BONDHOLDERS' RETURNS AND STAKEHOLDER INTERESTS: WHEN ARE THEY ALIGNED?

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MOTIVATION

- Corporate bond markets ($1.49T) surpassed equity markets ($257B)
  - Yet, majority of research focuses on ESG (CSR) and shareholder returns
- Bondholders are more risk-averse than shareholders
  - Since CSR performance generally relates to firms' risk, in theory, bondholder would care about firms' CSR performance
  - Yet, most studies that examine fixed income SRI (in mutual funds setting) and CSR displayed mixed results.
- Why?

3 OUR STUDY

- Examines the relationship between bondholders' interests (returns) and stakeholders' interests from the stakeholder theory and agency cost of debt
- Based on stakeholder resource-based theory (Barney, 2018):
    - Bondholders = ultimate fixed claimants vs. shareholders = ultimate residual claimants
    - Bondholders care about ESG when it is attributed to risks
- Examines bondholders' returns in a hypothetical portfolio setting:
    - flexibility to test a number of strategies and scenarios without the confounding effects of the fund managers' skills and funds' SRI screening criteria (Borgers et al., 2015; El Ghoul & Karoui, 2017; Schroeder, 2007).
- Utilizes bond yields traded in secondary markets (not mutual funds)
- We define "stakeholder" as non-bondholders stakeholders (e.g., shareholders, customers, employees, etc.)

4 MAJOR FINDINGS

- Bondholders abnormal returns are lower for firms with higher ESG risk (CSR concerns or controversies) and vice versa (aligned with stakeholder)
- Bondholders abnormal returns are lower for firms with greater risk-shifting risk from ESG investments (misaligned with stakeholder interests)
- The alignment and misalignment of bondholders and stakeholder interests:
  - Are weaker for bonds with longer maturity (bondholders less averse to risks)
  - Are stronger after negative shock in credit market (more averse to risks)
- Bondholders’ interests differ from shareholders’ interests in ESG performance

5 LITERATURE

- SRI in equity exhibits superior abnormal returns (Brammer et al., 2006; Galema et al., 2008; Kempf & Osthoff, 2007; Statman & Glushkov, 2009)
- Derwall & Koedijk (2009): investigate performance of fifteen US SRI fixed income funds & 7 US SRI balanced funds (1.3% superior vs. conventional)
- Henke (2016): 103 US and European SRI fixed income funds (0.5% superior)
- Leite & Cortez (2018): SRI bonds in France & Germany most superior returns from government (not corporate) bonds
- Menz (2010) finds that bond valuation is not related to CSR performance
- Pereira et al. (2019): socially screened bonds in Eurozone and find returns for high ESG-rated bonds are not significantly different from low ESG-rated bonds

Why these studies displayed mixed results?

THEORIES AND HYPOTHESES (PART 1)

- Barney (2018): **"fixed claimants, because they do not share in any profits generated by the firm, will generally be very risk averse with regard to the strategies they would like a firm to pursue. In particular, they will typically prefer that firms pursue strategies that reduce the probability of bankruptcy. Such strategies increase the probability that a firm will be able to pay off its fixed claimants" (pg.3319)**
- Corporate social irresponsibility is positively associated with higher financial risk (Karpoff et al., 2017; Kölbel et al., 2017; Lange & Washburn, 2012).
- Bondholders, as fixed claimants with fixed payoffs are quite averse to risk, they perceive firms with CSR concerns or controversies as greater financial risk and therefore they tend to be less inclined to invest in bonds that are issued by firms with all CSR concerns or all controversies. (In this case, bondholders and stakeholder interests are aligned)

Hypothesis 1 (H1): Bondholders' abnormal returns are lower (higher) for firms that (do not) engage in socially irresponsible actions.

7 THEORIES AND HYPOTHESES (PART 2)

- Shareholders (residual claimants) have greater incentives for firms to take on risky project opportunities that potentially can produce greater profits by replacing old intangible assets with newer ones but simultaneously increasing the risk of bankruptcy. Firms which take on riskier projects shift (i.e. distribute) risk from shareholders to the bondholders, known as risk-shifting (Jensen & Meckling, 1976; Myers, 1977). Bondholders create agency cost of debt.
- Payoffs (benefits) of CSR investments carry a great deal of uncertainties and are often realized over a long period of time (Barnett, 2007; Flammer & Kacperczyk, 2016; Porter & Kramer, 2006; Shiu & Yang, 2017).
- Greater CSR investments (CSR strengths) create greater risk-shifting opportunity.
- Bondholders as fixed claimants are averse to risk-shifting (In this case, bondholders and stakeholder interests are misaligned)

Hypothesis 2 (H2): Bondholders' abnormal returns are (higher) lower for firms that (do not) engage in CSR investments.

8 THEORIES AND HYPOTHESES (PART 3)

- Bondholders who hold longer maturity bonds are not only concerned with the short-term default risks but also about the long-term longevity (survivability) of the company (e.g., console bonds)
- Bondholders who hold bonds with longer maturities tend to have greater risk tolerance.
- Bonds (firms who issued bonds) with longer maturities have more steady cash flows, lower information asymmetry and more importantly it has lower agency cost of debt (Barclay & Smith, 1995; Custodio et al., 2013; Huang & Zhang, 2019; Huang et al., 2019; Myers, 1977).

