

Do financial markets care about SRI? Evidence from mergers and acquisitions

by

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Abstract

Mergers and acquisitions offer a framework for shedding new light on the stock market performance of socially responsible investments. We use the Innovest's Intangible Value Assessment (IVA) ratings as a measure of firms' ability to cope with social and environment risks. The IVA ratings allow us to uncover a positive relation between acquirer gains and the level of the targets' social and environmental risk management practices. Our findings suggest that the stock market rewards the acquirer for making socially and environmentally responsible investments. The gain is substantial; a one-unit increase in the target's IVA rating leads to an abnormal gain of \$1.2 million for the shareholders of an acquirer firm worth \$100 million in equity value.

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1. Introduction

Socially responsible investing (SRI)¹ has developed to a remarkable extent worldwide. According to the Social Investment Forum (2007), assets in SRI portfolios have increased by more than 324% (from \$639 billion in 1995 to \$2.71 trillion in 2007), while in the same period, total assets under professional management increased by less than 260% (\$7 trillion to \$25.1 trillion). The same trend appears in Europe (e.g., see Eurosif's 2008 study on European SRI).²

The rapid development of the SRI market has attracted interest from the academic community, yet debate still rages regarding whether financial markets care about social and environmental dimensions. Empirical results have been mixed. Derwall et al. (2005) argue that SRI improves portfolio performance, according to the eco-efficiency scores they use to rank U.S. companies and construct mutually exclusive portfolios. The portfolio that features stocks with the highest scores outperforms the portfolio of stocks with lower scores by 6% per annum during 1997–2003. Bauer et al. (2005) instead report that SRI funds in the United States and United Kingdom yield the same risk-adjusted return, on average, as traditional funds. In a more recent international study, Renneboog et al. (2008) indicate that SRI funds in the United States, United Kingdom, and many continental European and Asia-Pacific countries underperform their domestic benchmarks by –2.2% to –6.5% per annum. This

¹ According to the definition provided by the Social Investment Forum (2007), SRI is “an investment process that considers the social and environmental consequences of investments, both positive and negative, within the context of rigorous financial analysis.”

² The study is available on Eurosif's Web site at www.eurosif.org.

result seems consistent with the proposition that investors pay a price for their ethics. Fisher-Vanden and Thorburn (2008) reveal that voluntary corporate environmental initiatives yield negative stock performance, according to a sample of 58 U.S. firms that joined Climate Leaders, a program related to climate change, and that suffered significantly negative abnormal returns around the date of their announcement. This result suggests that corporate commitments to reduce greenhouse gas emissions may conflict with shareholder value maximization goals.

In view of these contradictory results, the question of whether SRI provides value creation or destruction for shareholders remains largely open. We therefore conduct an analysis based on mergers and acquisitions (M&A) to shed a new light on this question. We focus on a sample of listed acquirers and measure wealth effects according to stock market reactions (i.e., abnormal returns,³ from event study methodology) to the announcement. Thus, we can analyze the impact of targets' social and environmental performance on acquirer gains. Our measure of the target firm's environmental and social performance comes from the Innovest group's social and environmental performance ratings.

To the best of our knowledge, social and environmental dimensions in M&A decisions generally have been overlooked in finance literature.⁴ Yet M&A markets offer interesting frameworks for complementary insights on the ability of SRI to generate financial performance. In M&A transactions, the investor is a company, not a fund manager or an

³ In an efficient market, abnormal returns around an announcement date measures the wealth creation for shareholders.

⁴ Some studies in other research fields appraise, within an M&A context, the relationship among companies' ethical behaviors (e.g., ensuring employee security, caring practices), organizational commitment, and employee job performance (e.g., Lin and Wei, 2006; Syrjälä and Takala, 2008).

individual investor, so acquirer stock price reactions to the announcement of an investment decision provides a direct measure of the gain associated with the decision.

An important benefit of this framework is that it avoids endogeneity issues between environmental (and/or social) performance and financial performance. The direction of causation is not well established in the literature. It is unclear whether SRI improves performance of the firm or if well-performing companies are more willing to make SRI because they have the necessary financial resources to do so (see Fisher-Vanden and Thorburn, 2008). Endogeneity is an issue in the current literature because it is almost always the environmental performance and concurrent financial performance of the same firm that are related. In the M&A framework, we relate the financial performance of the acquirer to the environmental performance of the target; these are two different firms.

