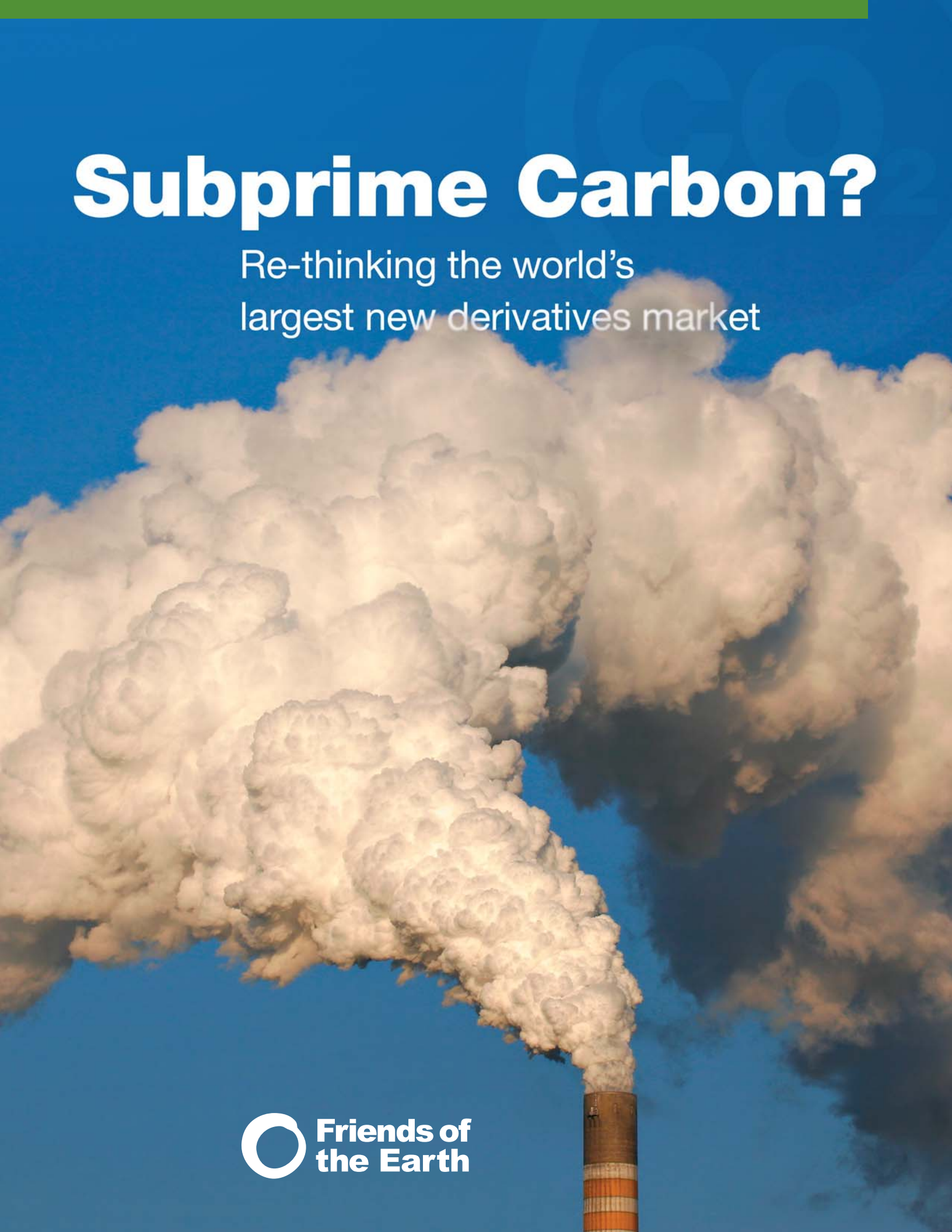
Subprime Carbon?

Re-thinking the world's largest new derivatives market



Friends of the Earth

Executive Summary

As U.S. policymakers debate ways to effectively reform Wall Street, little attention is being paid to how and whether new financial regulations will be adequate to govern the carbon derivatives markets, which many experts believe may eventually be larger than the credit derivatives market. Similarly, most federal climate change bills do not provide for adequate carbon market regulations, creating a potentially huge regulatory gap. Existing climate legislation fails to recognize that financial markets have become vastly more complex and exotic since the early 1990s, when the U.S. introduced sulfur-dioxide trading. In addition, such legislation does not focus enough on regulating the secondary carbon markets, which will be dominated by speculators and will dwarf the primary trading markets.

The speculative nature of the secondary markets has the potential to create a carbon bubble and spur the development of subprime carbon. "Subprime carbon" credits are futures contracts to deliver carbon that carry a relatively high risk of not being fulfilled, and could collapse in value. Subprime carbon is most likely to come from offset projects, because sellers can make promises to deliver carbon credits before credits are issued for a project, or sometimes even before greenhouse gas reductions have been verified. A carbon bubble can also set the stage for the kinds of financial innovation (e.g. complex securitized products) that can unwittingly spread subprime carbon through the broader marketplace. When the bubble bursts, the collapse in carbon prices can have destabilizing consequences for compliance buyers (companies) and for the larger financial system.

The financial crisis has clearly demonstrated that significant parts of the financial system, especially derivatives, are under- or unregulated. The U.S. is in no position to so quickly create such a large market without first establishing robust and effective mechanisms to govern it. Regulation of carbon markets must be included in current efforts to reform Wall Street, and policy makers should consider that carbon derivatives have unique components which may need to be covered by entirely new regulations and entities. Finally, the size and complexity of carbon trading schemes should be managed to prevent the build-up and spread of subprime carbon, and to ensure the environmental and financial integrity of this emerging, exotic derivatives market.

Written by Michelle Chan of Friends of the Earth - US, which is responsible for the content and opinions expressed in this report. Thanks to Mark Nicholls and Larry Lohmann for reviewing the report; to Erich Pica, David Hirsch, Lisa Matthes and Nick Berning for editing assistance; and to JML Design for design and layout.

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Friends of the Earth is the U.S. voice of Friends of the Earth International, the world's largest grassroots environmental network. Friends of the Earth International unites 77 national member groups and some 5,000 local activist groups on every inhabited continent.

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Since this report went to press, several bills and proposals have been introduced that would, to various extents, address the concerns raised here. FoE welcomes these proposals, and hopes they will create a robust policy debate on ways to best ensure environmental effectiveness and financial stability in our efforts to reduce global warming pollution.

