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The Impact of ESG Disclosures and Institutional Ownership on Market Information Asymmetry

Dr Renard Siew Yung Jhien, Dr Maria Balatbat and Prof David Carmichael
Centre for Energy and Environmental Markets, School of Accounting, School of Civil and Environmental Engineering, University of New South Wales, Sydney, Australia

2014 Asia-Pacific Journal of Accounting & Economics (APJAE) Symposium on ESG issues in the Asia Pacific Region
Hong Kong, December 4-5, 2014

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Outline

- ESG disclosures – context
- Background
- Literature review and hypothesis development
- Objectives and methodology
- Data and methods
- Results
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- Discussions/Implications
- Conclusions

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ESG – context

What is ESG?	• **Environmental, social and governance** issues • Represents risks and opportunities to companies
What influences?	• Driven by demand from stakeholders for higher transparency • Stakeholders include shareholders, the public, NGOs, employees etc.
Why is ESG important?	• Stock exchanges are starting to adopt a 'comply or explain' approach (i.e. Bursa Malaysia and Hong Kong Stock Exchange) • Sustainability indexes (DJSI, FTSE4Good)

- Traditionally the focus is on environmental issues (i.e. pollution, emissions) but ESG is becoming mainstream

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Background-ESG and the capital markets

- Evidence that ESG is priced into capital markets?
- Discussion around how ESG performance and disclosures reduces the cost of equity capital
- Dhaliwal et al. (2011) find negative relationship between ESG disclosures and cost of equity
- Statman and Glushkov (2009) document higher alphas on the portfolio of companies that rank highly on community, employee relations and environment

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ESG disclosures versus ESG performance

- Scholars made clear distinction between ESG disclosures and ESG performance (Clarkson et al., 2008; Dhaliwal et al., 2011; Dhaliwal et al., 2014; Al-Tuwaijri et al., 2004)
- Clarkson et al. (2008) and Al-Tuwaijri et al. (2004) use quantitative environmental performance as opposed to qualitative performance

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Background

- Viewing the fact that ESG is gaining traction among the investment community, two research questions are conjectured to understand the role of ESG disclosures and investor's assessment of company value:
  - What is the impact of **ESG disclosures** on market **information asymmetry**?
  - Is there any difference in the relationship between ESG disclosures and market information asymmetry for companies with **higher institutional ownership** (informed investors)?

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Background

Builds upon two streams of literature

- **Voluntary disclosures (Clarkson et al. 2008; Shane and Spicer, 1983)**
- **Impact of institutional ownership (Schwartz,1991; Copeland & Galai, 1983; Cho et al., 2012)**

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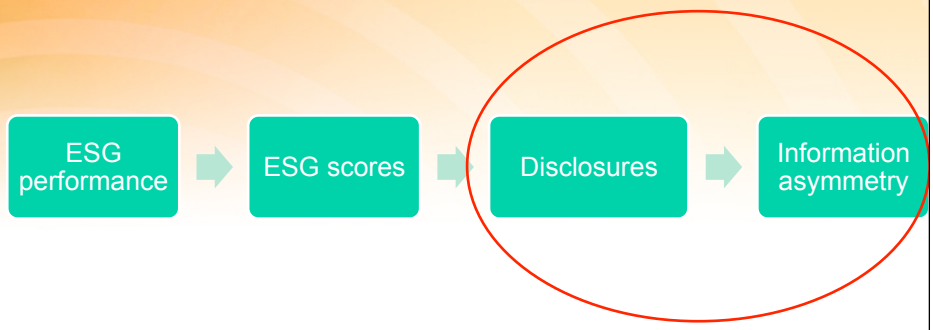
Literature review

Link between ESG performance, rating, disclosures and information asymmetry



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Part 1: Literature review

Disconnect between ESG performance and ESG disclosures

- **Contention**:

1) Mixed results- empirical studies focusing on the association between environmental disclosures and corporate environmental performance (Hughes et al., 2001; Patten, 2002)

2) ESG ratings may not necessarily reflect on the true ESG performance of companies (a range of factors for example scorers may not be familiar with the different industry sectors, bias in ratings)

3) Kulkarni (2000) contends that information asymmetry exist because of the 'desire of companies to act opportunistically'

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Problem with KLD data

- A measure of both performance and disclosure - is it performance or disclosure that is driving information asymmetry?
- KLD scores x % institutional ownership – has no real meaning
- Actual performance data? High levels of subjectivity and difficult to make comparison.
- Mainstream literature use quantitative environmental performance such as Clarkson et al. (2008); Al-Tuwaijri et al. (2004)

