

Costs of Natural Capital Dependency are Shaking up the Conventional Wisdom

Chaoni Huang, Head of Asia Business Development of environmental economics company Trucost, explains why the costs of natural capital dependency and pollution are shaking up the conventional wisdom of corporate management and investing in China.

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High-profile pollution incidents sent shockwave across China in recent years, from metals giant Zijing Mining's severe toxic discharge in Fujian in 2010, oil spills in Bohai Bay Baotou Iron and Steel Group's hazardous mine dump in Mongolia, to Beijing's 'worst-on-record' air pollution in the first month of 2013ⁱ. Environmental pollution can result in material financial, operational and reputational costs. How can Chinese companies and investors manage these risks?

Part 1: Economic losses due to environmental factors

Many companies in China face serious resource constraints as environmental challenges contribute to high food, energy and commodity prices. China, like many other Asian economies, is consuming more resources than its ecosystems can replenish, threatening the country's forests and rivers. The region's consumption of biomass, fossil fuels, metal ores/industrial minerals and construction materials has grown rapidly. Resource-intensive growth has made China more vulnerable to resource price volatility.

Companies in China are increasingly exposed to more frequent and extreme weather conditions and environmental degradation. Floods in 2011 disrupted production facilities and businesses, causing economic losses totalling some RMB 43.2 billion (USD 6.9 billion)ⁱⁱ. A recent Greenpeace report revealed the "inconvenient truth" that fine particulates (PM 2.5) are responsible for 8,570 deaths in Beijing, Shanghai, Guangzhou and Xian and linked to RMB 6.8 billion (USD 1.1 billion) of economic losses in 2012 aloneⁱⁱⁱ.

The seven pilot trading schemes for greenhouse gas emissions could lower the bill for damages from air pollutants whilst also boosting the uptake of cleaner fuels, energy efficiency and renewable energy technologies that will make the economy more competitive in the long run. The government's plan to conserve energy and cut carbon emissions aims to boost resource efficiency and control exports of energy-intensive, resource-based or heavily polluting products. The Ministry of Environmental Protection (MEP) is also set to curb "backward" production in sectors such as cement, while promoting green industry, procurement and products.

Part 2: Chinese Companies Facing Material Environmental and Natural Resource Challenges

International companies look at supply chain risks

While relocating and outsourcing business activities across Asia is nothing new, many international companies are now evaluating environmental risks embedded in their supply chains. Awareness is growing of exposure to risks from water scarcity along with other environmental impacts that could disrupt their supply chains and increase manufacturing costs, through higher water tariffs, commodity price volatility or operating restrictions.

Suppliers of intermediate goods are often located in countries such as China, which faces growing risks from water scarcity and floods. According to the 2030 Water Resources Group, demand for water will exceed supply by nearly 200 billion cubic meters in China by 2030. Our analysis of Nikkei 225 constituents found that Personal Goods companies are particularly exposed to water risks through greater volatility in prices for commodities such as cotton sourced from countries including China. Water risk in China's cotton-producing regions, for example, can increase price volatility in the supply chains of many textile companies. China produces about 25% of global cotton production with more than half of its cotton grown in high-water risk areas of the Yangtze and Yellow river basins. China's drought in 2010/11 contributed to cotton prices rising to a 15-year high. Water stress is expected to increase under climate change impacts in the northwest cotton growing region^{iv,v}.

China's competitive advantage in the labour market has attracted inflows of foreign capital in the past few decades. However, environmental costs are now catching up, along with upward trending wages and transport fuel costs, potentially eroding the profit margins that used to be enjoyed by international companies that outsource in China. More and more companies and investors are looking to understand financial risks and opportunities from water-related and other environmental challenges in their supply chains. For instance, sport and lifestyle company Puma's environmental profit and loss (EP&L) account showed that its biodegradable, organic T-shirt carried a slightly higher water cost (2%) than the non-organic version because the cotton used to make it was sourced from water-stressed parts of China. The implication is significant for companies like Puma as well as upstream manufacturers in China. Going forward, we expect that international buyers will start to factor environmental criteria into sourcing strategies, with questions such as which raw materials are used and how water is managed locally.

Similarly, U.S. retailer Walmart partnered with suppliers to improve energy efficiency at 200 factories in China by the end of 2012. Challenges in the pilot project included lack of energy metering systems at factories, with many in China generating power onsite and failing to record energy consumption adequately. The pressure on Chinese companies is very much on, but at the same time, those that can adapt to changing market demands will survive and thrive in the long run.

