Bhutan Conference on Green Bond Issuance

Session 4: Green Bond Market Development and Issuance

Topic: From Brand to Green: The Role of ESG and Brand on Green Bond Issuance

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Story

- We explore the underlying corporate strategic milestone of achieving/verifying their green credentials through issuing green bonds.
- In order for a firm to maintain competitiveness, brand recognition is needed to enhance product image to extract proper financial return.
- With brand recognition achieved, improving transparency and CSR activities are of increased importance due to both compliance and risk management.

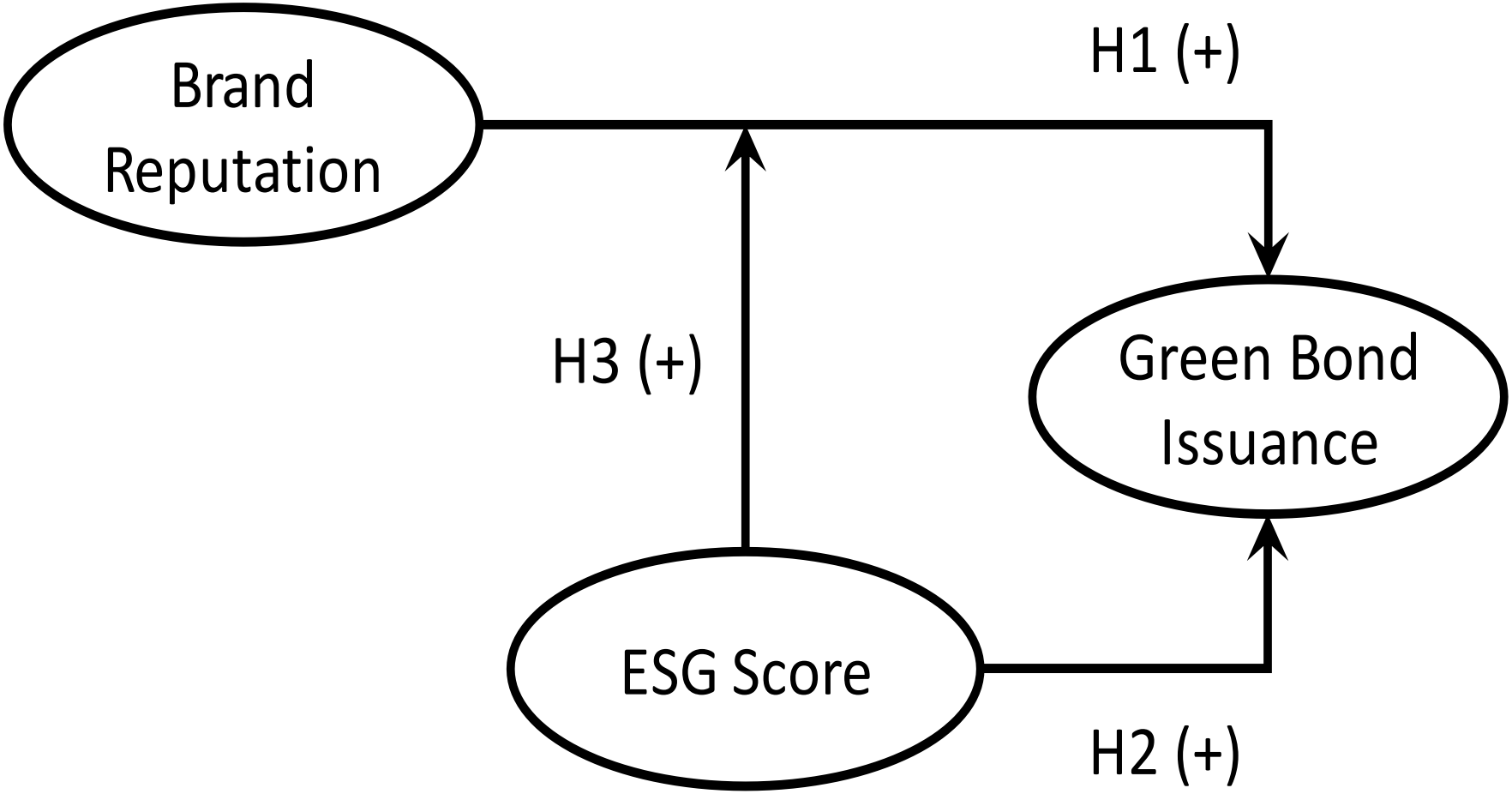
- Issuing a green bond is one way to create a more socially responsible/green capital structure. As issuing green bonds to finance projects involves additional compliance cost, thus, choosing green bond financing can be a unique path **to signal an environmental focus** of the overall CSR effort of the organization.

