such as the Management Discussion and Analysis.

Further research has studied the relationship between higher disclosure level and lower cost of capital (Botosan 1997; Hearly et al. 1999). Disclosure quality is negatively correlated with analyst forecast dispersion, bid-ask spread, and cost of equity (Chen et al. 2015). Lambert et al. (2007) explain that the quality of accounting information affects firms' cost of capital in both direct and indirect ways, directly by altering market's perception about the dispersion of firms' future cash flows and indirectly by influencing the real decisions that companies make. This research will focus on the differential effect on firm value on U.S. and non-U.S. companies associated with disclosure quality, as measured by the Disaggregation Index proposed by Chen et al. (2015).

Corporate Governance

Corporations have provisions to protect minority shareholders from expropriation by managers and controlling shareholders (La Porta et al. 2000). Shleifer and Vishny (1997) identify corporate governance as the ways financiers assure that they get return on their financial investments. Gompers et al. (2003) classify governance provisions into five categories of delay, protection, voting, state of incorporation, and other, to construct an index of corporate governance. They also show by using their index that better corporate governance leads to higher equity prices. Other research suggest that board diversity (Carter et al. 2003) and commitment to business ethics (Pae and Choi 2011) leads to higher firm value.

Non-US Markets

Previous literature examines the disclosure qualities of emerging markets in various perspectives, including regulation, auditing standards, and management. Barth et al. (2008) studied how the application of International Accounting Standards (IAS) is associated with higher accounting quality in non-US markets. Zhou (2007) examined the effect of new auditing standards in China on informational asymmetry. Although new standards significantly lowered the bid-ask spread, Zhou showed that foreign ownership of those control groups did not change. Hail and Leuz (2009) examine the cost of capital of companies cross-listed in the U.S. and demonstrated that cross-listed firms have a lower cost of capital. Pae and Choi (2011) tested the correlation between corporate governance, management commitment to business ethics, and firm valuation for Korean corporations. Porta et al. (2006) evaluate disclosure regulations of various countries. Ball et al. (2000) focus on how international institutional factors affect properties of accounting earnings, while Isidro et al. (2016) attempt to revisit the country attributes that were shown to affect financial

reporting quality and tested their validity.

III. RESEARCH APPROACH AND MODEL

Motivated by the previous literature connecting disclosure quality and corporate governance with firm value, this study will compare the slope of the regression between U.S. and non-U.S. companies. I expect that non-U.S. companies will exhibit a greater degree of firm value discount. I first reaffirm the relationship of disclosure quality and corporate governance with firm value in US and global companies, stated formally in the following hypotheses:

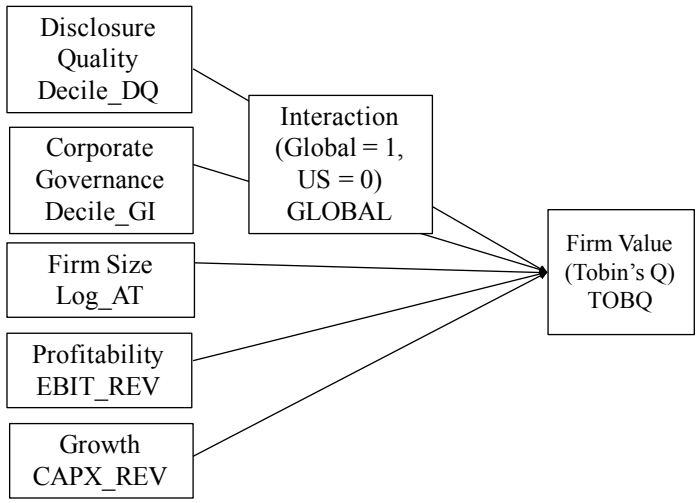
H1: Firm value is positively associated with disclosure quality for non-U.S. companies.

H2: Firm value is positively associated with corporate governance for non-U.S. companies.

Tests on H1 and H2 will show the association between transparency and firm value in a stand-alone setting. After confirming the correlation between the indices and firm value, I move on to test our main hypothesis, that the degree of firm value discount is greater in non-U.S. companies.

H3: Firm value discount due to lower disclosure quality is significantly larger in non-U.S. companies than in U.S. companies.

