Corporate Social Responsibility and Stakeholder Value Maximization: Evidence from Mergers

Journal of Financial Economics, 2013

Xin Deng[1], Jun-koo Kang[2], and Buen Sin Low[2]

[1] School of Finance, Shanghai University of Finance and Economics
[2] Nanyang Business School, Nanyang Technological University

BCG Lab Seminar, 22 July 2014

Presented by Jaeyoon Kim

Introduction: Situations

Increasing Attention toward CSR in US firms' operation

- More than 300 US firms published annual CSR reports (CorporateRegister.com)
- $3.07 trillion is invested in SRI funds in 2009, up from $2.16 trillion in 2003 (2010 report from Social Investment Forum)

Growing academic researches which identify the relation btw CSR and firm performance

- Vance (1975), Cochran and Wood (1984), Aupperle, Carroll, and Hatfield (1985), Jensen (2001), Jawahar and McLaughlin (2001), Freeman, Wicks and Parmar (2004)

Introduction:
Research Question

- Does the acquirer's social performance work as an important determinant of merger performance & the probability of its completion?

Introduction:
Main Findings

Compared with low CSR acquirers, high CSR acquires realize…

① Higher merger announcement returns
② Larger increases in post-merger long-term operating performance
③ Higher likelihood of deal completion
④ Positive long-term stock returns

Introduction:
Why they focus on mergers?

- Mergers can have a significant effect on the wealth of shareholders.
  - Easiness to examine the impact of CSR on shareholder wealth
- Since mergers are largely unanticipated events, it can potentially mitigate the reverse causality problem
  - Overcoming present causality issue in previous studies on the relation btw CSR and firm value

〈 Literature Review 〉

Brief review on the theory of the firm

Firm, a nexus of contracts btw shareholders and other stakeholders

Stakeholders supply the firm with effort in exchange for claims outlined in those contracts

Explicit Contracts (Legally binding)
ex) Wage contracts, Product warranties

Implicit Contracts (Legally non-binding)
Ex) Promises of job security to employees, Continued service to customers

〈 Literature Review 〉

Stakeholder value maximization view *VS* Shareholder expense

Stakeholder value maximization view

- Since *high CSR firms* tend to have a strong reputation for *keeping implicit contracts*, stakeholders have strong incentives to contribute effort to the firm.
- CSR activities have a *positive* effect on shareholder wealth.

Shareholder expense view

- CSR help other stakeholders at the *expense* of shareholders
- CSR activities have a *negative* effect on shareholder wealth

〈 Hypothesis Development 〉

Stakeholder value maximization view

- Firm's reputation for fulfilling its *implicit contracts* with relevant stakeholders and maintaining *continued relations* with them are crucial to merger's success

  - *H1: High CSR acquires realize higher merger announcement returns*
  - *H2: High CSR acquires realize higher post-merger operating performance of the combined firms*
  - *H3: High CSR acquires realize higher likelihood of deal completion*

〈 Hypothesis Development 〉

Stakeholder value maximization view

- CSR activities are likely to increase firm's intangible assets not fully incorporated into the stock price around the merger announcement date.

  - *H4: High CSR acquires realize higher post-merger long-term stock returns*

〈 Data and Variables〉
Overviews

- 1556 completed US mergers
- 1992 – 2007
- Main Variables
  - Stock returns
  - CSR indicators
  - Control Variables
    - Acquirer specific characteristics
      - Size, Leverage, Free cash flow, Tobin's q, Previous market-adjusted return, corporate governance, managerial incentives
    - Deal specific characteristics
      - Relative deal size, hostile dummy, high tech dummy, diversifying merger dummy, public target dummy, private target dummy, all-cash deal dummy, stock deal dummy
    - Industry characteristics
      - Industry M&A frequency, Industry competitiveness

〈 Data and Variables〉

Main independent variables

- CSR indicator
  - Social performance score from KLD database
  - Regarding 7 dimensions: community, corporate governance, diversity, employee relations, environment, human rights, and product quality & safety