“Going West” companies

While many parts of the world are still in the shadow of the financial crisis, Chinese companies have been “shopping” abroad including in developed markets. High-profile mergers and acquisitions include Wanda's USD 7 billion purchase of the U.S.'s largest cinema operator AMC, and numerous mining projects in Africa and Australia. Particularly in developed markets where environmental enforcement and awareness is strong, Chinese companies face challenges such as community opposition. For instance, as China searches internationally for resources to fuel its economic growth, Chinese extractive companies face new territories that they might not be familiar with. Mining projects in places such as Australia and Canada not only expose the companies to more stringent legislation, but also a higher tendency for community opposition. Yanzhou Coal's USD 86 million mining project in the Hunter Valley, Australia was rejected due to local opposition based on environmental concerns in 2012. In addition to the legal approval processes, managing its operations, understanding community relations and local biodiversity are key to success outside China.

Insight from CDP survey and Newsweek ranking

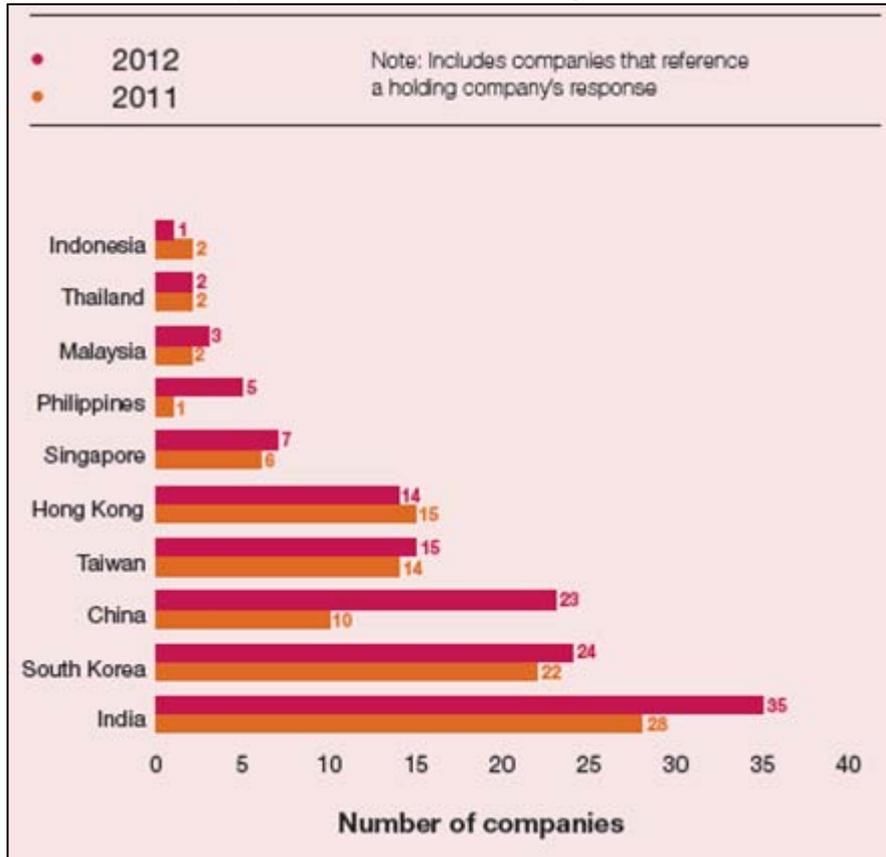


Chart 1: Breakdown of Asia ex Japan CDP responding 400 companies by country

So how are Chinese companies managing exposure to the rising costs of natural capital? Two recent reports have revealed that China's biggest companies are not sufficiently transparent about their environmental performance. The 2012 Carbon Disclosure Project (CDP) Asia ex-Japan Report, co-authored by Trucost, analyzes responses to a climate change information request sent to 400 companies in Asia ex-Japan (see chart 1). These are considered to be of greatest interest to investors and comparable in terms of size and importance to the region's economy. The survey showed that only 23 of China's top 100 companies are prepared to supply information on carbon management and climate risks. Despite an increase in participating Chinese companies from 10 in 2011 to 23 in 2012, companies in China are among the least transparent in the region. Reporting on energy and water data is also lagging.

Similarly, in a global Green Ranking of the top 500 companies by market capitalization in U.S. magazine Newsweek with Trucost's environmental performance data, Chinese companies performed poorly on environmental transparency and management relative to its global peers. Among the 32 Chinese companies analyzed, only Bank of China made it to the top 100 list while the rest were mostly trailing. There is room for improvement in systematically tracking and monitoring relevant environmental indicators, as well as a need for a better understanding of the materiality of environmental mis-management.

Part 3: Responsible investors step up

China's opening of its capital market to international investors, particularly with the significant boost of a qualified foreign institutional investor (QFII) quota up from previous USD 30 billion to USD 80 billion in April 2012, will bring demand for new levels of transparency in the area of environmental data and performance. Companies and funds will be influenced by global responsible investment and corporate responsibility initiatives such as shareholder activism, implementation of the UN-based Principles for Responsible Investment (PRI) and the Global Reporting Initiative.