H4: Firm value discount due to poor corporate governance is significantly larger in non-U.S. companies than in U.S. companies.



<Figure 1: Research Model>

Figure 1 summarizes the main research model of this paper. I utilize an OLS Regression with dummy variables indicating U.S. or non-U.S. firms to show the differential slopes for disclosure quality and corporate governance between U.S. and non-U.S. firms. I include the natural log of total assets, EBIT-to-sales ratio, and ratio of capital expenditure to sales were added as control variables to control for firm size, profitability, and growth opportunities, respectively (Berger and Ofek 1995). The estimation model is as follows.

$$TOBQ_i = \beta_0 + \beta_1 Decile_DQ_i + \beta_2 Decile_GI_i + \beta_3 Global_i + \beta_4 DQ * Global_i$$
$$+ \beta_5 GI * Global_i + \beta_6 Log_AT_i + \beta_7 EBIT_REV_i + \beta_8 CAPX_REV_i + \varepsilon_i$$

For non-US companies, I perform additional analyses regressing U.S. ownership on transparency to quantify the U.S. equity home bias related to disclosure quality and corporate governance.

IV. DATA AND RESEARCH METHOD

Data on Disclosure Quality, Corporate Governance, and Firm Value

Disclosure quality is measured using the Disaggregation Quality (DQ) proposed by Chen et al. (2015). This index is calculated as the proportion of non-missing Compustat subaccounts in both the balance sheet and the income statement. DQ captures the fineness of financial data and how detailed the disclosure information is. Finer information reduces information asymmetry and leads to more accurate valuation (Fairfield et al. 1996; Jegadeesh and Livnat 2006). DQ also captures the credibility of disclosure information, as management would have less discretion on its reporting numbers when it is reporting through more detailed subaccounts (Hirst et al. 2007; D'Souza et al. 2010). Chen et al. (2015) show that the index agrees with the previous information quality indices through validation tests examining association with analyst forecast dispersion, forecast accuracy, bid-ask spread, and cost of equity.

I use Disaggregation Quality (DQ) over other measures of information quality because of its subjectivity. DQ does not require any judgement by its users. Also, DQ could be easily replicated using the Compustat data, which includes disclosure data for a wide range of firms. Some adjustments were required on DQ for global companies since it is only applicable to firms under US GAAP. I replicated the process of identifying subaccounts and parent accounts in IFRS, and calculated DQ for balance sheet and income statement for global companies (Appendix A, B). Because IFRS tend to be more principles-based standards, as opposed to rules-based standards under U.S. GAAP, the number of subaccounts for IFRS in Compustat are smaller compared to US GAAP.

One of the most widely used measures of corporate governance is the Governance Index

proposed by Gompers et al. (2003). The Governance Index is simply the sum of numbers of provisions that restricts shareholder rights. The provisions are divided into five categories of Delay, Protection, Voting, Other, and State. There are total of 24 provisions that are tested, and this measure also does not require any judgement by the user. The Governance Index for US companies is accessible through ISS (formerly RiskMetrics). Since Governance Index is not available for global companies, WGI by World Bank, a country-level data on corporate governance is used instead. Global companies have different institutional and legal characteristics based on their domiciled country, and country-level characteristics are important factors of firm-level corporate governance (La Porta et al 2006; Henry 2000). Using country-level data on corporate governance might potentially introduce a problematic assumption that underlying governance level of companies in a given country is the same. Without finer firm-level data on governance, however, I cannot obtain a more detailed measure of firm-level corporate governance for non-U.S. firms.

Firm value is measured through Tobin's Q, which is calculated as Equity Market Value divided by Equity Book Value. Tobin's Q estimates how a firm is undervalued or overvalued. A higher Tobin's Q value indicate that the investors are willing to pay more than the company's book value for its equity.

Research Method

I conduct OLS regression analyses to verify the association among DQ, Governance Index and Tobin's Q. After showing that DQ and Governance Index are correlated with firm value for both US and global companies, the coefficients of US and global companies are compared to test the main hypothesis. Since DQ for US firms and DQ for global firms are somewhat different, direct comparison cannot be made between the two groups. Rather, DQ for US firms and DQ for global

firms are categorized into deciles from the highest to the lowest. Here I am not making assumption that the average levels of disclosure quality in US and non-US countries are the same. Only the association between relative transparency within its group and firm value is tested.

