Does the Adoption of Mandatory Sustainability Reporting Reduce Firm Risk? Evidence from China

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Abstract

This study examines whether the adoption of mandatory sustainability reporting reduces firm risk. Using a PSM sample of A-share listed firms on the Shanghai Stock Exchange during the 2006 to 2011 period, the empirical evidence indicates that firms subject to the disclosure mandate experience a decrease in firm total risk and systematic risk. However, there is no evidence supporting that they experience a reduction in idiosyncratic risk. Additional analysis shows that the risk-decreasing effect is mainly driven by firms in energy-intensive industries. This research contributes to the sustainability accounting literature by providing empirical evidence to the debate on the disclosure-risk relationship. It also has important implications for key stakeholders, including investors who are economically tied to the firm value and regulators who are actively pursuing a sustainability reporting mandate.

Aim

- To investigate whether the adoption of mandatory sustainability reporting affects firm risk

Motivations of the study

- Currently regulators around the world are considering sustainability reporting mandate (e.g., CSRD).
- The prior literature on sustainability reporting mainly focus on voluntary context, and this may raise the concerns on self-selection bias.
- The mandatory sustainability reporting is under researched. It is unclear at this stage whether and how the sustainability reporting mandate affects the firms and capital market.
- Topic of disclosure-risk relation is highly debated in the field of Accounting and Finance.

Institutional background

- China uses a mixed approach of voluntary and mandatory requirements on sustainability reporting.
- In the end of 2008, Shanghai Stock Exchange (SHSE) published two guidelines, requiring three types of listed firms to disclose sustainability information. The affected firms include:
  - ➢ Firms listed on "SHSE Corporate Governance Index"
  - ➢ Firms having shares crossed listed on foreign stock exchanges
  - ➢ Firms in financial sector
- The development of sustainability reporting in China is still in early stage:
  - ➢ No universal reporting standards
  - ➢ The requirements imposed by SHSE is broad and unclear
  - ➢ No requirements on sustainability reporting assurance

Hypotheses

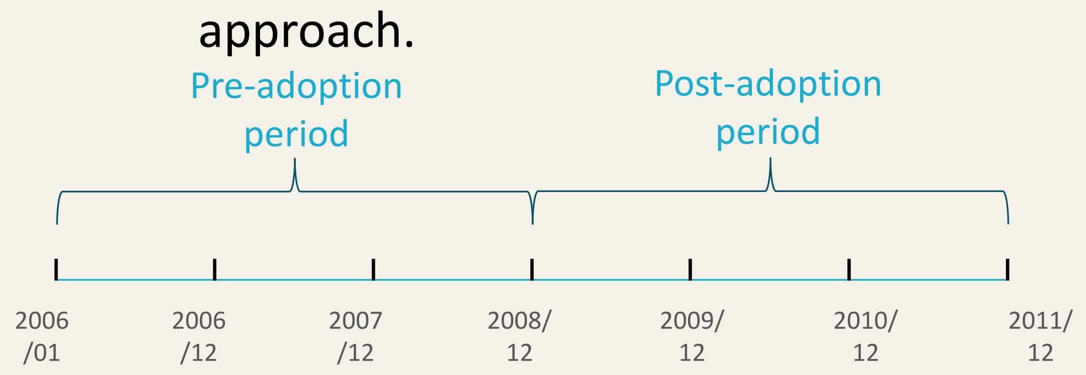
H1: Firms experience a decrease in systematic risk after the adoption of mandatory sustainability reporting.

H2: Firms experience a decrease in firm idiosyncratic risk after the adoption of mandatory sustainability reporting.

H3: Firms experience a decrease in total risk after the adoption of mandatory sustainability reporting.

Method

- Research method
  - ➢ Focusing on the disclosure shock introduced by Shanghai Stock Exchange(SHSE) in the end of 2008.
  - ➢ Using a Difference-in-differences approach.



Treatment firms: firms that are subject to mandatory sustainability reporting guideline.

Control firms: firms that are not subject to mandatory sustainability reporting guideline.