Our results confirm that SRI is value creating for shareholders within the context of M&A announcements. Acquirer abnormal returns are positively associated with targets' social and environmental performance. The gain is economically substantial. An increase in the target rating by one unit (over a 7-unit scale), leads to an abnormal gain of 1.2% for acquirer shareholders. For an acquirer worth \$100 million in equity, this represents a dollar gain of \$1.2 million. We show also that abnormal returns to target shareholders increase in the level of the target rating, but the impact is less significant. This result indicates that the acquirer's positive gain does not stem from a lower premium paid to target shareholders.

We organize the remainder of this article as follows: in Section 2, we lay out our testable hypothesis. Then, we consider the sample of M&As, Innovest ratings, and empirical methods in Section 3. Section 4 is devoted to the empirical analysis. Section 5 concludes.

2. Research question

Within our M&A framework, the investor represents the acquiring company. A significant corporate finance literature investigates the determinants of an acquirer's abnormal returns around M&A decision announcements and identifies the most important one to be the payment means, the target's status, the relative size of the deal, and uncertainty about the target's valuation (for a review, see Betton et al., 2008). We propose adding a novel determinant to this list, namely, the target's ability to cope with social and environmental risks (i.e., social and environmental performance of the target).

If SRIs are value-creating decisions, acquirer abnormal returns should have a positive relationship with the level of social and environmental performance of the target. Several arguments support this value-creation hypothesis. Some authors argue that increased social and environmental performance can enhance a firm's input-output efficiency, improve employee and customer satisfaction, generate new market opportunities, or signal management quality (e.g., Fombrun and Shanley, 1990; Porter and van der Linde, 1995). Socially and environmentally responsible activities may also enhance a firm's standing with financial market participants (such as bankers, financial intermediaries and investors) and governments. This reputation effect may improve a firm's access to financing sources (see, e.g., Spicer, 1978; Moussavi and Evans, 1986; McGuire et al., 1988). In this context, acquiring a socially responsible firm could be a signal, sent by the acquirer, about willingness to increase or maintain social and environmental screening and manage social and environmental risks.

Therefore we hypothesize *a positive relation between acquirer gain and the target's social and environmental performance* within our M&A framework.

3. Data and methods

3.1. Environmental and social performance

To measure the firm's ability to cope with social and environmental risks, we use data obtained from Innovest Strategic Value Advisors (hereafter, Innovest), a financial service leader that analyzes the economic impact of environmental and social issues. The Innovest group provides several ratings of firms' environmental, social, and governance performance. We use the Intangible Value Assessment (IVA), which is a composite measure of 120 performance factors, including innovation capacity, product liability, governance, human capital, emerging markets, and environmental opportunities and risk. We also employ two specific components of the IVA score: environmental (ENV) and social (SOC) ratings. Several recent articles use these ratings as well (e.g., Becker and Gluck, 2004; Derwall et al., 2005; Ringov and Zollo, 2007). However, to the best of our knowledge, ours is the first study to use Innovest ratings as potential determinants of wealth effects associated with M&A transactions.

Companies earn high IVA, ENV, and SOC scores by exhibiting low environmental or social risks and a strong strategic position that enables them to capture environmentally or socially based profit opportunities. Innovest's methodology not only reflects historical environmental and social performance but also identifies future environmental and social risks and opportunities. Another strength is that the Innovest method rates firms relative to other firms in their industry.

The Innovest database provides IVA ratings for 2000–2007. Table 1 describes the Innovest ratings, which go from AAA (best) to CCC (worst).

[Insert Table 1 about here]

3.2. Merger and acquisition announcements

We extract the M&A sample from the Thomson Securities Data Company (SDC) database. We impose the following sample selection criteria: (1) completed deals announced between 2000 and 2007, (2) deal size greater than \$1 million, (3) percentage held by the acquirer after the deal equal to 100%, and (4) Innovest ratings available for the target.

The last criterion reduces the sample size drastically. Our sample therefore encompasses 117 different deals for which we have at least one of the three Innovest ratings (IVA, ENV, or SOC) for the target. Table 2 provides the sample distribution by announcement year. Our sample deals concentrate in the most recent time period (i.e., 77.78% of the deals were announced during 2005–2007), likely because coverage by the Innovest database is greater for more recent periods. Table 3 presents the number of observations for which we can match M&A deals with Innovest ratings. The availability of control variables constraints the size of samples used in the regression analyses further.