The sample consists of 2,440 firm years, with 1,285 firm years of US companies in S&P Composite 1500 Index and 1,155 global companies included in S&P 700.

V. RESULTS

Table 1 demonstrates the OLS regression result for U.S. companies. As hypothesized, disclosure quality measured by Disaggregation Quality is positively correlated with firm value. Corporate governance, on the other hand, did not show a statistically significant result. The OLS regression result for global companies is presented in Table 2 (H1, H2). As in U.S. companies, disclosure quality is again positively correlated with firm value; however, it is mildly significant. Corporate governance is not a statistically significant factor for global companies' firm value.

Table 1: OLS Regression Results on US Companies

	coef	Std err	t	P > |t|	[95.0% Conf. Int.]	
Const	2.2768	0.226	10.086	0.000	1.834	2.720
Decile_DQ	0.0344	0.013	2.593	0.010	0.008	0.060
Decile_GI	0.0051	0.013	0.390	0.696	-0.020	0.031
Log_AT	-0.1254	0.026	-4.570	0.000	-0.176	-0.075
EBIT_REV	0.5701	0.111	5.149	0.000	0.353	0.787
CAPX_REV	-0.0239	0.247	-0.097	0.923	-0.508	0.461

Table 2: OLS Regression Results on Global Companies

	coef	Std err	t	P > |t|	[95.0% Conf. Int.]	
Const	3.4903	2.665	1.310	0.191	-1.738	8.718
Decile_DQ	0.1484	0.099	1.506	0.132	-0.045	0.342

Decile_GI	0.2109	0.212	0.993	0.321	-0.206	0.628
Log_AT	-0.3414	0.113	-3.014	0.003	-0.564	-0.119
EBIT_REV	14.6029	2.443	5.977	0.000	9.810	19.396
CAPX_REV	-8.1465	3.036	-2.683	0.007	-14.104	-2.189

Table 3 shows the results of our main hypotheses (H3, H4). As expected, the interaction terms, DQ*Global and GI*Global, showed positive coefficients. DQ*Global is statistically significantly association with firm value, while GI*Global is only marginally significant. These results support our model that the firm value of global companies are more sensitive to transparency. I also observe that the main effect of Decile_DQ, which was positively significant in both US and non-US companies (Table 1, 2) goes away once the interaction term is included.

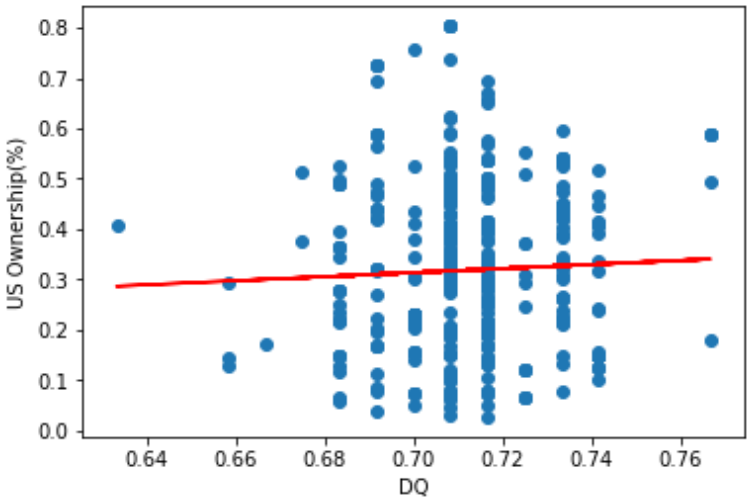
Table 3: OLS Regression Results with Interaction Terms

	coef	Std err	t	P > |t|	[95.0% Conf. Int.]	
Const	4.1190	0.724	5.689	0.000	2.699	5.539
Decile_DQ	-0.0197	0.064	-0.306	0.760	-0.146	0.107
Decile_GI	0.0446	0.063	0.708	0.479	-0.079	0.168
Global	-0.1863	1.429	-0.130	0.896	-2.988	2.615
DQ*Global	0.1921	0.093	2.069	0.039	0.010	0.374
GI*Global	0.2416	0.162	1.492	0.136	-0.076	0.559
Log_AT	-0.3516	0.067	-5.219	0.000	-0.484	-0.220
EBIT_REV	1.4750	0.501	2.945	0.003	0.493	2.457
CAPX_REV	-0.1633	1.054	-0.155	0.977	-2.229	1.903

