

The Emperor Wears Cellophane: A Fable on Sub-Prime, Collateralized Debt & Ignorance



"There are enormous challenges facing this country."

***Once upon a time, in a land much like ours
and in an economy much like ours...***

The leverage fashionistas adorned their emperor who always wore what they insisted were the finest clothes, made from the finest leverage fabrics, woven from the finest fashionista looms, operated by the most skilled hands of the finest magicians in all of Leverage Land. The emperor's clothes were all the largest sizes and came in a variety of colors – no one cared that they were, in fact, cellophane.



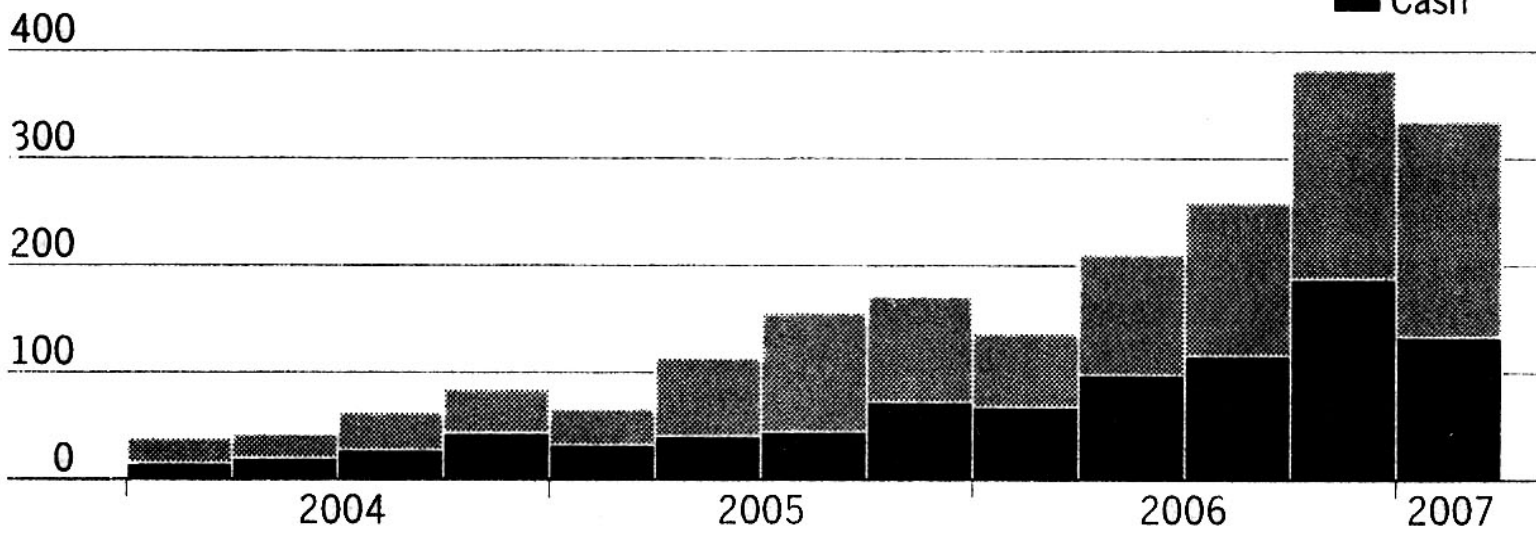
“We structured the deal so it won’t make any sense to you.”