[Insert Tables 2 and 3 about here]

3.3. Abnormal stock performance

Since Fama et al. (1969) published their study, the accepted method for isolating the impact of a particular event on market valuations is the event study methodology. In the first step, we construct a model for normal returns, that is, the individual firm returns that would have occurred in the absence of the event. We use the following market model to estimate these normal returns:

$$R_{jt} = \alpha_j + \beta_j R_{Mt} + \varepsilon_{jt}, \quad (1)$$

where R_{jt} is the observed return for firm j on day t ; R_{Mt} is the return of a concurrent local country stock market index on day t ; α_j and β_j are, respectively, the estimated ordinary least squares (OLS) regression intercept and slope; and ε_{jt} is the regression residual.⁵ The stock market data come from Datastream. We estimate the market model parameters over the period from event day -250 to event day -10 , where event day 0 is the acquisition announcement date. Before computing the corresponding returns, we convert all local prices and stock indices into USD denominated prices, using the appropriate exchange rate.⁶ The abnormal return (AR) for day t corresponds to the difference between the observed return on day t and that estimated using the market model:

$$AR_{jt} = R_{jt} - (\alpha_j + \beta_j R_{Mt}). \quad (2)$$

To compute the cumulative abnormal return (CAR), we determine, for each firm, the abnormal return across the three days around the announcement day (from day -1 to day $+1$, where day 0 is the announcement day).

At the deal level (considering both the acquirer and the target), we follow the same approach as in Wang and Xie (2009). We first form a value-weighted portfolio of the two firms. Then, market model parameters are estimated using the portfolio return data for the period $(-250, -10)$. The weights for the acquirer and the target are based on their market capitalizations on the 10th trading day prior to the announcement date. Since we have an international sample of M&As, which includes both domestic and cross-border deals, we adjust the market model as in Aktas et al. (2004):

⁵ Brown and Warner (1980, 1985) confirm the robustness of the short-term event study method to the choice of the return generating process.

⁶ Aktas et al. (2004) and also Campbell et al. (2009) demonstrate the robustness of the event study method to the use of local versus U.S. dollar-denominated prices and local versus world indices.

- When the acquirer and target are listed on the same stock exchange (domestic deal), normal returns are estimated using the classical one-factor model as in Equation 1 here above (i.e., we regress the portfolio return on the concurrent country market index);
- When the acquirer and target are listed on different stock exchange markets (cross-border deal), we include both the acquirer and the target local indices in the market model regression as follows:

$$R_{pt} = \alpha_p + \beta_p ACQ_{Mt} + \gamma_p TAR_{Mt} + \varepsilon_{pt}, \quad (3)$$

where R_{pt} is the observed portfolio return for deal p on day t ; ACQ_{Mt} and TAR_{Mt} are market index returns from the acquirer and target countries, respectively.

The countries involved in the sample, the corresponding local stock market indices, and their currencies appear in Table 4.

[Insert Table 4 about here]

In Table 5, we report summary statistics about acquirer, target and deal CARs. The average acquirer CAR is negative (-0.87%) and is significant at the 5% level, largely consistent with prior literature, which shows that acquirers' CARs around the announcement date equal at best zero or are slightly negative. For example, the average acquirer CAR is -0.7% in Andrade et al. (2001) study of U.S. acquirers and -0.15% for a sample of 583 international acquirers investigated by Aktas et al. (2004). Neither result is however statistically significant at conventional levels.⁷

⁷ However, recent empirical studies focusing on larger samples report slightly positive (1.5%) but significant abnormal returns for U.S. acquirers (e.g., Moeller et al. 2004). The positive abnormal returns in these studies result mainly from the inclusion of smaller and private target deals as well.

[Insert Table 5 about here]

The average target CAR is 9.25%, significantly lower than in previous U.S. studies. Mulherin and Boone (2000) find a target CAR of 20.2% in a sample of 281 combinations during 1990–1999, and Andrade et al. (2001) report a 15.9% return during 1990–1998. However, Campa and Hernando (2004) report an average CAR of 3.93% for European targets, and Aktas et al. (2004) find an average target CAR of 10.15% for a sample of international deals passed the regulatory actions of the European Commission.

For the combined firms (acquirer plus target), Table 5 displays significant wealth creation effects for shareholders around the announcement day. The average CAR at the deal level is 1.30%, statistically significant at the 5% level. Thus, our sample deals appear to be synergistic combinations, and much of the synergy gains accrue to target shareholders. The deal CAR is very close to previously reported results (e.g., 1.5%, Aktas et al., 2004; 1.4%, Andrade et al., 2001).