Fundamentally re-designing carbon markets

The first two proposals rely on designing carbon markets in ways that set stable prices while maintaining firm caps. Stable prices would eliminate the basic incentive for speculation, dramatically reduce the size of secondary markets and prevent carbon bubbles. This in turn would largely prevent excessive risk taking, and deter the development of subprime assets and the creation of complex and opaque products. All three proposals are compatible with mechanisms to raise revenue for climate change adaptation and other purposes.

- "Safe Markets Development Act of 2009" (Rep. Doggett)
  This bill relies on setting a hard cap in 2020, and having an independent board publish a stable price path for allowances. Mimicking the open market operations of the Federal Reserve, Treasury would hold quarterly auctions and manage the supply of allowances to hit, on average, the published annual price. As necessary, the board would adjust and re-publish the price path to meet the 2020 cap. Trading volumes would be diminished because there would be very limited arbitrage opportunities given the frequent auctions and the stable, predictable prices. The bill does not refer to whether carbon offset credits, a major source of subprime carbon, would be permitted.

- "Clean Environment and Stable Energy Market Act of 2009" (Rep. McDermott)
  This proposal would require covered entities to purchase allowances for a set price. Prices would be published for a five-year period, and would potentially be adjusted 1-2 times during each period to meet an annual cap. Permits would need to be purchased and surrendered on a quarterly basis. The bill eliminates trading in the primary and secondary markets, and prohibits carbon credits from offset projects. This would have the effect of eliminating subprime carbon risks and the development of potentially complex or opaque carbon securities/instruments which pose create broader regulatory and systemic risks to the financial markets.

- Limiting eligible participants
  Limiting trading to regulated entities represents a significant departure from traditional cap-and-trade proposals, and could go a long way toward preventing speculative bubbles and the proliferation of exotic carbon financial products. During last summer's dramatic oil price spikes, there was substantial support for an analogous concept: a House bill to limit energy trading to only those entities that are able to accept physical delivery of energy commodities. But because "bona fide" traders can still manipulate prices, this measure would have to be accompanied by additional actions such limiting secondary trading or adopting strong anti-manipulation measures. Restricting market participants would reduce liquidity, but liquidity is less important in the context of a compliance-oriented primary market without carbon offsets.

Modest design options

The following approaches represent more modest design options which have been proposed in various "traditional" cap-and-trade bills. Friends of the Earth strongly endorses prohibiting offsets as the best way to prevent subprime carbon. However, we believe the more fundamental design options described above are better for limiting manipulation and providing price stability and its attendant benefits.

- Prohibiting offsets
  Since offsets are the primary source of "junk" or "subprime" carbon, prohibiting offsets is the clearest way to ensure asset quality in this new market. Past bills have proposed various restrictions on offset credits (including the amount, type, origin, etc.), and prohibiting the riskier ones -- such as international offsets -- may reduce systemic risks.

- Prohibiting allowance banking
  Several measures have been proposed to limit carbon prices; these provide some dampening effect on price volatility, but may result in emissions that exceed the cap. One notable exception is a prohibition on allowance banking. This would prevent market participants from artificially creating scarcity by holding carbon in the hopes that they can sell when prices are higher. Several bills have proposed prohibitions or limits on banking, in an effort to counter such manipulation.

Specific carbon commodities regulation

The report (pp 10-12) outlines several bills introduced in the last Congress to regulate carbon derivatives. Most bills focus on which regulatory agencies have jurisdiction over carbon derivatives, and borrow from securities and commodities regulations. Friends of the Earth strongly supports measures to ensure adequate carbon market regulation, but believes that market design choices can play a more pivotal role in ensuring market integrity.

General commodities/derivatives regulation

Friends of the Earth likewise supports measures to bring more accountability and stability to the general derivatives markets. However, given the lack of proven mechanisms to govern commodities, it is imprudent to so hastily create the largest derivatives market in the world and foist it upon a new and untested regulatory regime. Since carbon commodities are being created from government fiat, it is possible to fundamentally structure carbon markets in ways that minimize their size and complexity, avoiding problems in the first place, rather than trying to contain market excesses.

- "Derivatives Markets Transparency and Accountability Act of 2009" (Rep. Peterson):
  In the wake of the financial crisis, several bills have been introduced to introduce more robust governance to general commodities and derivatives markets. The most comprehensive bill to regulate commodities passed out of the Agriculture Committee in February 2009. This bill introduces new rules such as margin and position limits to discourage excessive speculation. It essentially classifies carbon with agricultural commodities, subjecting them to stricter regulation. However, it also is meant to work with a system that includes offsets, opening the door to subprime carbon.

Subprime Carbon?

Re-thinking the world's largest new derivatives market

As policymakers debate Wall Street reform, little attention is being paid to whether new regulations will be adequate to govern carbon derivatives markets, which many experts believe will eventually become larger than credit derivatives markets. Most proposed climate bills rely on cap-and-trade systems to achieve greenhouse gas reductions, and the Obama administration also prefers this approach. But these bills do not seek to regulate carbon trading as a massive new derivatives market, which is, in fact, what it is. The absence of serious carbon market regulation, both from climate change bills as well as the current debate on Wall Street reform, threatens to create a giant regulatory gap.

A Cautionary Tale

The spectacular regulatory and market failures we have witnessed in the current financial crisis provide a cautionary tale for any future carbon trading program. The crisis had many causes, including a breakdown of regulation, a potentially flawed model for managing systemic risks, too much leverage, and excessive risk-taking.

Subprime mortgages were the catalyst, but not the cause, of the crisis. Banks pooled together high-risk and lower-risk mortgages into packages (tranched asset backed securities) that were then bought, re-bundled and re-sold in batches with various risk profiles. Credit default swaps, unregulated insurance-type products, were used to enhance the creditworthiness of some securities. Rating agencies declared the products safe, but eventually it became clear that a significant portion of the mortgages were bad, and that counterparties could not make good on the swaps. Soon, the whole system began to unravel, affecting everyone in the banking and investment system, including average Americans with bank accounts and retirement savings. As banks got stuck with toxic assets, some went bankrupt, sparking widespread distrust among banks. The inter-bank lending market froze and a system-wide credit crisis emerged, leading the world towards a recession, the severity of which is still unknown.