  - ➢ Using Propensity Score Matching (PSM) approach to make sure that the control firms are more comparable to the treatment firms.
- Data
  - ➢ All A-share listed firms on the SHSE from Refinitiv Datastream for the period from 2006 to 2011.

Model and Variables

- Baseline model:

$$Dependent\ variable = \beta_0 + \beta_1(POST) + \beta_2(TREATMENT) + \beta_3(POST * TREATMENT) + \beta_j\left(CONTROLS_j\right) + \varepsilon$$

Variables	Definitions
VOL	Stock volatility as proxied for firm total risk
BETA	CAPM beta as the measure of a firm's systematic risk
IDR	A firm's idiosyncratic risk measured by the standard deviation of residuals from CAPM model based on daily stock return
TREATMENT	A dummy variable equals to 1 if a firm is subject to SHSE Guidelines
POST	A dummy variable equals to 1 for post-adoption period
CONTROLS	Return on Assets; Firm size; the ratio of capital expenditure to total assets; annual growth; leverage

Results

This table presents the results for the main regression.

Panel A: regression results for PSM sample

Dependent Variables	VOL	BETA	IDR
	(1)	(2)	(3)
POST	0.1007 ***	0.2390 ***	-0.0062 ***
	(0.0040)	(0.0148)	(0.0006)
TREATMENT	-0.0029	0.0445 ***	-0.0006 **
	(0.0040)	(0.0061)	(0.0003)
POST x TREATMENT	**-0.0037 ****	**-0.0384 ****	**0.0001**
	(0.0028)	**(0.0266)**	**(0.0004)**
ROA	-0.0211	-0.0761	-0.0082 ***
	(0.0314)	(0.1447)	(0.0025)
SIZE	-0.0108 **	0.0621 ***	-0.0026 ***
	(0.0056)	(0.0186)	(0.0002)
CAPITE	-0.0334	-0.0669	-0.0018
	(0.0204)	(0.0519)	(0.0012)
SALESG	0.0096 ***	-0.0266 ***	0.0008 ***
	(0.0013)	(0.0081)	(0.0002)
LEV	0.0183 **	0.0400	0.0013 **
	(0.0105)	(0.0272)	(0.0007)
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Observation	2556	2556	2556
Adjusted R square (%)	42.48	18.31	62.12

Panel B: regression results for PSM sample excluding transition year (2006-2008, 2010, 2011)

Dependent Variables	VOL	BETA	IDR
	(1)	(2)	(3)
POST	0.1005 ***	0.2388 ***	-0.0062 ***
	(0.0044)	(0.0157)	(0.0006)
TREATMENT	-0.0031	0.0446 ***	-0.0005 **
	(0.0041)	(0.0065)	(0.0003)
POST x TREATMENT	**-0.0030 ****	**-0.0350 ****	**0.0001**
	(0.0029)	**(0.0282)**	**(0.0004)**
Control Variables	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes
Observation	2111	2111	2111
Adjusted R square (%)	42.72	20.79	65.66

Split sample into two subsamples:

- Firms in energy-intensive industries
- Firms not in energy-intensive industries

	energy-intensive firms	non-energy-intensive firms
	VOL	VOL
	(1)	(2)
POST	0.1262 ***	0.0935 ***
	(0.0091)	(0.0037)
TREATMENT	-0.0026	-0.0036
	(0.0092)	(0.0054)
POST x TREATMENT	**-0.0088 ****	**-0.0032**
	(0.0067)	(0.0036)
Firm-level controls	Yes	Yes
Year fixed effect	Yes	Yes
Industry fixed effect	Yes	Yes
Observation	650	1906
Adjusted R square %	48.48	46.42

Findings

- The firms subject to the reporting mandate experience a decrease in firm total risk and systematic risk after the mandate.
- No strong evidence supports that the firms subject to the reporting mandate experience a reduction in firm idiosyncratic risk.
- The risk-decreasing effect is more pronounced for firms in energy-intensive industries.

Contributions

- The paper contributes mainly to the literature on mandatory sustainability reporting and its economic consequences
  - ➢ Providing empirical evidence for disclosure-risk research
- This paper provides new insights for policymakers on the potential benefits and challenges for sustainability reporting mandate.

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