The Ruggles Report™

January 2009
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The Ruggles' Report is an ongoing, independently published report with insights, reflections and opinions from noted vehicle expert David Ruggles.

The Road Ahead

Comment [A1]: ORIGINALLY PUBLISHED 1/12/2009. Emphasis added here in 2012 but all text is original.

The New Year gives rise to reflection on the past months of 2008 as well as a look forward into 2009. We are living in historic times and sailing uncharted waters. The following is a look at where we've been and where we might be going.

By late summer 2008 the auto business was already in trouble with high fuel prices destroying volume, product mix, and resale values. Overnight, consumers and their banks found themselves thousands of dollars upside down, whether they were leases or long term finance contracts. Lenders, already running scared because of increasing delinquencies and defaults, experienced horrendous residual losses in their off lease portfolios. GAP insurance providers became nervous.

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Further, the housing and mortgage meltdown, which began in 2007, was building steam. Few knew the width and depth of mortgage securitization exposure and its possible effect on the financial sector. Who knew that speculation, primarily in the 4 states of CA, AZ, NV, and FL, and fundamental flaws in Fannie and Freddie's risk management could wreak such havoc? In my oversimplified view, the meltdown resulted from the perverse alignment of conservatives' desire to minimize regulation and the liberals' desire for everyone to be able to own a home. On September 7, it was announced that Fannie Mae and Freddie Mac were being placed into government conservatorship. They have since be re-juiced with billions of federal dollars and given a new mandate. Detailed notes of the Congressional hearings regarding Fannie and Freddie can by viewed in the first endnote at the end of this report.[i]

On September 15 Lehman Brothers declared Chapter 11 bankruptcy, the largest in U.S. history. Surprisingly, the government didn't bail them out. The markets asked, "If Lehman can go, who's next?" The government then announced a bailout of AIG, the largest bailout in

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history. Panic was setting in. September 2008 will go down as one of the darkest months in our economic history and it didn't get much better from there. In October we had a brief suspension in the presidential campaign so the Congress could focus on an economic bailout plan named T.A.R.P. for Troubled Asset Relief Program. Its author, Hank Paulson, started off with some credibility. By the time Congress got finished with the bill we all had more reason to revile our elected officials as they added in billions for their special interests. Later on, Paulsen and his people lost all credibility when it was revealed that the money wasn't used for the purpose stated when the country was sold the program. Then we learned about AIG executives going off on an expensive retreat on what was viewed as taxpayer money and banks who couldn't or wouldn't answer questions about what they had done with their share of the T.A.R.P. money. We learned new terms like "credit default swap", "risk modeling", and "tranche". See two important articles from the Washington Post entitled "A Mountain, Overlooked, How Risk Models Failed Wall St. and Washington, By James G. Rickards"[ii] and "The Perfect Machine"[iii] for additional detail.

In July, Wall Street pressured Chrysler Credit into giving up leasing as part of a refinancing deal. This was not commonly known at the time. Once this was announced independent banks figured if Chrysler wouldn't stand behind their own vehicles, why should we? What do they know that we don't? The banking climate was already uncertain enough. Lenders bailed out of leasing one after another. **Predicting residuals turned out to be a most inexact science especially if one could not predict fuel prices. Lessors took major baths on the residuals of luxury models and "heavies".** A few OEM captives stayed in leasing but they were either German or Japanese brands. The German luxury brands in particular rely on leasing for a major portion of their volume. Unfortunately, there are rumors of MANY off lease vehicles stored in marshalling yards around the country. Ford stayed in leasing on a very limited basis.

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Comment [A2]: Given the lessons of 2008 and current macroeconomic forces, it's not hard to predict fuel prices are going to rise through the summer.

U. S. Bank stands alone as the only bank with national scope that has stayed in new vehicle leasing. Even they abandoned pre-owned leasing leaving only the programs of certain OEMs for those who want to lease pre-owned vehicles. A few regional banks and credit unions have stayed in as well but have backed off of their residuals. Yet, EVERYONE agrees that after a period of time with a low SAAR (Seasonally Adjusted Annual Rate) **we will experience an extreme used vehicle shortage at some point down the road.**

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Comment [A3]: Which resulted in the strong resale market we've seen the last 2 years.

We saw the CEOs of the "Big 3 come to Washington in private jets with their hands out only to get spanked, lectured, and told to come back in two weeks using a different means of conveyance and with a plan. I stubbornly insist on referring to them as the Big 3 even though they aren't any more. Perhaps I should call them the Detroit 3. The hearings played out on television. The country became familiar with both old and new players like Bob Nardelli from Chrysler, Barney Frank, D-MA, and Bob Corker R-TN. After much theatrics Congress failed to act, divided on mostly party lines on UAW labor cost issues. The Bush administration stepped in at the last minute to prevent GM and Chrysler from going bankrupt with a cash infusion from T.A.R.P. funds. In the meantime, T.A.R.P. had ended up not being used for its intended purpose anyway. Since the initial T.A.R.P. funds were not used to buy up mortgage securities, no one seemed to know what the mortgage securities were worth. **Fear of both the known and the unknown caused the credit markets to seize up**. In the auto business, consumers with credit scores above 700 or below 580 could probably get credit, although the low credit scores were almost exclusively BHPH (Buy Here, Pay Here) transactions. Those in between were largely out of luck unless they had a credit union or a special circumstance they could call on. Negative equity? Forget about getting it financed!

Ford's CEO Alan Mullaly came to Washington with his two Detroit competitors but stated his company's situation was not so dire as to need an immediate "bailout." Ford had raised a lot of cash early on before the credit market dried up. Instead they asked to be considered for a line of credit in the case the economy stayed in recession longer than their cash cushion could last. It makes one wonder if someone in the Ford family might have seen the potential for a situation to arise where the company would have to go to the government for help. One wonders what might happen to the Ford family's special category of voting stock in the case of taxpayer money being injected into the company. Ford hopes to benefit from favorable PR as the only U.S. OEM to not need taxpayer money. They are also banking on being able to bring small vehicles to the U.S. from Europe if needed. In addition, they have some new technology almost ready for release that allows them to extract larger engine power from small displacement engines using direct injection and twin turbochargers. They stand to benefit from any concessions the UAW negotiates with their competitors.

Having said all of this, the American buying public has short memories. With the price of fuel around $1.60, hybrid and small vehicle sales have dropped remarkably. Toyota recently announced a 45% drop in Prius hybrid sales. This gives residual value prognosticators even more heartburn. Let's face it, if gasoline stays this cheap Americans absolutely will not pay extra for advanced fuel economy. It's been proven time and again. Keep in mind that Lee Iacocca pitched a 25 cent gasoline tax in the early eighties. To say that industry leaders are mixed on this issue would be an understatement. Energy policy is an issue that goes beyond

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Comment [A4]: Recall, gas prices plummeted in late 2008, peaking at $4.12 in July and falling to $1.61in late December. See http://gasbuddy.com/gb_retail_price_chart.aspx

The question is, what will be the US consumer tipping point this year and will the market pull back in a similar time frame? Impact of growing economies in China and India may extend timeframe before pullback as will consumers being conditioned to high prices 3 summers ago…

the auto industry as it is truly an issue of national security. **Also at issue is the value of the dollar and our country's balance of payments based on the extreme outflow of dollars to pay for foreign oil.** Bob Lutz of GM has weighed in on the subject and details of his opinions are included in the endnotes.[iv]

Detroit was accused by some Washington lawmakers and media pundits, of building cars no one wanted to buy. Yet the sales slump hit South Detroit and imports alike. **Even Lexus was down over 40% and has inventory stacked up at the port. Toyota idled their Tundra plant in San Antonio for 3 months and suspended plans for a new hybrid plant in Mississippi.** They ran the first quarter of red ink in company history.

Despite the fact that the Detroit 3's market share has been steadily eroding they still build a lot of vehicles and employ a lot of people. They are also responsible for the payment of a lot of taxes as are their dealers in their individual markets. South Detroit got their "bailouts" up front in the form of incentives and tax subsidies from the southern states where they located in the first place. This is not to defend the stupid moves made by the decision makers at the Detroit 3, but most of those decisions are the subject for a subsequent report. In my view, the government has some responsibility for what has happened. It's not the Big 3's fault that we have no comprehensive energy policy in this country as do other developed nations. It's also not their fault that the government's role in the housing and mortgage market through the debacles at Fannie and Freddie caused the financial markets to seize up and prevented the Big 3 from being able to go through normal financing channels to "bridge" themselves.

Through all of this the economy lost millions of jobs. The stock market continued its slide from earlier in the year. Its roller coaster nature during the dark days of September and October left many of us with a feeling of nausea. The auto industry slowed to a SAAR of 11 million units. Many auto dealers were left by the roadside, with more to fail in the coming months. The T.A.R.P. finds that were released to the big banks allowed them to gobble up small banks who were in trouble and would probably have gone bust. Even though this didn't do anything to firm up the value of the so called "toxic assets" it did serve the function of keeping the small banks from closing without the Feds having to micromanage each situation. It was thought that even small bank failures could potentially cause a run on many banks. But the taxpaying public felt betrayed. In late November CitiBank received a 300 billion plus commitment from the Feds that was over and above the T.A.R.P. In the middle of all this, we elected a new President largely based on hope for the future.

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Comment [A5]: And here's the rub. Iran and India recently announced they are going to trade for oil in gold rather than US Dollars. Our status as the World's Reserve Currency is at risk and that has major implications.

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So where are we now? The Detroit 3 have been "bridged" with the prospect of additional financing looking good under the incoming administration. GMAC/Cerberus has received a change in banking status to qualify for government funds. This is a MAJOR deal as they desperately need cheap money to lend to support their dealer's sales efforts.

Mortgage applications are up 82% in Las Vegas, due mostly to low interest rate refinancing. But it's a start. The "bottom feeders" are starting to pick up distressed properties. We still have the cloud of unknown value mortgage securities hanging over the head of the economy, but the first step is getting a handle on home values. Here in Las Vegas it has been hard to know what a house is worth. But as transactions occur, values for other properties can be ascertained. If a mortgage security includes mortgages from states where values just aren't known, how can Fitch or anyone else rate or value that security? How can a bank value these assets on their balance sheet, let alone turn them into cash? Getting a handle on the value of these securities will be a major task of the new administration, as well as coming up with a major stimulus and jobs package. I expect them to hit the ground running.

So what else has to happen for the economy to recover? Americans have to start buying more stuff. As usual I expect the auto industry to be the "leading indicator." Maybe we should dig up Joe Garagiola who with Chrysler almost single handedly yanked us out of the recession of the mid seventies with "Buy a car, Get a check!" But rebates won't work this time. Buyers are so accustomed to them they don't represent anything "special". An auto buyer's tax holiday might get some attention. This has been effective in some foreign countries where the consumption tax is federal, not state by state. Repealing the federal excise tax on vehicles worked in the early seventies to yank us out of the economic downturn of 1970. How I date myself, as I was actively in the auto business as a new car sales person when these events took place. But we will first have to work through tremendous unsold inventories of both new AND pre-owned. There are other issues as itemized by Brian Wesbury, Chief Economist from First Trust.[v]

So what's the outlook for the long term of the auto industry? The Detroit 3 have been touting their quality and J. D. Power statistics have supported their claims to some degree. But in my opinion a huge problem the Detroit 3 has in competing in the marketplace is in resale value. Years of desperation "push marketing" brought on by short sightedness and over production have undermined the value of most Detroit 3 vehicles. Many sophisticated consumers purchase a Toyota or Honda because they know that a Honda or Toyota at MSRP is a relatively better long term value than most Big 3 products are at invoice or under. This is not to say that everyone buys a particular product for the same reason, but it doesn't take a genius to figure out that a big rebate or discount upfront doesn't mean much if it gets eaten up in depreciation in the first year of ownership. Low resale value tarnishes an OEM's image. It betrays their owner body. It makes it more difficult for a borrower to achieve anything close to equity which makes it more difficult for them to trade in their encumbered vehicle on a new one. In other words, it costs sales. It reduces owner loyalty. It also means that leasing strategies to make monthly payments more achievable on new vehicles are more costly and/or not as competitive. All OEMs know these things. But when trying desperately to survive they resist allocating resources to bolster their resale values, especially if it involves using their captive finance arm to aggressively finance or lease their late model pre-owned vehicles. CPO (Certified Pre-Owned) is a great strategy but without strong finance and lease support it will never realize its potential. For the sake of the Detroit 3 and their dealers let's hope they survive and take a long term view of their business that includes taking necessary measures to maintain a high resale value. A great way to move the over flow of pre-owned late model vehicles currently in the pipeline would be through pre-owned leasing. With the current low SAAR and the projected pre-owned vehicle shortage down the road, pre-owned leasing would be a really safe bet!