VI. DISCUSSION

By testing our hypothesis, I examine whether the effect of transparency on firm value is greater in global companies. I perform additional analysis to discover the causes driving the difference in coefficients. The underlying assumption is that that global companies' firm value

will be more sensitive to their transparency level due to U.S. being more responsive to the transparency level of non-U.S. companies. Prior literature discussed on US investors' concerns on global companies in various aspects, focusing on higher informational costs. Bradshaw et al. (2004) show that accounting choices in global companies affect U.S. investors' behavior, while DeFond and Hung (2007) find that analysts provide cash flow forecasts more frequently in countries with poor investor protection. To examine the effect of U.S. equity home bias on the results, I perform a regression analysis of U.S. ownership proportion on disclosure quality. The regression showed a positive association between U.S. ownership and disclosure quality, however, the association was not statistically significant. Figure 2 depicts the fitted line between two variables.



<Figure 2: US Ownership on Disclosure Quality>

The additional analysis show that the difference in coefficients between U.S. and non-U.S. companies cannot be fully explained by U.S. equity home bias. Further research in this area should investigate the driver of the difference in coefficients. Another limitation in this study is the use of country-level data in measuring corporate governance for global companies. Although country-

level characteristics are shown to be important factors of firm-level corporate governance in global setting, it is clear that more detailed analysis would have been possible with firm-level data. The statistical significance on the association between governance and firm value might also be stronger with more granular firm-level data on global companies, rather than the more coarse country-level data.

VII. CONCLUSION

I find that firm value is more sensitive to transparency in non-U.S. companies compared to U.S. companies. I also confirm the association among disclosure quality, corporate governance, and firm value after replicating Disaggregation Index (Chen et al. 2015) to the IFRS setting. The underlying presumption is that the U.S. equity home bias would be the major factor leading the difference in coefficients, however additional analysis showed that home bias is not sufficient in explaining the different slopes.

This research contributes to the existing literature by showing that companies in non-U.S. emerging markets are punished more heavily on lower disclosure quality and poor corporate governance compared to U.S. companies. This paper attempts to make meaningful connections by discussing transparency in US and global settings, as well as by connecting U.S. equity home bias to firm transparency. Further research can further explore the drivers of differential sensitivity of firm value on transparency and investigate further on U.S. investors' concern in investing on global equities. Comparison among various emerging markets to specify the investors sentiment on each market is also a plausible research topic, once firm-level data on corporate governance in non-U.S. firms is available.

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Appendix A. Linking Table for Balance Sheet – IFRS

SUB ACCOUNTS	DESCRIPTION	PARENT	GROUP
CH	Cash and Due from Banks	CHE	ACT
IVST	Short-term Investments – Total	CHE	ACT
RECTR	Accounts Receivable/Debtors – Trade	RECT	ACT
RECCO	Accounts Receivable/Debtors – Other	RECT	ACT
INVRM	Inventories/Stocks – Raw Materials	INVT	ACT
INVWIP	Inventories/Stocks – Work in Progress	INVT	ACT
INVFG	Inventories/Stocks – Finished Goods	INVT	ACT
INVO	Inventories/Stocks – Other	INVT	ACT
XPP	Prepaid Expense	ACO	ACT
TSCA	Treasury Stock (Current Assets)	ACO	ACT
ACOX	Current Assets – Other Excluding Prepaid Expense	ACO	ACT
CHE	Cash and Short-term Investments	ACT	AT
RECT	Accounts Receivable/Debtors – Total	ACT	AT
INVT	Inventories/Stocks – Total	ACT	AT
ACO	Current Assets – Other – Total	ACT	AT
PPEGT	Property, Plant and Equipment (Gross) – Total	PPENT	AT
DPACT	Depreciation and Amortization (Accumulated) (-)	PPENT	AT
IVGOD	Investment Grants and Other Deductions (-)	PPENT	AT
DC	Deferred Charges	AO	AT
TSTLTA	Treasury Stock (Long-term Assets)	AO	AT
UNL	Unappropriated Net Loss	AO	AT
EA	Exchange Adjustments (Assets)	AO	AT
AOX	Assets – Other – Excluding Deferred Charges	AO	AT
ACT	Current Assets – Total	AT	AT
PPENT	Property, Plant, and Equipment (Net) – Total	AT	AT