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Incremental contribution

- Focus on impact of ESG disclosures on information asymmetry as opposed to ESG performance. Fills the gap in the literature.
- Focus on 'degree of informedness' of institutional investors on information asymmetry
- Use of more meaningful data set with reduced subjectivity/ contention

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Hypothesis development

- Because of the possibility of disconnect between ESG performance and the level of disclosures, we are motivated to improve on prior studies by using a more accurate proxy of disclosures and investigate this link with information asymmetry

- **H1: There is a negative association between ESG disclosures and market information asymmetry**

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Part 2: Literature review

The role of information intermediaries

- Healy and Palepu (2001) discuss the role of disclosure in capital markets *'information impede the efficient allocation of resources in a capital market economy. Disclosure and the institutions created to facilitate credible disclosure between managers and investors play an important role in mitigating these problems'*
- Healy et al. (1999) find that there is a positive relationship between disclosure of companies and institutional ownership.
- Bushee and Noe (2000) find that the presence of institutional investors create stock price volatility.
- Cho et al. (2012) supports the information efficiency theory - institutional investors' superior information allow them to participate in the markets and their trading assists with dissemination of information to the market.

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Hypothesis development

- Based on 'information efficiency' theory, it is hypothesised that:
- **H2: There is a negative relationship between the interaction term between ESG disclosures and percentage of informed investors with market information asymmetry**

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Data and methods

Empirical model for H1:

$$SPREAD_t = \beta_1 ESG_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 STDEV_t + \beta_5 INV_t + \varepsilon$$

Variable	Description
SPREAD	Annual average ratio of the daily closing bid-ask spread to the closing price
ESG	Bloomberg's annual ESG disclosure scores for year t
SIZE	Log of total assets for year t
LEV	Debt to equity ratio for year t
STDEV	Average standard deviation of daily stock price returns for year t
INV	Average inverse of daily closing stock price for year t
OWN	Percentage of institutional investor ownership at the end of year t

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Data and methods

- Bloomberg's database covers approximately 20,000 companies across 73 countries. Because of the disappointingly low response of companies to its ESG performance survey, Bloomberg decided to capture ESG disclosure of companies (Suzuki and Levy, 2010)
- One of the most accessible databases

3,241 NYSE companies

↓

683 NYSE companies

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Results

H1: Correlation analysis with SPREAD

Variables	2007	2008	2009	2010	2011
ESG	**-0.244**	**-0.150**	**-0.133**	-0.036	-0.005
SIZE	**-0.333**	**-0.142**	**-0.147**	**-0.093**	-0.033
LEV	**0.053**	0.020	**0.120**	0.030	**0.118**
INV	**0.366**	**0.450**	**0.440**	**0.338**	**0.546**
STDEV	**0.338**	**0.273**	**0.380**	**0.296**	**0.197**

Bolded coefficients are statistically significant p-value<0.1

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Results

H2: Pooled regression 2007-2011

- Test the differential role of the investor informedness level using interaction term of ESG disclosure and institutional ownership (ESG x OWN)

$$SPREAD = \beta_1 ESG + \beta_2 SIZE + \beta_3 LEV + \beta_4 STDEV + \beta_5 INV + \beta_6 OWN + \beta_7 ESG * OWN + \varepsilon$$

Variable	Un-standardised coefficients		Standardised coefficients	t-test	p-value
		Std. error			
(Constant)	.003	.000		17.426	.000
ESG	-1.526E-05	.000	-.183	-6.001	.000
SIZE	.000	.000	-.118	-7.164	.000
LEV	1.449E-09	.000	.003	.200	.841
OWN	-.001	.000	-.344	-9.606	.000
INV	.004	.000	.285	19.953	.000
STDEV	.017	.001	.221	12.988	.000
ESG*OWN	1.884E-05	.000	.197	5.379	.000

Adjusted r^2= 0.379

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Robustness tests

- Check for multicollinearity→ predictors themselves may be highly correlated with each other resulting in biased coefficients
- Use the variance inflation factor (VIF)

Variables	VIF
ESG	1.602
SIZE	1.485
LEV	1.003
OWN	1.154
INV	1.120
STDEV	1.589

- Durbin-Watson test to check for auto-correlation ~2

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Robustness tests

- Extends on prior studies by examining if a lag effect exists between ESG disclosures and market information asymmetry.