Congress and the Administration are currently debating new financial regulations to govern Wall Street. But if the newly created financial rules and regulatory bodies only curb the most visible and extreme pathologies exposed by the financial crisis, and do not address the fundamental weaknesses that created it, in the future other catalysts — such as the collapse of the U.S. carbon markets — could also create reverberations across the broader economy.

Carbon Trading as Derivatives Trading

Regulated carbon markets are created by the establishment of a mandatory cap-and-trade scheme covering greenhouse gas (GHG) emissions. Under such a scheme, the government sets an overall limit, or a cap, on GHG emissions for a portion of the economy. Based on historical emissions, individual emitters are issued (or must purchase) carbon allowances, which allow the holder to emit a certain amount of GHGs. At given times, regulated entities (emitters) must surrender a quantity of allowances that is at least equal to the amount of GHGs that they produced. Emitters that have produced less GHGs than their limit can sell their extra allowances to those that have exceeded their limit.

Most cap-and-trade proposals provide for a second type of tradable carbon instrument, known as carbon (offset) credits. These credits are not created by government fiat, as is the case with allowances, but rather are earned for not emitting GHGs (compared to a business-as-usual scenario). They are generated outside the capped economy by projects designed to reduce, avoid or sequester GHGs, and can be sold to emitters within the capped economy to help them comply with their GHG limits. The largest market for carbon credits comes from projects based in developing countries, under the Kyoto Protocol's Clean Development Mechanism (CDM).

The buying and selling of carbon (allowances and credits) is fundamentally derivatives trading. Currently, most carbon is sold as futures or forward contracts, a type of derivative. These contracts contain promises to deliver carbon allowances or credits in a certain quantity, at a certain price, by a specified date. Today's carbon markets are small, but if the United States adopts carbon trading on the scale envisioned by most federal cap-and-trade bills, carbon derivatives will become what Commodities Future Trading Commissioner Bart Chilton predicted would be "the biggest of any derivatives product in the next four to five years."[1]

1 Minder, Raphael, "Regulator forecasts surge in emissions trading," *Financial Times*, 10 March 2008.

Subprime Carbon

The financial crisis was sparked by bad mortgages, and U.S. carbon markets could pose similar problems through the creation of "bad carbon" or "**subprime carbon**." Subprime carbon contracts — called "junk carbon" by traders — are contracts to deliver carbon that carry a relatively high risk of not being fulfilled and may collapse in value. They are comparable to subprime loans or junk bonds, which are debts that carry a relatively high risk of not being paid.

Subprime carbon would most likely come from shoddy carbon offset credits, which could trade alongside emission allowances in carbon markets. For offset projects to actually receive carbon credits, many steps must be accomplished. In addition to overcoming ordinary project risks (related to factors such as interest and exchange rates, technical performance, political risks, etc.), offset projects need to create independently verified GHG emissions reductions. Such emissions savings are not easy to prove with certainty.

Some of the most visible carbon offset scandals to date have centered on international offset projects that may be simply disingenuous. Perhaps the most well-known controversies relate to offset projects designed to destroy HFC-23, a chemical byproduct of refrigerant production that is more than 11,000 times more potent than carbon dioxide. Widespread reports of companies purposely creating these very powerful greenhouse gas chemicals — just to destroy them and make money off of the credits — prompted the Kyoto Conference of the Parties to take up this issue at their December 2008 meeting in Poland.

Subprime carbon can also come from projects that use controversial methodologies to verify a project's GHG savings. Some offset projects, such as those which seek to protect forests as a means of sequestering carbon, are by nature difficult to verify. For example, even with advances in satellite imaging, it is difficult to verify with accuracy how many tons of GHGs were sequestered by preventing a tract of land from being deforested or degraded.

But perhaps the most common, and in fact universal, problem relates to "additionality" — proof that the offset project creates GHG savings which wouldn't have occurred otherwise. Projects must demonstrate that they are additional in order for the CDM Executive Board to issue credits. But a recent study found that about three-quarters of dams (a major type of CDM project) receiving CDM credits were not additional; they were already built and operational by the time they received the credits.[2] The CDM has come under increased pressure to be stricter in issuing credits, but **it is nearly impossible to establish with certainty that an offset project is additional, which is a major risk contributing to subprime carbon.** A recent study of international offsets by Stanford University found that "offset schemes are unable to determine reliably whether credits are issued for activities that would have happened anyway,"[3] and a 2008 U.S. Government Accountability Office report similarly concluded that "it is not possible to ensure that every [CDM] credit represents a real, measurable, and long-term reduction in emissions."[4]

Currently, most carbon credits are sold as simple forward contracts. But they can carry high risks because sellers often make promises to deliver carbon credits before the CDM Executive Board (or other crediting body) officially issues the credits, or sometimes even before verifiers confirm how much or if GHGs have been reduced.

Some cap-and-trade bills establish carbon trading schemes that allow carbon offset credits to make up one-third of carbon traded, which opens the door wide to subprime carbon. Given the potentially huge size of the carbon trading market, and the increasing complexity of carbon derivatives products, subprime carbon creates a real danger, not only to the environment but to the broader financial markets. Subprime carbon may not spark a financial contagion of a similar magnitude to that of subprime mortgages, but policy makers should take careful stock of the lessons learned from the current crisis before establishing what Merrill Lynch predicted could be "one of the fasting-growing markets ever, with volumes comparable to credit derivatives inside of a decade."[5]

2 *Rip-Offsets:The Failure Of The Kyoto Protocol's Clean Development Mechanism*, International Rivers at http://www.internationalrivers.org/files/CDM_fact-sheet_low-rez.pdf

3 Wara, Michael W. & Victor, David G. "A Realistic Policy on International Carbon Offsets" Program on Energy and Sustainable Development, Working Paper #74: April 2008. http://iis- b.stanford.edu/pubs/22157/WP74_final_final.pdf

4 *International Climate Change Programs: Lessons Learned From The European Union's Emissions Trading Scheme And The Kyoto Protocol's Clean Development Mechanism*, US Government Accountability Office, Nov 2008 at http://www.Gao.Gov/New.Items/D09151.Pdf

5 Kanter, James, " In London's Financial World, Carbon Trading Is the New Big Thing," *New York Times*, July 6, 2007

Problems Exposed by the Financial Crisis

While part of the financial crisis was brought on by macroeconomic drivers such as cheap credit and over-leveraging, the dramatic rise in securitizations is another part of the story. The "originate and distribute model" for managing systemic risks, in which banks offload their risks to investors in the secondary markets, led to a boom in investment banking and securitizations. The seemingly limitless appetite for mortgage securitization, along with abundant credit, fueled a dangerous deterioration in lending standards.

