

GREEN FINANCE FOR CHINA

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Introduction

The fate of China's environment and its financial sector are intimately connected. Despite central government efforts to divert lending away from polluters and towards environmentally friendly projects, financial flows continue to support dirty industries and blight lives. Meanwhile, environmental disasters impact the health of businesses and returns for shareholders: Zijin Mining's 2010 toxic copper spill in Fujian province, which killed off nearly 2,000 tonnes of fish, also pushed the company stock price down 12%.

Like much of the rest of the world – still reeling from the 2008 financial crisis – China is grappling with the question of how to build a more responsible investment sector; one where short-term profit seeking is not allowed to dictate the fortunes of our society and the health of our environment. In this short collection of articles, published with the support of China's Policy Research Center for Environment and Economy (PRCEE) and the British Foreign & Commonwealth Office (FCO), chinadialogue explores the challenges and possible solutions.

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Chinese banks under “almost negligible” pressure to protect the environment

Xu Nan

Companies and government regulators get blamed for pollution incidents, but rarely the financial bodies that lent the money, senior state researcher Yuan Qingdan tells chinadialogue.

In February 1995, China’s central bank – the People’s Bank of China – issued a notice requiring financial institutions to take protection of natural resources and the environment into account when making lending decisions. That document is regarded as the start of China’s efforts on “green credit”.

Almost two decades later, and with the more concrete Green Credit Policy now in place, what progress has China seen?

Last year, the Ministry of Environmental Protection’s Policy Research Center for Environment and Economy published a report ranking China’s 50 biggest banks by market capitalisation on green lending criteria. Speaking at the study’s launch, the body’s deputy director Yuan Qingdan said only 12% of the banks examined were fully implementing a green credit policy. Implementation was not ideal at over half of the banks, he said, while 18% had no information available on their policy.



The report revealed that, since 2006, when information on breaches of environmental law was included in the central bank’s credit rating system, over 50,000 pieces of data have been submitted from all over the country. But submission of data by 30% of local environmental protection bureaus has fallen significantly below the levels required by both the state and central bank.

Yuan talked to chinadialogue about the barriers to greener lending and the path ahead.

Xu Nan: What is holding the Chinese banking sector back from making greener lending decisions?

Yuan Qingdan: China’s 50 banks all have green credit policies in place, but generally these policies are just hung on

the wall. They don't actually influence credit ratings and lending decisions.

In the sector as a whole, lending to polluting, energy-hungry and resource extracting industries is still high, and that's particularly the case at city-level commercial banks. Those banks are strongly influenced by local governments, which prevent the local environmental authorities from providing information on breaches of environmental law by some companies, or in some projects. Some local governments require local banks to lend to environmentally risky companies.

There has long been a lack of motivation for banking institutions to implement green lending. Banks want profits, but no matter how financially innovative they are, someone will still need to pay to clean up the pollution created. China needs both a market environment and legal environment more conducive to promoting environmental protection. That's a precondition for more green lending.

Compared with other countries, the financial sector in China is under a lot less, almost negligible, pressure to protect the environment. When an environmental problem arises, the media blames the company and government regulators, but rarely the financial bodies that lent money to the company. Things are very different overseas. In other countries, the public will ask: who invested? Who were the accomplices?

XN: China's most important financial players are the big state-owned banks – the Bank of China, Industrial and Commercial Bank of China, the Construction Bank and the Agricultural Bank. How do they differ on green lending?

YQ: Not much. The state-owned banks respond to government control and macroeconomic regulation. The government has issued documents on green lending, and the China Banking Regulatory Commission (CBRC) put out plenty of specific measures – just last year it issued guidelines for green lending.

The big four banks are all responding by implementing those measures, for example by maintaining lists of firms to check for environmental wrongdoing when they apply for credit, and so on. But there are limitations: currently there are no standards for doing this, nothing is made public and there is no specific regulator or authority to check environmental assessments.

If a problem arises at a project the bank has loaned money to, it won't make its involvement public. The CBRC might know, but the public doesn't. Nobody dares to air their dirty laundry. In this sense, progress has been very limited.

XN: Which parts of the sector have shown the poorest performance? Where are the problems worst?

YQ: Overall, the big commercial banks are doing fairly well. The bigger the bank, the better its performance, in particular the state-owned banks. The local credit cooperatives do worse – they don't have so many projects to select from.

Some polluting projects aren't funded by lending, which means China's ability to regulate them via lending policy is limited. And of course green policies don't reach underground lenders. Big companies, even if they consume lots of energy or emit lots of pollution, can at least be seen and regulated by the authorities. The worst pollution comes from the areas regulation hasn't reached, which aren't even covered in the statistics.

XN: How green is Chinese finance compared to other countries?

YQ: I'm not sure you can make the comparison.

In China, green finance relies on top-down administrative instructions, and that doesn't work in the long term. Take the US – over there, the Federal Reserve just has to manage interest rates, while there are laws to take care of green financing. And when you have a culture of open information, the public and NGOs also get involved. Things are completely different in China: not just the market environment, but the ways of operating, the degree to which the rule of law functions, the amount of transparency, these are all different. It might never be possible to make the comparison.

Another very important factor is that western nations have already been through their period of high-emission industrialisation. They simply have lower emissions than China.

XN: So will China's degree of green lending inevitably match its stage of economic development?

YQ: Finance is the core of the economy, and actually it can take a bit of a lead and go a bit faster. Unlike bricks and mortar industries, finance relies more on management, on services, on information, and so it can play more of a guiding role.