In the next section, we explore whether the quality of the target in terms of its social and environmental risk management (as reflected by Innovest rating) influences the firms' and deal's abnormal returns.

4. Findings

4.1. Do socially responsible investments pay?

In Table 6, we present multivariate regression analyses, in which the variable of interest is the target rating. We use a discrete version of the variable and apply the following coding: The variable takes a value of 0 for the lowest rating (CCC, see Table 1), and it increases by

increments of 1 as it moves to the next higher rating. The variable takes a value of 6 for the highest AAA rating.⁸ Thus, the variable increases with the ability of the target to cope with environmental and social risks.

Regarding the econometric approach to the regressions, to address non-normality and small sample issues, we use a percentile t-bootstrap approach for the statistical tests of significance (see Efron and Tibshirani 1993). From the original data matrix, we draw, with replacements, 1,000 bootstrap samples with the same number of observations as in the original sample. For each of these bootstrap samples, we run an OLS regression with White-adjusted standard errors to obtain the heteroskedastic robust student statistic of the coefficients for the bootstrap samples. The adjusted bootstrap t-statistics provide the empirical distribution for comparison against the t-statistic obtained from the original data, which produces a bootstrap *p*-value estimate.

[Insert Table 6 about here]

Table 6 shows the effects of target's social and environmental rating on acquirer CAR (Panel A), target CAR (Panel B) and deal CAR (Panel C). For each panel, we report three multivariate regressions: variable of interests (target rating) are the IVA rating in column 1; the environmental and social components of the IVA rating in column 2 and column 3, respectively.

⁸ The discrete coding of the variable of interest assumes that the variation in quality between two subsequent ratings is homogeneous throughout the rating scheme. The use of a score version of the rating, instead of the discrete rating, does not alter our conclusions. The results are available on request from the authors.

Each specification also includes the following control variables: deal size, relative size, cash, related, cross-border, number of bidders, and control transaction. Variable definitions are stated in the legend of Table 6.

In Panel A of Table 6, the dependent variable is the acquirer's three-day abnormal returns. Both the general IVA rating and its two components (ENV and SOC) have significant positive impacts on the acquirer's CARs. An increase in the target rating increases acquirer abnormal returns. Investors seem to value socially and environmentally responsible investment decisions positively. The effects of the ratings are economically significant. For the IVA rating, an increase in the target rating by 1 unit (for example, a target moving from rating BBB to rating A, see Table 1) leads to an increase in the acquirer CAR by 1.2%. This corresponds to an abnormal change of \$1.2 million in market value for an acquirer having a size of \$100 million in equity.

Concerning the control variables, consistent with the literature, related deals (acquirer and target from the same industry) and acquisition fully paid in cash generate higher abnormal returns for acquirer shareholders (see, a.o., Travlos, 1987; Goergen and Renneboog, 2004; Betton et al., 2008). Cross-border deals affect acquirer abnormal returns negatively, suggesting that these deals are seen to be more risky (or less synergistic) from acquirer shareholders point of view. The coefficient is only significant for the second specification which uses the ENV rating as variable of interest. Eckbo and Thorburn (2000) report similar evidence within the US and Canadian contexts. Deal size and relative deal size also have signs that are consistent with the literature, but without being significant (i.e., large deals are known to be more wealth destroying, and small acquirers tend to make better deals (see Moeller et al., 2004; 2005)).

Panel B of Table 6 is devoted to the multivariate analysis of the target CAR. Compared to the results obtained for acquirers, wealth effects to target shareholders seem to depend less on target own rating (see Panel B). The IVA rating and the social component of the IVA rating are only marginally significant, with p -values of 0.10 and 0.09, respectively. This result seems to indicate that investors are aware of the SRI behavior of targets and that stock market prices already include a premium for SRI. This result also suggests that the positive impact on acquirer CARs does not come from a lower price paid to target shareholders.⁹ At the deal level, the most value-creating (or synergistic) deals are combinations with targets that have earned higher environmental ratings (see Panel C), which is also consistent with our value creating hypothesis.

Overall, our result supports the idea that SRI represents a positive net present value project for acquirer, according to financial markets' assessments at the announcement of the deal.

4.2. Additional checks

Besides the authors who suggest that SRI is value creating, there are other scholars who argue that social and environmental responsibility might be achieved only to the detriment of the firm's financial performance, therefore viewing SRI as value destroying decisions for shareholders. Walley and Whitehead (1994) argue, for example, that adopting ethical or higher social and environmental standards will translate into higher costs, which negatively affects the competitiveness and profitability of the firm.