Hypothesis 3a (H3a): The relationship between bondholders' abnormal returns and firms' engagements in irresponsible actions is weaker for bonds with longer maturities.

Hypothesis 3b (H3b): The relationship between bondholders' abnormal returns and firms' CSR investments is weaker for bonds with longer maturities.

9 THEORIES AND HYPOTHESES (PART 4)

- When bond default risk increases, bondholders' risk aversion increases (Kim et al., 1993; Merton, 1974).
- The 2007 financial crisis has brought a significant increase in bond default risks (Dick-Nielsen et al., 2012; Flammer & Ioannou, 2020; Flannery & Bliss, 2019; Friewald et al., 2012).
- We argue that the bondholders' risk aversion is heightened after the exogenous negative shock of the 2007 financial crisis.
- Therefore, the alignment and misalignment between bondholders' interests and stakeholder interest are greater after the negative shock of 2007 crisis

Hypothesis 4a (H4a): The relationship between bondholders' abnormal returns and firms' engagements in irresponsible actions is stronger after an exogenous negative shock in the credit markets.

Hypothesis 4b (H4b): The relationship between bondholders' abnormal returns firms' CSR investments is stronger after an exogenous negative shock in the credit markets.

DATA AND METHODOLOGY

- We start with 5,000 US companies from the MSCI World index and match with about 3,000 firms in the MSCI ESG (KLD) Stats. *Exclude financial and real estate (high bonds issuance).*
- Final sample 5,240 bonds issued by 425 U.S. firms from Refinitiv's Datastream 2001 to 2014
- CSR performance: all (no) CSR strengths, all (no) CSR concerns, and all (no) CSR controversies
- VW portfolios based on CSR performance at (t-1) are created and rebalanced annually
- Nine-factor model plus nine ICB industry dummy variables (Industry Dummies) used to measure for the bond abnormal returns performance evaluation:

$$R_{pt}-R_{ft} = \alpha_i + \beta_{1i}\,(Market_{mt}-R_{ft}) + \beta_{2i}Duration_t + \beta_{3i}Default_t + \beta_{4i}Option_t + \beta_{5i}Equity_t + \beta_{6i}Global_t + \beta_{7i}€_t + \beta_{8i}£_t + \beta_{9i}¥_t + \Sigma\,\beta_i\ Industry\ Dummies + \varepsilon_{it}$$

Orthogonalization based on Elton et al. (1993) and Hoepner et al. (2011)

DESCRIPTIVE STATISTICS

Portfolios	Mean return	Std. Dev	Sharpe Ratio	Semi Std. Dev	Sortino Ratio
CSR Concerns	0.47%	1.32%	0.26	0.98%	0.35
No CSR Concerns	0.54%	1.38%	0.29	1.03%	0.40
Controversies	0.47%	1.46%	0.23	1.09%	0.31
No Controversies	0.48%	1.29%	0.28	0.96%	0.37
All CSR Strengths	0.47%	1.32%	0.26	0.98%	0.34
No CSR Strengths	0.55%	1.36%	0.31	1.01%	0.41
No Strengths, No Concerns & No Controversies	0.56%	1.4%	0.35	1.02%	0.42

ICB industry classification	# Firms breakdown	Bond breakdown
Oil & Gas	9.12%	9.03%
Basic Materials	9.31%	8.13%
Industrials	17.32%	17.60%
Consumer Goods	16.39%	21.08%
Health Care	8.94%	5.92%
Consumer Services	18.44%	20.87%
Telecommunications	2.42%	2.45%
Utilities	11.55%	10.20%
Technology	6.52%	4.72%

BASELINE RESULTS

Portfolios	CSR Concerns	No CSR Concerns	CSR Controversies	No CSR Controversies	All CSR Strengths	No CSR Strengths	No Strengths, No Concerns & No Contro-versies
Alpha	**-0.78%**	**2.93%**	**-2.57%**	**0.90%**	**-0.09%**	**1.89%**	**2.52%**
	[0.0004]* **	**[0.0016]*** **	**[0.0265]** **	**[0.0046]*** **	**[0.7508]**	**[0.0939]***	**[0.0011]*** **
Market	0.98	1.08	1.06	0.98	0.99	1.06	1.04
	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]	[0.0000]
Duration	0.02	-0.07	0.02	-0.01	0.01	-0.06	-0.05
	[0.0010]	[0.0003]	[0.2663]	[0.0583]	[0.0006]	[0.0000]	[0.0094]
Default	0.00	0.01	0.02	0.00	0.00	0.01	0.02
	[0.7363]	[0.7381]	[0.3706]	[0.6844]	[0.7064]	[0.7482]	[0.5644]
Option	0.03	-0.06	0.06	-0.03	0.04	-0.11	-0.12
	[0.1507]	[0.2752]	[0.2967]	[0.1083]	[0.0167]	[0.0619]	[0.0729]
Equity	-0.01	0.02	0.00	0.00	0.00	0.02	0.02
	[0.0180]	[0.0275]	[0.7584]	[0.6877]	[0.2828]	[0.1221]	[0.0705]
Global	0.00	0.02	-0.01	0.00	0.00	0.05	0.01
	[0.8707]	[0.8062]	[0.8395]	[0.9725]	[0.8741]	[0.4285]	[0.9096]
€	0.00	-0.03	0.00	0.00	0.01	-0.04	-0.01
	[0.5138]	[0.2938]	[0.9177]	[0.6819]	[0.2369]	[0.1167]	[0.6271]
£	0.00	0.02	0.00	0.00	0.00	0.01	-0.01
	[0.7742]	[0.5012]	[0.7299]	[0.6422]	[0.7452]	[0.7685]	[0.7522]
¥	0.00	-0.01	0.00	0.00	0.00	-0.02	0.00
	[0.6326]	[0.5064]	[0.7670]	[0.8263]	[0.4761]	[0.2010]	[0.7959]
Adj R^2	99.60%	95.71%	96.21%	99.58%	99.55%	94.49%	93.79%