The Chinese banking industry is relatively centralised: there aren't that many commercial banks, only a dozen or so big ones and no more than several hundred city-level commercial banks, which makes it easier to form a consensus. That's an advantage for China when it comes to increasing the degree of green lending. The banks can be more forward looking, and better guide the sustainable development of the economy. The key is uniform standards and consensus, with strict implementation of policy from financial institutions to all levels of government.

Currently, financial institutions aren't held responsible if something goes wrong with a project – they just risk their money. But they could easily become a force for more professional risk assessments, even helping to reduce environmental risks. The sector doesn't lack the personnel or

the funds, and if they could make a 3% or 5% profit on assessments, they could do better.

Of course, we also urgently need to do more on legal constraints and public access to information.

Xu Nan is deputy editor in chinadialogue's Beijing office.

Can activist shareholders drive a new era of sustainable investment in China?

Olivia Boyd

With its reputation in tatters following the 2008 crisis, the financial world is being shaken by a push for more socially and ecologically responsible investment. Will Chinese shareholders be next?



Since the western banking crisis of 2008, “responsible” has not been a word readily associated with investment. “Casino”, “cowboy”, “rogue” and “unsustainable” have more regularly featured in newspaper headlines as a string of scandals has unravelled public confidence in the reliability and decency of the financial sector.

But, over the past few years, a very different story has been playing out in the world of investment banks, speculators, hedge funds and pension portfolios. An emerging body of organisations and campaigners is pushing for a more sustainable approach to finance – what they call “responsible investment” – from the inside. They want to persuade shareholders to demand a more active say in how, and how well, their money is used.

Leading the pack is the UN-backed Principles for Responsible Investment (PRI), which works with many of the world’s biggest investors to push for better environmental and social corporate performance. Then there’s Fair

Pensions, a UK charity that uses internet tools to empower ordinary pension holders; and the Cambridge University-based Banking Environment Initiative, a bank-led consortium seeking to redirect capital in environmentally friendly ways.

These are not banner-waving activists attacking the ethics of the financial powerhouses, but financially savvy operators, out to persuade investors they will achieve better returns if they push for sound environmental and social management, and good corporate governance.

“The companies that look after their workers, that don’t have huge pollution issues, that have good relationships with their communities, that have safe products – these are the sorts of companies that will ultimately prosper,” explains James Gifford, executive director at PRI.

There is evidence this message is very slowly starting to get through. PRI now has more than

1,000 signatories, representing around US\$30 trillion in assets. The list includes some of the biggest asset managers and pension funds in the world – UBS, Blackrock, the Norwegian government, plus “the majority of funds under management in Brazil, South Africa, Australia and most of western Europe”, according to Gifford.

Since even the biggest investors rarely have more than 1-2% of the stock in a listed company, PRI has also set up a forum to coordinate investor coalitions. The idea is that investors can pool knowledge and resources and take their concerns to a particular company en masse. In 2010, for example, an alliance of 16 investors, worth a combined US\$1.5 trillion, asked 100 of the world’s biggest companies to sign an initiative to improve corporate practices around water. Twenty-one firms did so, including big names like Nike, Cadbury and GlaxoSmithKline. Other coalitions have covered issues from environmental disclosure to corporate engagement with Sudan and the global arms trade.

Fair Pensions has made similar attempts on the grassroots side. Two years ago, in alliance with other NGOs, it coordinated the UK’s first shareholder resolutions – proposals put forward by shareholders for vote at a company’s annual general meeting – addressing environmental risk. The resolutions asked BP and Shell to publish details of the environmental, social and financial risks associated with their tar sands projects in Canada after more than 6,000 people contacted their pension providers to express concern about energy intensive oil-drilling in

this fragile ecosystem.

Though these “rebellions” were ultimately quashed, they did have an impact, says Fair Pensions chief executive Catherine Howarth: “Both BP and Shell became a lot more transparent about what was happening in the Canadian tar sands operations.”

Support for shareholder activism is also starting to trickle through from the academic world. In September, London Business School fellow Elroy Dimson published a paper concluding that shareholder engagement on climate change and corporate governance helps companies to outperform their peers.

China: the next frontier?

But progress is not uniform. Japan and South Korea excepting, Asia as a whole has not embraced the “responsible investment” movement, says Gifford. Of UNPRI’s 1,000 signatories, just two are Chinese. As China’s global financial clout grows, this is something Gifford wants to change. He has called China the “next frontier” for responsible investment.

When *chinadialogue* spoke to Gifford, he had just returned to the UK from a trip to China, ready with evidence that the Chinese need the PRI. He reeled off a list of high-profile scandals that have dealt a financial blow to Chinese companies and in turn their shareholders. After the Mengniu Dairy scandal, in which melamine-tainted milk killed at least six children and sickened hundreds of thousands more, the company share price fell 31%. The China Railway Construction corruption scandal pushed the stock down 25%. In the case of Zijin

Mining's toxic copper spill in Fujian, the company suffered a 12% reduction in stock price. The list goes on.

"The point we are trying to make is this isn't about sacrificing returns to make the world a better place," says Gifford. "This is about running responsible companies that don't get themselves into all sorts of trouble cutting corners, being corrupt, trying to do things on the cheap." To achieve change, he said, the signals from investors to companies need to move from the traditional message of "extract as much value out of your market as possible and give it to us the next quarter".

China is taking its own measures to tackle these problems. The explicit aim of the government's Green Credit Policy, launched in 2007, is to limit commercial funding to dirty companies. With its own initiatives under way, does China really need to be part of this global club?

For Gifford, the key advantage for China of signing up to the PRI would be linking up with other investors, including those grappling with similar issues around commodities and farmland in developing countries. "China still has massive challenges in terms of corporate governance and accountability to shareholders. I think the PRI would provide a really strong community of investors to plug into that global dialogue."