- ❖ As of the end of 2006, the global value of interest rate swaps, currency swaps and interest rate options reached \$286 trillion, six times the gross global product. (Financial Times, 6/19/07)
- ❖ Last year, the collateralized debt obligation (CDO) market topped \$1 trillion. (Financial Times, 6/28/07)
- ❖ Last year, the value of bonds backed by sub-prime mortgage loans reached \$483 billion. (New York Times, 6/21/07)
- ❖ In the second quarter of 2007, companies issued roughly \$56 billion in “junk” bonds, up 50 percent from the same quarter in 2006. (Investors Business Daily, 7/6/07)
- ❖ In the first half of this year leveraged loans comprised 29 percent of all loans, up from 22 percent during the same period in 2006. The amount raised through debt capital markets – both junk and high grade – reached a record \$1.45 trillion in the period, up 32 percent from the same period a year earlier. (Financial Times, 6/29/07)
- ❖ According to Standard & Poor’s, more than one-third of all loans issued in the U.S. through May, were “cov-lite” loans, meaning they eased the typical covenants required of the borrower to monitor repayment capabilities. Although no numbers have yet surfaced, more and more bankers have been tinkering with “cov-loose” loans, which essentially eliminate all information related to ability to repay, collateral behind the loans and other standard measures. (Financial Times, 6/19/07)
- ❖ As of early July, 75 percent of sub-prime residential mortgage-backed securities (RMBS) were rated AAA, with another 10 percent rated at AA and another 8 percent at A. Just 7 percent were rated BBB or lower. (Market Watch, 7/10/07)
- ❖ Half of all CDOs issued in 2005 and 2006 were backed by mortgage-related debt. (Financial Times, 7/13/07)

Global collateralised debt obligation (CDO) issuance

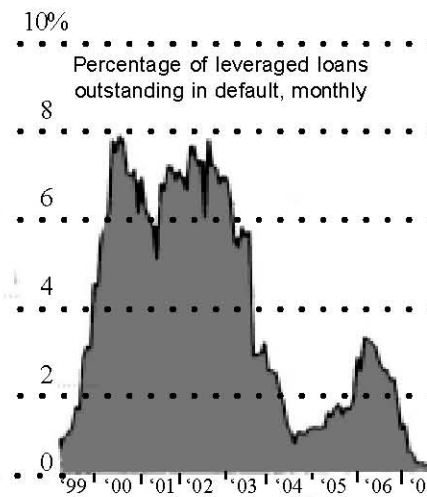
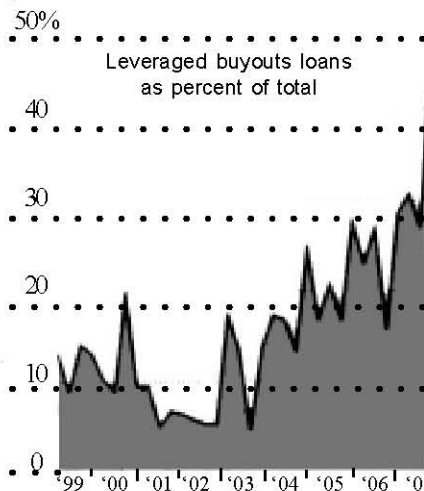
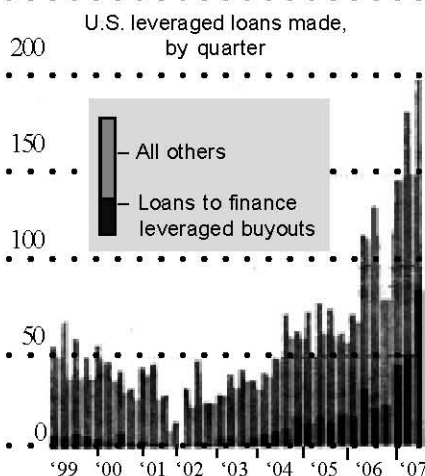
\$bn

█ Synthetic
█ Cash



Leveraged Loan Volume Soars as Defaults Nearly Vanish

\$250 billion



Source: Standard & Poor's Leveraged Commentary and Data

The New York Times

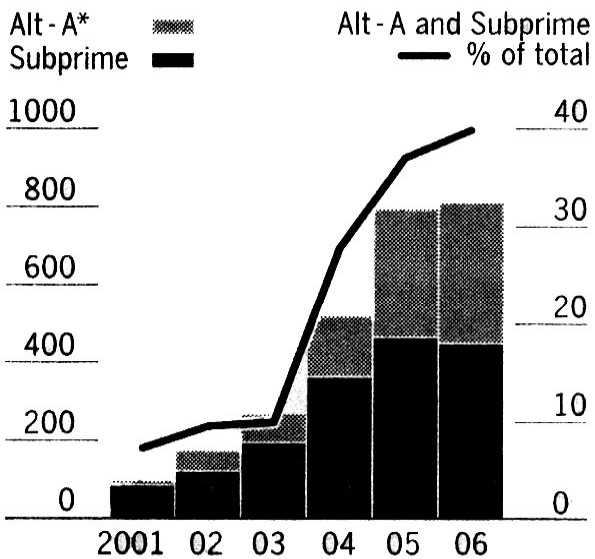
*Everything was fine, more clothes of more cellophane with ever-more clever designers made the leverage fashionistas happy and seemed to cover what was needed of the emperor, until one day, some fool yelled –
“You can see through the emperor’s clothes!”*