Ruggles

NOTE: See next page for Endnotes referenced above.

[i] Notes: House Oversight & Government Reform Committee Hearing 12/9/2008:

Committee Chairman - Henry Waxman D - CA, Edolphus Towns D-NY sitting in today

Darrell ISSA R-CA Ranking Member

Definitions: subprime is defined as mortgages with a 660 FICO or below
AltA mortgages are typically "no doc" "stated income" mortgages, "liar loans" and other high risk factors
GSE = Government Sponsored Enterprises

To Testify: Pinto, Kling, Calomiris, Stanton.... see below

Edward Pinto - Chief Credit Officer for Fannie Mae until 1989

There are 25 million subprime and AltA mortgages representing 4.5 trillion unpaid dollars in the country. This represents 44% of all mortgage loans by count in the USA
The GSEs became insolvent while being allowed to operate on a 75 to 1 leverage ratio which makes Lehman Bros. practices look conservative in comparison.
The GSEs own 1.6 trillion in subprime and AltA outstanding which equals one third of their risk portfolio

From 2005 - 2007

The GSEs were responsible for 34% of all subprime loans, 59% of AltA
These 10.5 million non prime loans are 8 times more likely to default than traditional "conforming" mortgages
5.7 million subprime, 3.3 AltA,1.5 million additional high risk factor mortgages
these 10.5 million non prime loans do not include 3 million FHA obligations

AltA mortgages, or so called "liar loans", with zero down payment, represent about 1 million of the GSE's total
1 million GSEs had no down payment, help meet their housing goals based on "target" neighborhoods
20 % of these mortgages made to investors, not homesteaders, mostly for rental or flip

Default performance of Fannie and Freddie subprime and AltA portfolio::

2005 8%
2007 40%

2005 to 2007 they bought 1 trillion dollars of "junk" mortgages

Fannie and Freddie enabled thinly capitalized mortgage brokers and non depository banks, who did not have to meet the same capital requirements, to take over the mortgage origination business Depository banks, which have more stringent capital requirements and regulation than the GSEs. Of course, they couldn't compete for this business with Fannie and Freddie. The GSEs grew at the expense of regulated depository banks.

2004 Raines and Syron went to a meeting of mortgage originators and announced they would wrest back the AltA and subprime market from Wall Street

The announced their new EZ approval practice trying to meet 2005 HUD targets which meant 55% of their loans should qualify as affordable housing loans including 28% to low income borrowers.

By ramping up their EZ lending they persuaded their supporters in Congress that they were doing what they were supposed to be doing.

Arnold Kling - Senior Economist Fannie Mae until 1994

He thinks Industry executives, the regulators, AND the market were fooled, so it's no one's fault. After saying he doesn't think a lack of regulation played a role, he then talked in detail about the "perverse" incentives in bank capital requirements encouraged unsound lending practices and caused excessive securitization. A depository bank could originate low risk mortgages, exchange their low risk mortgage for mortgage securities, and lessen their capital requirements in doing so. This also increased their risk as the securities were much riskier than the low risk loans they originated in the first place. A high risk mortgage held by a bank would require a greater capital requirement, but when that risky mortgage is laundered through Wall street, it can come back into the bank as a AAA security. He believes all the players in the mortgage business should all have to use the same capital standards. To encourage home ownership he recommends against trying to artificially create cheap mortgages and easy approval, as it has been proven to be a cruel joke on the same people Congress was trying to help.

Charles Calomiris - Columbia University

GSEs hold 1.6 trillion in subprime mortgages which is half of the non FHA exposure to subprime

They willingly engaged in practices that they KNEW were not in the best interest of the subprime borrower. Their risk managers saw the losses coming and warned management. WHY did they ignore the warnings of their own internal experts? First answer: The affordable housing mandate to the GSEs. There existed a quid pro quo between elements of the government and the GSEs based on the implicit mission of "affordable housing" and favorable treatment of the GSEs by the government. Second answer: Short term goal oriented compensation reinforced this deal.

They chose to relax underwriting standards to achieve their affordable housing mandate.

Had they not decided to enter the subprime and AltA market so aggressively the crisis would have been at least 50% less than actually experienced.

The GSEs were the market makers. From 2003 to 2005 subprime and AltA lending tripled as a result of the GSEs getting aggressive in this area.

They continued to buy these toxic mortgages aggressively even after signs of severe problems emerged.

The GSEs adopted accounting practices that masked the problem by subtly redefining subprime and AltA.
Thomas Stanton - Johns Hopkins

Regulators were overwhelmed by political influence.

3 Points

1. They didn't cause it, just exacerbated it
2. They should be in "receivership" and shareholders removed. Once that takes place, the next government can use the GSEs for their original purpose. They are currently in "conservatorship."
3. Should not be restored as private companies operating with pervasive federal backing.

The biggest mistakes made by the GSEs involves their resistance to oversight and reasonable capital standards. They doubled in size every five years. The combination of private ownership and government backing made them a compelling poliitical force. they selected their leaders based on their political connections, not on their ability to run massive complex financial companies. They funded over 40% of all mortgages which gave them market and political power. They achieved this by avoiding capital structure requirements put on conventional depository banks and by ever more risky lending practices.

By themselves they DID NOT cause the housing bubble or the proliferation of subprime and AltA mortgages. Stanton's Law, "Risk will migrate to the area where government is least equipped to deal with it." The flow of the capital markets sent the most toxic of mortgages to where the capital requirements were the least and federal supervision was weak. This same phenomenon sent trillions of dollars of toxic mortgages to commercial and investment banks where supervision was weak at best.

HUD established the recent goals for "affordable housing" under the Bush administration. The low income housing goals DID NOT cause the problem. The low income housing mandate only required that a certain number of mortgages be made where "the financial return is somewhat less than normal mortgages." The GSEs received no appropriations to make losing mortgages. HUD was precluded by law from imposing rules and goals that would cause them to fall below a standard of profitability. The leaders of the GSEs engaged in lending practices to achieve HUD goals that exceeded all common sense for political reasons and reasons of short term compensation, read bonuses. HUD kept ratcheting up the goals and the GSEs kept striving to beat them. Political favors AND bonuses were attached to the goals. It got so bad there was a time when Fannie "rented" some low income mortgages from another lender at the end of a year to meet the HUD goal and trigger the bonuses. HUD didn't audit the quality of the mortgages they were doing to achieve the goals. HUD was only concerned that they were "low income."

Too many AltA mortgages went to investors and speculators, not homesteaders, perhaps 20%. Everyone who took out a mortgage was NOT a victim. Many were perpetrators of fraud. Many were just plain stupid. The main victims are the people who do everything right and are victimized by the collapse of their home equity. Most of the victims didn't even enter the mortgage market during the boom years. Who is going to help them?
The GSEs bought mortgages of undocumented aliens. No legitimate ID was required. Foreign investors bought the securities sight unseen.

According to Pinto we are facing a 2nd and 3rd wave of defaults. In eighteen months we will have more in outstanding mortgage balances than we will have in home value in the USA.... in other words, we will be upside down as a country in our houses.

The taxpayers own 77% of the mortgage liability in the USA. It is ludicrous for the government to try to bail out mortgage holders from Washington. Trying to do that would cost more in administration than could be expected in benefit. There are other ways to do it. There isn't enough time or space here to itemize all of the ideas that were put forth.

[ii] A Mountain, Overlooked
How Risk Models Failed Wall St. and Washington
By James G. Rickards
Thursday, October 2, 2008; A23

Crooked mortgage brokers, greedy investment bankers, oblivious rating agencies and gullible investors have all been faulted in the financial crisis, and there is bipartisan agreement that regulators were asleep at the switch. It's all well and good to call for substantial new oversight. But if regulators were oblivious to the danger, the question is why.
In the case of Fannie Mae and Freddie Mac, the answer seems easy: Their massive lobbying machines thwarted every legislative attempt at reform. But what about the Fed, the Treasury and the Securities and Exchange Commission, agencies that are not above politics but are known for their professionalism and expertise? Surely they had the capability and motivation to avoid a calamity of the type that is occurring. Why did they fail? The problem is that Wall Street and regulators relied on complex mathematical models that told financial institutions how much risk they were taking at any given time. Since the 1990s, risk management on Wall Street has been dominated by a model called "value at risk" (VaR). VaR attributes risk factors to every security and aggregates these factors across an entire portfolio, identifying those risks that cancel out. What's left is "net" risk that is then considered in light of historical patterns. The model predicts with 99 percent probability that institutions cannot lose more than a certain amount of money. Institutions compare this "worst case" with their actual capital and, if the amount of capital is greater, sleep soundly at night. Regulators, knowing that the institutions used these models, also slept soundly. As long as capital was greater than the value at risk, institutions were considered sound -- and there was no need for hands-on regulation. Lurking behind the models, however, was a colossal conceptual error: the belief that risk is randomly distributed and that each event has no bearing on the next event in a sequence. This is typically explained with a coin-toss analogy. If you flip a coin and get "heads" and then do it again, the first heads has no bearing on whether the second toss will be heads or tails. It's a common fallacy that if you get three heads in a row, there's a better-than-even chance that the next toss will be tails. That's simply not true. Each toss has a 50-50 chance of being heads or tails. Such systems are represented in the bell curve, which makes clear that events of the type we have witnessed lately are so statistically improbable as to be practically impossible. This is why markets are taken by surprise when they occur. But what if markets are not like coin tosses? What if risk is not

shaped like a bell curve? What if new events are profoundly affected by what went before? Both natural and man-made systems are full of the kind of complexity in which minute changes at the start result in divergent and unpredictable outcomes. These systems are sometimes referred to as "chaotic," but that's a misnomer; chaos theory permits an understanding of dynamic processes. Chaotic systems can be steered toward more regular behavior by affecting a small number of variables. But beyond chaos lies complexity that truly is unpredictable and cannot be modeled with even the most powerful computers. Capital markets are an example of such complex dynamic systems. Think of a mountainside full of snow. A snowflake falls, an avalanche begins and a village is buried. What caused the catastrophe? The value-at-risk crowd focuses on each snowflake and resulting cause and effect. The complexity theorist studies the mountain. The arrangement of snow is a good example of a highly complex set of interdependent relationships; so complex it is impossible to model. If one snowflake did not set off the avalanche, the next one could, or the one after that. But it's not about the snowflakes; it's about the instability of the system. This is why ski patrols throw dynamite down the slopes each day before skiers arrive. They are "regulating" the system so that it does not become unstable. The more enlightened among the value-at-risk practitioners understand that extreme events occur more frequently than their models predict. So they embellish their models with "fat tails" (upward bends on the wings of the bell curve) and model these tails on historical extremes such as the post-Sept. 11 market reaction. But complex systems are not confined to historical experience. Events of any size are possible, and limited only by the scale of the system itself. Since we have scaled the system to unprecedented size, we should expect catastrophes of unprecedented size as well. We're in the middle of one such catastrophe, and complexity theory says it will get much worse. Financial systems overall have emergent properties that are not conspicuous in their individual components and that traditional risk management does not account for. When it comes to the markets, the aggregate risk is far greater than the sum of the individual risks; this is something that Long-Term Capital Management did not understand in the 1990s and that Wall Street seems not to comprehend now. As long as Wall Street and regulators keep using the wrong paradigm, there's no hope they will appreciate just how bad things can become. And the new paradigm of risk must be understood if we are to avoid lurching from one bank failure to the next.

The writer was general counsel of Long-Term Capital Management from 1994 to 1999. He works for Omnis Inc., a McLean consultant on national security and capital markets.

iii *The Beautiful Machine*

Greed on Wall Street and blindness in Washington certainly helped cause the financial system's crash. But a deeper explanation begins 20 years ago with a bold experiment to master the variable that has defeated so many visionaries: Risk.

