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Building Value By Paring Environmental Risk

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ENVIRONMENTAL LIABILITY

It started when a market analyst called the CFO of a Texas-based energy company to discuss concerns about the company's outlook. Volatility in reported environmental remediation liabilities was among the analyst's top concerns.

Afterwards, the CFO asked the company's general counsel what could be done to extinguish the company's environmental liabilities. The general counsel, in turn, asked the director of environmental remediation to determine the feasibility and cost of transferring the company's environmental liabilities to a trust or liability buy-out firm. The company had the cash to settle its environmental obligations, but numerous other projects were competing for limited resources.

Expecting that the company would have to pay a 25-30 percent premium to transfer these liabilities to an independent party and remove them from its balance sheet, the remediation manager

Investors will reward companies that act to prevent a rise in environmental liabilities and penalize those who don't, writes an environmental attorney and CPA.

Measuring Return On Investment

Expenditures to cap or extinguish environmental liabilities serve to monetize estimation risk. The return on these expenditures will come from investors in the form of increased market capitalization and reduced weighted average cost of capital. Return on investment (ROI) can thus be calculated as follows:

$$ROI = \frac{(MC + CC) - E}{E}$$

Where: MC = Increased market capitalization
CC = Net present value of reduced weighted average cost of capital
E = Expenditures to cap or extinguish environmental liabilities

Consider the following example using a major U.S. oil company (OILCO) as a hypothetical case study. As of April 27, 2007, Google Finance reported the following information about OILCO:

- Stock price - $80.36
- Earnings per share (EPS) – $6.88
- Price-to-earnings ratio (P/E) - 11.68
- Market capitalization - $452.67 billion

Table 1 below shows OILCO's reported environmental liabilities since December 31, 2002 and annual accruals for environmental liabilities in 2003 through 2006. OILCO reported no other information in its 10-Ks to assist investors in understanding its environmental liabilities.

Table 1 – OILCO's Environmental Liabilities (millions)

	2003	2004	2005	2006
Environmental Reserves (as of January 1)	$468	$528	$643	$849
Environmental Remediation Expenditures (calculated)	$215	$225	$281	$335
New Accruals for Environmental Reserves	$275	$340	$487	$350
Environmental Reserves (December 31)	$528	$643	$849	$864
Total assets (December 31)	$174,3278	$195,256	$208,335	$219,015
Environmental Reserves as a Percent of Total Assets (December 31)	0.30%	0.33%	0.41%	0.39%
ELTR	2.5	2.9	3.0	2.6
Percent of Market Capitalization	0.10%	0.12%	0.14%	0.19%

From this information, several observations can be made. OILCO's environmental liabilities, which are approaching $1 billion and 0.20 percent of the company's market capitalization, are significant in absolute terms, but relatively small in comparison to the value of the company. The company's relatively constant ELTR of between 2.5 and 3.0 suggests that the company should be resolving its accrued environmental liabilities in three years or less. Yet, in five years from 2002 to 2006, the company's estimated environmental liabilities increased by 85 percent in absolute terms and by 30 percent as a percent of total assets. One might expect that OILCO would not be creating new environmental liabilities each year, and yet the company's accruals for new liabilities exceeded its expenditures to settle old ones in each of the last five years. The figures also suggest that OILCO could be wondered how he could ever demonstrate a satisfactory return on investment.

There is a conceptual framework for calculating the return on investment for expenditures to extinguish or otherwise cap environmental liabilities. This framework is based on the thesis that financially strong corporations with significant environmental liabilities can generate a positive return on investment by controlling the potential for upward volatility of these obligations.

By investing in mechanisms to extinguish or otherwise cap their environmental liabilities, companies reduce risk to lenders and investors and thereby increase their market capitalization and lower their weighted average cost of capital. This thesis rests on four key assumptions:

1. Investors discount the value of a company's future cash flows and stock price for estimation risk — risk arising from uncertainty surrounding the valuation and future cash flows associated with the company's environmental liabilities (both recognized and unrecognized).