And, like Wall Street, China is struggling with a "gambling culture", says Gifford – a hunger for short-term investments, with damaging long-term impacts. "The volatility of the Asian stock markets is quite big and that's in large

part because there is a very large group of gamblers, investors who are really just playing the game. And that's not very helpful for long-term productive capital and enterprise."

As well as facing common challenges, investors are dealing with an age of global capital, global supply chains and global customers, says Gifford. "China is one of the biggest exporters in the world. It's really important that Chinese companies, if they want western capital and vice versa, are accountable."

UK pension savings invested in China

It's not just the big institutional investors who are affected by this aspect of globalisation, points out Howarth. Increasingly, UK pension savings are invested in Chinese companies. This, she predicts, will bring demands for new levels of openness as companies or funds have to answer to global standards, not just local ones. "It will come slowly, but it's inevitable that we will want the same level of access to information as we have here and we're absolutely right to demand it. Because you invest in a company and you've given them money, which means that in return you should be able to see what's happening to it."

Strengthening that connection between ordinary people and their invested pensions is more important than ever as the financial crisis rumbles on, she says.

Confidence that your money is being managed properly includes making sure the companies it goes into are environmentally sustainable, says Howarth. After all, "it's really illogical for people who are saving for the future to invest

in companies that are potentially destroying our future.” That point came out clearly, she says, shortly after Fair Pensions’ shareholder resolution on Canadian tar sands, when the Gulf of Mexico oil spill wiped around US\$25 billion off BP’s share price, to the cost of its shareholders.

“I think our resolutions were raising these kinds of operational and environmental risks. And the potential of those risks to have a real financial impact was demonstrated shortly afterwards in the Gulf of Mexico,” Howarth says. “It was almost spooky the way it happened. And I deeply regret that it did happen. But it did suggest we were on to something.”

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Natural capital: avoiding the next financial crisis

Ivo Mulder
George Scott

Earth's ecosystems are the foundations of our economy, but rarely appear in balance sheets. That means risks for markets.

Nature underpins global wealth creation. The renewable flow of goods and services provided by the earth's ecosystems buttress our economy and yield benefits for business. But this stock of ecosystems – also known as “natural capital” – is largely invisible in financial decision-making. As a result, natural capital does not appear on the balance sheets of businesses and is largely unaccounted for in financial products.

Take for instance an investor in London, Shanghai or New York who finances a palm-oil development scheme in Indonesia or Africa, resulting in clearance of a large area of natural tropical rainforest. The dependency on and impacts of this investment on climate, food, energy, water and livelihood security are unlikely to be included in the cost of capital or debt, credit ratings on fixed income products, investment analysis or insurance premiums.

Most finance institutions still do not believe that natural capital is material to their bottom line. As a result, for many types of financial products there are at present no metrics available to incorporate it (quantitatively) in credit risk. But loss of forests affects water supplies vital to agriculture and hydropower. Greenhouse gas emissions from forest clearance account for about 12-15% of



Image by Rainforest Action Network

emissions globally. Species loss is immense, while deforestation can trigger community conflicts. Economists estimate forest loss alone is eroding natural capital and ecosystem services valued at US\$1.2 to US\$4.7 trillion per year.

There are also a number of ways natural capital consumption may affect the risk profile of an individual investor. First, there is a reputational risk, which may inhibit an institutions' ability to raise funds in the future, based on a history of irresponsible investment.

Second, there are important legislative and liability considerations, demonstrated by a growing number of cases of companies being held financially responsible for biodiversity and ecosystem impacts. The EU Environmental Liability Directive (ELD), for example, makes companies directly accountable for impacts on water resources, fauna, flora and natural habitats. Operators of risky or potentially risky activities can therefore be held liable for the preventative and remedial costs of environmental damage. In these cases

investors may be left exposed to any litigious action against the operating company which would adversely affect the price of their shares.

For industries dependent on natural capital, the continued erosion of global resources presents additional operational challenges. Exponential population growth is putting ever increasing pressure on the limited global natural capital base. The resulting surging demand in the past decade alone has reversed a 100-year decline in resource prices. Growing pressure on agricultural production, as well as associated water and energy requirements, from feeding an additional billion people by 2030 will trigger considerable increases in the price of global commodities.

These predicted price rises fall well within the investment horizon of pension funds and many project finance loans. And they represent potentially difficult supply-chain challenges for business and an important credit risk consideration for investors. A 2011 report by Ernst and Young found that 29% of profit warnings from FTSE companies were caused by increases in the cost of raw materials. For large financial institutions, where due to the complexity of their activities, the exact level of exposure to natural capital is often not fully understood, this represents a very real risk. A recent study by UNEP FI and PRI revealed that environmental externalities can equate to up to 50% of company earnings in standard equity portfolio.

Natural Capital Declaration

The Natural Capital Declaration, launched in June 2012, is an attempt to do something about this web of risks. The industry-led initiative aims to encourage widespread

integration of natural capital considerations into financial products and services, and work towards their inclusion in financial accounting and reporting.

It isn't the first step taken by the industry. Financial institutions began to address natural capital issues before 2012 through the adoption of the Equator Principles – a voluntary set of standards to help banks identify environmental and social risks linked to financing large projects like dams or mines – and the development of specific policies for environmentally sensitive sectors such as mining, oil and gas, forestry and chemicals. Leading companies are taking commitments to “green” their supply chains and some governments are making plans to account for natural capital nationally.

However, a systematic approach to understanding how a bank, an investment firm or insurance company impacts and depends on natural capital – indirectly through corporate customers, or directly through say, project finance – is lacking. Many institutions are in the dark about how to integrate natural capital considerations beyond project finance. The increasingly complex web of financial transactions held on a financial institution's balance sheet, interbank lending, corporate finance and creative financial products, often mean that, as with the 2008 financial crisis, the location, dependency and exposure to natural capital and the risk of natural capital depletion is hard to measure.