- ❖ In June, two of Bear Stearns hedge funds – charmingly named the High-Grade Structured Credit Strategies Fund and High-Grade Structured Credit Strategies Enhanced Leveraged Fund – failed to meet margin calls for \$1.6 billion in fund loans. Meanwhile, United Capital Asset Management suspended redemptions for its Horizon funds, which were heavily invested in sub-prime mortgages. (Financial Times, 7/6/07; Investor’s Business Daily, 7/27/07)
- ❖ Stodgy old Merrill Lynch seized collateral from Bear Stearns equal to roughly \$850 million, as did Deutsche Bank, which took another \$600 million in assets. Others like JP Morgan, Goldman Sachs and Bank of America made deals with Bear Stearns. Morgan Chase was allowed to sell \$400 million collateral back to the hedge funds for cash. Other deals remained private. (New York Times, 6/21/07)

Issuance of US residential mortgage-backed securities

\$ billion

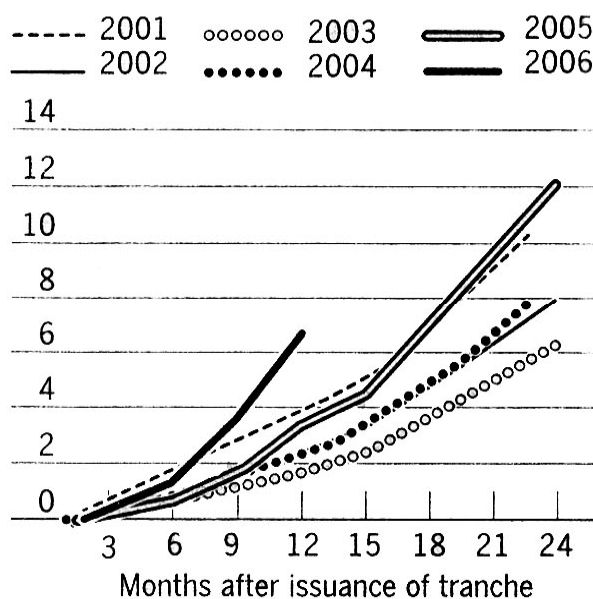


* Slightly less risky than subprime

Source: BIS

Subprime mortgage delinquency rates

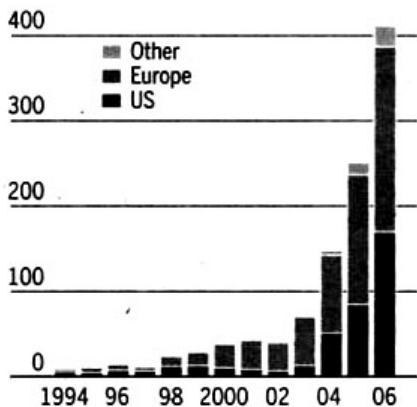
%, by date of loan tranche



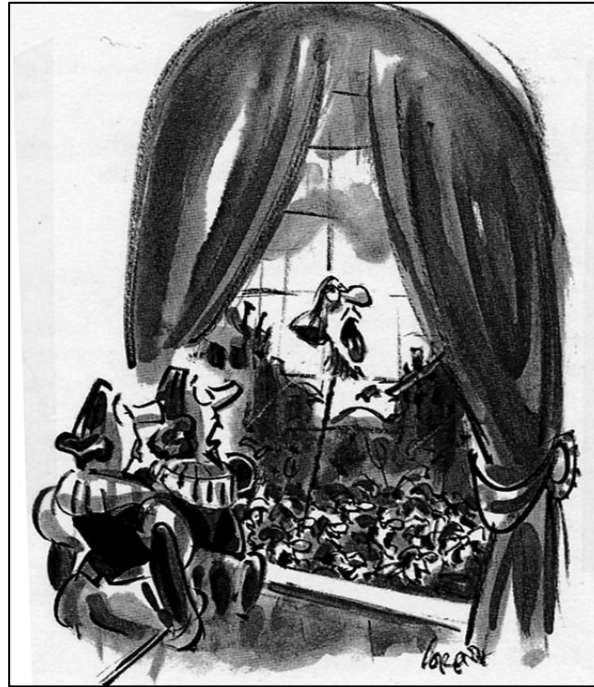