BONDHOLDERS RETURNS ACROSS MATURITIES

Maturity	Portfolios	Alpha	Adj R^2	Maturity	Alpha	Adj R^2	Maturity	Alpha	Adj R^2	Maturity	Alpha	Adj R^2
0-1y	CSR Concerns	-0.43%	96.92%	1-5y	-0.18%	98.26%	5-10y	-0.22%	99.53%	10+y	-0.09%	98.32%
		[0.0004]***			[0.0473]**			[0.0222]**			[0.7845]	
0-1y	No CSR Concerns	2.62%	88.18%	1-5y	0.69%	88.12%	5-10y	1.01%	91.69%	10+y	-0.22%	82.90%
		[0.0001]***			[0.0733]*			[0.0489]**			[0.8366]	
0-1y	CSR Controversies	-0.30%	99.18%	1-5y	-0.56%	88.18%	5-10y	-0.91%	95.16%	10+y	-0.79%	94.79%
		[0.0000]***			[0.0745]*			[0.0063]***			[0.1744]	
0-1y	No CSR Controversies	1.56%	26.26%	1-5y	0.14%	98.86%	5-10y	0.34%	99.39%	10+y	0.28%	99.21%
		[0.0000]***			[0.0476]**			[0.0033]***			[0.2050]	
0-1y	All CSR Strengths	-0.33%	97.41%	1-5y	-0.18%	99.04%	5-10y	-0.19%	99.49%	10+y	-0.20%	99.02%
		[0.0002]***			[0.0464]**			[0.0763]*			[0.4079]	
0-1y	No CSR Strengths	2.62%	86.62%	1-5y	1.02%	86.08%	5-10y	0.99%	93.30%	10+y	-0.14%	87.05%
		[0.0003]***			[0.0258]**			[0.0216]**			[0.8775]	
0-1y	No Strengths, No Concerns & No Controversies	2.63% [[0.0007]***	71.20%	1-5y	0.87% [0.0643]*	86.54%	5-10y	2.16% [0.0018]***	86.78%	10+y	-0.49% [0.6848]	81.38%

PRE-POST 2007 FINANCIAL CRISIS

Pre-2007 (2001-2007)

Portfolios	Alpha	Adj R^2
CSR Concerns	-0.38% [0.2326]	98.84%
No CSR Concerns	0.74% [0.2814]	95.27%
CSR Controversies	-0.76% [0.2080]	95.72%
No CSR Controversies	0.28% [0.2164]	99.42%
All CSR Strengths	-0.06% [0.6854]	99.34%
No CSR Strengths	0.03% [0.9321]	97.79%
No Strengths, No Concerns & No Controversies	0.35% [0.4539]	96.70%

Post-2007 (2008-2014)

Portfolios	Alpha	Adj R^2
CSR Concerns	-0.20% [0.0088]***	99.83%
No CSR Concerns	1.12% [0.0162]**	94.45%
CSR Controversies	-0.83% [0.066]*	94.73%
No CSR Controversies	0.25% [0.0305]**	99.52%
All CSR Strengths	-0.26% [0.0133]**	99.73%
No CSR Strengths	1.54% [0.0102]**	91.28%
No Strengths, No Concerns & No Controversies	1.53% [0.0111]**	90.49%

15 CONCLUSIONS

- Bondholders and stakeholder interests are aligned with respect to greater ESG (CSR) risk (CSR concerns or controversies)
- Bondholders and stakeholder interests are misaligned with respect to ESG (CSR) investments (risk-shifting and agency cost of debt)
- Alignment and misalignment are weaker for longer maturities and are stronger after a negative shock in credit markets.
- Bondholders’ interests with respect to ESG (CSR) performance is different from the shareholders’ interests on ESG (CSR) performance
- Magnitudes of bondholders’ abnormal returns are economically significant (2%-3% per annum) that create opportunities for investment strategies based on ESG performance.