Research Structure & Hypotheses

- First, we argue that brand reputation (BR) alone is not sufficient to help firms to achieve CSR performance in terms of green bond issuance.
- Second, we posit that CSR strategy in the form of ESG (Environmental, Social, and Governance) is a positive predictor of the ability of the firms to issue green bonds.
- Finally, we hypothesize that ESG would positively moderate (enhance) the positive impact of BR on green bond issuance.
- **H1: Brand reputation has a positive effect on green bond issuance.**
- **H2: ESG has a positive effect on green bond issuance.**
- **H3: ESG positively moderates the positive effect of brand reputation on green bond issuance, such that:**

Brand reputation has a stronger effect on green bond issuance for firms with higher ESG scores.

Conceptual Model



Findings

- Based on firm level financial characteristics, we propose that branded firms with strong CSR performance tend to issue green bonds more.
- The reason: strong brand recognition magnifies the reputation benefits to a more socially responsible capital structure. When the brand is strong enough, the reputational benefits counterbalance the additional compliance and monitoring costs of issuing green bond.
- Our regression results support the conclusion that green bond issuance is pursued by branded companies with a high ESG recognition.

Implications to Bhutan

- To have a good brand for an institution or country will lead to green bond issuance.
- Therefore if Bhutan will issue a green bond, the world will recognize Bhutan with a good 'brand' (reputation) as a country

~Thank You~

References

1. Bhandari, A., & Javakhadze, D., 2017, Corporate social responsibility and capital allocation efficiency. *Journal of Corporate Finance*, 43, 354-377.
2. "Bond and Climate Change: The state of the market 2016", 2016, Climate Bonds Initiative and HSBC.
3. Carolyn M. DuPont, James N. Levitt & Linda J. Bilmes, January 2016, "Green Bonds and Land Conservation: The Evolution of a New Financing Tool", Harvard Kennedy School.
4. "Credit Research – The Cost of Being Green", 18 September 2015, BARCLAYS.
5. Di Giuli, A., & Kostovetsky, L., 2014, Are red or blue companies more likely to go green? Politics and corporate social responsibility. Journal of Financial Economics, 111, 158-180.
6. Ferrell, A., Liang, H., & Renneboog, L., 2016, Socially responsible firms. Journal of Financial Economics, 122(3), 585-606.
7. "GFOA White Paper: Green Bonds", 8 October 2015, Government Finance Officers Association.
8. "Green bond policy perspective", December 2015, OECD and Bloomberg Philanthropies.
9. Mihkel Kase, April 2015, "The Fix: Green Bonds - are they colouring investors' judgements?", Schroders. URL (Accessed on 17 June 2016): http://www.schroders.com/en/SysGlobalAssets/schroders/sites/au/insights/20150429-the-fix_green-bonds.pdf
10. "Roadmap for China: Scaling up GREEN BOND market Issuance", 2016, Climate Bonds Initiative and International Institute for Sustainable Development.
11. "WBCSD Leadership Program 2015: Green Bonds 002˚C A guide to scale up climate finance", 2015, WBCSD Education.