The Natural Capital Declaration specifically aims to develop metrics and tools to help financial institutions integrate natural capital in a broad range of financial products including corporate finance, corporate and sovereign

fixed income, private equity and insurance products.

As increasing global pressures chip away at stock of natural capital, businesses face mounting challenges. These can come in the form of legal liability, credit, reputational, regularity and portfolio risks, each presenting different threats and requiring additional mitigating measures. For example, climate-change driven shifting rainfall patterns have led to the destabilisation of the global commodities markets, exposing financial institutions to risks from increasingly unstable asset prices.

Market destabilisation is one consequence of a shrinking natural capital base, other examples might be: declining hydropower linked to increasing drought, political restrictions on the export of genetic material, an unexpected and irreversible collapse of fish stocks, stranded assets resulting from changing energy legislation, all of which present a material risk to financial institutions.

Acting now to boost profits

The outlook is not all bleak however. Understanding the risks posed by degradation of natural capital can bring a market advantage and the ability to generate additional returns at the same time as maintaining the global stock of natural reserves. Financial institutions can generate long-term profit from equity holdings in companies which, say, take serious measures to sustainably and responsibly source fish, or which take a long term view to managing timber reserves in paper and pulp supply lines. Such measures will not only benefit individual holdings, but also boost stability in markets dependent on natural resources.

Equally, as the corporate sector develops its natural capital agenda, integration of natural capital into business accounting standards will make it easier for financial institutions to discern profitable investments. Investments in new technologies which increase efficiency and cut consumption could also prove lucrative, as could low impact industrial processes.

Financial institutions can improve their market position by leading in this space, as well as through the development of certified products. The Roundtable on Certified Palm Oil, set up in 2004, had certified 11% of total palm oil production by 2011, for example. Similarly, the Marine Stewardship Council (MSC), which certifies sustainably managed fisheries, presently accounts for 147 fisheries and 2,000 seafood businesses, meaning around 8% of all wild caught seafood is certified by this standard.

Increasingly conscious consumers are driving the development of these markets. In the 12 months from 2010 to 2011, the volume of MSC certified products on retailers' shelves increased by 62%. When seen this way, natural capital is very much a risk and reward game. Risk mitigation side by side with opportunity expansion makes for a smart proposition.

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China key in move to green economy, global leaders told at Davos

Simon Zadek

Global and business elite receive stark warning at Davos – extra \$700 billion must be spent greening infrastructure investments by 2030 to avoid dangerous climate change.

The world needs to spend a massive US\$5 trillion a year on infrastructure to keep up with transport, energy and water needs, says a coalition of institutions including the OECD and World Bank.

That's equivalent to the combined GDPs of the France and the UK, each and every year.

But finding the cash isn't the only challenge, warn the authors of the report *Green Investment*, who presented their findings at the World Economic Forum meeting in Davos, the world's largest annual jamboree for business and politicians.

If the world is to avoid a dangerous rise in temperatures of 4°C or more in coming decades, much of the investment must be low-carbon and resource-light, says the Green Growth Action Alliance, which also includes Bloomberg New Energy Finance, the Climate Policy Initiative and the World Economic Forum.

China and other developing nations need to be part of this shift from brown to green



investment for the numbers to add up, explains the report. The World Resources Institute estimates that China and India alone account for 76% of the 1,199 new coal-fired power plants currently proposed globally.

Green investment costs more, at least in the short term. The Alliance's report puts the extra cost, globally, at US\$700 billion a year, with almost half of that needed to cover the added costs of buildings and industrial efficiency measures, and another 20% to green the estimated US\$15 trillion investment in energy generation needed by 2020.

These incremental costs are insignificant compared to the damage to economies, communities and nations of unrestrained climate change, or rising and volatile commodity prices, especially food. However, someone still needs to put up the extra money. So where will it come from?

Mobilising the private sector

Global investment in renewable energy has risen six-fold since 2004. But the numbers remain far too small. Moreover, future renewable investments are threatened by government cut-backs. Germany, the UK and Spain have reduced solar PV subsidies. Wind installations in the US are falling, in part due to the expiry of a key incentive scheme, the federal Production Tax Credit. And India and China are also phasing out tax incentives for wind power, though support for solar remains strong.

Active government support is crucial to scaling up green investment as long as the lack of a strong carbon price and fossil fuel subsidies continue to make green uneconomic for many private investors.

The good news is there is growing experience in mobilising private capital through the use of relatively small amounts of public finance. Equity and debt financing by public institutions, especially development banks, has been a crucial catalyst of private investment, as have feed-in tariffs – a guaranteed price for clean energy from small-scale producers – and other means of incentivising renewables investment and pollution clean-up.

Growing importance of developing countries in clean-tech

Major developing economies are a growing source of finance for green investment, despite, or perhaps because of, the failure to secure an adequate global deal on climate finance. Domestic clean energy financing within

non-OECD (developing) countries has exceeded that of OECD (developed) countries each year since 2008, according to Bloomberg New Energy Finance. Total clean-tech investment originating from non-OECD countries for both domestic and international schemes grew from US\$4.5 billion in 2004 to US\$68 billion in 2011, according to the Climate Policy Initiative.

What's more, judging by recent growth rates, the figure for 2012 may actually exceed the investment originating in developed countries that year.