By James G. Rickards

Howard Sosin and Randy Rackson conceived their financial revolution as they walked along the Manhattan waterfront during lunchtime outings. They refined their ideas at late-night dinners and during breaks in their busy days as traders at the junk-bond firm of Drexel Burnham Lambert. Sosin, a 35-year-old reserved finance scholar who had honed his theories at the famed Bell Labs, projected an aura of brilliance and fierce determination. Rackson, a 30-year-old soft-spoken computer wizard and art lover, arrived on Wall Street with a Wharton School pedigree and a desire to create something memorable. They combined forces with Barry Goldman, a Drexel colleague with a PhD in economics and a genius for constructing complex financial transactions. "Imagine what we could do," Sosin would tell Rackson and Goldman as they brainstormed in the spring of 1986. The three men had earned plenty of money through short-term deals known as interest-rate swaps, a clever transaction designed to protect banks, corporations and other clients from swings in interest rates that threw uncertainty into the cost of borrowing the money necessary for their business operations. They believed their revolution could never happen if they stayed at Drexel. Swaps in those days typically lasted no longer than two or three years. The trio envisioned deals lasting decades that would lock in profits and manage risks with unprecedented precision. But the junk-bond firm's inferior credit rating sharply raised its borrowing costs, making it a dubious and risky partner for such long-term deals. Sosin and his team needed the backing of a company with deep pockets, a burnished reputation and the very top credit rating, a Triple A institution as unlikely to default as the U.S. Treasury itself. One name topped their wish list that fall: American International Group, or AIG, the global insurance conglomerate considered one of the world's safest bets. They would find a partner for their venture. They would create an elegant and powerful system that earned billions of dollars, operating in the seams and gaps of the market and federal regulation. They and their firm would alter the way Wall Street did business, particularly in the use of derivatives, and eventually test Washington's growing belief that capitalism could safely thrive with little oversight. Then, they would watch in disbelief as their creation -- by then in the hands of others -- led to the most costly rescue of a private company in U.S. history, triggering a federal investigation into AIG's near-collapse and making AIG synonymous not with safety and security, but with risk and ruin. Over the past two decades, their enterprise, AIG Financial Products, evolved into an indispensable aid to such investment banks as Goldman Sachs and Merrill Lynch, as well as governments, municipalities and corporations around the world. The firm developed innovative solutions for its clients, including new methods to free up cash, get rid of debt and guard against rising interest rates or currency fluctuations. Financial Products unleashed techniques that others on Wall Street rushed to emulate, creating vast, interlocking deals that bound together financial institutions in ways that no one fully understood and contributed to the demise of its parent company as a private enterprise. In the panic of mid-September's crash, the Bush administration said that AIG had grown too intertwined with the global economy to fail and made the extraordinary decision to take over the reeling giant. The bailout stands at $152 billion and counting -- almost 10 times as large as the rescue for the American auto industry. Many of the most compelling aspects of the economic cataclysm can be seen through the story of AIG and its Financial Products unit: the failure of credit-rating firms, the absence of meaningful federal regulation, the mistaken belief that private contracts did not pose systemic risk, the veneration of computer models and quantitative analysis. At the end, though, the story of Financial Products is not about math and financial formulas. It is a parable about people who thought they could outwit competitors and market forces alike, and who behaved as though they were uniquely positioned to sidestep the disasters that had destroyed so many financial dreams before them.

2: 'We Are The Tide'

Sosin, Rackson and Goldman could hardly contain themselves as they labored over a business plan at Sosin's kitchen table in his apartment on Manhattan's Upper East Side. Their timing happened to be exquisite. The staid Wall Street of their fathers' generation was gone, replaced by an anything-goes culture that applauded the kind of path they were charting during the final months of 1986. Their plan fit perfectly with another revolution they saw unfolding in Washington. Ronald Reagan's unwavering belief in free markets -- and his distaste for regulation that put hurdles in the way of entrepreneurs -- had steadily spread through the government. "The United States believes the greatest contribution we can make to world prosperity is the continued advocacy of the magic of the marketplace," Reagan told a U.N. audience that fall. As eager as the three dreamers were, they had to confront certain realities. They had no backing, no inside track to the top levels of the corporate world that controlled the money they needed.

They had passed AIG headquarters at 70 Pine St., a few blocks from Drexel's offices, many times. Now, they wanted an entrée to the 18th floor, where legendary 61-year-old chairman and chief executive Maurice "Hank" Greenberg presided over the nation's largest insurance company, with operations in scores of countries. Greenberg was proud and protective of his company's AAA credit rating, one of only a handful in the world. The AAA, awarded after an examination by the bond-rating firms, sent a resounding signal to clients that they could always sleep well at night, that AIG was in no danger of failing. The more secure a company, the more cheaply it could borrow money -- a fact that would be pivotal to Financial Products' success. AIG's roots went back to 1919 and Shanghai, where founder Cornelius V. Starr built a business around a lucrative, relatively untapped insurance market. Starr's company later received an unorthodox boost when he worked with the U.S. Office of Strategic Services during World War II to create an intelligence unit that gleaned information from insurance documents. When Greenberg took the reins in 1968, AIG was a privately held company. Greenberg, a compactly built son of a taxi cab driver, eventually became a figure in both New York and Washington, where he counted Henry Kissinger and Reagan CIA director Bill Casey among his confidantes. The World War II and Korean War veteran had a temper, a gift for growth and a restless mind. He had transformed AIG into a global titan and now wanted to do more. Few people thought of AIG as a financial innovator. Greenberg kept his stockholders happy by striving for an annual 15 percent increase in profits. He instructed his deputy, vice chairman Edward E. Matthews, to explore how AIG could get more involved in Wall Street's realm.

"This is never going to get any better than it is today," Greenberg told Matthews. "We're so big, we're never going to swim against the tide. We are the tide."

3: 'It Wasn't The Money'

At the law offices of Kaye Scholer in Midtown Manhattan, former Sen. Abraham Ribicoff had a match to make.

Sosin had come to the firm -- where the 76-year-old Ribicoff was a senior adviser -- seeking guidance on how to leave Drexel. As he mentioned his interest in getting AIG's backing for a new venture, a Kaye Scholer lawyer told him to see Ribicoff, an old Greenberg friend. Ribicoff was happy to introduce the inventive Sosin to the ambitious Greenberg, and let them figure out whether they could do business together. But he warned Sosin that any partnership, no matter how productive, can sour. "I'll only call Greenberg if you let us plan your divorce while we're planning your marriage," Sosin remembers Ribicoff saying. Sosin came to the negotiation with conditions. He wanted the kind of autonomy that Greenberg rarely granted. Greenberg wanted assurances that Sosin's venture would do nothing to harm the gold-plated rating he had spent two decades building. Greenberg had little extra time for the nuts-and-bolts details that Sosin sought to negotiate. "I don't really know much about this," he told Matthews. "You go talk to these people."

The morning after AIG and Sosin signed their joint venture agreement, Jan. 27, 1987, word spread rapidly through Drexel's trading floor in lower Manhattan: Sosin, Rackson and Goldman were leaving. Discreetly, the three men had invited some of their colleagues to a recruitment meeting. Ten eventually signed up for the ride. Michael Milken, the junk-bond king who was Drexel's star trader, tried to stop the breakaways. But the pull of innovation, and the promise of even greater pay, was too strong. At Drexel, Sosin, Rackson and their band of brainy followers didn't have much say in how bonuses were doled out. At Financial Products, they would keep 38 percent of the profits, with Greenberg and AIG getting 62 percent. (Greenberg remembers AIG's share as 65 percent.) Their revolution began with a whisper. They set up shop in a windowless, makeshift room at an accounting firm on Third Avenue. Until the rental furniture arrived, they sat on cardboard boxes. When it finally showed up, someone had made a mistake and so for a short time, they perched on children's chairs and worked at tiny tables. When Matthews escorted Greenberg there for a visit, the chief executive chewed him out. "You can't have them in such terrible quarters," Greenberg said. Sosin and Rackson hoped that everyone would get rich, but they had their sights set on something more. They wanted to tear down walls they saw as impediments to innovation, the "fiefdoms" that were standard practice at other Wall Street firms. Their vision required a collaborative culture and a computer system that no one else had. For six months, the group worked on constructing "the position analysis and storage system," or PASS. They called it simply "the system." It enabled Financial Products to bring a rare discipline to complex trades. By maintaining market, accounting and transaction details in one place, Sosin and his people could track the constantly changing value of a trade's components in a way no other firm could. Put more simply, they could see opportunities in the marketplace for taking on risk that others couldn't, squeeze out profits where no one had before and protect themselves in the process.

They exploited the developing realm of derivatives, financial jargon for a contract settling in the future that is based on something trading now. A futures contract is a common derivative: A farmer might agree to sell wheat next spring for a price set today. If the price goes up, the farmer misses out on greater profits; if it goes down, the farmer is protected against loss. Essentially, the contract guarantees enough money to keep the farm going. For its clients, Financial Products found ways to create more lucrative and longer-term derivative deals tied to all sorts of underlying assets, neutralizing the constant gyrations of prices in stocks, currencies and commodities. Behind each transaction was the cushion of AIG's AAA rating. Precision was the key to tamping down the risk of these derivatives to the firm. Using another computer program to monitor the minute fluctuations in various rates, Financial Products could place offsetting trades on all sides of a transaction, so it almost didn't matter what the markets did. That was the beauty of their evolving machine: The firm won either way, as long as it stuck to its commitment to keep hedging its bets. But it took more than technology to realize their vision. It took a culture of skepticism. The firm set up a committee to examine all transactions at the end of each workday, searching for flaws in logic, pricing and hedges. "Everyone kind of understood what the nature of the game was. . . . This was not a company that involved speculating," said Tom Savage, a mathematician from Drexel who joined the firm in 1988. "So it was everybody's job to criticize and double-check other people's opinions about what was appropriate business and what wasn't." Sosin and his colleagues worked to create a finely balanced system that married technology, intelligence, verve and cultural discipline. "We were all kind of artists," Rackson said recently. "The excitement of it wasn't the money. The money was the scorecard. The drive behind it was creating something new."

4: 'We Regret to Inform You . . .'

In July 1987, Sosin phoned Ed Matthews at his vacation house in the Adirondacks, where the AIG executive often went to escape Manhattan's summer heat. It was a phone call both would remember for a long time. Financial Products was about to close its first significant deal, a $1 billion interest-rate swap with the Italian government, 10 times larger than the typical Wall Street swaps deal in those days. The elements of the transaction might seem arcane to those outside the financial world. The contract involved an exchange of floating and fixed rates that gave Italy advantages in how it paid bondholders. Financial Products engaged in a separate set of transactions to offset the risk it was taking on. As Sosin explained to Matthews, the firm made money, over the life of the contract, on the spread between the cost of the deal and the cost of its hedge. This one swap, Sosin told him, would pay the firm more than $3 million -- as much as AIG's two other small financial operations each earned in a year. "I was stunned," Matthews said. That first year, Financial Products brought in millions for the company -- $60 million in the first six months alone, as Sosin recalls. He and his team left behind their ad hoc digs for a swanky Madison Avenue address, a temporary stop en route to their eventual

headquarters in suburban Connecticut. Competitors hustled to keep pace. Sosin pressed to find niches where others weren't playing and provide cost-saving solutions for clients. Standard interest-rate swaps were no longer enough. The firm moved into more exotic deals, involving stocks, currency and municipal bonds. By 1990, Financial Products had offices in London and Tokyo. It would soon set up a small bank in Paris to improve its image and lower the cost of some European deals. As in the Italian deal, the transactions were hedged and, if necessary, hedged again. The hedges involved precisely calibrated transactions, including the purchase of Treasury bonds or other swaps, that brought a cash flow in almost direct proportion to the money going out. But with success came tension. Greenberg's love of his joint venture's revenue could not overcome his desire for greater control. He chafed at the deal, worrying that he had given Sosin too much freedom. One detail in particular nagged at Greenberg. Under the joint-venture agreement, Financial Products received its profits upfront, even if the transactions took 30 years to play out. AIG would be on the hook if something went wrong down the road, not Sosin and his team, who took their pay immediately.
Greenberg's uneasiness grew into distrust, and not just about the numbers. Greenberg was a wink-and-handshake guy, while Sosin relied on the written agreement as his Bible. If Greenberg asked for something that wasn't stipulated, Sosin wouldn't comply. "We ran our company very openly," Greenberg said. "Our word was our bond." For his part, Sosin said the agreement gave both sides a clear understanding of the arrangement. Early in 1990, Greenberg summoned Sosin to his office. Drexel had just imploded amid allegations of fraud and insider trading, and Greenberg had recruited several executives to start an AIG unit specializing in currency trading. That was a problem: Sosin interpreted the joint agreement as giving his firm exclusive rights to that business. Greenberg disagreed, and hoped to finesse the conflict.
"Howard, I'm sure you won't mind," Greenberg said. "Mr. Greenberg, I mind very much," Sosin said. "Howard, that isn't wise," Greenberg responded. Days later, on March 13, 1990, Matthews sent Sosin a letter on Greenberg's behalf announcing their intention to terminate the agreement. "We regret to inform you. . . " the letter began. Under the agreement, Sosin could take a duplicate of his computer system and his team with him. He began looking for backing from another AAA company. Greenberg heard about Sosin's efforts and got cold feet. After a series of meetings, including one at Greenberg's Florida retreat in Ocean Reef, they patched it back together, reasoning that there was too much money still to be made. Greenberg's next letter had a different tone. "It is with great pleasure that, with this letter, we revoke any and all of our prior notices of termination," he wrote on May 31, 1990. The peace wouldn't last.