- Instrument variables for CSR indicator
  - Religion rank
    - The ratio of the number of religious adherents in the acquirer headquarters' state to the total population in that state
    - Degree of religiousness is positively correlated with attitudes toward CSR (Angelidis and Ibrahim, 2004)
  - Blue state dummy
    - Dummy that equals 1 if a firm's headquarters is located in blue (or Democratic) state
    - High CSR firms tend to be located in Democratic or blue state (Rubin, 2008)

〈 Data and Variables〉
Control Variables (1/3)

- Acquirer specific characteristics

Variables	Specifications
Size	
Free cash flow	
Leverage	
Tobin's q	• Controlling management quality
Previous market-adjusted returns	• Acquirer's BHAR using 200 days ending 11 days before merger announcement • Controlling management quality
G-Index	• Governance index conducted by Gompers, Ishii, and Metrick (2003) • Controlling corporate governance effect
Scaled wealth-performance sensitivity	• Dollar change in CEO wealth for a 1 % change in firm value • Controlling managerial incentives effect

〈 Data and Variables〉
Control Variables (2/3)

- Deal specific characteristics

Variables	Specifications
Relative deal size	• Deal value over market value of acquirer equity
Hostile dummy	• 1 if the deal is reported as hostile in SDC
High tech dummy	• 1 if the acquirer and target operate in both high-tech industries defined by Loughran and Ritter (2004)
Diversifying merger dummy	• 1 if the acquirer and the target have different first two-digit SIC codes
Public market dummy	• 1 if the firm acquires a publicly held target
Private market dummy	• 1 if the firm acquirers a privately held target
All-cash deal dummy	• 1 if the deal is purely cash-financed
Stock deal dummy	• 1 if the deal is at least partially financed by stocks

〈 Data and Variables〉
Control Variables (3/3)

- Industry characteristics

Variables	Specifications
Industry M&A	• $\frac{\text{The value of all corporate control transactions for each two-digit SIC industry}}{\text{Total book value of assets all firms in that industry}}$ • Controlling industry's M&A frequency
Hefindahl Index	• The sum of squared market shares of all Compustat firms in the industry • Controlling industry's competitiveness • Firms in competitive industries might focus more on CSR activities (Simmons and Becker-Olsen, 2006)

〈 Data and Variables〉

Summary Statistics

Variable	Full sample (N=1,556)		Subsample of high adjusted CSR: A (N=786)		Subsample of low adjusted CSR: B (N=770)		Test of difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Adjusted CSR	−0.112	−0.083	0.262	0.143	−0.495	−0.408	0.757***	0.551***
Raw CSR	0.266	0.000	2.037	1.000	−1.542	−1.000	3.578***	2.000***
Herfindahl Index	5.194	4.219	4.811	4.201	5.584	4.316	−0.773***	−0.115***
G-index	9.255	9.000	9.024	9.000	9.512	9.000	−0.487***	0.000***
Scaled wealth-performance sensitivity	61.400	8.647	71.420	9.379	50.950	7.969	20.470	1.410***
Total asset (millions of dollars)	9,195.42	2,665.16	9,865.76	2,774.73	8,511.16	2,568.23	1,354.60	206.50
Tobin's q	2.893	2.064	3.296	2.274	2.483	1.906	0.813***	0.368***
Leverage	0.108	0.080	0.095	0.066	0.122	0.100	−0.027***	−0.034***
Free cash flow	0.056	0.058	0.066	0.064	0.046	0.053	0.020***	0.012***
Previous market-adjusted return	0.094	0.035	0.102	0.035	0.086	0.032	0.016	0.003
Relative deal size	0.184	0.055	0.150	0.043	0.218	0.072	−0.068***	−0.029***
Industry M&A	0.040	0.030	0.038	0.030	0.043	0.030	−0.005***	0.000
Hostile (dummy)	0.012	0.000	0.009	0.000	0.014	0.000	−0.005	0.000
High tech (dummy)	0.308	0.000	0.375	0.000	0.239	0.000	0.136***	0.000***
Diversifying merger (dummy)	0.667	1.000	0.702	1.000	0.631	1.000	0.071***	0.000***
Public target (dummy)	0.531	1.000	0.503	1.000	0.561	1.000	−0.058**	0.000**
Private target (dummy)	0.372	0.000	0.392	0.000	0.352	0.000	0.040	0.000*
Stock deal (dummy)	0.440	0.000	0.436	0.000	0.444	0.000	−0.008	0.000
All-cash deal (dummy)	0.363	0.000	0.355	0.000	0.371	0.000	−0.016	0.000