IVAEQ	Investments and Advances – Equity Method	AT	AT
IVAO	Investments and Advances – Other	AT	AT
INTAN	Intangibles	AT	AT
AO	Assets – Other	AT	AT
DD1	Long-term Debt Due in One Year	DLC	LCT
NP	Notes Payable	DLC	LCT
XACC	Accrued Expenses	LCO	LCT
TXP	Taxes Payable	LCO	LCT
APO	Accounts Payable/Creditors – Others	LCO	LCT
PRODV	Proposed Dividends	LCO	LCT
LCOX	Current Liabilities – Other – Excluding Accrued Expense	LCO	LCT
MIB	Redeemable Noncontrolling Interest	MIBT	LT
MIBN	Nonredeemable Noncontrolling Interest	MIBT	LT
DLC	Debt in Current Liabilities	LCT	LT
AP	Accounts Payable	LCT	LT
LCO	Current Liabilities – Other	LCT	LT
LCT	Current Liabilities – Total	LT	LT
TXDB	Deferred Taxes (Balance Sheet)	LT	LT
DLTT	Long-term Debt – Total	LT	LT
MIB	Minority Interest (Balance Sheet)	LT	LT
RVUTX	Reserves – Untaxed	LT	LT
LO	Liabilities - Other	LT	LT
PSTKR	Preferred Stock – Redeemable	PSTK	SEQ
PSTKN	Preferred Stock – Nonredeemable	PSTK	SEQ
PSTK	Preferred Stock - Total	SEQ	SEQ
CSTK	Common Stock	SEQ	SEQ
SCO	Share Capital - Other	SEQ	SEQ

PRC	Participation Rights Certificates	SEQ	SEQ
TSTK	Treasury Stock – All Capital – Total	SEQ	SEQ
CAPS	Capital Surplus/Share Premium Reserve	SEQ	SEQ
RVLRV	Revaluation Reserve	SEQ	SEQ
RE	Retained Earnings	SEQ	SEQ
UNNP	Unappropriated Net Profit (Shareholders' Equity)	SEQ	SEQ
ERO	Equity Reserves – Other)	SEQ	SEQ
TRANSA	Cumulative Translation Adjustment	SEQ	SEQ

Appendix B. Linking Table for Income Statement – IFRS

SUB ACCOUNTS	DESCRIPTION	GROUP
COGS	Cost of Goods Sold	XOPR
XSGA	Selling, General, and Administrative Expense	XOPR
RAWMSM	Raw Materials, Supplies and Merchandise	XOPR
STKCH	Change in Stocks (-)	XOPR
CAPCST	Capitalized Costs (-)	XOPR
XSTF	Staff Expense – Total	XOPR
XOPRO	Operating Expense – Other	XOPR
DFXA	Depreciation of Fixed Assets (Tangible)	DP
AM	Amortization of Intangibles	DP
INTC	Interest Capitalized	NOPI
IDIT	Interest and Dividend Income – Total	NOPI
NOPI	Nonoperating Income (Expense)	NOPI
TXC	Income Taxes – Current	TXT
TXDI	Deferred Taxes (Income Account)	TXT
TXO	Income Taxes – Other	TXT

EIEA	Equity in Earnings – After Tax	NIT
PACQP	Preacquisition Profits	NIT
NIO	Net Items – Other	NIT
DVP	Dividends – Peferred	DVT
DVC	Dividends – Common/Ordinary	DVT
DVSCO	Dividends – Share Capital - Other	DVT

Appendix C. Linking Table for the Balance Sheet – US GAAP

Refer to the Internet Appendix of Chen et al. (2015)