The bubble economy

Asset bubbles are characterized by self-perpetuating but ultimately pathological cycles. In the current crisis, lax lending standards contributed to over-borrowing, which pumped up real estate prices, and encouraged mortgage originators to sell even more bad loans.

Carbon markets, like other markets, are at risk of experiencing boom-bust cycles. Today, as a result of the economic downturn, carbon prices in Europe have collapsed after posting record years. Until the current bust, the carbon market was growing rapidly; between 2006 and 2007 market volumes doubled,[6] and the secondary CDM markets changed almost beyond recognition as traded volumes increased by almost nine-fold.[7]

The boom was largely driven by a flood of new traders seeking financial returns, as well as green bragging rights.[8] Asset managers began marketing carbon as a new asset class, encouraging investors such as pension funds to increasingly allocate a portion of their portfolio to carbon derivatives. Investment banks developed financial instruments such as indexes to allow even more investors to gain exposure to carbon, and new carbon funds (investment schemes set up to finance offset projects and/or buy carbon credits) were formed. Today, **speculators do the majority of carbon trading, and they will continue to dominate as carbon markets grow.** In fact, about two-thirds of carbon investment funds by volume were not established to help companies comply with carbon caps, but rather for capital gains purposes.[9]

Proponents argue that carbon speculators can help save the earth simply by participating in carbon trading and increasing liquidity, which helps allocate risks and set appropriate prices. But as more investors become involved (particularly hedge funds, which seized upon carbon finance as a particularly successful play[10]), they can also increase market volatility and create a potential asset bubble.

In 2006 Mark Trexler of EcoSecurities warned against "market speculators, whose role has been getting rather dangerous in contributing (in our view) to a 'carbon dot com' bubble analogous to the technology 'dot com' bubble."[11] In a speculative bubble, too much money chases too few viable investments, which can spur the development of toxic assets. In retrospect, the behaviors exhibited in bubble economies — such as mortgage brokers approving "ninja loans" (loans to borrowers with no income, job, or assets) — seem reckless and ludicrous, yet in the absence of counter-cyclical financial policies, boom-bust cycles continue to occur.

A market dominated by speculators may push up prices, create a bubble and spur the development of subprime assets. In a carbon bubble, unscrupulous intermediaries may overpromise on offset projects by selling future credits based on projects that do not yet exist, are not additional, or which simply do not deliver the promised GHG reductions. This would not only have financial impacts, but also environmental consequences, as economies fail to meet GHG reduction targets.

Financial innovation in a world of securitization

In today's financial markets, rapidly inflating asset bubbles can also set the stage for the kinds of "financial innovation" that take straightforward transactions, such as using futures to hedge against risks (e.g. buying car-

6 World Bank, *State and Trends of the Carbon Market 2008*, May 2008.
7 Point Carbon, *Carbon 2008: Post 2012 is Now*, 11 Mar 08.
8 In the past few years, banks such as Goldman Sachs have pointed to their growing carbon trading business as a key part of their commitment to corporate social responsibility. Similarly, the recently-launched Climate Principles, which is a self-described "framework to guide the finance sector in tackling the challenge of climate change," includes a key commitment for investment banks to engage in emissions trading and other climate commodities.
9 *Carbon Funds 2007-2008*¸ Environmental Finance Publications, 2007.
10 Mackintosh, James, "Freight and carbon credits help small hedge funds beat turmoil," Financial Times, 17 Sept 2007 at http://www.ft.com/cms/s/0/b59ac92a-64b5-11dc-90ea-0000779fd2ac.html
11 Trexler, Mark, "I've heard the carbon market in Europe melted down a couple of weeks ago? What happened?," [Weblog entry]. Climatebiz, May 15, 2006 at http://www.climatebiz.com/blog/2006/05/15/i%E2%80%99ve-heard-carbon-market-europe-melted-down-a-couple-weeks-ago-what-happened

The Xiaoxi Dam on the Zishui River in China has already been completed, yet is applying to the UN to receive carbon credits. Problems with proving "additionality" (that projects are not viable without carbon credits) are a key risk for carbon offset projects, and can lead to subprime carbon — contracts to sell carbon credits that may fail to deliver. Photo: Tina Lea, at www.internationalrivers.org

bon allowances or credits to comply with regulations), to dangerous new levels. As we realized in the aftermath of the financial crisis, financial engineers developed increasingly opaque and exotic products to sop up the seemingly limitless demand for mortgage-backed securities and related products. Testifying before Congress on the financial crisis, Joseph Stiglitz explained that banks' development of exotic derivatives products, which went largely unregulated, "went beyond laying off risk. They were gambling, and that kind of activity should be restricted."[12]

Proponents of a cap-and-trade system tend to focus on the environmental objective of carbon trading, often drawing parallels with the experience of earlier emissions trading schemes. **Financial markets, however, have become vastly more complex and exotic since the early 1990s, when the U.S. introduced sulfur dioxide trading.** A market dominated by gamblers provides fertile ground for the kinds of "financial innovation" that can unwittingly spread subprime carbon through the broader financial marketplace, particularly if financial regulators continue to employ the "originate and distribute" model for managing systemic risks.

12 Joseph Stiglitz, Professor, Columbia University, Testimony to House Financial Services Committee, October 21, 2008 at http://www.house.gov/apps/list/hearing/financialsvcs_dem/stiglitz102108.pdf

This model is based on the idea that securitizing assets and selling them to the broader capital markets is the most effective mechanism for transferring risk to those best equipped to handle it. But without effective regulation and supervision, the "originate and distribute" model instead provides vectors for financial contagion. The current financial crisis should serve as a cautionary tale for the development of carbon markets, which are predicted to be "the world's biggest commodity market, and [possibly] the world's biggest market overall."[13]

Difficulty in valuing assets

By now it is well known that credit rating agencies, which were supposed to be providing rigorous assessments of mortgage-backed securities, could not analyze the thousands of individual mortgages which comprised these securities. They relied instead on financial models, which were ultimately flawed.

In the carbon markets, offset aggregators already bundle small offset projects for buyers. And as more investors flock to the carbon markets, increased demand will spawn the creation of new derivatives and structured products which may pose similar asset valuation challenges.