〈 Empirical results Ⅰ 〉
Acquirer's CSR & Merger Announcement Returns (1/2)

- Methodology

Variable Type	Specifications
Dependent variables	• CAR(-1,1)
Main independent variables	• CSR score • Instrument Variable for CSR score: Religion rank, Blue state dummy

- Univariate Tests

Panel A: Acquirer CARs (percent)

CARs	Full sample (N=1,556)		Subsample of acquirers with high adjusted CSR: A (N=786)		Subsample of acquirers with low adjusted CSR: B (N=770)		Test of difference (A-B)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
CAR (−1, 1)	−0.212	−0.092	0.058	0.023	−0.487**	−0.179**	0.546**	0.202
CAR (−2, 2)	−0.124	0.011	0.090	0.167	−0.343	−0.205	0.433	0.372*
CAR (−5, 5)	−0.445**	−0.395**	−0.222	−0.312	−0.674**	−0.678**	0.452	0.366

〈 Empirical results Ⅰ 〉

Acquirer's CSR & Merger Announcement Returns (2/2)

	OLS		2SLS			
			First stage	Second stage	First stage	Second stage
Variable	(1)	(2)	(3)	(4)	(5)	(6)
CSR measure						
Adjusted CSR	0.639**	0.500**		5.533**		5.077**
	(2.50)	(2.01)		(2.03)		(2.13)
Instrumental variables						
Religion rank			0.003***		0.003**	
			(2.85)		(2.32)	
Blue state (dummy)			0.082***		0.120***	
			(2.65)		(3.03)	
Herfindahl Index		0.049				–0.001	0.056
		(0.92)				(–0.14)	(0.74)
Corporate governance							
G-index		–0.023				0.000	–0.019
		(–0.39)				(0.07)	(–0.28)
Acquirer managerial incentives							
Scaled wealth-performance sensitivity		–0.000				–0.000	–0.000
		(–0.78)				(–1.33)	(–0.19)
Other acquirer characteristics							
Firm size	–0.187	–0.172	0.032***	–0.357**	0.053***	–0.426**
	(–1.64)	(–1.42)	(3.63)	(–2.31)	(4.57)	(–2.24)
Leverage	3.837**	2.468	–0.057	4.400**	–0.100	3.315
	(2.05)	(1.26)	(–0.41)	(2.45)	(–0.52)	(1.54)
Free cash flow	–1.167	1.383	0.141	–1.770	0.340	–0.033
	(–0.46)	(0.44)	(0.82)	(–0.81)	(1.40)	(–0.01)
Tobin's q	0.205**	0.130	0.013*	0.147	0.013	0.077
	(2.16)	(1.35)	(1.88)	(1.60)	(1.53)	(0.79)
Previous market-adjusted return	0.240	–0.219	–0.025	0.348	–0.029	–0.085
	(0.47)	(–0.38)	(–0.70)	(0.77)	(–0.64)	(–0.17)
Deal characteristics						
Relative deal size	–0.892	–3.799***		–0.902		–3.718***
	(–1.28)	(–4.71)		(–1.55)		(–5.16)
Industry M&A	1.767	–1.209		1.664		–1.497
	(0.41)	(–0.27)		(0.38)		(–0.33)
Hostile (dummy)	–0.586	–0.308		–0.732		–0.507
	(–0.54)	(–0.28)		(–0.50)		(–0.36)
High tech (dummy)	–0.242	–0.132		–0.187		–0.083
	(–0.57)	(–0.30)		(–0.42)		(–0.17)
Diversifying merger (dummy)	0.279	0.170		0.268		0.159
	(0.80)	(0.47)		(0.76)		(0.42)
Public target (dummy)	–1.183**	–0.575		–1.163**		–0.532
	(–2.26)	(–1.09)		(–2.10)		(–0.89)
Private target (dummy)	0.072	0.249		0.084		0.261
	(0.14)	(0.46)		(0.15)		(0.42)
All-cash deal (dummy)	0.195	0.484		0.168		0.443
	(0.47)	(1.11)		(0.37)		(0.91)
Stock deal (dummy)	–1.038**	–0.536		–1.069**		–0.570
	(–2.39)	(–1.23)		(–2.35)		(–1.15)
Constant	1.803	1.287	–0.462	0.347	–0.535	2.033**
	(1.61)	(0.87)	(–0.96)	(0.06)	(–1.03)	(0.35)
Industry and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