Collateralised debt obligations are divided into two categories: "cash" CDOs, invested in real assets such as bonds, and "synthetic" CDOs, which buy derivatives. Less than 1 per cent of the assets of cash CDOs are corporate bonds: most are loans or asset-backed securities. Asset classes tend to span borders: surprisingly, European CDOs holding ABS appear to have as high an exposure to subprime loans as those issued in the US.

Leveraged buy-out loans

Issuance volume (\$bn)



This, of course, frightened the fashion-nerds, and their concern brought out the Kingdom's fashion police.



"I suppose this is some kind of wake-up call."

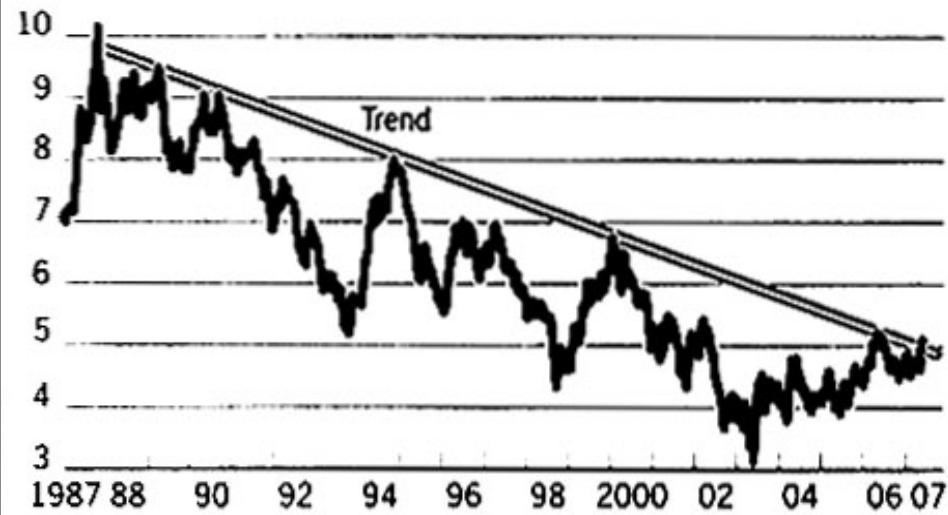
- ❖ S&P said it has placed 612 classes of sub-prime mortgage bonds on watch for possible downgrades. These bonds represent 2.13 percent of the \$565.3 billion in U.S. residential mortgages. (Financial Times, 7/11/07; CNN Money, 7/10/07; MarketWatch, 7/10/07)
- ❖ Moody's said it might downgrade \$5 billion of CDOs backed by mortgages securities. (Financial Times, 7/12/07)
- ❖ Moody's warned of "credit tightening" for some low-rated corporate debt issuers. (Investor's Business Daily, 7/27/07)
- ❖ Moody's issued a report saying that, henceforth, it will be "requesting" loan-level data detailing the structure of adjustable-rate mortgages, the servicer the month of the first interest-rate adjustment and other formerly ignored information. (Financial Times, 7/13/07)

Some of the fashion police seemed to believe they could manage the situation.