Parameter	1-year lag (ESG_{2010})	2-year lag (ESG_{2009})	3-year lag (ESG_{2008})	4-year lag (ESG_{2007})
Standardised β_1 coefficient	-0.103	-0.102	-0.085	-0.085
p-value	0.009	0.009	0.034	0.037
t-test statistic	-2.614	-2.607	-2.121	-2.091

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Discussions/Implications

- H1- There is a significantly negative relationship between ESG disclosures and market information asymmetry. Motivation for governments, auditors and policymakers to start regulating both quality and quantity of ESG information disclosed by companies.
- H2- There is a negative relationship between the percentage of informed investors and market information asymmetry. This is consistent with the information efficiency theory that presence of institutional investors help reduce overall asymmetry. However, a higher level of institutional ownership may attenuate this effect (based on interaction term analysis). Institutional investors may be exploiting private ESG information to their advantage.

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Conclusions

Future research direction

- This study provides an insight into the impact of ESG disclosures
- Need to examine what motivates voluntary ESG disclosures (Healy and Palepu, 2001)
- What type of ESG information is considered material to institutional owners
- Move towards 'integrated reporting <IR>'→ combining both financial and non-financial information. Future research will look into the effects of issuing IR on bid-ask spread

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Thank you and Questions?

yung.siew@unsw.edu.au and m.balatbat@unsw.edu.au

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Appendix (Control for effects of industry sectors)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.003	.000		14.045	.000	.002	.003					
	STDEV	3.002E-5	.000	.209	6.195	.000	.000	.000	.095	.233	.197	.892	1.121
	SIZE	.000	.000	-.378	-9.942	.000	-.001	.000	-.333	-.359	-.317	.703	1.423
	LEVERAGE	3.401E-8	.000	.016	.480	.631	.000	.000	.053	.019	.015	.884	1.131
	OWNER	.000	.000	-.122	-3.751	.000	.000	.000	-.076	-.144	-.119	.960	1.042
	INVPRICE	.010	.001	.352	9.775	.000	.008	.012	.366	.354	.311	.781	1.280
	VAR00001	.000	.000	-.119	-2.954	.003	.000	.000	-.051	-.113	-.094	.628	1.592
	VAR00002	.000	.000	-.116	-3.165	.002	-.001	.000	-.116	-.121	-.101	.758	1.319
	VAR00003	-2.444E-5	.000	-.007	-.190	.850	.000	.000	.056	-.007	-.006	.806	1.241
	VAR00004	.000	.000	.130	3.171	.002	.000	.001	.040	.122	.101	.601	1.664
	VAR00006	.000	.000	-.148	-3.681	.000	-.001	.000	-.085	-.141	-.117	.630	1.587
	VAR00007	.000	.000	-.073	-1.909	.057	.000	.000	.040	-.074	-.061	.698	1.432
	VAR00008	9.819E-5	.000	.028	.767	.443	.000	.000	.100	.030	.024	.781	1.281
	VAR00009	7.538E-5	.000	.019	.469	.639	.000	.000	-.031	.018	.015	.842	1.187

a. Dependent Variable: SPREAD

Var 1= Industrials Var 2=Healthcare
Var 3= Technology Var 4=Financial services
Var 6= Consumer Var 7= Basic Materials
Var 8= Real estate Var 9=Communication

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Results

H2: Pooled regression 2007-2011

Variable	Un-standardised coefficients		Standardised coefficients	t-test	p-value
		Std. error			
(Constant)	0.002	.000		16.196	.000
ESG	-3.928E-06	.000	-.047	-2.746	.006
SIZE	0.000	.000	-.116	-7.005	.000
LEV	2.176E-09	.000	.004	.299	.765
OWN	-0.001	.000	-.168	-11.547	.000
INV	.005	.000	.289	20.129	.000
STDEV	.018	.001	.225	13.195	.000

Adjusted r^2= 0.373

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Part 3: Literature review

Lead-lag effect

- The study of the pace of information diffusion into the markets has been of paramount concern
- Hou (2007) focuses on the lead-lag effect arising from companies reacting more slowly to information than others
- Chan (1992) investigates the lead-lag effect between cash market and stock index futures market
- Siew et al. (2011) attempted to study the lag effect of ESG performance on financials but there is no conclusive evidence to justify that the lag effect exists

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Data and methods

Empirical model for H2:

$$SPREAD_t = \beta_1 ESG_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 STDEV_t + \beta_5 INV_t + \beta_6 OWN_t + \varepsilon$$

Empirical model for H3:

$$SPREAD_t = \beta_1 ESG_{t-1} + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 STDEV_t + \beta_5 INV_t + \beta_6 OWN_t + \varepsilon$$

All variable are defined in Table, except that the year for ESG is appended (1-year, 2-year-,3-year and 4-year lag)

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