⁹ We have also checked whether the target rating has an impact on bid premium. The multivariate analysis of the bid premium reveals that none of the variable of interests are significant (unreported result).

In fact, a positive coefficient associated with the target rating variable in the regression explaining acquirer CAR in Table 6 could also be compatible with SRI being value destroying for shareholders. Consequently, if social responsibility cannot be achieved without destroying shareholder value, socially responsible companies should be more frequent targets of disciplinary takeover bids according to the theory of the market for corporate control (Manne, 1965; Jensen and Ruback, 1983). This theory states that disciplinary mergers are *'motivated by target management's failure to maximize shareholder value and the bidder's desire to create value by correcting the suboptimal conduct'* (Bratton, 2007, p. 6). Morck et al. (1989) or Servaes and Tamayo (2009) assert that hostile bids (i.e., bids opposed by target management) are often disciplinary mergers.¹⁰ However, the empirical evidence regarding external governance exerted by disciplinary hostile takeovers is mixed in the literature.¹¹

In this section, our aim is to check whether this disciplinary explanation is at work in our sample. We perform three additional tests for this purpose.

¹⁰ In our sample, only 5% of the deals (6 deals out of 117) are depicted as hostile deals by the financial press. We use Factiva to analyze the news around the announcement dates of our sample M&As.

¹¹ On the one hand, there is some evidence in the literature regarding value creation stemming from disciplinary hostile takeovers. Morck et al. (1989) document that hostile takeovers are often related to agency problems in the target firm or its industry. Mitchell and Lehn (1990) show that bad bidders (companies that are doing wealth destroying acquisitions) become good targets in the future (value creating investment decision for the final acquirer). More recently, Servaes and Tamayo (2009) show that rival companies of hostile targets reduce agency costs following the announcement of the merger. On the other hand, there are also some studies that reject the idea that the market for corporate control functions as a disciplinary device for poorly managed companies. Franks and Mayer (1996) report little evidence that hostile takeovers are driven by poor performance prior to the deal announcements, and Schwert (2000) provides evidence suggesting that hostile takeovers do not differ substantially from friendly takeovers.

Test 1. If the wealth creation comes from sanctioning SRI intensive companies then on average we should observe SRI intensive targets being bought more often by less SRI aware acquirer in our sample. This is our first additional check.

The two-entry Table 7 compares the ratings of the acquirer and the target. The grey area denotes the deals for which the rating of the target is higher than the rating of the acquirer. For the IVA rating, the target earns a higher rating than the acquirer in 29% of the cases (19 of 65 deals). This proportion is statistically significantly less than 50%. The corresponding t-statistic equals 3.73.¹² The proportion is almost the same for the environmental and social ratings (unreported). This simple univariate test is not consistent with the idea that SRI intensive companies are taken over more often for disciplinary purposes. On average, our results instead suggest that the acquirer tends to be at least as good as the target in its social and environmental risk management.

[Insert Table 7 about here]

Test 2. If stock markets value SRI negatively, according to the disciplinary view of mergers, stock markets' reactions (acquirer abnormal returns) should be more positive when the social and environmental rating of the target is greater than that of the acquirer. Then, the positive impact on acquirer abnormal returns would reflect the anticipation of wealth creation due to the replacement of target management because of its having wasted too many resources on socially responsible investment.

¹² The t-statistic is computed using the following formula: $t\text{-statistic} = (0.50 - p)/[p*(1-p)/N]^{1/2}$, where p is the proportion of targets with higher rating than bidders (29%), and N is the sample size.

To capture this idea we define a variable which measures the spread between the target rating and the acquirer rating; the higher the spread, the better the target is relative to the acquirer in terms of SRI practices. We then replicate the regressions in Panel A of Table 6 with this additional variable to assess whether the market positively values lower SRI bidders taking over higher SRI aware targets. The coefficient of this new variable, denoted *rating spread* (target rating minus acquirer rating) in Table 8, is not statistically significant for any of the three SRI indices. Investors seem not to value the difference of rating between the target and the acquirer. However, investors reward the quality of the target (i.e., target rating variable is statistically significant). Again, we obtain a result that is not consistent with the alternative wealth destroying hypothesis.