- ❖ Bank regulators in the U.S. told banks to be more lenient with sub-prime mortgage borrowers who are in trouble, suggesting that they modify loan conditions. (Financial Times, 6/30/07)
- ❖ In May, Ben S. Bernanke, chairman of the Federal Reserve, explained rather calmly, "We believe the effect of the troubles in the subprime sector on the broader housing market will likely be limited, and we do not expect significant spillovers from the subprime market to the rest of the economy or to the financial system." (Reuters, 5/17/07)

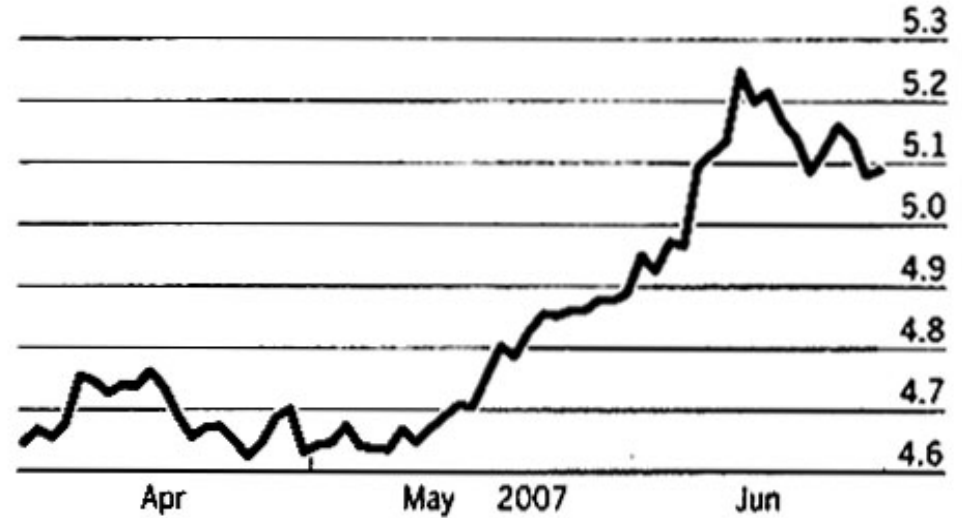
US benchmark 10-year Treasury yield

Over 20 years (%)



Sources: Bloomberg; Thomson Datastream

Over three months (%)



FT montage: Ian Rott Photos: Charlie Bibby, Ashley Ashwood

The Kingdom's fashion-nerds began to wonder about these leverage fashionistas, especially when their private empires were at risk.



- ❖ In Germany, a group of large commercial banks, several local financial institutions and the government joined together to supply more than \$11 billion to save a specialist lender, IKB, from bankruptcy. Just 10 days before the emergency rescue effort, IKB had said it was doing fine. (Financial Times, 8/3/07)
- ❖ Queen's Walk Fund, a London hedge fund, had to write down the value of its U.S. sub-prime mortgage securities by 50 percent. (Financial Times, 6/28/07)
- ❖ Oddo Asset Management, a French financial services company, closed three funds because of significant losses due to exposure to the U.S. sub-prime market, and AXA, a French insurance group, propped up two of its funds after heavy losses in the same U.S. market. (Financial Times, 8/3/07)
- ❖ American International Group (AIG) said that it would cost roughly \$178 million to implement the easing of sub-prime loan conditions requested by U.S. bank regulators. Washington Mutual said it would commit \$2 billion to the effort. (Financial Times, 6/30/07)
- ❖ The ABX Derivative Index, which tracks home loans made to sub-prime borrowers, dropped to a record low 59.25 in late June. Between July 13 and July 18, the figure for A-rated bonds issued in late 2006 and early 2007 dropped from 72.36 cents to 68.5 cents. (Financial Times, 6/18/07; New York Times, 7/18/07)
- ❖ Debt issuance pullbacks altered or ended deals involving Chrysler, Expedia, Alliance Boots, Thomas Learning, Acelor Mittal, Kia Motors, Tyco and Gazprom among others. (Atlanta Journal-Constitution, 7/27/07; Associated Press, 7/25/07 and 7/26/07; MarketWatch, 7/25/07)
- ❖ Clayton Dubilier & Rice failed to find buyers for its \$1.15 billion toggle notes. U.S. Foodservice, tried three times to sweeten the terms of its \$1.55 billion fund raising, but they gave up. KKR had to boost interest rates on its \$2.43 billion loan to fund the purchase of Dollar General, upping the premium from 2.5 percentage points to 3. (Bloomberg.com, 6/28/07)
- ❖ Carlyle Group reduced the size of its IPO for a fund to invest in bonds backed by mortgages, reducing the figure by 25 percent to \$300 million (Bloomberg.com, 6/28/07)
- ❖ The last week of June produced \$9.7 billion in high-yield instruments, but by the third week of July, the weekly issuance had dropped to \$322 million. In July, "junk" bond issuance shrank by 89 percent. (Financial Times, 7/27/07; New York Times, 8/5/07)
- ❖ By August, Reuters' Loan Pricing Corporation could report that \$231 billion in leveraged loans were waiting to be sold, up from \$62 billion one year earlier, which was a record year itself. (Business Week, 8/6/07)