For example, in November 2008, Credit Suisse announced a securitized carbon deal in which they bundled together carbon credits from 25 offset projects *at various stages of UN approval*, sourced from three countries, and five project developers.[14] They then split these assets into three tranches representing different risk levels and sold them to investors, a process known as securitization. Carbon-backed securities sound hauntingly close to mortgage-backed securities because they are indeed very similar in structure. Although the Credit Suisse deal was relatively modest, future deals could become bigger and more complex, bundling hundreds or thousands of carbon assets of mixed types and origins, perhaps enhanced with agreements to swap more risky carbon credits for safer assets (such as government-issued emissions allowances) as "insurance" against junk carbon. Moreover, **it could be as difficult, if not more, to analyze the quality of the numerous underlying carbon offset projects as it is to analyze U.S. mortgages, and carbon securities may be less suited to modeling.**

Excessive risk taking and conflicts of interest

In the aftermath of the crisis, it is clear that many complex structured products, derivatives, off-balance sheet entities, etc. were inordinately risky, but very profitable in the short term. AIG, with its $78 billion in credit default swaps, is perhaps the best-known example of a company growing a lucrative new business while becoming dangerously overcommitted. Banks were also at fault, eagerly buying these swaps not as a hedge against credit default, but as a way to further leverage their capital and skirt capital adequacy requirements.[15] Further down the asset chain, many mortgage brokers and underwriters provided questionable, if not unscrupulous, services. The lure of short-term fees, profits, and stock options meant that few CEOs questioned the growth of these risky new practices and products.

In response, some new regulations have been issued to reduce conflicts of interest. For example, the Securities and Exchange Commission (SEC) introduced new rules to reduce conflicts of interest among credit rating agencies. New regulations have also been proposed by the Obama administration and members of Congress. However, conflicts of interest are still a problem, both in the broader financial sector and in the emerging carbon finance market.

For example, similar to how credit rating agencies helped design complex structured finance products and rate them, consulting firms that offer advice on developing carbon offset projects may also earn fees for verifying emissions reductions from projects. Banks that own equity stakes in carbon offset projects may also be carbon brokers or sector analysts, creating a temptation to bid up carbon prices to increase the value of their own carbon assets. For example, in October 2008 Goldman Sachs bought a stake in BlueSource, a carbon offset developer, and JPMorganChase bought stakes in ClimateCare, another offset specialist. Such **conflicts of interest are not unique to the carbon markets, but they compromise their integrity, from both a financial and environmental perspective.**

13 Kanter, James, " Carbon trading: Where greed is green," *International Herald Tribune*, 20 June 2007.
14 Szabo, Michael, "Credit Suisse to offer largest structured CO2 deal," *Reuters*, 22 Oct 08.
15 Henry, David, et al. "How AIG's Credit Loophole Squeezed Europe's Banks, BusinessWeek, October 18, 2008 at http://www.businessweek.com/magazine/content/08_43/b4105032835044.htm

Regulatory Weaknesses Exposed by the Crisis; Implications for Carbon Trading

Policy makers, regulators and the financial sector itself have widely acknowledged that inadequate financial regulation was a key contributor to the current credit crisis.

The inadequacies of self-regulation

For more than a decade, Wall Street successfully promoted a deregulatory agenda that lifted governmental oversight in favor of self-regulation. Perhaps the best example is the 1999 Graham-Leach-Bliley Act, which loosened many regulations[16] and formally repealed the Glass-Steagall Act. This allowed financial institutions to simultaneously engage in commercial banking, investment banking and insurance activities. As more financial institutions merged, they created too-big-to-fail financial holding companies. According to the Independent Community Bankers of America, "today the four largest banking companies in the U.S. control more than 40 percent of the nation's deposits and more than 50 percent of its assets."[17]

The consolidation in the financial sector also exacerbated conflicts of interest and gave rise to moral hazards. Former SEC Commissioner Arthur Levitt worried that "the merger of investment bank and commercial bank interests has created conflicts of interest that clearly hurt the public investor," as banks grappled with the temptation to relax corporate lending standards in an effort to gain or retain a client's underwriting business.[18] Combining investment and commercial banking also created moral hazard by allowing banks to take riskier bets on the investment banking side by using the bigger balance sheets afforded by depositor capital.

In the wake of the credit crisis, many policy makers now recognize the harm that was caused by financial deregulation. Relying on the self-interest of Wall Street to properly regulate itself, as many policy makers long believed was possible, is clearly inadequate to protect the integrity of the markets. **Carbon trading firms have strongly advocated self-regulation as a way to govern this market, and most cap-and-trade bills implicitly reflect this mode of governance.** In a letter to Senators Feinstein and Snowe, who introduced a carbon market governance bill, the International Emissions Trading Association asserted that "the market itself recognizes the importance of integrity and exerts discipline on participants." They cite a number of self-policing tactics, saying for example that "trading companies set their own trading limits to guard against excessive speculation."[19]

Regulatory patchwork

Another lesson learned from the crisis is that a variety of state and federal regulators were responsible for discrete segments of the primary and secondary mortgage markets, but they did not coordinate with each other and sometimes had different policy objectives.

In the primary market, banks were subject to a host of consumer protection laws, such as the Truth in Lending Act and the Home Mortgage Disclosure Act, and regulated by numerous state and national agencies. Independent mortgage brokers are, by comparison, very lightly regulated and not subject to these same consumer protection laws.[20] When mortgage banks and brokers began to dominate the primary mortgage market (for example, in 2006 they originated the majority of mortgages)[21], it created a major regulatory gap. In the secondary market, regulation was similarly scattered. Conforming mortgages bought by Fannie Mae and Freddie Mac were supervised by the Office of Federal Housing Enterprise Oversight; non-conforming loans securitized by broker-dealers were overseen by SEC.

16 The Act reduced the number of banks subject to the Community Reinvestment Act (CRA) and relaxed CRA reporting requirements. This had the effect of increasing predatory lending, as the CRA provided disincentives for predatory lending through lowering CRA performance ratings, and increasing costs for FDIC insurance.

17 Testimony of Mr. Mike Washburn, President and Chief Executive Officer, Red Mountain Bank on behalf of the Independent Community Bankers of America, to the US House Financial Services Committee, October 21, 2008.