Appendix 1: Equations & Hypotheses

$$Pr.(Green\ Bond_{it} = 1) = f\begin{pmatrix}\beta_0 + \beta_1 BRAND_{it} + \beta_2 ESG_{it} + \\ \beta_3(BRAND_{it} * ESG_{it}) + \beta_k X_{kit} + \epsilon_{it}\end{pmatrix} \quad \textbf{(1)}$$

- H1: $\beta_1 > 0$, which means that firms with a global brand reputation are likely to be more willing than other firms to pursue business decisions that may offer value in enhancing, or at least sustaining, its public image.

- H2: $\beta_2 > 0$, which means that ESG has a positive effect on green bond issuance because higher ESG scores reflect (i) greater public exposure in relation to environmental management by the firm (a stakeholder pressure effect) and/or (ii) a propensity or disposition by the firm towards strong environmental management strategies.

- H3: $\beta_3 > 0$, which argues that the incentives to issue green bonds are further reinforced when both the ESG and BRAND effects co-exist (i.e., ESG > 0 and BRAND = 1).

Appendix 2: Data Construction

Data processing step	Sample information
Phase 1: Bond sample construction	
Generate a list of green bonds based on the Bloomberg database list of green bonds, cross verified against the Climate Bonds Initiative (CBI) certified bond list	Circa. **1000 green bonds** up until the 2016 sample cutoff date.
Of which we then isolate the corporate issuances. Most green bonds up until the end of our sample period were by non-corporate issuers, thereby eliminating many observations from the sample.	Giving a sample of **338 corporate green bonds** in total, issued across a sample of **108 unique firms** from across the globe
Create a matched sample of black bonds from the universe of international corporate bonds issuances over the sample period, taken from Datastream.	Circa 250,000 corporate black bonds identified over the sample period
Implement a 3:1 propensity score based matching of black bonds against the green bonds on a range of bond-level characteristics including coupon, term, whether bond type is perpetual or fixed, currency of issue, industry of issue, and country of issuer. *The matching process is constrained to identify black bonds only from companies that have no history of issuing a green bond, such that we do not compare green and black bonds from the same company.*	1,358 corporate bond issuances are identified, from 651 unique firms. *Note:* *GB mean coupon rate = 3.221* *BB mean coupon rate = 3.316* *GB ST.Dev. of coupon rate = 2.288* *BB ST.Dev. of coupon rate = 2.647* *BB = 'black bond'*

Data processing step	Sample information
Phase 2: Construction of firm level indicators	
Obtain a range of firm level accounting and corporate governance variables. Data are hand collected from the Bloomberg database, availability of consistently measured international data, Bloomberg's proprietary disclosure measures, and corporate governance variables are the main factors reducing sample size	From the 651 unique firms we potentially have 1,953 firm-year observations available for estimation.
Global brand ranking classifications are identified using information from http://interbrand.com. This website provides access to comprehensive global and regional brand ranking data. We hand collect all global and country specific ranking reports over the sample period, then carefully match brand names against corporate names. *(Where necessary, brand information was allocated to the parent company, if the brand belongs to a subsidiary of the parent company)*	138 of the firms in the sample are identified as having a strong global brand, of which **31** are green bond issuers *(i.e. roughly 22.5% of firms with **global brand recognition issued a green bond** in our sample)*
	After (casewise) deletions, we arrive at a pooled cross section of **1,934** firm-year observations for estimation of our most general model specifications.