Activity in the US housing market is collapsing...

Existing home sales
Millions (annual rates)



Source: Thomson Datastream

...while securities backed by subprime mortgages suffer heavy losses...

Mortgage-backed securities
ABX index BBB - (07 - 1 tranche)



Source: Markit

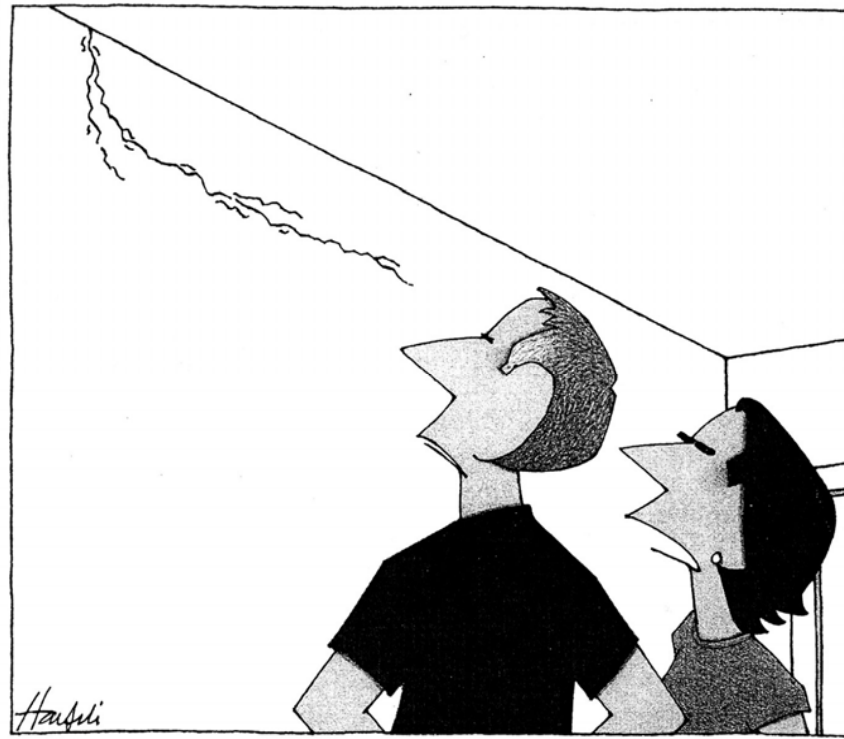
...leading to a global sell-off of financial stocks

Indices (rebased)



Source: Thomson Datastream

The leverage fashionistas screamed at the fashion police, “Turn out the lights! Turn out the Lights! They can’t see through it all when the lights are out!”



“Can’t we just get some load-bearing wallpaper?”

- ❖ In the first half of 2007, the value of private-equity exits (sales of holdings) through secondary buyouts (selling to another like firm) rose 146 percent over the prior year, reaching \$86.1 billion. (Financial Times, 6/29/07)
- ❖ Goldman Sachs said that in the second quarter, the value of its holdings of securities backed by pools of bonds and loans fell by \$1.56 billion (29 percent). (International Herald Tribune, 7/5/07)
- ❖ Absolute Capital Group, an Australian hedge fund, joined other funds invested in sub-prime loans and halted withdrawals from its at-risk funds. (Investor’s Business Daily, 7/27/07)

...and as the leverage fashionistas rushed toward the light switch...