5: 'Cave or Terminate'

In late 1992, Greenberg once again summoned Sosin to AIG headquarters. He was livid over two recent Financial Products deals with entities controlled by the Edper Group, a giant Canadian holding company owned by billionaires Edward and Peter Bronfman. The first involved the purchase of bonds, which amounted to a loan to one of the Edper entities. The firm occasionally ventured into such credit deals as part of larger transactions, but only with highly rated companies and with provisions that opened an exit ramp if the bonds started to default. "We want to be the first rat to leave the sinking ship," Sosin told his troops, reflecting his unease with credit deals, which their system couldn't tame. When this particular ship sank, Financial Products sold out as quickly as it could, but not before it lost $100 million. The second deal, involving a swap with extra layers of complexity, was going fine. But the $100 million loss in the first deal and the intricate machinations in the other had spooked Greenberg. Sitting in an anteroom to his office, in a favorite red leather chair, Greenberg demanded that Sosin stop doing some of the deals that had made Financial Products a Wall Street darling. Greenberg handed Sosin a document that would change the terms of their joint venture. Greenberg was daring Sosin to flinch. Instead, Sosin walked out. He visited his lawyer, Ronald Rolfe, at Cravath Swaine & Moore in New York. "I said, 'What can I do?' And he said, "Cave or terminate.' "

6: No Reconciliation Possible

Under the agreement, either man had the right to terminate the joint venture. Sosin notified Greenberg that he wanted out. Greenberg knew that Sosin's departure could cost him and AIG millions. But that wasn't his main concern. He didn't have a thorough understanding of how Sosin's system worked, and he wasn't going to let him get away without finding out. In March 1993, as the two sides commenced a bitter arbitration battle, Greenberg formed what came to be known as a "shadow group." It verged on a covert operation. The group included AIG's auditors, now known as PricewaterhouseCoopers, which set up an office near Financial Products -- now in Connecticut -- and built a parallel computer system to track the firm's trades. Greenberg also held surreptitious conversations with some of Sosin's colleagues, recruiting them to stay. Years later, Greenberg and Matthews still chafe visibly at the mention of Sosin. "One of the most difficult individuals I have ever dealt with in my entire life. Hands down," Matthews said. "Howard was in it for Howard." Sosin, too, remains sensitive about what happened. "Greenberg took this very personally," he said. "He likes to be able to step in at any point and change things at his whim." In Sosin's view, Greenberg and Matthews were envious of the profits that he and his colleagues were keeping for themselves. "It was peculiar to have something go so well," Sosin said, "and for him to have such suspicion." In August 1993, with no reconciliation possible this time, the AIG board of directors installed a new leadership team. Sosin and Rackson took some employees with them to start another firm. Sosin later settled with AIG for a reported payout of more than $150 million; Rackson later received a share of the settlement. Greenberg and AIG gained control of Financial Products and the beautiful machine. In the coming years, the firm would accelerate its profit-making ability, while forging into uncharted -- and ever riskier -- financial territory.

7: 'Honor the Trust'

Tom Savage stood before a room of anxious colleagues at the Four Seasons resort in Dallas, eager to reassure them that Greenberg was not going to pull the plug on their money-making machine. Savage, a 44-year-old Midwestern math whiz, had just been named the new president of Financial Products. With the honor came explicit expectations, which Greenberg made clear: "You guys up at FP ever do anything to my Triple A rating, and I'm coming after you with a pitchfork." It was spring 1994 and, on the surface, nothing much had changed since Sosin left the previous summer. Financial Products had come a long way from the days of sitting on cardboard boxes. The Dallas meeting was opulent in a way that had become customary for the firm: Lavish meals, open bars, luxurious rooms and rounds of golf, which was Savage's particular passion. Dallas's international airport allowed dozens of associates to fly direct from the firm's far-flung outposts. The employees couldn't understand why there was any doubt about the firm's future. In just seven years, it had grown into a 125-person operation with annual profits comfortably above $100 million.
Like his predecessors, Savage knew the enterprise could not thrive without AIG's AAA rating, which continued to provide the leverage it needed to stay ahead. "AIG has given us the license to work," Savage told his colleagues that day. "We have to honor the trust they have given us." The catch? Financial Products would have to take more direction than ever from Greenberg.

8: 24 Hours A Day

Greenberg called Savage most days that first year. "I'd be changing a diaper at home," Savage recalled. "He'd say, 'What are you doing?' I'd say, 'Changing the diaper.' He'd say, 'Well, I don't think I can help you with that.' But he would say, 'What are you thinking about? What's going on?' He was always taking my temperature." Savage knew that Greenberg hadn't been 100 percent sure about his ability to run Financial Products. Greenberg had told him as much when they sealed the deal at a Vermont ski resort that AIG owned in Stowe. "I don't know if you have all the buttons for this job," the AIG chairman had said. Greenberg managed the company by both charming and intimidating his subordinates. He said of himself recently, "I suffer fools very badly." Greenberg also had no patience for anyone who didn't share his relentless work ethic. "You don't build a company like AIG from nine to five, five days a week. It just doesn't happen," Greenberg said recently. "And you've got to surround yourself with a group of people who share the same values, the same aspirations that you do. When I traveled, I could call somebody, I don't care what time it was, maybe two, three in the morning. As far as I'm concerned, I'm working 24 hours, they're working 24 hours." Savage understood that, but he came at the job with a mathematician's love of the numbers and how they worked. He was among a growing number of "quants" -- short for quantitative thinkers -- who had worked their way into the heart of Wall Street. With a PhD from Claremont Graduate University in California, Savage had started his career at First Boston in 1983, where he wrote computer models for a then-arcane type of security called a collateralized mortgage obligation, or CMO. It is the kind of asset-backed security at the core of the current meltdown. Savage respected Sosin, but saw no reason to follow Sosin and Rackson out the door. "I think what was clear was that, however things should work out, there was a business at AIG Financial Products and Sosin didn't need to be there for it to be successful," Savage said. Immediately after Sosin's ouster, Savage and three others -- soon dubbed the Gang of Four -- ran Financial Products on an interim basis, with Matthews assigned to keep tabs on them. Savage remained committed to running the place under the same rigorous, risk-reducing code that Sosin's group had cultivated. But not everything stayed the same. Under a new operating agreement imposed by Greenberg, AIG owned Financial Products as a subsidiary, and the parent company received 70 percent of the profits, up from 62 percent. Greenberg also wanted to change the way Financial Products' employees divvied up its share of the profits. Under the previous arrangement, Sosin and his crew had the right to book immediate profits on the long-term deals. Greenberg thought there was a powerful incentive to go after millions of dollars in short-term gains while leaving AIG and its shareholders responsible for potential losses for years to come. Savage agreed with Greenberg that Financial Products employees should defer half of their compensation for several years, depending on the length of the deals being done -- an arrangement that would still yield hefty paychecks as the firm's profits soared in the coming years. Savage said he welcomed Greenberg's input. "I would give Greenberg a lot of deference," Savage said. "Hank Greenberg's a great man. And I'm willing, when I talk to him, to say, you know, I'm in the presence of a great man and that's worth something."

9: 'We're Not Hiding Anything'

Financial Products found its profit margins shrinking on some transactions as competitors succeeded in duplicating its services. Like Sosin, Savage urged his talented team to devise ever more complicated transactions, often in untapped areas. Financial Products was becoming a chameleon, taking on the coloration of whatever problem it was solving for its diverse clients. The firm pushed further into structured investments, hedge fund deals and guaranteed investment contracts, or GICs. The GIC deals involved loans from municipalities that had temporary surpluses of cash. Financial Products reckoned that it could borrow that cash, pay state and local governments more than they could make otherwise and then use the money for lucrative deals for itself, somewhat like a bank. The firm also began applying its complex formulas to the movement of single stocks. Using such structured finance enabled clients, such as Microsoft, to better manage their stock prices. It also helped Financial Products to more than double its profits in three years -- to $323 million in 1998, from $140 million in 1995. A new unit, called the Transaction Development Group, did its part by taking advantage of gaps between securities regulation and tax laws in the United States as well as in other countries. Financial Products associates noticed, for instance, they could make money by exploiting differences between the U.S. and British definitions of stocks and bonds. A security that met the definition of stock in Britain could pay tax-free dividends to shareholders. The same security in the United States was regarded as a bond that provided tax-deductible payments. A Financial Products client would get both tax breaks. The firm used the capital raised from that line of business, in part, to finance other operations. "We're the guys there who are going to try to exploit that," Savage said. "We dot our i's, we cross our t's, we tell everybody what we're doing. We're not hiding anything. . . . However, we're getting different treatments in different jurisdictions and we're making money as a result." But even as Financial Products experimented, Savage said, he continued to stress the need to minimize risk. "That was one of the things that really marked this company, was the rigor with which it looked at the business of trading. . . . There was an academic rigor to it that very few companies match," he said. "It was Howard Sosin who said, 'You know, we're not going to do trades that we can't correctly model, value, provide hedges for and account for.' Though the language of caution was the same, the firm's drive toward novel and ever more lucrative deals led down the path of greater risk. The beautiful machine was about to crack.

A Crack in The System

By 1998, AIG Financial Products had made hundreds of millions of dollars and had captured Wall Street's attention with its precise, finely balanced system for managing risk. Then it subtly turned in a dangerous direction.

By Brady Dennis and Robert O'Harrow Jr.

For months, several executives at AIG Financial Products had pulled apart the data, looking for flaws in the logic. In phone calls and e-mails, at meetings and on their trading floor, they kept asking themselves in early 1998: Could this be right? What are we missing? Their debate centered on a consultant's computer model and a new kind of contract known as a credit-default swap. For a fee, the firm essentially would insure a company's corporate debt in case of default. The model showed that these swaps could be a moneymaker for the decade-old firm and its parent, insurance giant AIG, with a 99.85 percent chance of never having to pay out. The computer model was based on years of historical data about the ups and downs of corporate debt, essentially the bonds that corporations sell to finance their operations. As AIG's top executives and Tom Savage, the 48-year-old Financial Products president, understood the model's projections, the U.S. economy would have to disintegrate into a full-blown depression to trigger the succession of events that would require Financial Products to cover defaults. If that happened, the holders of swaps would almost certainly be wiped out, so how could they even collect? Financial Products would receive millions of dollars in fees for taking on infinitesimal risk. The firm's chief operating officer, Joseph Cassano, had studied the model and urged Savage to give the swaps a green light. "The models suggested that the risk was so remote that the fees were almost free money," Savage said in a recent interview. "Just put it on your books and enjoy the money." Initially, the credit-default swaps business would amount to a fraction of the half-billion dollars in Financial Products' revenue that year. It didn't seem to them like a major decision and certainly not a turning point. They were wrong. The firm's entry into credit-default swaps would evolve into insuring more volatile forms of debt, including the mortgage-backed securities that helped fuel the real estate boom now gone bust. It would expose AIG to more than $500 billion in liabilities and entangle dozens of financial institutions on Wall Street and around the world. When the housing market tanked, a statistically improbable chain of events began to unfold. Provisions in the contracts kicked in, spurring collateral calls on swaps linked to $80 billion in questionable assets, requiring the firm and AIG to come up with billions of dollars in cash. They scrambled for almost a year to stave off the calls, but there were too many deals with too many counterparties. In September, the Bush administration concluded that AIG's position at the nexus of the deals meant that it could not be allowed to fail, triggering the most expensive rescue of a private company in U.S. history. So far, the government has invested $152 billion in its efforts to save AIG. Federal investigators are sifting the carnage.

Credit-default swaps exemplify the contradictions of modern finance. At a basic level, they serve as insurance, but they aren't regulated as such. They have allowed companies to free up untold amounts of capital that otherwise would be tied up as collateral for loans. They were sold both to reduce risk and, in some cases, to give clients room to take on more risk -- a key component to making money on Wall Street. But in the end, neither the buyers nor sellers truly understood the enormous risks they were creating. Anyone could sell such a swap, and anyone could buy one, even if he had no stake in the transaction. Some buyers used them to bet against failing companies, prompting a debate among state regulators about whether this type of swap was a form of gambling. The very nature of credit-default swaps put Financial Products at odds with itself, requiring it to deviate from the disciplined system that had made it a pathbreaker. Everything about the company -- its technology, its people, its rigorous culture of transparency and caution -- was designed to minimize the various risks that it shouldered while solving problems for clients. That meant hedging whenever possible, a Wall Street term for making offsetting trades to balance risk. For transactions involving credit and loans, it also meant building an escape route so that the firm could get out early if it saw a deal going bad.