2. Corporations can take steps, other than protracted cleanup, to reduce or eliminate perceived estimation risk to lenders and investors.

3. Investors and lenders will reward companies for perceptible reductions in estimation risk.

4. Incremental investments to extinguish or cap environmental liabilities will result in positive net present values for financially strong companies. For financially weak companies, investors may regard bankruptcy as a better means of resolving outstanding environmental obligations.

Estimation Risk

Estimation risk with respect to pre-existing pollution conditions, including both known and unknown conditions, arises

from uncertainty surrounding valuations and future cash flows associated with these legal obligations.

The actual value of a company's environmental liabilities may differ from its reported environmental liabilities for a variety of reasons. Pollution conditions giving rise to environmental liabilities can be difficult and expensive to identify, and, even when identified, environmental liabilities and the ultimate cost of remediation are subject to considerable scientific, engineering, and legal uncertainty.

Accounting standards provide significant latitude for professional judgment and discretion regarding recognition, valuation and disclosure, thereby compounding the uncertainty around reported numbers. Given this flexibility, some managers may be tempted to manipulate estimates in order to smooth earnings. Notably, there have been three SEC enforcement actions involving manipulation of environmental reserves in the past year.

Estimating a company's implicit environmental liabilities can be a daunting task, even for sophisticated lenders and investors. When there is recognized uncertainty, they will regard the company's environmental liabilities as riskier, with this risk reflected in the company's valuation and cost of debt. Moreover, when faced with uncertainty and limited information, analysts will tend to overestimate risk adjustments.

Estimation risk with regard to liabilities for pre-existing pollution conditions comprises three primary components — factual uncertainty, accounting uncertainty and legal uncertainty.

Factual uncertainty is composed of site uncertainty, allocation uncertainty, timing uncertainty and recovery uncertainty:

- Site uncertainty impacts the total cleanup cost at a particular site due to incomplete site characterization data, uncertainty whether a given remedial approach will be approved by regulators and the risk of cost overruns.
- Allocation uncertainty involves any individual party's share of the total cost of site cleanup at a multi-party site.
- Timing uncertainty relates to when cash outflows will be required to settle existing obligations — for example, when a company will retire facilities subject to asset retirement obligations.
- Recovery uncertainty involves a company's ability to recover funds from other responsible parties, insurers or indemnitors to offset its own costs.

Accounting uncertainty is composed of measurement uncertainty, standards uncertainty and control uncertainty.

- Measurement uncertainty re-lates to the company's estimating techniques to accommodate high levels of factual uncertainty. For example, an expected present-value technique is more

Measuring Return On Investment *(cont.)*

understating earnings by $215 - $335 million per year by charging to current operations environmental expenditures that should instead be debited against reserves (if the company's environmental liability reserves were adequate). Based on this data, without the benefit of any additional information, a market analyst could conclude that OILCO is underreporting its environmental liabilities or that it is ineffective in managing these liabilities, or both. Estimation risk appears high.

If OILCO wished to determine the economic benefit of extinguishing or capping its environmental liabilities, it would need to estimate the extent to which financial markets are discounting its securities for estimation risk. Table 2 below shows the impact on market capitalization at various risk premiums, ranging from a 0.1 percent to 5.0 percent. OILCO could obtain evidence of the actual risk premium by surveying its lenders and investors.

Table 2 –Estimation Risk Premium

P/E Discount	P/E (undiscounted)	Lost Market Capitalization (billions)
0	11.68	$0.00
0.1%	11.69	$0.44
0.5%	11.74	$2.25
1.0%	11.80	$4.52
2.0%	11.91	$9.04
3.0%	12.03	$13.57
4.0%	12.15	$18.10
5.0%	12.26	$22.62

Based on these calculations, if OILCO determined (a) the market is charging a 0.5 percent P/E discount for estimation risk relating to environmental liabilities, and (b) it would cost $2 billion to extinguish or otherwise cap its environmental liabilities and thereby eliminate the market discount, then the company could achieve a 12.5 percent return on investment, excluding any benefits from future reductions in the company's weighted average cost of capital.

effective in dealing with uncertainty than a most-likely-value or known-minimum-value technique.