Since its launch in April 2006, PRI has grown to 1,100 signatories representing more than USD 32 trillion in assets under management (AUM) by the end of 2012. Just two private equity investment managers in China have voluntarily committed to the six PRI principles to address environmental, social and governance (ESG) issues – Jiuding Capital and Lunar Capital Management. The first SRI (Social Responsible Investment) fund in China was launched by Ageon-Industrial Fund Management in 2008. Capabilities to integrate ESG factors into investment processes by Chinese asset managers are yet to catch up with those of many PRI signatories elsewhere, which could challenge their ability to attract foreign funds. For instance, it is uncertain to what extent Chinese asset managers systematically understand the water intensity of portfolio companies' operations, suppliers and products, despite water being a scarce resource in China. Most are yet to model the sensitivity of corporate earnings to water risk. Yet international equity and fixed income investment mandates increasingly expect fund managers to monitor environmental risks and opportunities.

Fund managers in China need to position their portfolios for the financial impacts of pilot carbon trading schemes, pollution controls and market-based measures to induce resource efficiency, which will shift industry dynamics and have a material impact on companies' fundamentals in China and elsewhere. Our study of the materiality of environmental external costs, commissioned by PRI in 2011, estimates that 50% of company earnings that could be at risk from environmental costs in an equity portfolio weighted according to the MSCI All Country World Index. Chinese asset managers are likely to start embracing ESG integration to help win mandates from institutional investors that will soon need to report publicly on how they are integrating these issues into investment analysis and decision-making. Chinese asset managers need to look beyond the financial ratios, and expand research and investment horizons to consider relevant natural resource factors in decision-making.

Part 4: What can Chinese investors do?

Chinese investors to incorporate material environmental data

For investors, it is important to feed quantitative and meaningful environmental data into its mainstream investment decision making processes, enabling risk management, portfolio footprinting, sector and stock level analysis and environmental stress testing across asset classes. Equity analysts and fund managers could focus on environmental factors that are material to company's revenue generation and profit margin, and incorporate key environmental metrics into fundamental analysis. Understanding variations in carbon performance among companies within each sector will become increasingly important to investors. Standardized and quantitative corporate data on greenhouse gas emissions is important to enable investors to address climate change risks and opportunities. This also holds true for water efficiency, energy use, waste management and other pollution impacts.

Companies that have lower hidden environmental costs will likely maintain market competitiveness in the long run due to shifts in environmental policies, supply constraints, and changing demand patterns. Responsible investment is not necessarily about negatively

screening out environmentally-intensive companies in portfolios or best-in-class filters. Quantitative environmental data at a company level can inform long and short strategies. Portfolios that overweight companies that use natural resource efficiently are more resilient to increasingly stringent environmental regulations, volatile commodity and energy prices as well as changing consumption patterns. In our experience with investors, incorporating Trucost' environmental data has driven investment products from leading fund managers that match the financial performance of benchmarks with up to 50% reduced carbon risk.

Considering carbon intensity across funds could encourage uptake of low-carbon fuels, buildings and technologies in emerging markets. S&P Dow Jones Indices has used substantial variations in the carbon intensity of companies within country/sector combinations to construct a carbon optimized index using the S&P/IFCI LargeMidCap Index as its benchmark. The [S&P/IFCI Carbon Efficient Index](#) retains the same constituents as the mainstream emerging markets index, but stocks are rebalanced within each country/sector combination to overweight those that are carbon efficient relative to industry peers, and underweight companies that are more carbon intensive, while maintaining similar exposure to other factors. As a result, the S&P/IFCI Carbon Efficient Index is more than 30% less carbon intensive than the parent index, and has outperformed its benchmark by 2.84% since inception, based on relative returns between December 2009 and November 2012 (see chart 2).