With credit-default swaps, there was no way out, and the risk was so minute that hedging was considered unnecessary, as well as problematic. Savage remembers discussions about whether the firm's vaunted computer system could even come up with the proper values needed for the trades that hedging relied on. All of that made Savage and the others wary. Skepticism was hard-wired into the company's culture, part of its mantra: Hedge if you can. Don't make speculative trades. Above all, protect AIG's reputation and its top-drawer Triple A credit rating, which gave Financial Products credibility and the ability to borrow money at the cheapest rates. The rating was the fuel for Financial Products' innovation and success. AIG's chairman, Maurice "Hank" Greenberg, had once warned Savage that he would come after him "with a pitchfork" if Financial Products did anything to harm AIG's AAA rating. No one saw credit-default swaps as anything on that scale. After conversations that included AIG executives, Greenberg blessed the new line of business. "There was a long discussion about it," Savage recalled recently, "and he said it was fine." Greenberg said recently, "I don't think going into it in '98 was wrong." During his tenure, he said, he and his risk managers kept close watch on the swaps and the exposure they created. Savage retired from Financial Products in 2001. When he left, credit-default swaps were still a small portion of the firm's business. Not long ago, in the dining room of his golf club in Florida, he reflected on the significance of the decision that he and his colleagues made in 1998. Like his bosses at AIG, he still thinks it made perfect sense to give swaps a try. "The credit derivative business had just begun and because of our role in the derivatives business, it was very natural for us to have some minimal participation," he said.

Savage says he now sees that the decision sent Financial Products down a path at odds with its guiding principles. The firm's success had been built on assessing data daily, recalibrating assumptions constantly, counterbalancing one risk against another and making the hedges. The credit-default swaps didn't require that sort of attention. "The different nature of those trades from any other trades that FP had done," Savage said, "opened the door to all the problems that came about." He added later: "In retrospect, perhaps those deals should never have been done."

2: 'A Watershed Event'

One of the firm's biggest advocates for credit-default swaps was Joseph Cassano. Cassano, the feisty, hardworking son of a Brooklyn cop, did not have the pedigree of Financial Products' three founders, who hailed from places such as Bell Labs and the Wharton School. Cassano had worked with the trio at the junk-bond firm of Drexel Burnham Lambert, and had been one of 10 original recruits who left Drexel to start Financial Products. A Brooklyn College graduate, the 42-year-old Cassano was not one of the "quants" who had mastered the quantitative analysis and risk assessment on which the firm had been built. He had no expertise in the art of hedging. But he had excelled in the world of accounting and credit -- the "back office," as it is known on Wall Street. The founders of Financial Products made him the firm's chief financial officer. From the start, Cassano gained respect, in part because he and his team rarely made mistakes processing trades. He was smart and aggressive -- sometimes too aggressive, some executives thought. He had a mercurial temper, occasionally screaming at an underling. He swore, berated and moved on, sometimes leaving hard feelings in his wake. "He was very, very good," recalled Edward Matthews, AIG vice chairman. "But he was arrogant."

He also was ambitious. He made plain to his bosses that he wanted more than the back office.
In 1994, Cassano got a chance. The firm's founders had left in a bitter dispute with Greenberg, and Savage had taken the reins. He put Cassano in charge of the Transaction Development Group, a new unit hunting for business involving energy products and tax credits in the United States and abroad. He was also made chief operating officer. Cassano's portfolio included deals involving credit, so he played a key role in the credit-default swap debate going on inside the company. In 1998, when the investment bank J.P. Morgan came to Financial Products, seeking a credit-default swap arrangement, Cassano was among the most interested. After studying the proposals, he passed on the first deal. But he soon became a leading proponent. J.P. Morgan wanted to package a variety of debt on its books and resell it. The debt would be turned into bond-like securities, and layered like a wedding cake so that investors in the top tiers were first to get their money back in case of default. Investors in lower tiers earned a higher interest rate for taking greater risk.
The "structured" deal had an unwieldy name, the Broad Index Secured Trust Offering, so it was called "Bistro" for short. Because the debt in Bistro was diverse, the investment was considered exceedingly safe; if one kind of debt went into default, it was unlikely other kinds would go under at the same time. As an extra measure of safety, the Bistro organizers wanted Financial Products to write credit-default swaps on the top tiers to further reassure skittish investors.
As private contracts, deals like Bistro could be financed with greater amounts of borrowed money than regulators would allow if the deals were publicly traded. This high degree of leveraging would come back to haunt the industry later. The structure was an early form of collateralized debt obligations. CDOs were a hit almost from the start. It would take several years and a housing bubble for CDOs backed by mortgages to catch on. At Financial Products, the credit-default swap was only one of many innovations in play, but Cassano was passionate about how it could help the firm. "It was a watershed event in 1998 when J.P. Morgan came to us, who were somebody we worked with a great deal, and asked us to participate," Cassano told an investment banking conference in 2007. "These trades were the precursors to what's become the CDO market today." Even as Cassano spoke, the housing market was collapsing, the lack of diversity of the CDO debt was being exposed, and the risk for Financial Products was rising. 3: 'It's the Hardest Thing' By summer 1998, after four years as president, Savage found himself thinking even harder about risk, particularly credit risk. It was often difficult to quantify the likelihood that someone would pay back a loan. Savage kept his distance from developing trades, with the idea that he could better maintain his objectivity about potential pitfalls. He sometimes wondered whether Cassano's enthusiasm for the credit deals colored his ability to assess them. Cassano's lawyer, F. Joseph Warin, said in a recent interview that Cassano took care to follow procedures that minimized risk. Greenberg, too, kept at Savage about the risk, even while keeping on the pressure for greater profits. On Wall Street, investment banks and other financial institutions were mad for private contracts called derivatives, Wall Street's jargon for a contract based on something trading now, but settling in the future. (A credit-default swap is a kind of derivative in which one company takes on the future credit risk of another.) Derivative contracts accounted for more of the world's financial activity by the day. Some in Washington had taken notice, and thought investors and regulators needed to know more about these privately arranged deals that were cloaked from outside scrutiny and clouded by complexity. Brooksley Born, the 57-year-old head of the Commodity Futures Trading Commission, argued forcefully for a public debate about whether derivatives posed an unknown and growing risk to the world's financial system. She testified at least 17 times before Congress on the subject. Her campaign gained no traction. More powerful regulators, including Federal Reserve Chairman Alan Greenspan, Treasury Secretary Robert E. Rubin and Securities and Exchange Commission Chairman Arthur Levitt, opposed Born. They and others said her agency had no authority over derivatives and that her call for action was casting a "shadow of regulatory uncertainty over an otherwise thriving market." Greenspan, in particular, argued a free-market view. He saw derivatives as a mechanism that unlocked efficiency, allowing dormant capital to flow into the system, greasing the gears of the world's economy. The Clinton administration and many congressional Democrats endorsed the notion that too much regulation stymied growth. Greenspan pushed the idea that the marketplace was self-correcting, a view that he often espoused in speeches at economic conferences around the world. He invited Greenberg to attend one such meeting in Basel, Switzerland. Greenberg couldn't go, so he arranged for Savage to go. Chief executives of banks, investment firms and insurance companies, as well as U.S. and German regulatory officials, filled the room. Greenspan, already celebrated as an economic guru, commanded attention every time he spoke. The question he posed that day resonated with Savage for a long time. "Do you folks find that you have enough information to make credit decisions in your businesses?" Greenspan asked. Mathis Cabiallavetta, chairman of the board for the giant Swiss bank UBS, responded that his company knew well what it was up against. Not well enough, as soon became clear. In September 1998, Long Term Capital Management, a heavily leveraged hedge fund with mountains of derivatives, told Federal Reserve officials that it could not cover $4 billion in losses. Russia, swept up in an Asian economic crisis, had defaulted on its debt, and Long Term was besieged with calls to put up more collateral for its investments. The collapse threatened the fortunes of investors from tycoons to pension funds. UBS lost hundreds of millions of dollars. Cabiallavetta lost his job. The exchange in Switzerland, and the Long Term debacle, fueled Savage's unease. His mind kept turning over the

problem of how to calculate the risks of credit. "I've always thought about that," he said. "At the highest level of finance, this is a question of interest. Are you getting enough information about the loans that you're making to corporations? It's the hardest thing. . . . You have to look beyond the credit-rating agencies and make your own decisions." Savage recalled something that Greenberg had once told him. "He said to me, 'I want you to understand that no matter what the credit rating is, no matter what other things you might understand, when a CEO owes you $100 million and is supposed to pay you on Friday, sometimes he just doesn't do it.' "

4: Exploiting A Seam

Financial Products' drive to keep ahead of its competitors took the firm in unexpected directions. It developed a reputation as an innovator with one of the most diverse toolboxes in the derivatives business. That's how Cassano and his Transaction Development Group found coal. For a group of financial wizards, the coal business seemed an odd turn. But it was a logical extension of what the firm had been doing all along: discovering gaps in regulations and markets. A 1980 law, generated by the Carter administration, offered tax credits to companies as incentives to design and use synthetic fuel systems. The aim was to reduce U.S. dependence on foreign oil. Associates at the Transaction Development Group had discovered that many energy companies were not making enough money to benefit from the tax breaks. But Financial Products' profitable parent, AIG, could use those credits to reduce its tax bill. "One thing AIG had was ample income," Savage said. "So what we did is, we went out and we bought synthetic coal facilities."
The firm had no intention of becoming coal processors. Instead, it arranged to install the equipment -- bought for more than $225 million, as Savage recalls -- at coal facilities and power plants. The facilities leased and operated the machines at a discount, while AIG got millions in tax credits. Financial Products hedged aspects of the deals and checked with government officials to make sure the arrangements qualified for the breaks. Savage said the idea was bold as well as clever. "We had the gumption to go out and take seven of these plants that were sitting around doing nothing," he said. "We carted [the machines] off to where they could be used, and it went on." Greenberg, too, was taken with the gambit. "It was opportunistic," he said recently. He once joked that he wanted to ride shotgun in the truck carting the machines around, Savage said. Over the next several years, AIG reaped $875 million in benefits from the deals. It was a coup for Cassano and his group. Although it wasn't Cassano's idea, Savage said, he guided it from concept to reality. "He says he thought about it for six months," said Savage, who came to appreciate Cassano's single-minded focus. "He made a lot of money for the company."

5: 'It Would Be Joe'

In fall 2001, Savage decided to call it quits. He had moved his family to Florida and briefly considered whether he could manage the commute. The Sept. 11 attacks made that sort of arrangement seem impossible. He told Greenberg of his plan to leave. Cassano emerged as Greenberg's candidate to take over. Some colleagues questioned his qualifications to manage a team that was heavily dependent on quantitative skills. Though he was the firm's chief operating officer, some colleagues thought he wasn't as conversant with the complex calculations of risk that remained at the heart of its business. Beyond that, few liked his chip-on-the-shoulder demeanor. Greenberg had come to know Cassano through board meetings over the years. Cassano had won Greenberg's confidence. The two shared a number of qualities. Both were strong-willed, and both disliked criticism. Greenberg knew that, like him, Cassano had made AIG the center of his life. He knew about Cassano's temper, but he appreciated his grit and drive to make money in the derivatives field, which was becoming more crowded with competition. Cassano had one other virtue that helped him land the top job: He followed directions from Greenberg and Matthews, the parent company's leaders. "He told us that in no uncertain terms, that he was -- that all of his people up there were -- smarter than anybody we had at AIG," Matthews said. "And he made it clear that he listened only to two people: He listened to Hank Greenberg and he listened to me." Cassano would need all the smarts he could muster. He was taking the reins at a challenging juncture. Financial Products was now a $1 billion operation with 225 employees working on a multitude of derivatives deals for clients, involving hundreds of billons of dollars in obligations. But in early 2002, when he replaced Savage, the derivatives industry was coming under a shadow. A high-flying financial company called Enron was just starting to melt down. Because Enron had systematically abused derivatives as part of its fraudulent corporate accounting, some kinds of derivatives became the focus of regulatory scrutiny and fell out of favor. Structured deals for corporations were a large part of Financial Products' business. The firm would need to make up lost revenue. "The response to Enron really reduced the toolbox for Financial Products," Savage said. "It wasn't at all clear to me where the profits were going to come from." Under Cassano, Financial Products would grow, take on more risk and become more top-down than before. The culture that had characterized the firm from the outset -- one that relied on informed skepticism in which just about anyone could question dubious aspects of a trade --

would change, according to people who worked at the firm. Cassano disputes the notion that the culture had changed, according to Warin, his lawyer. "FP worked closely and had healthy discussions with its internal auditors so they would fully understand the business and investments," Warin said. "Mr. Cassano encouraged this oversight, review and open communication."