〈 Empirical results Ⅱ 〉
Acquirer's CSR & Long-term Operating Performance(1/2)

- Methodology

Variable Type	Specifications
Dependent variables	• Difference in *post-merger operating cash flow* btw merged firm and the control firm
Independent variables	• Difference in *pre-merger operating cash flow* btw merged firm and the control firm
Control firm matching variable	• CSR score, size, leverage, market-to-book ratio, two-digit SIC code, and year dummies

- *Intercept of the regression* measures the *abnormal change in operating cash flow* btw pre-merger and post-merger

KAIST

〈 Empirical results Ⅱ 〉
Acquirer's CSR & Long-term Operating Performance(2/2)

Independent variable	Dependent variable=difference in post-merger operating performance between the combined firm and the control firm	
	Subsample of high adjusted CSR	Subsample of low adjusted CSR
Panel A: Nearest neighborhood approach		
Constant	−0.003	−0.016**
	(−0.51)	(−2.53)
Difference in pre-merger operating performance between the combined firm and the control firm	0.586***	0.578***
	(11.80)	(12.46)
Sample size	250	245
Adjusted R^2	0.357	0.387
Panel B: Gaussian kernel approach		
Constant	−0.000	−0.014***
	(−0.10)	(−3.50)
Difference in pre-merger operating performance between the combined firm and the control firm	0.624***	0.523***
	(13.77)	(12.70)
Sample size	245	245
Adjusted R^2	0.436	0.397

KAIST

〈 Empirical results III 〉
Acquirer's CSR and Likelihood of deal completion (1/2)

- Methodology

Variable Type	Specifications
Dependent variables	• Dummy variable that equals 1 if the deal is completed
Main Independent variables	• CSR score • Instrument Variable for CSR score: Religion rank, Blue state dummy

	Probit		2SPLS			
Variable	(1)	(2)	(3)	(4)	(5)	(6)
CSR measure						
Adjusted CSR	0.536**	0.556**		7.368**		11.212***
	(2.20)	(2.03)		(2.54)		(2.69)
	[0.005]	[0.001]				
Instrumental variables						
Religion rank			0.003*		0.003	
			(1.84)		(1.48)	
Blue state (dummy)			0.122***		0.111**	
			(2.67)		(1.99)	

〈 Empirical results Ⅲ 〉

Acquirer's CSR and Likelihood of deal completion (2/2)