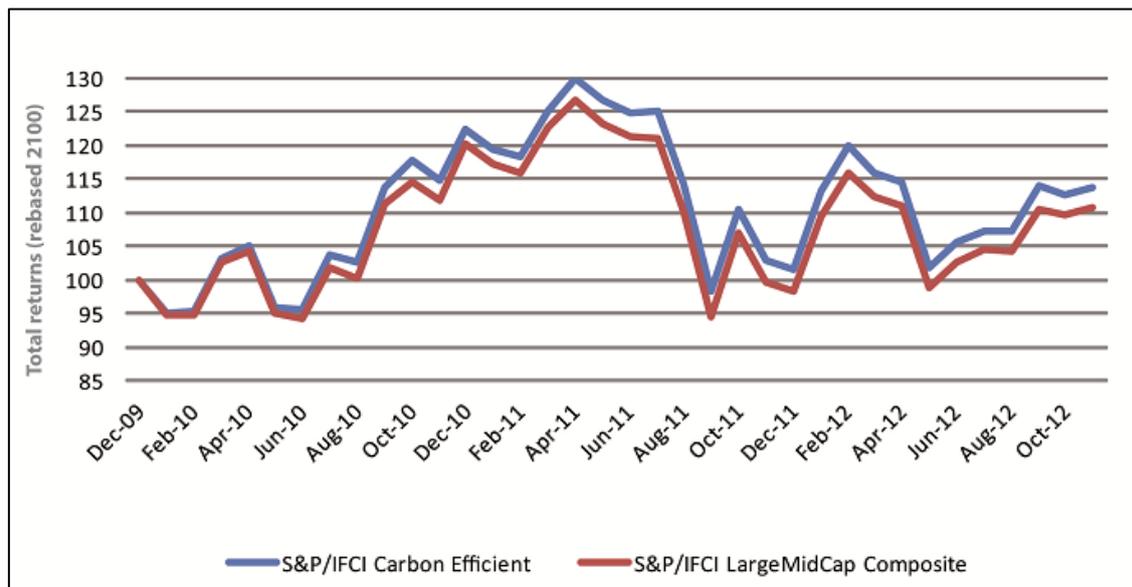


Chart 2: S&P/IFCI Carbon Efficient Index v Benchmark

Shareholder engagement can also help protect financial returns. Hermes and First State are among fund managers actively encouraging investee companies to improve environmental management, and to strengthen good corporate governance, to protect risk-adjusted returns in the long run.

Chinese banks to evaluate credit risk stemmed from natural capital dependence

As China's Central Government is increasingly robust on environmental protection, the cost of environmental pollution, changes in criteria for licenses to operate and mitigation rules can have direct impacts on companies operational and financial stability. These costs can translate into credit risks for the companies' financiers, including Chinese banks. The MEP has shortlisted more than 600 highly-polluting products and techniques and is urging economic departments to use market-based and economic instruments to curb their production, consumption and export, for instance, by cancelling export rebates and banning processing trade of environmentally risky products. Banking regulators want the inventory to be used in the approval of credit applications. For lenders, understanding the natural

resource dependence and environmental footprints of companies in loan books is vital to manage exposure to future credit risk from resource pressures and carbon constraints.

China's Green Credit Policy could help cut the environmental costs of financed business activities. The MEP is currently developing criteria to evaluate banks and enterprises on their implementation of its green credit policy. The China Banking Regulatory Commission's 2012 guidelines require banks and financial institutions to adjust lending practices to support energy saving and environmental protection. For instance, by prioritising credit for green projects that can help bring about a low-carbon economy.

Trucost measured the intensity of environmental damage for loans made by banks based in Hong Kong. Construction and manufacturing firms were responsible for the majority of carbon emissions linked to loans across more than 10 sectors analyzed. An understanding of which companies and sectors are most polluting can inform credit risk assessments and adjustments of interest rates to reflect higher risks from pollution or resource costs and shutdowns.

Chinese fund managers to conduct environment portfolio audit

One solution is to start with a fresh perspective on risk, stock selection and sector exposures by conducting an environmental audit of investment portfolios. This can enable the fund manager or asset owner to explore how the value of investments may change under a carbon trading scheme. Ultimately, Chinese investors including institutional or retail asset owners are entitled to ask the question: what are the long-term consequences of investing in these companies in a carbon-constrained economy and how is my fund managing these risks and opportunities?

Part 5 Conclusion: An optimistic outlook

Environmental protection is no longer a tool used just for public relation purposes. Natural capital challenges are directly linked to a company's top and bottom lines. As emissions of pollutants are being regulated and the cost of environmental damage outweighs abatement costs, Chinese companies and investors are increasingly incentivized to take into account the true costs of pollution and natural resource use in core businesses. Companies and investors that recognize material environmental impacts, track and monitor emissions, integrate data into performance evaluations, and optimize products and supply chains, will be well positioned for China's shift to a cleaner, greener economy.

About Trucost www.trucost.com

Trucost has been helping companies, investors, governments, academics and thought leaders to understand the economic consequences of natural capital dependency for over 12 years. Trucost's world leading data and insight enables its clients to identify natural capital dependency across companies, products, supply chains and investments; manage risk from volatile commodity prices and increasing environmental costs; and ultimately build more sustainable business models and brands.

ⁱ "北京 PM2.5 爆表, 谁能独善其身?", 新口网, 13 January 2013

ⁱⁱ "Floods cause direct economic loss of 43.2 billion yuan in China", Xinhua, 30 June 2011

ⁱⁱⁱ "Dangerous Breathing", Greenpeace, 18 December 2012

^{iv} China report spells out "grim" climate change risks, Thomson Reuters, 17 January 2012

^v Cotton gains on reports of Chinese drought; orange juice falls, Bloomberg, 18 May 2011