6: Clearing The Way

In 2002, the regulatory debate over one of those lines of business, credit-default swaps, was going nowhere. The swaps had fierce critics. Some saw them as insurance deals that ought to be subject to the same regulation that governed the writing of homeowners' policies or car insurance. Others saw certain swaps as gambling: Because anyone could buy a swap, even someone who had no stake in a particular asset, some critics thought those swaps were like a poker game in which spectators placed bets among themselves on who would win the hand. Some regulators had a hard time seeing the financial value in certain swaps -- especially in deals used to remove debts from a corporation's books. But those regulators were fighting a lost cause. In the waning days of the Clinton administration, Congress had passed the Commodity Futures Modernization Act, which preempted derivatives from oversight under state gaming laws and excluded certain swaps from being considered a "security" under SEC rules. While some regulators had expressed concerns about the act, President Clinton's economic team had agreed that derivatives should not be regulated. Clinton signed the measure, which was part of a larger bill. "By ruling that credit-default swaps were not gaming and not a security, the way was cleared for the growth of the market," Eric Dinallo, the superintendent of New York State's insurance department, told a Senate committee during recent hearings on the role of derivatives in triggering the financial crisis. "None of this was a problem as long as the value of everything was going up and defaults were rare. But the problem with this sort of unregulated protection scheme is that when everyone needs to be paid at once, the market is not strong enough to provide the protection everyone suddenly needs."

7: 'We Made Some Mistakes'

In August 2002, one Financial Products' innovation caught the attention of federal investigators. The year before, Financial Products had been pitching a new way for companies to shed bad debts, and it had found a customer in PNC Financial Services Group, which had $762 million in under performing assets it wanted to unload. Ordinarily, the bank would need to account for the falling value of those assets, which would mean a hit to its profits. Associates at Financial Products, working with accountants, thought they had found a way to solve PNC's problem: Create "special-purpose entities" to take on the unwanted assets. Federal investigators alleged, however, that the deals were a sham. To make the transactions look legitimate, Financial Products had set up a company to "invest" in the entities, while receiving an equivalent amount in the form of fees, according to the investigators. Structuring the deal this way violated securities laws, FBI agent Randy Tice asserted in an affidavit filed in federal court as part of the simultaneous settlement of a criminal case and an SEC civil complaint. AIG and two Financial Products subsidiaries agreed to pay an $80 million fine and give back $39.8 million in the fees that it had earned, plus $6.5 million in interest. PNC paid a $115 million fine. The government announced the settlement on Nov. 30, 2004. In the wake of Enron, the investigators were sending a message. "We are pleased that AIG has accepted responsibility," said Christopher Wray, an assistant U.S. attorney general. "There is no place in our markets for financial transactions that lack economic substance."
But authorities demanded more. The settlement also required AIG "to implement a series of reforms addressing the integrity of client and third-party transactions." A group of senior AIG executives would review complex transactions from the previous few years, working with an independent monitor chosen by the Justice Department, the SEC and the company. In other words, the government had concluded that Financial Products' internal controls -- the disciplined system that had once made the company different from its competitors -- had faltered. Cassano, who had not arranged the transactions but signed the settlement for Financial Products, later described the PNC deals as an anomaly. "We made some mistakes in those transactions, and we suffered dearly for that," he said in 2007 at an investors conference. "And we've gone to great lengths to correct the things that allowed the transactions to occur." Greenberg said recently that Financial Products had consulted its legal and accounting experts before going forward with the special entities. The board of directors also had looked it over, Greenberg said. "We thought it was proper," he said. The settlement is still a source of grief for the former AIG chief executive, who had to swallow the costly settlement and the independent monitor. "I took a bullet for them," he said. "I went out in front. I didn't have to do that. It was their deal." But the case had another consequence for Greenberg. It brought AIG into the sights of another skeptical investigator: New York Attorney General Eliot L. Spitzer.

8: Foot Faults

After the PNC case became public, a tipster approached Spitzer's office. Insurance companies, the tipster said, were selling policies known as "finite insurance." The tipster thought the policies were a fraud. Done right, finite insurance expressly limits the losses an insurer can suffer. Done wrong, it isn't insurance at all because neither side takes any risk. Instead, it's an accounting trick that can help both parties improve the appearance of their balance sheets. The tipster urged Spitzer's office to examine finite insurance and suggested several companies for scrutiny, including AIG and Gen Re, another large insurance company. Spitzer's office sent subpoenas to companies, seeking more information. Not long after, a black binder from another tipster arrived at Spitzer's office in Lower Manhattan. Four inches thick, the binder held confidential documents from Gen Re. The documents appeared to show that Greenberg had arranged bogus transactions with Gen Re that made it look as if AIG had $500 million more in insurance revenue than it had actually earned. Spitzer and his people could not believe their luck. It was a case on a silver platter. They decided to question Greenberg right away, instead of the usual approach of working slowly toward such a big potential target. On Feb. 9, 2005, Spitzer told his people to begin work on a Greenberg subpoena. That afternoon, coincidently, Greenberg announced AIG's latest earnings in a conference call with industry analysts and others. During the call, he complained indirectly about Spitzer's investigation of the insurance industry, suggesting that the probe was overkill and Spitzer was wasting his time.
"When you begin to look at foot faults and make them into a murder charge, then you have gone too far," Greenberg said. Greenberg's remarks were reported online that afternoon and Spitzer happened to see them. Irked, he asked a deputy how soon the Greenberg subpoena could go out. That evening, Spitzer was to speak at a dinner with senior executives at Goldman Sachs, in an elegant conference room at the investment bank's headquarters. Among those in the audience: Henry Paulson, then Goldman's chairman and chief executive. The next year, he would become Treasury secretary and head to Washington, where he eventually assumed the central role in dealing with AIG's near-collapse. As Spitzer waited to deliver his remarks, a deputy came in and whispered into his ear: The Greenberg subpoena had been faxed to AIG. A few minutes later, Spitzer alluded to Greenberg's comments earlier in the day. "These are not foot faults," Spitzer recalls saying. "But second, too many foot faults and you lose the match."

9: 'No Choice'

The end of Greenberg's reign at AIG came with a phone call March 13, 2005. He was in a private jet on his way back to New York from a visit to Key Largo, Fla. The AIG board of directors had called a meeting that Sunday to consider allegations from Spitzer that Greenberg had been personally involved in the fraudulent deal with Gen Re. The board had asked Greenberg to call. Frank Zarb, a veteran Wall Street executive and board member, told Greenberg that Spitzer had issued an ultimatum: Greenberg had to resign. "I had no choice," Greenberg said recently. "No choice." Earlier this year, four Gen Re executives and an AIG executive were found guilty on federal fraud charges. Later, AIG restated earnings from 2000 to 2004. Greenberg, referred to anonymously in federal documents as an un-indicted co-conspirator, maintains that what "we did, from AIG's perspective, was perfectly proper." In a recent interview, he tore into Spitzer: "He destroyed a company. And for what?" Spitzer said recently that the activities at AIG were too important to ignore. Events have solidified his view. "AIG, as we have now all seen," he said, "was at the center of the web of the entire financial system." Greenberg blames others for his company's downfall. He says his forced departure left AIG without the strong hand it needed to protect against future excesses. He said AIG and Financial Products were prepared to hedge any transaction "if we thought there was going to be a potential problem." Matthews put it this way: "What bothers us about this is we had a climate of risk management which seems to have evaporated after we left."
By then, though, the company had already taken a deeper dive into credit-default swaps, including an expansion into the subprime mortgage market that would eventually trigger the improbable. The crack in the Financial Products system was about to get a lot wider.

10: Downgrades And Downfall

How could a single unit of AIG cause the giant company's near-ruin and become a fulcrum of the global financial crisis? By straying from its own rules for managing risk and then failing to anticipate the consequences.
The contracts were flying out of AIG Financial Products. Hardly anyone outside Wall Street had ever heard of credit-default swaps, but by early 2005, investment banks were snapping them up to insure all kinds of deals in case of default, fueling one of the great financial booms in U.S. history. During twice-monthly conference calls that originated from the

company's headquarters in Wilton, Conn., president Joseph Cassano would listen as marketing executive Alan Frost listed the latest swap transactions for associates in the firm's offices in London, Paris and Tokyo. Once a small part of the firm's business, the increasingly popular contracts had helped boost the company's profits to record levels. The company's computer models continued to show only a minute chance that the firm would ever pay out a dime on the contracts, and it turned down deals that didn't meet its standards. After their reviews, Cassano and his team would consult with AIG executives, sometimes including chairman and chief executive Maurice "Hank" Greenberg. "We rode pretty tight rein on them," Greenberg recalls. But the swaps also exposed Financial Products and its parent AIG, the global insurance titan, to billions of dollars in possible losses. By spring 2005, some Financial Products executives were questioning the surge in volume. Among them was Cassano, an early advocate for the swaps business who ran the firm from its London office. "How could we possibly be doing so many deals?" one executive recalls Cassano asking Frost, the firm's liaison with Wall Street dealers, during one conference call. "Dealers know we can close and close quickly," Frost said. "That's why we're the go-to." Efficiency wasn't the only reason. Frost didn't have to say aloud what everyone at the firm already appreciated. Financial Products had become the "go-to" for credit-default swaps in part because of its knowledge and reliability, but also because it had AIG's backing. The parent company's top-drawer, Triple A credit rating and its deep pockets assured customers that they could rest easy. Their comfort turned out to be illusory. The credit-default swaps became a primary force in the disintegration of AIG as a private enterprise and a massive government rescue aimed at preventing catastrophic damage to the world's financial system. Never in U.S. history has the government invested so much money trying to save a private company. Even as Frost spoke, trouble was brewing for AIG. On March 14, 2005, Greenberg stepped down amid allegations about his involvement in a questionable deal and accounting practices at AIG. The next day, the Fitch Ratings service downgraded AIG's credit rating to AA. The two other major rating services, Moody's and Standard & Poor's, soon followed suit. The initial fallout came swiftly, as AIG's annual report to federal regulators disclosed. The downgrades had triggered provisions in Financial Products' existing transaction, the report said, requiring its parent company to post $1.16 billion in collateral for the deals.
The company also warned that the downgrades could erode confidence in Financial Products, a crucial element in the unit's phenomenal success. "Historically, AIG's triple-A ratings provided AIGFP a competitive advantage. The downgrades will reduce this advantage and [some] counterparties may be unwilling to transact business with AIGFP except on a secured basis," AIG reported to the Securities and Exchange Commission in May 2005. The swaps business had bound Financial Products to hundreds of counterparties in New York and Europe. Wall Street firms such as Goldman Sachs and Merrill Lynch favored the credit-default swaps as an extra layer of protection for mortgage-backed securities, one of the many investment by-products helping to fuel the overheated housing boom. European banks liked them because they could treat the swaps as a form of collateral, which freed up cash that the banks would ordinarily have to set aside as protection against losses. The interlocking, complex nature of these contracts would speed their downfall. When the housing market began to unravel in 2007, it set off a chain of events that would prove disastrous: downgrades in the ratings of securities that Financial Products had insured; demands by Financial Products' counterparties for billions of dollars in collateral; AIG's desperate search for cash to meet the collateral calls; a panicky weekend of negotiations in New York and Washington; and, finally, Treasury Secretary Henry M. Paulson's conclusion that AIG could not be allowed to collapse. The taxpayer rescue of AIG stands at $152 billion, including $60 billion in loans, a $40 billion investment in AIG preferred stock and a $52 billion purchase of troubled AIG assets that the government hopes to sell off to recoup its investment. Meanwhile, federal investigators are examining statements made last year by the company and its executives to determine whether shareholders received misleading information. Several investors have filed civil lawsuits, alleging that executives at AIG and Financial Products hid the extent of their credit-default swap troubles. Whether that turns out to be the case, there's no doubt that Cassano's concern in spring 2005 did not slow the firm's mounting involvement in the credit-default swap business for several months. The deals mounted and the risks grew. Even after Financial Products stopped writing the credit-default swaps at the end of 2005, it maintained a public veneer of confidence that the contracts it had on its books were fine and that their computer models were sound. As Cassano told investors in a December 2007 webcast, "Our fundamental analysis says this is a money-good asset. We would not be doing the shareholders any benefit by exiting this right now and taking that loss."