18 Interview with Arthur Levitt, "The Wall Street Fix," *Frontline*, May 8, 2003 at http://www.pbs.org/wgbh/pages/frontline/shows/wallstreet/interviews/levitt.html

19 IETA letter to Sens. Feinstein and Snowe, 4 March 2008 at http://www.ieta.org/ieta/www/pages/getfile.php?docID=2938

20 Testimony of Mr. Edward Yingling, President and Chief Executive Officer, American Bankers Association, to the House Financial Services Committee, October 21, 2008 at http://www.house.gov/apps/list/hearing/financialsvcs_dem/yingling102108.pdf

21 Statement of the Honorable Steve Bartlett, President and Chief Executive Officer, The Financial Services Roundtable, before the Committee on Financial Services, U.S. House of Representatives, October 21, 2008 at http://www.house.gov/apps/list/hearing/financialsvcs_dem/financial_modernization_testimony_steve_bartlett_.pdf

Credit ratings agencies were regulated by the SEC and accounting standards were set by the Federal Accounting Standards Board.[22]

Along the lengthy financial value chain from mortgage brokers to credit default swap counterparties, these various regulators did not share information and coordinate with each other. In addition, no agency had purview over monitoring and responding to the growing real estate asset bubble and dangerous trends building up in the primary and secondary mortgage markets. **Unless regulatory coordination dramatically improves, similar dynamics will likely play out in the project, primary and secondary carbon markets.**

Regulatory gaps — derivatives

While on the one hand lack of regulatory coordination led to an inability to perceive and manage the broader risks developing in the mortgage markets, it is also clear that huge regulatory gaps existed in some key parts of Wall Street. Known as the "shadow banking sector," these largely under- or unregulated parts of the financial sector are dominated by off-the-books structured investment vehicles, hedge funds and most of all, derivatives. Representative Barney Frank, Chairman of the House Financial Services Committee, noted that "the largely unregulated uninsured firms have created problems, while the regulated and FDIC insured banks and savings institutions have not."[23]

But even relatively well-regulated institutions, such as commercial banks and insurers, developed new financial products and vehicles designed to fly under the radar screen of relevant agencies. For example, commercial banks created off-balance sheet entities, such as structured investment vehicles, which allowed them to get around existing capital adequacy requirements. Insurance companies created massive portfolios of derivatives, particularly credit default swaps, which were non-standardized, traded over the counter, and not subject to particular insurance or other regulations.

The lack of regulation in the derivatives market has particularly significant implications for the carbon markets. While most carbon derivatives are currently quite simple, as the markets mature, more exotic instruments will likely develop. Because carbon markets are expected to be so large, the need for adequate oversight is even more critical.

July 2006: A Quilombola community in Brazil marches to a historic cemetery, now covered with a eucalyptus plantation, to tear down trees in protest. Eucalyptus monocultures are common in the Brazilian state of Minas Gerias, and many are designed to generate carbon offset credits. Offset projects that encounter local resistance are at risk of not being completed as planned, contributing to subprime carbon. Still from film, "Luta Quilombola do Sape do Norte," Little Sister Productions.

Although robust regulation of derivatives is one of the most important elements to ensure a well-governed carbon market, attempts to regulate derivatives have repeatedly been thwarted. Perhaps the best-known deregulatory effort was in 1998, when the Commodities Future Trading Corporation (CFTC) floated a proposal before Congress to merely explore derivatives regulation. Appearing before Congress, then-Deputy Treasury Secretary Larry Summers, speaking for himself, Treasury Secretary Robert Rubin, and Federal Reserve Chairman Alan Greenspan, testified against the CFTC proposal. Later, through the Gramm-Leach-Biley Act (which Senator Gramm claimed would "protect financial institutions from overregulation"), CFTC essentially was prohibited from regulating over-the-counter derivatives.

In 2000, many derivatives were exempted from regulatory, supervisory or reserve requirements by the Commodity Futures Modernization Act. This failure to

22 Statement of the Honorable Steve Bartlett, President and Chief Executive Officer, The Financial Services Roundtable, before the Committee on Financial Services, U.S. House of Representatives, October 21, 2008 at http://www.house.gov/apps/list/hearing/financialsvcs_dem/financial_modernization_testimony_steve_bartlett_.pdf

23 Frank, Barney, "Lessons of the Subprime Crisis," Opinion-Editorial, *Boston Globe*, September 14, 2007

regulate allowed for the explosion in complex OTC (over-the-counter) derivatives, making them, in the now-famous words of Warren Buffet, "financial weapons of mass destruction, carrying dangers that, while now latent, are potentially lethal."[24]

Since the financial crisis, various proposals, legislative and otherwise, have been made to improve governance of OTC derivatives. Since the vast majority of carbon derivatives trading is done OTC (for example, about 70 percent of European Union Allowances trade OTC[25]), the OTC derivatives rules will play a key role in future carbon trading regulation. However, most derivatives proposals have focused on credit default swaps, rather than the broader derivatives market.

One exception is the "Derivatives Markets Transparency and Accountability Act," (H.R. 977) which was passed by the House Agriculture Committee in February 2009. This bill defines carbon as separate from "exempt commodities" (such as metals and energy) under the Commodities Exchange Act, and would essentially require carbon to be traded on designated contract markets such as exchanges, rather than OTC. But it also promotes carbon offset projects, requiring the CFTC to cooperate with the Secretary of Agriculture to ensure that protocols for a carbon trading system "maximize credits for carbon sequestration."

Regulatory Capture and Political Influence

One of the most sobering lessons from the financial crisis is how Wall Street's deregulatory achievements were made possible through aggressive political lobbying and campaign contributions. Since 1990, the financial industry has more than quadrupled its federal campaign contributions, and is now the leading source of campaign contributions to federal candidates and parties. (In 2006, for example, the industry donated $252 million and spent $368 million in federal lobbying efforts.[26]) The Wall Street lobby has become so influential in Washington that Joseph Stiglitz asserted, "These deeper political reforms, including campaign finance reform, are an essential part of any successful [financial] regulatory reform."[27]

For carbon trading to be successful — from an environmental, financial and governance perspective — policy makers and market regulators must be even more insulated from corruption and political influence. The UK Financial Services Authority noted, "The key differences in the emissions market, compared with other commodities markets, are that it is a politically-generated and managed market and that the underlying [instrument] is a dematerialised allowance certificate, as opposed to a physical commodity. Also, there is a compliance aspect to the underlying market."[28]

It is precisely these politically generated and managed aspects of carbon trading, as well as its compliance aspects, which make carbon markets particularly vulnerable to inappropriate lobbying and regulatory capture. For example, companies have weighed in on various carbon trading bills, strongly lobbying for "safety valves" or "off-ramps" that would raise the carbon cap in certain situations. Not only would this weaken the environmental integrity of the market system, but it could undercut market confidence and flood the market with additional carbon allowances. Wall Street firms, eager to gain more carbon brokerage business, have advocated for an increasing proportion of carbon offsets to be allowed in a carbon trading system, despite the fact that this would make the market more vulnerable to subprime carbon risks. Other areas subject to potential corruption or regulatory capture (and unique to carbon trading) include the setting and release of information on individual companies' emissions caps, and the verification of companies' actual emissions.