Product market competition						
Herfindahl Index		−0.013			−0.014	0.097
		(−0.40)			(−1.34)	(0.79)
		[−0.000]				
Corporate governance						
G-index		0.056			0.002	0.060
		(1.42)			(0.30)	(0.97)
		[0.000]				
Acquirer managerial incentives						
Scaled wealth-performance sensitivity		−0.000			0.000	−0.000
		(−1.53)			(0.04)	(−0.18)
		[−0.000]				
Other acquirer characteristics						
Firm size	0.755***	0.789***	0.007	0.616*	0.016	0.550***
	(3.83)	(3.44)	(0.68)	(1.71)	(1.16)	(2.97)
	[0.007]	[0.002]				
MB	−0.037*	−0.032	0.007	−0.102*	0.011*	−0.181**
	(−1.83)	(−1.30)	(1.55)	(−1.91)	(1.82)	(−2.47)
	[−0.000]	[−0.000]				
Target characteristics						
Firm size	−0.534***	−0.528**		−0.539		−0.578***
	(−2.78)	(−2.52)		(−1.47)		(−2.77)
	[−0.005]	[−0.001]				
MB	0.039	0.029		0.035		0.031
	(1.61)	(1.04)		(0.65)		(1.02)
	[0.000]	[0.000]				
Deal characteristics						
Premium	0.556**	0.216		0.442		0.078
	(2.44)	(0.90)		(1.08)		(0.22)
	[0.005]	[0.001]				
Toehold (dummy)	0.981	0.755		0.810		0.628
	(1.56)	(1.03)		(1.08)		(0.62)
	[0.003]	[0.001]				
All-cash deal (dummy)	−0.414**	−0.498**		−0.334		−0.323
	(−1.97)	(−2.14)		(−0.65)		(−0.92)
	[−0.004]	[−0.002]				
Tender (dummy)	0.267	0.622**		0.259		0.492
	(1.14)	(2.34)		(0.61)		(0.88)
	[0.002]	[0.001]				
Hostile (dummy)	−1.515***	−1.529***		−1.330*		−1.196
	(−4.61)	(−4.51)		(−1.66)		(−1.36)
	[−0.095]	[−0.043]				
Diversifying merger (dummy)	−0.015	−0.360		−0.048		−0.405
	(−0.07)	(−1.31)		(−0.17)		(−0.92)
	[−0.000]	[−0.001]				
Multiple acquirer (dummy)	−1.244***	−1.068***		−1.258*		−1.208**
	(−6.09)	(−4.73)		(−1.71)		(−2.39)
	[−0.051]	[−0.013]				
Constant	−0.145	3.865***	−0.343*	2.364	−0.193***	4.815***
	(−0.23)	(4.18)	(−1.94)	(1.52)	(−0.74)	(3.27)
Industry and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

〈 Empirical results IV 〉
Acquirer's CSR and Long-term Post-merger Stock Returns (1/2)

- Methodology

Calendar-time portfolio approach	Specifications
Portfolio formation	• Equally weighted portfolios of firms that have just completed mergers for each month from 1992 to 2007
Holding duration	• 1year, 2year or 3year
Portfolio monthly rebalancing	• Dropping all firms that have reached the end of their holding period • Adding all firms that have just announced a merger
Regression	• Regress time series of portfolio excess return on 4 factor model $R_{p,t} - R_{f,t} = \alpha + \beta_1(R_{m,t} - R_{f,t}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t$

KAIST

〈 Empirical results IV 〉

Acquirer's CSR and Long-term Post-merger Stock Returns (2/2)

Variable	After one year		After two years		After three years	
	Coefficient	*t*-statistics	Coefficient	*t*-statistics	Coefficient	*t*-statistics
Panel A: Full sample of acquirer portfolios						
α	−0.000	−0.05	0.002	1.21	0.002	1.27
β_{mkt}	1.177	29.45***	1.090	31.62***	1.086	31.87***
β_{SmB}	0.149	3.28***	0.130	3.18***	0.139	3.46***
β_{HmL}	0.033	0.62	−0.049	−1.12	−0.012	0.27
β_{UmD}	−0.146	−4.50***	−0.198	−7.39***	−0.213	−8.07***
Adjusted R^2	0.887		0.882		0.883	
Sample size	203		215		216	
Panel B: Subsample of acquirer portfolios with low adjusted CSR						
α	−0.002	−0.98	0.000	0.01	0.001	0.38
β_{mkt}	1.133	22.76***	1.037	25.61***	1.039	27.17***
β_{SmB}	0.214	3.70***	0.125	2.56***	0.166	3.62***
β_{HmL}	0.177	2.62***	0.046	0.87*	0.107	2.17**
β_{UmD}	−0.193	−4.78***	−0.228	−7.27***	−0.236	−7.97***
Adjusted R^2	0.790		0.833		0.849	
Sample size	201		213		214	
Panel C: Subsample of acquirer portfolios with high adjusted CSR						
α	0.002	0.95	0.003	2.10**	0.003	1.93*
β_{mkt}	1.229	26.83***	1.114	27.21***	1.127	28.61***
β_{SmB}	0.135	2.60***	0.165	3.41***	0.147	3.16***
β_{HmL}	−0.070	−1.15	−0.117	−2.24**	−0.110	−2.20**
β_{UmD}	−0.107	−2.87***	−0.159	−5.00***	−0.200	−6.55***
Adjusted-R^2	0.842		0.847		0.861	
Sample size	203		215		216	

감사합니다.