However, that isn't the end of the story. The *Green Investment* report highlights two further points worthy of attention. First, today's trade rules and the basis on which international development institutions stump up cash are at best insensitive to, and more often actively block, potential economic development gains from green investment supported by tax dollars. This is a crucial issue for all developing countries, not only major potential exporters such as China, but smaller developing nations in Africa and elsewhere keen to secure economic benefits from their willingness to go green.

China's attempt to gain from public financing of solar-panel manufacturing through lucrative exports, for example, has attracted accusations of unfair subsidies at the World Trade Organization. It's not just China. South Africa's attempts to link its willingness to pay more for renewable energy to local manufacturing conditions has met with resistance, often from the very international development banks mandated to support green economic

transitions across the developing world.

While a free-for-all in subsidising exports clearly has to be avoided, there is now an urgent need to validate and encourage green-growth transitions through international trade rules and available development finance.

Second, while it's reasonable to use public money to incentivise long-term private investors to go green, financial markets need to be more robustly diverted from their endemic short-termism. By not pricing in climate risk, British economist Nicholas Stern points out that investors are in effect betting on, indeed encouraging, an unsustainable increase in global temperatures.

Developing countries with maturing capital markets have a chance to leapfrog more advanced competitors by gearing their finance industries for more active investment in tomorrow's carbon-light economy.

This is especially relevant to China, which is at a critical moment in the development of its financial services sector. Recent signals by the China Banking Regulatory Commission, which launched its Green Credit Guidelines in 2012 are encouraging. But much more can and needs to be done to shape an appropriate regulatory environment and investment culture that ensures that domestic green investment advances more quickly, and that China becomes a major player in financing green investment internationally.

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How environmental ratings can make China more competitive

Matt Prescott

China beats India and Saudi Arabia in a global table of environmental risks, but the full picture is obscured by poor access to data.

Following the massive institutional and market failures associated with the global financial crisis and Hurricane Sandy, it is clear that all countries, including China, urgently need new and different metrics for assessing their exposure to economic risk.

It is simply too expensive and disruptive for economies to be repeatedly hit by unexpected disasters which catch their populations, policymakers and investors by surprise and cause catastrophic losses.

One problem with business-as-usual is that the dominant framework for making decisions – economics – largely ignores or downplays whole categories of information, expertise and risk; especially, if they do not happen to come in dollar units.

Economics therefore needs to find new ways of integrating additional categories of risk and expertise into its decision-making processes, so that the resulting decisions are less vulnerable to flattering failure, and more resilient to risks.

The need for environmental ratings

Credit rating agencies offer a useful clue as to



which strategies might work, as their AAA rating scales already help investors to judge the risk of businesses or countries defaulting on their loans, and play a central role in the world economy. The major disadvantage of these ratings is that they are almost exclusively based on short-term economic metrics such as annual costs, profits and growth.

Environmental ratings offer a practical new method for considering additional risks. This is because, many countries struggle to value their environment until it is no longer able to provide them with stable and secure supplies of food, water, air or rainfall.

This widespread lack of regard for essential ecosystem services and natural capital means that environmental data offers an incredibly accurate, meaningful and honest manifestation of a country's prevailing strengths, weaknesses and risks. As a result, environmental ratings are well placed to highlight signs of weak management, under-investment or high-risk strategies that might otherwise be missed,

flattered or hidden by traditional economic metrics, such as profits.

The Environmental Rating Agency (ERA) has set about adapting the traditional AAA rating scale to this end. We award an AAA rating to countries that demonstrate the highest level of environmental performance for a given indicator. This drops by one grade for every 5% decline in performance, with the lowest grade, DDD, representing an environmental “default”.

An environmental “default” has extremely serious implications as it indicates that a country (or company) is failing to manage fundamental environmental risks, with performance that is 95-100% worse than the world’s best. Such a situation strongly indicates that today’s seemingly rational choices are failing to take into account real and tangible risks, and could undermine tomorrow’s economic viability and social stability.

China performs better than Saudi Arabia or India

Last summer, the ERA produced a report assessing the environmental performance of the G20 group of nations, based on 12 environmental indicators: economic efficiency; energy efficiency; infrastructure investment; atmospheric emissions; environmental protection; land management; water resource use; corruption; social development, threats to endemic mammals, birds and amphibians; marine protected areas; and air particulates.

These indicators reflect, in their different ways, the environmental consequences of each country’s own long and short-term actions and choices – not just their natural exposure to environmental risks. Indeed, countries with

similar exposures often have different environmental ratings, and vice versa, and based on these ratings can be seen to carry more or less risk than their peers in a variety of important ways.

Overall National Environmental Performance Rating

Rank	Country	Indicator	Rating
1	Germany	0.7750	A+
2	United Kingdom	0.7334	A
3	France	0.6950	A-
4	United States	0.6539	A-
5	Canada	0.6453	BBB+
6	Brazil	0.6439	BBB+
7	Japan	0.6219	BBB+
8	Italy	0.6199	BBB+
9	Australia	0.5953	BBB
10	Argentina	0.5875	BBB
11	Mexico	0.5537	BBB
12	Turkey	0.5446	BBB-
13	South Korea	0.5434	BBB-
14	Indonesia	0.5338	BBB-
15	Russia	0.5173	BBB-
16	China	0.5018	BBB-
17	South Africa	0.4306	BB
18	India	0.3621	BB-
19	Saudi Arabia	0.3536	BB-

No country achieved an AAA rating across all 12 environmental indicators.

Overall, Germany topped the G20 league table with an A+, the fifth best rating possible. By contrast, Saudi Arabia came bottom, with many low ratings, including DDD scores for extracting 943% of annual renewable water resources and its cities having urban air quality up to 12 times worse than that found in Sydney. Saudi Arabia’s terrible overall rating indicates that it

is vulnerable to severe environmental risks, which could ultimately undermine its future economic viability despite the country's great wealth.