11: Playing Catch-Up

By 2005, the world of debt had changed dramatically since Financial Products wrote its first credit-default swap in 1998. Back then, the swaps involved corporate debt, essentially the bonds that corporations use to finance their operations. There was a wealth of historical data about corporate debt, which gave Financial Products' executives a high degree of confidence in consultant Gary Gorton's computer models. Gorton, a Yale business professor with a PhD in economics, had written scores of intricate papers about corporate finance, banking and the history of financial panics. Cassano saw

Gorton as a valuable asset. "Gary has helped us tremendously in helping us organize our procedures, organize our modeling effort, developing the intuition," Cassano said during the December 2007 webcast for investors. By then, Gorton had worked as a consultant for Financial Products for nearly a decade. At that same investor conference, Gorton explained how he saw the analysis that he and his colleagues had been doing. "These models are guided by a few very basic principles, which are designed to make them very robust and to introduce as little model risk as possible," he said. "No transaction is approved by Joe if it's not based on a model that we built." Financial Products had built itself on data, analysis and a culture of healthy skepticism. Even as the firm grew to about 400 in 2005 from 13 employees in 1987, it sought to maintain its discipline. At Financial Products, God had always been in the details, and the details were always rooted in the math. Over the years, the firm had stayed ahead of competitors by finding innovative ways to manage and minimize the risks it took on for clients. Financial Products executives made fortunes, some taking home tens of millions of dollars a year, as the firm created markets in untapped areas -- such as buying synthetic coal equipment to capitalize on energy tax breaks. On credit-default swaps, the firm adapted as the market evolved. By 2004, Wall Street investment banks were discovering how to turn consumer debt into a moneymaker, churning out bond-like securities backed by mortgages and other assets. Credit-default swaps helped attract institutional investors to these mind-bendingly complex deals, known in Wall Street jargon as collateralized debt obligations, or CDOs. CDOs defined a revolution in corporate finance called "securitization." Wall Street saw any income stream as a candidate for securitizing: mortgages, credit card payments, car loans, and even student loans. The investment banks would bundle these loans, and the monthly payments that came with them, into a new security for investors looking for steady but higher yields than Treasury or corporate bonds. CDOs had been around for years, but the real estate boom suddenly made mortgages one of the hottest investments on Wall Street. The mortgage industry turned into the equivalent of a giant assembly line, lubricated by fees from one end to the other. New lenders sprung up by the month, offering loans to first-time buyers as well as existing homeowners who wanted to move up to more square footage. For people with shaky credit, the industry provided subprime loans, with higher rates that some homebuyers now cannot repay. Banks packaged and resold the mortgages in pools, which became the basis for mortgage-backed securities. Wall Street scooped them up. The CDO market took off, ballooning to $551 billion issued in 2006 from $157 billion in 2004. The CDO structure depended on the concept of layered risk. The securities in the "super senior" top tier were considered low risk and attracted the highest ratings. In return for their safety, these bonds paid the lowest interest rate. The reverse was true at the other end: The lower tiers absorbed the first losses in the case of loan defaults. For accepting extra risk, investors in these tiers earned a higher interest rate. Financial Products made its money by selling credit-default swaps only on the super-senior tier. It seemed a safe bet: Cassano once defined super senior as the portion of the deal that was safe even "under worst-case stresses and worst-case stress" assumptions.

The mortgage-backed CDOs were also thought to be safe because of the geographic diversity of the underlying loans. Surely, investment bankers reasoned, people in different parts of the country would not default on their home loans at the same time. The real estate market was strong and showed no sign of faltering. Financial Products executives said the swaps contracts were like catastrophe insurance for events that would never happen. Hedging, the firm's hallmark, seemed largely unnecessary. "Given the conservatism in that we've built these portfolios, we haven't had to do a huge amount of hedging over the years," Andy Forster, the firm's global head of credit trading, said at a May 2007 presentation to investors in New York. Cassano also emphasized that both Financial Products and AIG had a review role. "Each and every one of our transactions," he told investors listening to the December 2007 webcast, "passes through the same careful process. We don't have any short-cuts. . . . So there are always two eyes, two teams reviewing our business. There is not one dollar of this business that's been done that hasn't gone through that double-review check." But there were provisions in the swap contracts that the computer simulations hadn't adequately addressed, as later events showed. There were also tremors in the mortgage industry that would convince one Financial Products executive that the company should get out of the credit-default swap business -- fast.

12: The Subprime Threat

In fall 2005, Eugene Park was asked to take over Alan Frost's responsibilities at Financial Products. Frost had done exceedingly well in marketing the credit-default swaps to Wall Street, and was getting a promotion. He would now report to Cassano directly on other strategic projects. Park had been at the firm for six years and ran the North American corporate credit derivative portfolio. Taking on that swaps business would boost his already handsome compensation. But he wanted no part of it. He was worried about the subprime component of the CDO market. He had examined the annual report of a company involved in the subprime business. He was stunned, he told his colleagues at the time. The subprime loans underlying many CDOs formed too large a part of the packaged debt, increasing the risk to unacceptable levels. Those loans could default at any time, anywhere across the country because the underwriting processes had been so shoddy. The diversification was a myth -- if the housing market went bust, the subprimes would collapse, like a house of cards. Park spelled out his reasoning in meetings and conversations with colleagues over the next several weeks. It was as if he had scratched the needle across an old record album at full volume. Cassano agreed the firm should dig deeper. Over the next few weeks, Financial Products executives worked with researchers from investment banks to examine the subprime threat. They discovered that the subprime exposure had been growing since early 2004, when the composition of the CDOs were increasingly dominated by mortgages rather than other kinds of consumer debt. Cassano decided it was time to stop. Gorton explained the decision to investors during the December 2007 webcast: "We stopped writing this business in late 2005 based on fundamental analysis and based on concerns that the model was not going to be able to handle declining underwriting standards." By then, the firm had $80 billion worth of existing CDOs that included subprime mortgages as underlying assets. About half had been issued before Greenberg's ouster, Nicholas J. Ashooh, an AIG spokesman, said this week. Greenberg said in a recent interview that his research shows only $7 billion in swaps were issued on CDOs with subprime assets during his tenure. Either way, the exposure would prove significant. If additional downgrades occurred, either in AIG's credit rating or in the CDO ratings, Financial Products would have to come up with tens of billions of dollars in collateral it did not have.

13: 'Not a Lot Of Risk'

In May 2007, Cassano stepped before a crowd of entrepreneurs in Manhattan. Financial Products was itself an entrepreneurial success story, with the numbers to prove it: an investment portfolio in excess of $50 billion; a trading operation that dealt in dozens of currencies, 18 commodities and a host of credit and equity services; a reputation for finding innovative ways to assess and manage the risks in interest rates, equities and other deals for its clients. "And who are our clients?" Cassano asked. "It's a broad global swath of mostly high-grade institutions, mostly high-grade entities around the world and it includes banks and investment banks, pension funds, endowments, foundations, insurance companies, hedge funds, money managers, high-net-worth individuals, municipalities and sovereigns and supranationals." Cassano went on. "My colleagues and myself have $500 million invested in the company," he said. "And so we've become very, very good caretakers of the value of the company." As a company with billions of dollars riding on arcane financial transactions such as derivatives, Financial Products certainly faced challenges, Cassano said. He then alluded to the debate within the firm over credit-default swaps. "Credit risk is the biggest risk our group has. It's the single biggest risk that we manage," he said. "But with a AA plus/AA credit portfolio, there's not a lot of risk sitting in there. And so while it is the largest risk, it's not by any stretch a risky business." Three months later, in a conference call with investors, AIG chief executive Martin Sullivan struck a different note, acknowledging the growing unrest over defaults in the U.S. mortgage market. The 52-year-old Sullivan had taken the reins at AIG after Greenberg's ouster in March 2005. He was an AIG veteran, with more than 35 years at the company, primarily on the insurance side. His rise to the top was an exclamation point on a career that began at 17, when he joined AIG's London office as a clerk. Cassano joined Sullivan on the call. Asked by a Goldman Sachs analyst about the stability of Financial Products' huge portfolio of credit derivatives, Cassano responded with calm and confidence. "It is hard for us, without being flippant, to even see a scenario within any kind of realm of reason that would see us losing $1 in any of those transactions," Cassano said. Sullivan added: "That's why I am sleeping a little bit easier at night."

14: Collateral Calls

After Sullivan's comment to investors, a wave of collateral calls would begin, swamping AIG. The first came from Goldman Sachs, the venerable Wall Street investment bank and one of Financial Products' biggest counter parties. Citing the plummeting value of some subprime assets underlying securities that Financial Products had insured, Goldman demanded $1.5 billion to help cover its exposure. The 2005 downgrade of AIG to a AA company now came into play. Under the swaps contracts, AIG had to post more collateral than in its Triple A days. AIG disputed the amount but had no choice but to negotiate. It agreed to post $450 million. As if AIG didn't have enough problems, the rapidly crumbling real estate market was causing the ratings services to downgrade the securities in CDOs, including the top layers that investors had been led to believe were safe. Those downgrades also made AIG more vulnerable under the swaps contracts. In October, Goldman came calling again, demanding $3 billion. AIG balked once more, but agreed to provide another $1.5 billion. These and other events sent AIG's stock price tumbling. In six weeks, between early October and mid-November, it fell more than 25 percent, contributing to the perception that AIG was in trouble. The collateral calls also set off alarms at Price Waterhouse Coopers, AIG's outside auditing firm. The auditors told Sullivan on Nov. 29 that they had found serious oversight problems and "that AIG could have a material weakness" relating to risk management. More ominously, they said, no one knew whether the value that Financial Products placed on its portfolio of derivatives was

accurate. That meant the losses in market value could be much worse.
About the same time, the SEC required companies like AIG to adopt an accounting standard known as "mark-to-market," designed to give investors a better sense of the current values of a company's assets. As the housing market declined, and the rate of defaults increased, the swaps looked at greater risk. That allowed counter parties to ask for more collateral. Greenberg questioned the merits of the rule. "Mark-to-market accounting, I would argue, probably caused a great deal of the trauma that the financial industry is in today," he said. On paper, the value of the credit-default swaps was sliding. In November, the company reported the portfolio had lost $352 million. At the December 2007 webcast for investors, Cassano reported a higher number, $1.1 billion. Sullivan, Cassano and others at the company remained bullish on their ability to weather the calls, and in the long run, even recover the collateral they had posted. "But because this business is carefully underwritten," Sullivan said, "we believe the probability that it will sustain an economic loss is close to zero." AIG's chief risk management officer, Robert E. Lewis, reminded investors of the company's culture. "If you look at AIG's history," Lewis said, "I think you can realize that AIG in its culture does not have an appetite for undue concentrations of risk." Cassano made the case that Financial Products would survive the storm because it had one of the world's best companies behind it. "Clearly this is a time where it's a huge benefit to be part of the AIG family," he told the investors. "It's these crises and these points in time that give us the wherewithal right now to stand here with you and say on the back of giants, on the back of everybody at AIG who has built the capital that AIG has, the AIGFP unit is able to withstand this aberrant period." Federal investigators are examining the December 2007 webcast as part of their effort to determine whether Cassano, Sullivan and others at the company misled investors about how dire the situation had become. Two months later, on Feb. 11, AIG disclosed that its auditors had found the company "had a material weakness in its internal control over financial reporting and oversight relating to the fair value valuation of the AIGFP super-senior credit-default swap portfolio." On Feb. 28, AIG announced that its estimate of paper losses had spiraled to $11.5 billion. The company also acknowledged that its collateral postings had reached $5.3 billion. The next day, Sullivan announced that the Cassano era was over. The Financial Products president had resigned, effective March 31. Sullivan did not reveal that Cassano would get $1 million a month as a consultant. That fact came out months later during congressional hearings on AIG's near-collapse. AIG had also provided a record of Cassano's compensation history to the committee, showing that he received $43.6 million in salary and bonuses in 2006, and $24.2 million in 2007. "Joe has been a very valuable member of the AIGFP senior management team for over 20 years," Sullivan said in making the announcement. "He has had a great career with us, and we wish him the very best in the future." The worst was still to come.