[Insert Table 8 about here]

Test 3. Finally, we study the evolution of the acquirer's rating after the deal. But because our sample is very limited after the deal completion, we simply provide a descriptive analysis. After acquiring a better target, the IVA rating of the acquirer never declines, but it improves in 33% of the 48 cases. For the ENV rating, negative revision occurs in 21% of the cases, compared with 31% positive revisions among the 69 cases. Finally, for the SOC rating, out of 66 cases, we find only 10% negative revisions for the acquirers to be compared to 45% for positive revisions.

These additional analyses prompt us to reject the idea that the value creation for acquirer shareholders originates in the disciplinary acquisition of targets that are over invested in SRI. Our results support the idea that socially responsible investing pays for acquirer shareholders, at least within our M&A framework.

5. Conclusion

Relying on an original empirical framework, we analyze whether SRI benefits shareholders. The use of merger and acquisition decisions of listed companies reveals the stock market reactions to SRI announcements (i.e., acquisition of targets with social and environmental performance ratings). Our findings suggest that acquirer gains relate positively to the target's ability to cope with social and environmental risks and more synergistic deals occur with targets that exhibit better environmental performance. Furthermore, we provide some evidence that our sample of M&A deals is not driven by disciplinary motives.

The results of this study suggest several avenues for future research. Using a broader sample of M&A deals, it would be interesting to complement the short-term event study with an analysis of acquirers' long-term financial and operational performance. Another interesting direction for future research is to deepen the analysis of disciplinary takeovers from the SRI perspective by focusing on hostile transactions. M&As offer also a fruitful framework to study the transformations of SRI practices following the acquisition of SRI aware targets. Do targets' SRI skills transfer to the acquirer? Is this a long process? Does it affect the selection of future targets? Since all listed firms are not followed systematically by rating agencies, all these extensions require the elaboration of alternative measures of environmental and social performance.

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Table 1

Description of Innovest ratings

Notation	Description
AAA	A company with minimal, well-identified environmental/social risks and liabilities, and with a strong ability to meet any losses which might materialize. Extremely well-positioned to handle any foreseeable tightening of regulatory requirements, and strongly positioned strategically to capitalize on environmentally/socially-driven profit opportunities.
AA	A company with environmental/social risks and liabilities which have been well-identified and provided for. This position is unlikely to be impaired by any foreseeable tightening of regulatory requirements. The company is well-positioned strategically to capitalize on environmentally/socially driven profit opportunities.
A	A company with large but well-identified environmental/social risks and liabilities, and sufficient financial and managerial strength to absorb all but exceptional risks. Able, also, to finance any currently proposed regulatory requirements. Above average positioning with respect to profit opportunities.
BBB	A company with strong managerial capability, but one where environmental/social risks and liabilities are a potential source of loss, though not on any material scale. Average level of positioning vis a vis profit opportunities.
BB	A company with good managerial capability, but one where environmental/social risks and liabilities are a potential source of material loss. Below-average level of strategic positioning.
B	A company whose environmental/social risks and liabilities create a strong likelihood of material losses in both profitability and competitive position. Significantly below-average strategic positioning.
CCC	A company where there are significant doubts about management's ability to handle its environmental/social risks and liabilities, and where these are likely to create a serious loss. Well below-average ability to capitalize on environmentally/socially-driven profit opportunities.

Source: Innovest Strategic Value Advisors, IVA Methodology, Year 2007.

Table 2
Sample distribution by announcement year

Year	Number of deals	Proportion
2000	7	5.98%
2001	3	2.56%
2002	2	1.71%
2003	5	4.27%
2004	9	7.69%
2005	32	27.35%
2006	36	30.77%
2007	23	19.66%
Total	117	100.00%

Table 3
Sample of M&As with available social and environmental performance ratings

This table reports the number of observations per rating for M&A deals announced between 2000 and 2007. IVA, ENV and SOC correspond to the Intangible Value Assessment rating, the environmental rating and the social rating, respectively.

	Bidder			Target		
	IVA	ENV	SOC	IVA	ENV	SOC
AAA	13	20	16	5	7	6
AA	21	17	25	7	5	11
A	16	19	21	16	17	13
BBB	17	20	19	23	31	32
BB	9	18	9	27	29	24
B	9	14	10	15	21	18
CCC	8	8	12	5	7	9
Total	93	116	112	98	117	113

Table 4
Home country, local market index, and currency

All prices are converted into USD using the appropriate exchange rate. *#Acquirer* and *#Target* denote, respectively, the number of acquirers and targets per country.