Appendix 3: Descriptive Statistics

Variable	N	Mean	St. Dev.	Min	Max	Freq=0	Freq
Panel A: Green bond issuers							
BRAND	315	0.15	0.36	0	1	267	46
ESG	315	20.05	24.12	0	78.07	-	-
BRAND_b	315	0.19	0.40	0	1	254	61
log(MCAP)	315	5.03	5.33	0	16.17	-	-
DvdYLD	315	1.61	2.43	0	13.79	-	-
CAGR	315	2.47	13.11	-100.00	98.31	-	-
OPM	315	24.82	35.93	-162.10	361.66	-	-
DE	315	218.37	1,012.44	-118.42	16,584.80	-	-
WACCD	315	1.66	3.41	0	25.15	-	-
PE	315	10.06	55.57	0	962.50	-	-
IDOB	315	29.30	35.69	0	100.00	-	-
WOB	315	11.87	16.40	0	75.00	-	-
CEOTENURE	315	1.69	3.71	0	26.00	-	-
US	315	0.15	0.36	0	1	270	45
EUROPE	315	0.48	0.50	0	1	165	150
Panel B: Black bond issuers							
BRAND	1,619	0.11	0.32	0	1	1438	181
ESG	1,619	17.30	21.54	0	80.70	-	-
BRAND_b	1,619	0.10	0.30	0	1	1461	158
log(MCAP)	1,619	5.37	5.23	-4.61	16.95	-	-
DvdYLD	1,619	1.51	2.95	0	34.01	-	-
CAGR	1,619	3.41	13.11	-53.17	228.01	-	-
OPM	1,619	5.60	338.35	-13,462.78	300.55	-	-
DE	1,619	166.95	533.12	-1,324.04	12,380.92	-	-
WACCD	1,619	1.42	2.05	-0.16	25.94	-	-
PE	1,619	27.61	560.95	0	22,476.19	-	-
IDOB	1,619	30.98	37.59	0	100.00	-	-
WOB	1,619	9.70	13.48	0	53.85	-	-
CEOTENURE	1,619	2.53	4.86	0	40.00	-	-
US	1,619	0.38	0.49	0	1	1006	613
EUROPE	1,619	0.38	0.48	0	1	1010	609

Appendix 4: Estimation Results H1/H2

	Dependent Variable: GREEN_BOND (=1)						
	(1) – (4) Original brand measure				**(5)– (7) Alternative brand measure**		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	No Brand	*No ESG*	*Full*	*Stepwise*	*No ESG*	*Full*	*Stepwise*
ESG	0.020***		0.015**	0.014**		0.016**	0.016**
	(0.007)		(0.007)	(0.007)		(0.007)	(0.007)
BRAND		0.256	-0.533	-0.442			
		(0.208)	(0.412)	(0.403)			
BRAND_b					0.640***	0.242	0.549***
					(0.191)	(0.343)	(0.190)
log(MCAP)	-0.068*	-0.057	-0.082**	-0.088**	-0.059	-0.079**	-0.084**
	(0.039)	(0.038)	(0.040)	(0.039)	(0.038)	(0.040)	(0.039)
BRAND*ESG			0.019**	0.017*			
			(0.009)	(0.009)			
BRAND_b*ESG						0.010	
						(0.008)	
Constant	-2.149***	-1.481**	-1.811**	-1.219**	-1.704**	-2.151***	-1.444***
	(0.734)	(0.693)	(0.756)	(0.523)	(0.705)	(0.752)	(0.512)
Observations	1,934	1,934	1,934	1,934	1,934	1,934	1,934
Log Likelihood	-766.572	-770.110	-764.192	-766.756	-765.393	-761.353	-764.873
Akaike Inf. Crit.	1,583.143	1,590.219	1,582.385	1,565.512	1,580.786	1,576.706	1,559.746
Chi-square test	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Pseudo R^2	0.108	0.104	0.111	0.107	0.109	0.114	0.110

Appendix 5: Estimation Results H3

	Dependent variable:							
	GREEN_BOND (=1)							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ESG=0	*ESG>0*	*0<ESG<τ*	*τ <ESG<100*	*ESG=0*	*ESG>0*	*0<ESG<τ*	*τ <ESG<100*
BRAND	-0.352	0.495*	0.343	0.738**				
	(0.444)	(0.264)	(0.514)	(0.367)				
BRAND_b					0.681*	0.793***	-0.007	1.227***
					(0.370)	(0.248)	(0.436)	(0.345)
Observations	1,048	886	446	440	1,048	886	446	440
Log Likelihood	-425.015	-318.578	-141.755	-158.225	-423.743	-315.220	-141.974	-153.728
Akaike Inf. Crit.	900.029	687.156	333.510	364.449	897.487	680.439	333.948	355.456
Chi-square test	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Pseudo R^2	0.079	0.200	0.242	0.247	0.081	0.208	0.241	0.268