15: A Deep Hole

The urgent phone call that alerted Eric Dinallo to the extent of the financial meltdown came Friday, Sept. 12, as he drove to his family's weekend home in the Hudson Valley, north of Manhattan. Dinallo, head of New York state's insurance department, got a briefing about AIG, where panicked executives were desperately trying to come up with a huge infusion of cash. They had heard the bond-rating agencies were going to downgrade the company's already ailing credit grade, which would trigger more collateral calls. "And if downgraded -- even like one notch -- they didn't have sufficient liquidity" to meet the calls, Dinallo said recently. Dinallo recognized the danger. AIG had operated for so long at the center of the world's financial web, with so many counterparties, that its collapse would be felt in every corner of the globe. As insurance superintendent, Dinallo was aware of the previous calls. But he was still taken by surprise. "I never realized things were as bad as they were," he said. "I didn't realize how deep the hole was they had created." AIG was going to try selling some of its life insurance affiliates. AIG officials also made a pitch for a $20 billion loan from the state insurance department. "They said, 'We will pay this loan quickly,' " Dinallo recalled.
Dinallo cut short his weekend plans and headed back to Manhattan early Saturday. By noon he had assembled a small team at AIG headquarters. Working on the 18th floor, not far from where Greenberg once reigned, Dinallo and his crew pored through AIG's books, looking for ways to raise money. Meanwhile, Goldman Sachs and J.P. Morgan set to work on a $75 billion bridge loan from a syndicate of major financial institutions, which was intended to give AIG cash until it could sell enough assets to bail itself out. The urgency and tension were palpable. New York's governor, David A. Paterson, called in. So did Timothy Geithner, head of the New York Federal Reserve. Geithner was swamped that day with the imminent collapse of Lehman Brothers, but he wanted constant updates. By Sunday night, no solution emerged, and AIG executives were worried that the company's stock price would take another hit when the market opened on Monday. On Monday morning, Paterson announced he would relax insurance regulations so that AIG could borrow up to $20 billion from its subsidiaries to cover operating expenses. Meanwhile, the Goldman-J.P. Morgan effort on the bridge loan wasn't coming together. Hour by hour, it became clear that AIG was far more exposed by Financial Products' commitments than anyone realized. The next day, sensing disaster, the Federal Reserve Board, with the backing of the Treasury Department, stepped in and took control of what had been one of the most successful private enterprises ever.

"The Board determined that, in current circumstances, a disorderly failure of AIG could add to already significant levels of financial market fragility and lead to substantially higher borrowing costs, reduced household wealth, and materially weaker economic performance," the Federal Reserve said.

16: 'An Unacceptable Situation'

In October, SEC chairman Christopher Cox appeared at a roundtable discussion that the agency was hosting at its Washington headquarters. He delivered a tough, grim message: The federal government had failed taxpayers by not regulating the swaps market. "The regulatory black hole for credit-default swaps is one of the most significant issues we are confronting in the current credit crisis," Cox said, "and it requires immediate legislative action." He tried to put the regulatory failure into context. "The market for CDS is barely 10 years old. It has doubled in size since just two years ago," he said. "It has grown between the gaps and seams of the current regulatory system, where neither the commission nor any other government agency can reach it. No one has regulatory authority over credit-default swaps -- not even to require basic reporting or disclosure." He went on: "The over-the-counter credit-default swaps market has drawn the world's major financial institutions and others into a tangled web of interconnections where the failure of any one institution might jeopardize the entire financial system. This is an unacceptable situation for a free-market economy."

17: Recriminations

The question of what went wrong at AIG and its Financial Products unit provoked some finger-pointing in recent interviews with former executives. Greenberg, the ousted AIG chairman, says that the responsibility rests with the people who ran the company after his forced resignation in 2005. He said that Cassano, the man he appointed to run Financial Products in 2001, never would have been allowed to do anything untoward under his leadership. "No. No," Greenberg said. "Because he was controlled." His longtime deputy, former AIG vice chairman Edward Matthews, also blamed their successors. "When Hank and I left," he said, "those chains that bound Joe Cassano were off." Cassano doesn't agree. Through his lawyer, F. Joseph Warin, he maintained that "every single super-senior CDS investment was authorized by AIG corporate." Warin said, in a statement: "Regardless of what Mr. Greenberg says today, the facts speak for themselves: Mr. Cassano decided on his own, after Mr. Greenberg left AIG, to stop writing CDS [credit-default swap] protection. Mr. Cassano instructed his team to analyze the mortgage underwriting standards and then made the decision to exit the business in late 2005, all within months of Mr. Greenberg leaving the company."
As for the allegations that Cassano and others made misleading statements in December 2007, Warin has said, in a statement, his client acted lawfully and is cooperating with investigators. "He provided full and complete information to investors, his supervisors and auditors," Warin said. Howard Sosin and Randy Rackson, two of Financial Products' founders, left the company in 1993 after a bitter dispute with Greenberg. Sosin lives in Connecticut, not far from Financial Products' headquarters. He traces the roots of the firm's demise to Greenberg's decision to force him out. "We did really well with it. AIG did really well with it," Sosin said, adding that recent events could have been avoided with more attention to the firm's "core values." "It did not have to be this total failure of control." In his brownstone on Manhattan's Upper West Side, Rackson said, "You put something together that was good, and then somebody takes the controls and drives it into the ground."

18: Epilogue

On Nov. 11, Gerry Pasciucco pulled open the front door of AIG Financial Products headquarters in Wilton, Conn. For much of Pasciucco's career on Wall Street, Financial Products had drawn some of the smartest, most ambitious people in the business, while doing pioneering work. Now, it was in ruins. Just weeks before, the 48-year-old Pasciucco, a vice chairman at Morgan Stanley, had heard from colleagues working with federal authorities that AIG was looking for someone to end Financial Products. He spoke with current AIG chief executive, Edward Liddy, who invited him to the Manhattan headquarters of the hemorrhaging insurance giant. Sullivan was gone; he had resigned as of July 1 with a $47 million severance package. As Liddy and Pasciucco sat in the office once occupied by Greenberg, Liddy spelled out what he needed from Pasciucco: To identify Financial Products' outstanding obligations, resolve those transactions as profitably and quickly as possible, and then close the doors and turn out the lights. Pasciucco had worked at Morgan Stanley for 24 years in capital markets and risk assessment. He had once been filmed by Harvard Business School for a case study on how to manage in a fast-paced financial market. But even with that background, he wondered whether he had the chops to sort out Financial Products' problems. "How solvable is it?" Pasciucco recalled asking Liddy. "I'm up for a challenge, but there has to be a chance." Liddy told Pasciucco to think about it. Back in his Morgan Stanley office, overlooking Times Square, Pasciucco did more homework. The organization was in desperate need of leadership and a game plan for unwinding its enormous book of transactions. Pasciucco came to believe that he could make a difference and decided to take the job, in part because he saw it as a chance to pitch in on the great economic crisis of his time. Now, in Wilton for his first day on the job, Pasciucco knew from the demeanor of new colleagues that it was going to be even rougher than he thought. Their faces looked glum, their arms were crossed, and they seemed unsure of what to do. He dove into the company's books. The story he found in the numbers was fascinating and daunting: Financial Products had $2.7 trillion worth of swap contracts and positions; 50,000 outstanding trades; 2,000 firms involved on the other side of those trades; and 450 employees in six offices around the world. The majority of the firm's trades had been hedged, essentially along the lines that Sosin, Rackson and others had laid out two decades before. "The place made sense when I got here," Pasciucco said last week. "They were very, very smart." But Pasciucco soon found evidence of a fatal miscalculation. It seems that as Financial Products ramped up its credit-default swap business, its leaders assumed that its parent, AIG, would always be as strong as it was the day it backed the firm's first big trade in 1987. He said they had failed to prepare for the possibility of a downgrade in AIG's credit rating. The executives who had pushed or approved the credit-default swap business had placed too much faith in the math that told them the worst would never happen, that AIG and its deep pockets would be there to usher them through the trouble. "When the unexpected happens and you have the biggest credit crisis since 1929, you have to be prepared to deal with it, and they weren't," Pasciucco said. "There was no system in place to account for the fact that the company might not be a Triple A forever."

[iv] General Motors Corp. Vice Chairman Bob Lutz caused a stir last month by doing something very controversial: He used the truth to point out the obvious. In an email interview with *Ward's* Automotive Group editors that was published on WardsAuto.com and in the December issue of *Ward's AutoWorld*, Lutz suggests that consumers, with the help of government incentives, have to become part of the solution in switching America's product fleet to more fuel-efficient vehicles.

“The worst case scenario is for fuel prices to remain low, because that means customer demand will remain high for larger vehicles,” he says. Very few people will want to change what has been their ‘nationally-given’ right to drive big and bigger if the price of gas is $1.50 or $2.00 or even $2.50,” Lutz says. “Those prices will put the CAFE (corporate average fuel economy) mandated manufacturers at war with their consumers – and no one will win that battle,” Lutz adds. With sales of hybrid-electric vehicles falling precipitously, along with gas prices, and deliveries of even America's most popular HEV, the Toyota Prius, off almost 50%, you would think America would be nodding its collective head in agreement. But no, the quote was picked up in the general media and the blogosphere, and critics on both the right and left are choosing to kill the messenger. One editorial latched onto Lutz's comments to argue GM and Chrysler should not be given bridge loans because bad government policies such as tough CAFE will kill them anyway by forcing them to build unprofitable fuel sippers. Ignored in this debate is the fact if California's defacto fuel-economy rules are allowed to take hold, all auto makers will suffer. That's why Toyota, Honda and others also are opposing California's rules. In his prescient book “The End of Oil” author Paul Roberts points out that every major fuel shift in history – from wood to coal to oil – was driven primarily by market forces, specifically by competitive advantages of the new fuel over the old.
“This is not happening today,” he writes. “The hydrocarbon economy suffers from no direct competitive disadvantage that wind turbines, solar arrays, fuel cells or some other non carbon energy technology can easily exploit.”
Roberts adds that every advance in our energy evolution has been centered on a new machine or process, such as the steam engine, oil lamp or internal combustion that ensured the new fuel's success, but the machine ultimately had to be successful economically on its own. “Factors like oil depletion or climate change or energy security may push us to champion new fuels or different emission policies, but the fundamental question remains the same. Does the innovation help turn a profit?” In the absence of real-market incentives for new technology, such as a return to $4 per gallon gas, the U.S. government will have to create inducements or the entire U.S. auto industry, not just Detroit, will fail to earn a profit. That means the U.S. must act like every other major industrialized nation in the world and use special incentives to encourage consumers to buy new technology. That also means it likely will have to fund those incentives with hefty gas taxes. All Lutz did was speak the truth. Unfortunately, it seems no one can handle it.

[v] Many observers are pessimistic about the economy because they believe a vicious downward cycle has taken hold, where less spending leads to fewer jobs, which reduces purchasing power, leading to even more job losses. Many just can't see how this vicious cycle will stop. We are frequently asked; “what is the ‘catalyst’ for a recovery?” What force (external or internal) will break the downward cycle of job losses? How does it ever end? Taking this thought process to

its conclusion clearly shows that something is missing. If job losses beget less spending and more job losses, then recessions would never end. On the other hand, if job gains beget more spending and more job gains, then expansions would never end. But, a cursory look at history shows that this can't be true. Since 1854, the US economy has gone through 32 business cycles (recessions and recoveries). In other words, the direction of economic activity eventually changed. Many times in these past cycles, the economy started to recover well before employment turned up. There are a number of reasons for why this is true. The first reason is that the combined decisions we make as independent members of a free society tend to generate economic growth. When people lose their jobs, it does not mean they lose their ability to be productive. It may take time for them to find a new position that matches their skill set, but as long as they have worthwhile abilities, they will eventually get another chance to produce. In the meantime, companies can use layoffs to increase efficiency, laying the groundwork for future increases in profits and wages for their remaining workers. What that means is that a 1% loss in jobs results in a smaller than 1% loss of production. And using assets more productively frees up resources to do "new" things. We have lost millions of farming jobs over the decades and centuries, but the nation as a whole is more prosperous as a result, not less. In addition, if a recession is partly caused by over investment in a particular sector, two forces drive down jobs in that sector, but one is temporary. For example, home building exceeded demand, and those extra jobs were unnecessary. But, by reducing inventories of homes, employment will fall even further. Once excess inventories are worked off, the industry will be adding jobs, even if it does not ramp up to the previous peak in production. Nonetheless, some still look for a catalyst to end the panic that started this Fall. Consumers and businesses have pulled back, basically hoarding cash, to the point of driving down the T-bill interest rate to zero. Part of this was because many people lost faith in the banking system, but the end result was a sharp decline in the velocity of money. Only once in history has something like this spread in a long-term downward spiral and that was in the Great Depression. But, in the Depression, the real problem was that the Fed let the money supply collapse, which in turn shut down aggregate demand. This is not happening now. The Federal Reserve is making sure a persistent deflation will not take hold and is adding liquidity to the system as rapidly as it can. As a result, we expect both money growth and a turnaround in velocity to start healing in the months ahead. In fact, given the unexpected increase of 0.5% in "core" retail sales in November, this may already be happening. In other words, the catalyst for recovery is attached to the very eyes that are looking for it. As long as human beings attempt to better themselves and improve standards of living, and as long as policy-makers don't compound problems, the natural course of growth will return in its magical and mysterious way.