China came 16th in the ranking, with a BBB-rating, beating South Africa (BB), India (BB-) and Saudi Arabia (BB-). Unlike the latter two, China only had two environmental indicators with very poor ratings, along with a significant number of middle-ranking ratings. These results suggest that, from a low baseline, China is beginning to control its major environmental risks, despite its immense population pressures and industrial growth.

Poor access to data still a problem in China

It is, however, difficult to assess any country based on 12 indicators, especially one as geographically and socially diverse as China. For the G20 report, over 30 different indicators were considered and a major problem limiting this assessment was the lack of standardised and high-quality data from many countries, including China, which lack official transparency and independent sources of third party data.

Of the 30 indicators initially considered, some of the biggest disappointments included the lack of high quality and reliable data for water quality, heavy metal pollution and pesticide consumption in China and numerous other countries. If these datasets exist, then they should be made publicly available; if they do not exist, then they absolutely should.

It is also worth acknowledging that very little of the most important environmental data is available, or particularly meaningful, at the nanosecond timescales that markets are now used to demanding. Over time, new

technologies and additional investments will almost certainly make more environmental data available in real-time. But as of today, plenty of the world's best available hourly to decadal environmental data is not being used by markets in any way at all. A useful first step for markets would be for them to learn how to integrate this environmental data into their decision-making so that they can take advantage of better data as it comes on stream.

In particular, the ERA hopes that more world-class and comparable environmental data will become available for China, including at the province and city scales, so that best practice and competitive advantages can more quickly be shared, as widely as possible.

Despite the present limitations in the available data, it is obvious that China faces an assortment of serious environmental risks, which may or may not be controlled over the years ahead. If China succeeds in tackling these risks effectively, it is likely to deliver significant social and environmental benefits, both at home and overseas. If it fails, this will likely harm economic growth, environmental viability and social stability, in China and everywhere else.

It remains to be seen whether China's new leaders will more fully incorporate environmental risks and knowledge into their economic thinking. Doing so would allow them to make not only more sustainable and informed choices, but more competitive and profitable choices too.

China's scorecard explained:

China

Indicator	Rating
GDP per unit of energy	BB
Thermal Power Plant Efficiency	A
CO2 per kWh generated	CC
CO2 per capita (2008)	A
Protected Areas	B
Forest Area x Deforestation Rate	AAA
Water % of renewable water resource removed	BBB
TI Corruption Index	BB
Human Development Index	A
M + B + A endemic sp / threatened sp *	BBB+
Marine Protected Areas	DDD
Air quality : Annual mean PM10 ug/m3	BBB
Mean Environmental Rating	BBB-

China scored its one and only AAA environmental rating for large-scale efforts to replant trees to reduce the threats of desertification and flooding.

China's power stations offer only modest thermal efficiency at 32% (A), but are similar to those of France (A+), Australia (A+), Indonesia (A+) and Saudi Arabia (A).

China's threatened endemic mammal, bird and amphibian species rating (BBB+) is low, as the country has relatively few endemic species. Nationally, species and habitats could be far more threatened than this indicates.

Almost 20% of China's annual renewable water resource (BBB) is extracted. This is high for a temperate nation and implies that pollution, abstraction and climate change risks could grow over time.

China's air quality (BBB) is undoubtedly bad by international standards. But it's less polluted than the industrial cities of India (CCC) and Saudi Arabia (DDD).

China's conversion of energy into GDP is weak (BB). China could benefit from increasing its focus on resource efficiency, reducing its reliance on manufacturing and scaling up service industries.

About 6.4% of China's territory is officially protected (B). This is low by international standards and reflects intense pressure on land.

China emits 842 grams of carbon dioxide per kilowatt-hour (kWh, a unit of electricity) (CC) by relying on coal to make most of its electricity. This compares to 56 grams in Brazil, 83 grams in France and 435 grams in the UK.

China's only DDD environmental default rating was the result of only 1.3% of the country's territorial waters being marine protected areas. This suggests China is particularly vulnerable to over-fishing, pollution and extraction of deep-sea marine resources causing local and regional conflicts.

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Companies in Asia expect to profit from climate-change regulations

Huang Chaoni
Antigone Theodorou

The Carbon Disclosure Project's latest report on Asia points to corporate enthusiasm for climate-change policies. But, in China, just one company reported a fall in emissions intensity.

More than half of the companies in Asia that responded to the latest request for climate-change information from the Carbon Disclosure Project (CDP) expect to benefit from government policies to tackle climate change. That was a key finding in the "CDP Asia ex-Japan Climate Change Report 2012", which was co-authored and analysed by natural capital research company Trucost and covers countries in Asia excluding Japan.

CDP surveyed 400 companies in Asia that it deemed most relevant to investors and comparable in terms of size and importance to the region's economy. The report, published in November 2012, shows that 32% of the 400 responded – an increase of almost 20% from 27% in 2011.

Twenty-three companies based in China responded, up from 10 in 2011. South Korea and Taiwan-based companies were most likely to answer the questionnaire or provide some information.



The responses provide valuable insight into how companies navigate the region's emerging climate-change regulations to reduce greenhouse-gas emissions.

Approximately 30% of 117 responding companies identified near-term regulatory opportunities. Planned cap-and-trade programmes and other carbon-related policies are expected to boost top-line growth within the next five years. For instance, South Korea's Act on Allocation and Trading of Greenhouse Gas Emissions Allowances will establish Asia's first nationwide emissions trading scheme. Last month, South Korea doubled a target to cut greenhouse-gas emissions from local industrial and power sectors, to enhance competitiveness before the cap-and-trade scheme starts.