Country	#Acquirer	#Target	Stock market index	Currency
Australia	6	6	ASX ALL ORDINARIES	AUD
Austria	2	0	WIENER BOERSE INDEX (WBI)	EUR
Belgium	4	2	BEL 20	EUR
Bermuda	0	1	S&P 500 COMPOSITE	USD
Brazil	3	2	BRAZIL BOVESPA	BRL
Canada	5	6	S&P/TSX COMPOSITE INDEX	CAD
Chile	0	0	CHILE GENERAL (IGPA)	CLP
Czech Republic	2	0	PRAGUE SE PX	CZK
Denmark	1	0	OMX COPENHAGEN BMARK (OMXCB)	DKK
France	4	16	SBF 120	EUR
Germany	6	13	DAX 30 PERFORMANCE	EUR
Greece	1	0	ATHEX COMPOSITE	EUR
Hong Kong	1	0	HANG SENG	HKD
Israel	0	1	ISRAEL TA 100	ILS
Italy	9	10	MILAN MIBTEL	EUR
Japan	5	6	TOPIX	JPY
Luxembourg	0	0	LUXEMBOURG SE LUXX	EUR
Mexico	2	1	MEXICO IPC (BOLSA)	MXN
Netherlands	3	3	AEX INDEX (AEX)	EUR
New Zealand	1	0	NZX 50	NZD
Norway	1	1	OSLO SE OBX	NOK
Poland	2	0	WARSAW GENERAL INDEX 20	PLN
Portugal	0	1	PORTUGAL PSI-20	EUR
Singapore	0	2	STI L	SGD
Spain	3	4	IBEX 35	EUR
Sweden	1	0	AFFARSVARLDEN GENERAL INDEX	SEK
Switzerland	3	2	SWISS MARKET	CHF
U.K.	20	15	FTSE ALL SHARE	GBP
U.S.	33	25	S&P 500 COMPOSITE	USD

Table 5
Abnormal returns

Cumulative abnormal returns (CAR) are 3-day market adjusted abnormal returns estimated around the announcement day of the M&A deal. *T-stat* corresponds to the Student *t*-statistic computed using the Boehmer et al. (1991) standardized approach, which is known to be robust to the event-induced variance phenomenon. *N* denotes the number of observations.

	Acquirer CAR (<i>N</i> =117)	Target CAR (<i>N</i> =112)	Deal CAR (<i>N</i> =112)
Average	-0.87%	9.25%	1.30%
<i>T</i> -stat	-2.01	7.03	2.37
<i>p</i> -value	0.04	0.00	0.02
Min	-21.34%	-20.51%	-11.16%
Median	-0.95%	5.79%	0.21%
Max	14.00%	75.75%	27.04%

Table 6
Multivariate regression analyses: The variable of interest is the rating of the target

Deal size is the natural log of the deal value, defined by SDC as the total value of consideration paid by the acquirer, excluding fees and expenses. *Relative size* is the ratio of the deal value to the acquirer market value. *Cash* is a dummy variable that takes a value of 1 for purely cash-financed deals, and 0 otherwise. *Related* is a dummy variable that takes a value of 1 when the acquirer and the target are from the same industry (two-digit standard industrial classification code), and 0 otherwise. *Cross-border* is a dummy variable that takes a value of 1 when the acquirer and the target are in the same country. *Number of bidders* corresponds to the number of rival bidders, reported by SDC. *Control transaction* is a dummy variable that takes a value of 1 when the acquirer holds more than 50% of the target before the deal announcement (to increase the sample size, we also considered a few deals for which the bidder holds more than 50% of the target before the deal announcement.) Significance is based on bootstrap *p*-values. *R*² is the coefficient of determination. *N* denotes the number of observations. The intercept, year dummies (identifying years 2005-2007) and country dummies (identifying U.S. and U.K. firms) are not shown in the table for brevity.