- Standards uncertainty relates to whether new accounting standards will expand the definition of "liability" to include previously unrecognized obligations — for example, new accounting standards now require recognition of liabilities for conditional asset retirement obligations in a manner not previously identified in financial reports.
- Control uncertainty involves a company's potential failure to properly identify, assess, measure and report environmental liabilities due to error or fraud.

Legal uncertainty is comprised of litigation uncertainty and regulatory uncertainty.

- Litigation uncertainty relates to the future assertion of claims by government agencies or private litigants.
- Regulatory uncertainty involves future changes in laws and regulations or judicial rulings that could create new legal obligations relating to pre-existing or ongoing pollution conditions.

To account for estimation risk, analysts must calculate a risk premium, whether intuitively or empirically, to account for uncertainty surrounding environmental liabilities. Transparency in financial reporting (in terms of both robust accruals and detailed disclosure) can reduce, but cannot entirely eliminate, estimation risk.

Indicators of Estimation Risk

Investors today should generally expect a company's environmental liabilities relating to pre-existing pollution conditions — with the exception of asset retirement obligations (discussed later) — to steadily decline from year to year, as the company systematically settles its legacy cleanup obligations.

Companies become subject to environmental liabilities in one of four ways: 1) past activities that gave rise to environmental liabilities following changes in U.S. environmental laws in the 1970s and 1980s; 2) ongoing and future activities that create new pollution conditions as a result of improper operations; 3) acquisition of sites or companies subject to pre-existing environmental liabilities; and 4) the acquisition, construction or normal operation of a company's tangible, long-lived assets that results in legal obligations associated with the retirement of such assets.

Past activities. It has been more than 25 years since the enactment of the major U.S. environmental remediation laws (RCRA and CERCLA) that gave rise to recognition by companies of tens of billions of dollars in legacy environmental liabilities. By now, companies are, or at least should be, well aware of their legacy liabilities and should have programs in place to manage them. Insurance carriers have paid out billions of dollars in claims for cleanup costs under general liability policies that pre-dated the pollution exclusion now present in such policies. Federal and state governments have adopted more pragmatic, risk-based corrective action programs that reduce site cleanup costs, and new, more cost-effective remediation technologies have been developed. Based on these and other factors, environmental liabilities for legacy sites should be declining.

Improper operations. In response to environmental remediation and pollution control laws, responsible companies have implemented practices to minimize the probability of creating new pollution conditions (with the notable exception of greenhouse gas emissions). To the extent that such risks cannot be entirely eliminated through sound risk control activities, environmental insurance covering sudden and accidental pollution conditions has been widely available for the past 10 years. Generally, investors should not expect to see environmental liabilities growing as a result of new pollution conditions.

M&A activity. ASTM E1527, an industry standard for identifying potential environmental liabilities prior to acquisition of commercial real estate, has been in wide use for 10 years. Well-developed commercial practices for environmental due diligence in corporate M&A transactions have been in place for just as long. To the extent that an acquirer company knowingly assumes another company's legacy environmental liabilities, the extent of these liabilities should be known prior to acquisition and their assumption should be disclosed to investors.

Asset retirement obligations (AROs). These are legal obligations associated with the retirement of tangible, long-lived assets and arising from the acquisition, construction or normal operation (as opposed to improper operations) of the asset. Many AROs result from environmental laws that require cleanup, disposal and restoration at the end of an asset's useful life. AROs are reported separately from other environmental liabilities.

Because AROs can arise from a company's normal operations and are reported at present value, AROs can be expected to increase over time. When reported environmental liabilities other than AROs remain constant or rise, without appropriate explanation, investors should perceive greater estimation risk.