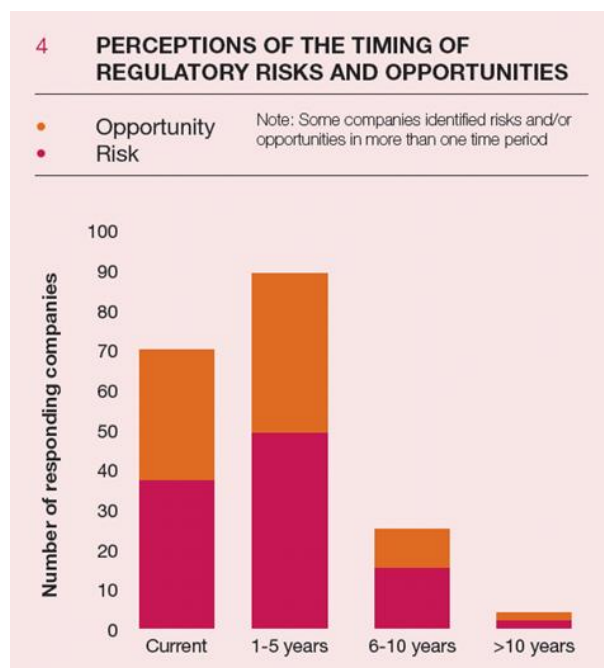
Many of the respondents said that they hope to generate carbon credits for sale to companies covered by carbon-trading schemes. Emissions-trading systems in South Korea and Australia, both expected to be up and running in 2015, will allow companies to surrender a

limited number of international carbon credits for emissions-reduction projects in countries with voluntary commitments under the Kyoto Protocol. Regional trials of carbon trading in China are also expected to demand carbon credits, to help meet a 17% carbon emissions per unit of GDP reduction target by 2015, published in the country's 12th Five-Year Plan.

Companies in many Asian countries will profit from selling carbon credits regulated under the UN Kyoto Protocol Clean Development Mechanism. India and China currently generate the majority of projects that qualify for carbon credits under the mechanism globally.

Fears of brand damage

Some 28% of responding companies think that they can already capitalise on low-carbon opportunities, with most business opportunities linked to revenue growth from low-carbon products and services. Responses show that companies consider the financial benefits of low-carbon branding to be equivalent to the risks borne by firms that remain unresponsive to an environmentally friendly consumer shift. Brand damage or greening consumer choices were among the most common risk drivers identified for companies that are not set for the shift to a low-carbon economy.



Companies in finance and IT in particular demonstrate awareness of the potential to make profits from regulatory change to cut carbon. The Financial and IT sectors were also most likely to carry out emissions-reduction activities in the region surveyed.

Energy efficiency dominates the IT industry's responses, while many financial services companies are financing renewable energy and developing green products. IT firm Lenovo Group is the only China-based company that was ranked among 2012's CDP Carbon Disclosure Leaders, a list of the firms leading the way on transparency and carbon reduction.

Quality data needed to back up low-carbon credentials

Companies will need hard evidence to support claims of carbon-efficient supply chains, operations, products and investments as businesses and consumers become more discerning in their purchases. Fifty-four percent of companies that responded to CDP verified or assured their carbon data, or were in the process of doing so.

Companies under the emissions-trading system in South Korea will have to report verified greenhouse-gas emissions and energy-use information to the regulatory authorities annually. Because of that, South Korean respondents were among those most likely to assess their data's accuracy and verify their emissions from operations and purchased electricity.

Seventy-two percent of responding companies provided data on emissions from operations, electricity purchases or value-chains to CDP. Reported emissions amounted to 325 million tonnes of carbon from operations, and a further 46 million tonnes from electricity use. Total emissions reported for these two categories equate to 70% of greenhouse-gas emissions in South Korea in 2008.

Thirty-three companies said they were confident that their carbon data is accurate, with a margin of error of up to 2%. But many companies see data gaps, measurement constraints or data management as key challenges to providing reliable figures.

Forty-five percent of responding companies disclosed data on emissions from value chains, such as suppliers and products in use. Many large publicly listed companies are starting to monitor those emissions to improve accountability and prospects for energy and carbon efficiency as part of managing climate risks and developing low-carbon products. Fifteen percent of responding companies provided data for purchased goods and services and/or upstream transportation and distribution, and many of the companies analysed intend to account for these in the future.

Carbon intensity down?

Asia Pacific is the fastest-growing source of greenhouse-gas emissions, and uses three times more resources than the rest of the world to create each unit of GDP. An increase in the region's resource intensity is in stark contrast to declines in other parts of the world. Yet the responding companies' combined rises and falls in carbon intensity, measured as emissions relative to revenue, suggest an overall 6% fall in carbon intensity (against a range of baseline years). Forty-two percent of responding companies said carbon intensity fell, whereas 15% said it had increased.

However, in China, despite the country's carbon policies, only one responding company reported a fall in emissions intensity, and only two have set targets to reduce emissions.

Seventy-one percent of the 41 companies with targets to cut carbon intensity report a fall in emissions relative to revenue. Sixty-seven percent of the 38 companies with targets to

reduce absolute greenhouse-gas emissions said they had cut carbon.

Credible, standardised carbon data would make it easier for investors to assess progress against targets and understand risks from exposure to carbon costs. CDP has been a catalyst for more widespread reporting on the business implications of climate change.

As more companies disclose information, investors recognise their efforts to integrate climate change into business strategies. Three companies from South Korea were ranked among CDP performance leaders in 2012: LG Electronics, Samsung C&T and SK Hynix. The companies' "A band" ranking recognises their efforts to integrate climate change into business strategies. Payoffs could include a lower cost of capital and less risk of credit rating downgrades, as investors switch money to low-carbon funds and credit ratings agencies take account of carbon risk.