Panel A. Dependent variable: acquirer CAR

	IVA (N=70)		ENV (N=84)		SOC (N=82)	
	coef	<i>p</i> -value	coef	<i>p</i> -value	coef	<i>p</i> -value
Target rating	0.012	0.07	0.012	0.02	0.007	0.08
<i>Control variables</i>						
Deal size	-0.023	0.11	-0.010	0.22	-0.017	0.12
Relative size	0.008	0.19	0.008	0.14	0.010	0.13
Cash	0.029	0.06	0.029	0.02	0.029	0.04
Related	0.023	0.07	0.025	0.03	0.022	0.06
Cross-border	-0.019	0.11	-0.017	0.09	-0.014	0.18
Number of bidders	0.007	0.37	0.000	0.52	0.007	0.34
Control transaction	-1E-4	0.52	-0.017	0.15	-0.010	0.29
Fisher statistic	1.86	0.06	2.25	0.02	1.71	0.08
Adjusted R ²	13.18%		15.77%		9.49%	

Panel B. Dependent variable: target CAR

	IVA (N=69)		ENV (N=83)		SOC (N=81)	
	coef	<i>p</i> -value	coef	<i>p</i> -value	coef	<i>p</i> -value
Target rating	0.012	0.10	0.005	0.31	0.011	0.09
<i>Control variables</i>						
Deal size	-0.062	0.00	-0.052	0.00	-0.057	0.00
Relative size	-0.013	0.21	-0.033	0.11	-0.039	0.08
Cash	0.044	0.17	0.058	0.06	0.053	0.07
Related	-0.019	0.20	-0.003	0.47	-0.003	0.46
Cross-border	0.038	0.20	0.020	0.35	0.022	0.35
Number of bidders	-0.023	0.19	-0.022	0.14	-0.021	0.15
Control transaction	0.126	0.02	0.128	0.00	0.131	0.00
Fisher statistic	2.24	0.02	2.06	0.03	2.05	0.03
Adjusted R ²	18.45%		13.69%		13.92%	

Panel C. Dependent variable: deal CAR

	IVA (N=69)		ENV (N=83)		SOC (N=81)	
	coef	<i>p-value</i>	coef	<i>p-value</i>	coef	<i>p-value</i>
Target rating	0.007	0.12	0.008	0.05	0.005	0.12
<i>Control variables</i>						
Deal size	-0.032	0.03	-0.020	0.04	-0.023	0.03
Relative size	0.037	0.01	0.034	0.03	0.034	0.01
Cash	0.025	0.04	0.026	0.02	0.025	0.03
Related	0.018	0.15	0.018	0.12	0.016	0.14
Cross-border	0.002	0.44	0.001	0.46	0.004	0.39
Number of bidders	-0.007	0.36	-0.005	0.34	-0.002	0.42
Control transaction	0.021	0.11	0.010	0.20	0.013	0.15
Fisher statistic	2.14	0.03	2.28	0.01	2.01	0.03
Adjusted R ²	17.24%		16.25%		13.38%	

Table 7
Two-entry table to compare acquirer and target IVA ratings

		Acquirer						Total	
		AAA	AA	A	BBB	BB	B		CCC
Target	AAA	3	0	0	1	0	0	0	4
	AA	1	0	2	1	0	0	0	4
	A	2	3	3	3	0	0	1	12
	BBB	0	5	2	3	2	2	1	15
	BB	1	5	1	4	3	3	3	20
	B	1	3	0	1	1	0	0	6
	CCC	1	0	0	0	1	2	0	4
	Total	9	16	8	13	7	7	5	65

Table 8

Multivariate regression analyses: The variable of interest is the spread between the target and the acquirer ratings

Rating spread corresponds to the difference between the target rating and the bidder rating. Definitions of control variables are stated in the legend of Table VI. R^2 is the coefficient of determination. N denotes the number of observations. The intercept, year dummies (identifying years 2005-2007) and country dummies (identifying U.S. and U.K. firms) are not shown in the table for brevity.

Dependent variable: acquirer CAR

	IVA (N=62)		ENV (N=83)		SOC (N=80)	
	coef	<i>p-value</i>	coef	<i>p-value</i>	coef	<i>p-value</i>
Target rating	0.014	0.06	0.015	0.00	0.011	0.03
Rating spread	0.003	0.26	0.002	0.20	0.003	0.21
<i>Control variables</i>						
Deal size	-0.029	0.10	-0.011	0.19	-0.016	0.15
Relative size	0.006	0.29	0.006	0.26	0.008	0.27
Cash	0.026	0.09	0.030	0.02	0.031	0.04
Related	0.025	0.06	0.028	0.02	0.029	0.02
Cross-border	-0.017	0.14	-0.020	0.05	-0.014	0.10
Number of bidders	-0.001	0.46	-0.002	0.41	0.007	0.32
Control transaction	-0.004	0.44	-0.014	0.17	-0.011	0.19
Fisher statistic	2.09	0.05	2.94	0.00	2.17	0.03
Adjusted R ²	12.89%		16.87%		10.95%	