24 Berkshire Hathaway 2002 annual report, at http://www.berkshirehathaway.com/2002ar/2002ar.pdf
25 Point Carbon, *Carbon 2008: Post 2012 is Now*, 11 Mar 08.
26 Center for Responsive Politics, http://www.opensecrets.org/industries/background.php?cycle=2008&ind=F and http://www.opensecrets.org/industries/indus.php?cycle=2008&ind=F
27 Joseph Stiglitz, Professor, Columbia University, Testimony to House Financial Services Committee, October 21, 2008 at http://www.house.gov/apps/list/hearing/financialsvcs_dem/stiglitz102108.pdf
28 UK Financial Services Authority Commodities Group, "The Emissions Trading Market: Risks and Challenges," March 2008 at http://www.fsa.gov.uk/pubs/other/emissions_trading.pdf

Proposed Regulatory Structures for Carbon Trading: Will They Be Enough?

Adequate governance of carbon markets lies largely with the future of U.S. financial regulations, as well as current efforts to regulate excess speculation in commodities markets. This regulatory future is yet undecided. The crisis has proved that self-regulation is inadequate, and that much greater levels of accountability need to be levied on the financial sector. But, policy makers may not take bold enough steps to ensure sufficient supervision and oversight of Wall Street.

Congress and the Administration will need to agree on a set of broad policy directions for the financial markets. For example, many economists have called for the adoption of counter-cyclical policies, such as managing interest rates to prevent excess leverage. If so, such policies could potentially mitigate the impact of future asset bubbles, whether in real estate or carbon markets. Policy makers will also have to consider whether to continue employing the "originate and distribute" model of managing systemic risk. Today, securitizations have dropped to a small fraction of their historic highs, but they may regain popularity and be deployed in the carbon markets of the future.

Policy makers will also be considering major institutional reforms. For example, adopting the proposal to merge the SEC and the CFTC would have major implications on carbon market governance. Similarly, the patchwork of regulations exposed by the crisis has prompted calls for a new macro-prudential oversight institution to monitor and respond to systemic risks and enhance regulatory coordination. Such a body would presumably also have purview over carbon markets, which could have a similarly long — if not longer — value chain in mortgage markets.

Finally, new regulations governing derivatives, investment banks, brokers and hedge funds will be debated. These regulations too will naturally have significant impacts on carbon markets.

In sum, the governance of carbon markets lies largely with the fate of future financial regulations. But **carbon trading has some unique components that may need to be covered by entirely new regulations and entities. A number of U.S. legislative proposals have suggested various regulatory regimes for carbon, but they are either flawed or leave regulation as an afterthought.**

Emission Allowance Market Transparency Act

The Emission Allowance Market Transparency Act (S. 2423) is the only stand-alone bill to address carbon market oversight. Proposed by Senators Feinstein and Snowe, it focuses on preventing manipulation in carbon markets. It prohibits traders from false reporting, any manipulative or deceptive device, as defined in the Securities Exchange Act, and any attempt to cheat or defraud another market participant. The bill establishes a maximum $1 million fine and 10 years in jail for each offense (current CFTC and Federal Energy Regulatory Commission, or FERC, laws provide for up to five years of jail time).

It relies on the CFTC to regulate carbon futures, draws on SEC anti-fraud rules, and gives the Environmental Protection Agency (EPA) new roles aimed at limiting speculation and gaming. The bill requires EPA to publish market price data in order to increase market transparency, monitor trading for manipulation and fraud, and enforce position limits to prevent excessive speculation. Relying on EPA to enforce position limits would make sense if carbon trading were conducted primarily among GHG emitters, but these markets will likely be dominated instead by Wall Street brokerage houses, hedge funds, and other financial players.

A recent analysis, authored by attorneys from the law firm Southerland, outlines several additional flaws:[29]

- The bill's definition of "emissions allowances" does not seem to apply to allowances traded in the secondary markets, which are likely to dwarf the primary markets.
- The bill refers to the anti-fraud rules (Rule 10b-5) of the Securities and Exchange Commission. However, according to the law firm, "10b-5 is an anti-fraud statute that generally applies when there is a duty to disclose (e.g., when a statute requires disclosure, when an insider trades on non-public information, or where a fiduciary or other relationship or trust exists). At this time, there is no duty to disclose in the emis-

29 Krupka, Catherine, and Lafferty, Susan, "Who's In Charge of Carbon Markets? Allowance trading needs oversight, but don't overdo it," *Public Utilities Fortnightly*, July, 2008.

March 2007: Forest villagers in India forced to resettle to make way for Ranthambore National Park, Rajastan, India. Under the proposed Reduced Emissions from Avoided Deforestation and Degradation (REDD) program, governments could receive carbon offset credits for reducing forest degradation. However, techniques for verifying how much carbon is actually sequestered from such forest protection efforts are very controversial. Trouble verifying how much carbon is reduced or sequestered increases the risk of subprime carbon. From 'REDD - CO2lonialism of Forests' exhibit, CarbonTradeWatch.org

sions-trading regime." The firm suggests CFTC's anti-manipulation provisions[30] as a better model.

- As currently worded, the bill may create turf battles between various agencies such as the CFTC, FERC and the EPA. For example, FERC may believe that it has authority over any manipulation that relates to the power sector, the EPA may believe it has jurisdiction over futures markets that are traditionally the domain of the CFTC.

Other climate change bills

The "Climate Security Act of 2007" (S. 2191), proposed by Senators Lieberman and Warner, provided for the establishment of a high-level "Carbon Market Working Group." This group would include the EPA Administrator, Treasury Secretary, and Chairs of the FERC, the CFTC and the SEC to work out the details of how to regulate carbon markets. One of its key tasks would be to prevent fraud and manipulation.