For instance, a Nedbank BGreen Exchange Traded Fund which selects constituents based on criteria including CDP scores is designed to boost investment exposure for emerging markets companies that are carbon-efficient for their sectors. Ratings agency Standard & Poor's has meanwhile started to incorporate carbon risk into company ratings globally. Stable ratings for low-carbon companies could help maintain their equity valuations and the value and liquidity of their debt securities.

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The capitalists calling for "market revolution"

John Elkington
Susie Braun

A new report celebrates the work of a wave of reformist capitalists, pushing for a new kind of economics.

The world must be in real trouble if even capitalists are beginning to call for "market revolutions".

Peter Bakker, President of the World Business Council for Sustainable Development, calls for a "revolution of capitalism." What he means is that markets must learn how to value and manage multiple forms of capital, including the human, social and natural forms. Like-minded leaders include Richard Branson, founder of the Virgin Group, Paul Polman, chief executive of Unilever, and Jochen Zeitz, former head of German sportswear brand PUMA.

It's a trend our organisation, Volans, has been watching for some time. At our Breakthrough Capitalism Forum last year, speaker after speaker stressed that the inertia of that old economic order is now a massive constraint on the necessary system change. "The system is blind to potentially existential threats," warned Jeremy Leggett, a leading solar energy entrepreneur. He argued that the current order is "dysfunctional almost to the point of being suicidal".



Image by Wolfgang Staudt

Others have reached the same conclusion. UN Secretary General Ban Ki-moon has stressed that our economic mindset and models increasingly look like "a global suicide pact". We "mined our way to growth," he said. "We burned our way to prosperity. We believed in consumption without consequences."

The growing security challenge

The UN, famously, is headquartered in New York. And more or less on the eve of America's 2012 presidential election, Superstorm Sandy hit the country's eastern seaboard and, most dramatically, New York City. One of the clearest voices for breakthrough change as the scale of the damage became clear was New York mayor Michael Bloomberg.

"Our climate is changing," he warned in his unexpected endorsement of president Obama just before the recent presidential election, insisting that Sandy "should compel all elected leaders to take immediate action".

Unlike many leaders, however, he was able to report real progress in his home patch. “Here in New York,” he said, “our comprehensive sustainability plan has helped us to cut our carbon footprint by 16% in just five years, which is the equivalent of eliminating the carbon footprint of a city twice the size of Seattle.

“Through the C40 Cities Climate Leadership Group – a partnership among many of the world’s largest cities – local governments are taking action where national governments are not.”

As these issues are increasingly framed as security challenges, intelligence agencies – among them the US National Intelligence Council (NIC) – are forecasting systemic crises that sound very much like those heralded by environmentalists a few decades back. By 2030, Shell forecasts, we will need 30% more water, 40% more energy and 50% more food than today.

By the same year, the NIC concludes, the world will be: “... radically transformed from our world today. By 2030, no country – whether the US, China or any other large country – will be a hegemonic power. The empowerment of individuals and diffusion of power among states and from states to informal networks will have a dramatic impact, largely reversing the historic rise of the West since 1750, restoring Asia’s weight in the global economy, and ushering in a new era of ‘democratisation’ at the international and domestic level.”

Rebooting the science of economics

These trends provide the context for Volans’ new report, *Breakthrough: Business Leaders, Market Revolutions*, published in March 2013. It spotlights the work of the first wave of breakthrough capitalists. Early breakthrough initiatives seek to address the systemic nature of many of our challenges, but most are as yet experimental, fragmented and not in clear line of sight for key decision-makers – often because they fail to provide short-term pay-offs in terms of jobs, revenues and taxes. Worse, emerging solutions are often fiercely contested by incumbents, because they threaten their existing business models.

To drive change at the level and scale now needed, breakthrough capitalists argue the need for various forms of system change, including a rebooting of the fundamental financial disciplines of economics and accounting.

If finance represents an economy’s bloodstream, think of economics as its genetic code. Critics have described economics as everything from the “dismal science” (the Scottish philosopher Thomas Carlyle) to a form of “brain damage” (Hazel Henderson, the sustainability-focused economist, who told us that she has often felt like an “extraterrestrial” among normal economists). But the discipline has been central to the success of capitalism.

The problem with conventional economics was underscored in the first auction of 2013 in Tokyo’s sprawling Tsukiji fish market. At a time

when many oceanic fisheries are being pushed to the edge of collapse, a single Bluefin tuna sold for a record US\$1.67 million. The winning bidder said he wanted to give his country “a boost”, but the implications of such prices for already endangered tuna stocks are profound.

Among those working to reboot the science of economics is Pavan Sukhdev. His UN study on the economics of ecosystems and biodiversity concluded that an annual investment of US\$45 billion into protected areas alone could secure the delivery of ecosystem services worth some US\$5 trillion a year.

Business has to fill the gap

Paradoxically, there is no better time than a major economic crisis to push forward disruptive new policy and investments, once people recover from their early panic. This argument is underscored by Dimitri Zenghelis, Cisco’s chief economist for climate change, and the man who led Lord Stern’s UK government inquiry team on the economics of climate change.

The inquiry concluded that climate change will become our biggest market failure ever. As if that was not enough, Lord Stern announced early in 2013 that he was wrong – the picture, he now concludes, is even worse than he thought. We are on track for an almost unimaginable 4°C global temperature rise.

“The world is on fire,” as WBCSD President Peter Bakker puts it. He is himself a former chief executive, of logistics company TNT. With governments too often failing to act, the question now is whether business can begin to

fill the gap in a meaningful way? The main message of our report is that, ultimately, they will have no choice.

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