Environmental Liability Turnover Ratio

Another metric investors can use to gauge estimation risk is

the environmental liability turnover ratio (ELTR), defined as a company's reported non-ARO environmental liabilities divided by its annual expenditures for settling such liabilities. Both figures needed to calculate this ratio should be available in the financial statements and related disclosures.

A company's ELTR is indicative of the quality of its management and reporting of environmental liabilities. Absent special circumstances, the ELTR of a well-managed company should steadily decline as the company systematically resolves its existing environmental liabilities and avoids taking on new ones. If a company's ELTR remains relatively constant or rises over time, investors have reason to question both the comany's ability to effectively manage its environmental liabilities and the reliability of its financial reporting.

A steady ELTR indicates that the company's annual expenditures to settle its environmental liabilities are offset by annual increases to its environmental reserves. An ELTR between five and seven that remains constant over many years — a finding common to many large U.S. industrial companies — suggests that the company is underreporting its long-term environmental liabilities or that it lacks an effective management program to systematically resolve them, or both.

Reducing Estimation Risk

Corporations have a variety of options to reduce estimation risk. Research has shown that increased transparency in financial reporting reduces estimation risk. Companies can reduce factual uncertainty by posting timely accruals and disclosing non-public information about environmental liabilities and risks. Implementation and certification of effective internal control over financial reporting of environmental liabilities and use of robust measurement techniques can reduce accounting uncertainty.

Disclosures regarding potential unasserted claims and foreseeable changes in environmental laws, and the company's strategy to mitigate such risks, can reduce legal uncertainty. If a company's ELTR is not declining over time, the company can offer an explanation.

Companies can also use environmental insurance to cap cleanup costs for known pollution conditions, provide liability protection for pre-existing but unknown pollution conditions and cover new pollution arising from ongoing and future operations. Large, financially strong corporations may correctly

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determine that self-insurance is more cost-effective, but self-insurance does not reduce estimation risk. Investors may prefer to know that reported environmental liabilities will not increase, even if such assurance comes at a slight premium.

Besides insurance and better accounting and disclosure, financially strong companies have another, more aggressive option to eliminate residual estimation risk — transferring recognized environmental liabilities to an independent third party and derecognizing the liability.

There is a sophisticated market for environmental liability transfer, including the sale of contaminated properties and their associated liabilities. Such transactions offer the multiple benefits of essentially eliminating estimation risk, doing away with the quarterly adjusting of accounting reserves and taking advantage of federal income tax incentives.

Liability transfers can also eliminate estimation risk related to unrecognized liabilities that arguably should be reflected in the financial statements but are not. In situations involving contaminated company-owned property with unrealized appreciated real estate value, these transactions also may generate a capital gain on sale and positive cash flow.

Financial executives of companies with significant environmental liabilities should seek to understand and minimize estimation risk to lenders and investors. In theory, financially healthy corporations with sufficient resources should be able to generate positive return on investment by controlling the potential for upward volatility of these obligations.

To the extent that financial markets are not fully accounting for estimation risk today, thus limiting the rewards for risk mitigation, this may be changing. In 2006, JPMorgan downgraded the stock of a major U.S. corporation due to "environmental uncertainty." In addition, institutional investors appear to be getting more concerned about environmental risk, primarily due to worries about global warming. Heightened attention to such risk — whatever the source — should increase market rewards (or penalties) associated with good (or bad) environmental risk management and disclosure.

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TAKEAWAYS

>> By extinguishing or otherwise capping their environmental liabilities, companies reduce risk to investors and thereby increase market capitalization and reduce capital costs.

>> The actual value of a company's environmental liabilities may differ from its reported environmental liabilities for a variety of reasons.

>> When there is more uncertainty, investors will regard the company's environmental liabilities as riskier, and this risk will be reflected in the company's valuation.

>> Investors should reasonably expect a company's environmental liabilities to steadily decline from year to year. If that doesn't happen, investors may get worried.

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