The "Investing in Climate Action and Protection Act" (H.R. 6186), also known as "iCAP," is sponsored by Congressman Markey and makes FERC primarily responsible for regulating the carbon markets. It establishes within FERC an Office of Carbon Market Oversight which is supposed to have jurisdiction over those areas that are not covered by the SEC, and is also not supposed to limit the authority of the EPA under the Clean Air Act. There is some rationale for providing FERC with a degree of regulatory authority, as movements in carbon prices will be closely correlated (inversely) with movements in energy prices. But putting carbon regulation under the jurisdiction of FERC would mean coordinating with the CFTC, the

30 CFTC manipulation provisions makes it a felony for 'Any person to manipulate or attempt to manipulate the price of any commodity in interstate commerce, or for future delivery ... or to corner or attempt to corner any such commodity.'

agency which generally oversees derivatives, and which is currently working with regional carbon markets. In addition, FERC focuses on regulating the spot market for energy, and has no experience regulating futures markets.[31]

The iCAP bill sets some standards on carbon trading facilities, traders, and clearing organizations; and prohibits market manipulation, fraud, and false/misleading reports. It also prohibits traders from artificially pumping up trading volumes, and offers some language on "Prevention of Excessive Speculation" by establishing position limits and requiring reporting of large trades. According to the bill, criminal offenders may be sanctioned up to $1 million, and FERC would be responsible for monitoring the markets, including potential fraud.

The "Climate Market Auction Trust and Trade Emissions Reduction System" (H.R. 6316), known also as the "Climate MATTERS " bill, was introduced by Congressman Doggett and provides for the creation of a Carbon Market Efficiency Board. Although this organization does have purview over monitoring the carbon markets for evidence of fraud and manipulation, one of its chief jobs is to determine whether the costs of carbon trading is too expensive for compliers, thus triggering cost relief measures. The bill is light on carbon market regulation; for example, it lacks particular language on derivatives or securities trading.

H.R. 1590, the "Safe Climate Act of 2007," was introduced by Congressman Waxman and has little to no language on the regulation of a carbon trading market. It permits allowances to "be held and traded by any person," rather than restricting carbon trading to regulated brokers and dealers.

Key Governance Challenges

A robust framework for governing carbon trading is critical for the environmental, economic and financial integrity of carbon markets. Whether such a framework will develop relies on the outcome of current financial regulation debates, various commodities trading bills, as well as competing carbon trading bills.

Areas of particular concern include:

Governance of carbon offset projects and credits

- Minimizing fraud and corruption, e.g.:
  - > Ensuring the independence of verifiers from their clients
  - > Ensuring the independence of certifiers
  - > Ensuring the scientific credibility of verification methodologies (for example regarding technically difficult reduction strategies such as avoided deforestation)
  - > Ensuring the scientific credibility of certification standards (for example regarding additionality)
- Minimizing conflicts of interest, e.g.:
  - > Ensuring that project developers or consultants do not verify projects
  - > Ensuring that project developers, consultants or verifiers do not broker in credits

Design of a carbon trading system and governance of primary trading markets

- Ensuring that decisions about emission reduction targets are based on sound science, and that the reduction schedule is implemented in a predictable and consistent manner
- Ensuring robust methodologies and effective monitoring systems for tracking emissions
- Minimizing political influence and corruption, e.g.
  - > Ensuring that the establishment of a carbon cap is not compromised by corporate lobbying and campaign contributions
  - > Ensuring that the establishment of individual quotas is fair and not compromised by political influence or corruption
  - > Ensuring accurate verification over individual emissions, whether it be through governmental or third party auditing
  - > Ensuring accurate verification over the amount and type of carbon credits held by an emitter
- Establishing appropriate sanctions for emitter noncompliance
- Minimizing fraud, e.g.:
  - > Ensuring orderly, timely and fair release of market-sensitive information (for example, on individual quotas)

31 Email correspondence with Tyson Slocum, Director, Public Citizen's Energy Program, 17 February 2009.

- > Ensuring fairness and preventing cartel behavior in allowance auctions
- > Ensuring accuracy and integrity of carbon products, including those offered by carbon aggregators
- > Preventing false reporting by emitters

Governance of secondary carbon markets

Most of the governance concerns for secondary carbon markets are the same as those for other derivatives and commodities markets generally, including:

- Minimizing fraud and manipulation, e.g.:
  - > Establishing systems to monitor trading
  - > Enforcing position limits
  - > Creating appropriate sanctions for fraud and manipulation
  - > Publishing market price data
  - > Ensuring transparency of and supervision over carbon brokers and investment funds
  - > Ensuring transparency of carbon securities and investment products
- Prohibiting excessive speculation
- Reducing systemic risks:
  - > Monitoring carbon derivatives trading, including gathering information on OTC activity
  - > Regulating counterparties and limiting excessive leverage
  - > Monitoring and management of carbon asset bubbles

Recommendations

As Alan Greenspan admitted, the notion that self-regulation and self-interest will ensure integrity in the financial markets is seriously flawed. There is no reason to believe that just because traders and investment banks can gain some green credentials from carbon trading, Wall Street will naturally behave more honorably when playing with this new class of derivatives. **Only strong government regulation and oversight can ensure accountability in the financial markets.** Whether Washington actually imposes such oversight on the financial sector in general, and carbon trading in particular, remains to be seen.

Governance of carbon derivatives must be included in current efforts to regulate Wall Street, and policy makers should consider that carbon trading has unique components which may need to be covered by entirely new regulations and entities. Carbon trading bills should similarly provide for a strong regulatory system to manage carbon futures.

In light of the spectacular market failures that have become apparent over the last year, and the lack of proven governance mechanisms to prevent such failures, **it is imprudent to so hastily create one of the biggest new derivatives markets in the world.** Yet despite the financial, environmental and governance risks, almost every major federal climate change bill relies on carbon trading as the centerpiece of a strategy to reduce GHGs.

The U.S. must instead employ a diverse set of strategies to dramatically reduce GHGs, rather than primarily rely on derivatives trading to meet our climate commitments. The U.S. should establish a national climate policy with a strong carbon cap (e.g. minimum of 80 percent reductions by 2050) and a coordinated, multi-pronged plan to aggressively reduce GHGs. Finally, **the size and complexity of carbon trading schemes should be minimized and managed** to prevent the build-up and spread of subprime carbon assets, and to ensure the environmental and financial integrity of this emerging and exotic derivatives market.

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