- ❖ Roughly \$100 billion in adjustable rate sub-prime mortgages are due to reset by October. (Economist, 6/23/07)
- ❖ In the first quarter, the delinquency rate on a composite of consumer loans – autos, boats, home improvement, and some home-equity – increased to 2.42 percent, up from 2.23 percent in December and the highest since 2001, when the economy was in recession. (Philadelphia Inquirer, 7/4/07)
- ❖ In the first half of 2006, foreclosure filings increased by 58 percent to 926,000 and is on pace to surpass 2 million this year. (CNN Money, 7/31/07)
- ❖ Morgan Stanley has put together an \$8 billion real estate fund, which with leverage will have roughly \$30 billion in buying power. (International Herald Tribune, 6/22/07)

THIS LITTLE FABLE – LIKE ALL GOOD LITTLE FABLES – HAS A MORAL:

Highly leveraged, opaque financial instruments that are backed by dubious assets, have never been subjected to fundamentals pricing and lack any usable and verifiable metrics can wreak havoc well beyond their believed realm of impact.

OR, IN A MORE FABLE-LIKE MORAL:

Ignorance is expensive.

THE FABLE RAISES SEVERAL CRITICAL QUESTIONS:

As those with liabilities in the CDO market reach for the metaphorical light switch, what are their options to flip it to “off” – that is, to mitigate the crisis? More critically, is there sufficient liquidity available (and willing) to stop the damage from spreading?

Several financial institutions, including Deutsche Bank, Bank of America, Washington Mutual and AIG, have recently put money into the sub-prime market to keep at-risk loans from going into default. In this way, they hope to avoid larger crises in larger financial arenas – specifically, structured derivatives. How much will these financial institutions need to put into that market to ease the pressure? Indeed, given the nature of the CDO market, with sub-prime mixed with prime loans, can any part of the sub-prime market be let go, given that any portion of that market may force the unwinding – and, as a result, force market pricing – of CDOs? What will such capital infusions into existing markets do to the financial institutions’ balance sheets? At another level, financial institutions can rush to the assistance of any fund or institution that is caught by their liabilities in the sub-prime derivatives market and throw cash at them to keep them from having to sell their leverage instruments to meet margin calls. For instance, several German banks, over one weekend, cobbled together more than \$11 billion to bailout IKB, a troubled German lender. According to Jochen Sanio, president of Bafin, that country’s financial regulator, the rescue was necessary to avoid “the worst banking crisis since 1931.” They saved that otherwise expendable lender because banks and government regulators did not want the CDOs that IKB held to be exposed to market pricing, which could unwind the entire sector. How many more of those situations await exposure? One assessment in Europe reckoned that 7,000 funds on the Continent are exposed to the structured market in the U.S. Who will be footing the bill for all of that, and do they have the needed capital? We expect liquidity to flow to this market, but the level of rescue capital may not be sufficient. If financial institutions successfully flip the light switch to “off” and return the CDO market to the dark – that is, keep CDOs and similar leveraged instruments from being subjected to market pricing – will investors have seen the “light” and not buy in again?

In the recent past, we have been observing how individuals, within a short period of time, see through a haze surrounding some specific issue and change their minds. In the past two years, for instance, substantial numbers of Americans have significantly shifted their personal views on topics as varied as the Iraq War and global warming. Efforts at the leadership level to reverse those changes of mind have failed. Individuals have seen through the situation. Leveraged, non-transparent financial instruments that lack market pricing may be experiencing a similar inflection point. In this instance, the shift in view is taking place among investors, who, having “seen through” the process, cannot be lured into running the risk of ignorance again, and among regulators, who, having been caught unaware of risks in the CDO market, cannot be cajoled into passing along investment-grade ratings to opaque instruments. If that happens, then we are in for a prolonged period of high risk premiums. 12

**“LEANING ON AIR” AND “PUKING TRANCHES”:
LINGERING ELEVATED EXPECTATIONS MEET POST-GROWTH REALITIES**

In a Post-Growth Economy, producing the kinds of returns that investors think hedge funds should provide has pushed the funds and other institutional investors to apply greater amounts of leverage to their investment strategies. Nothing highlights this added leverage more than the rapid rise of synthetic collateralized debt obligations (CDOs).

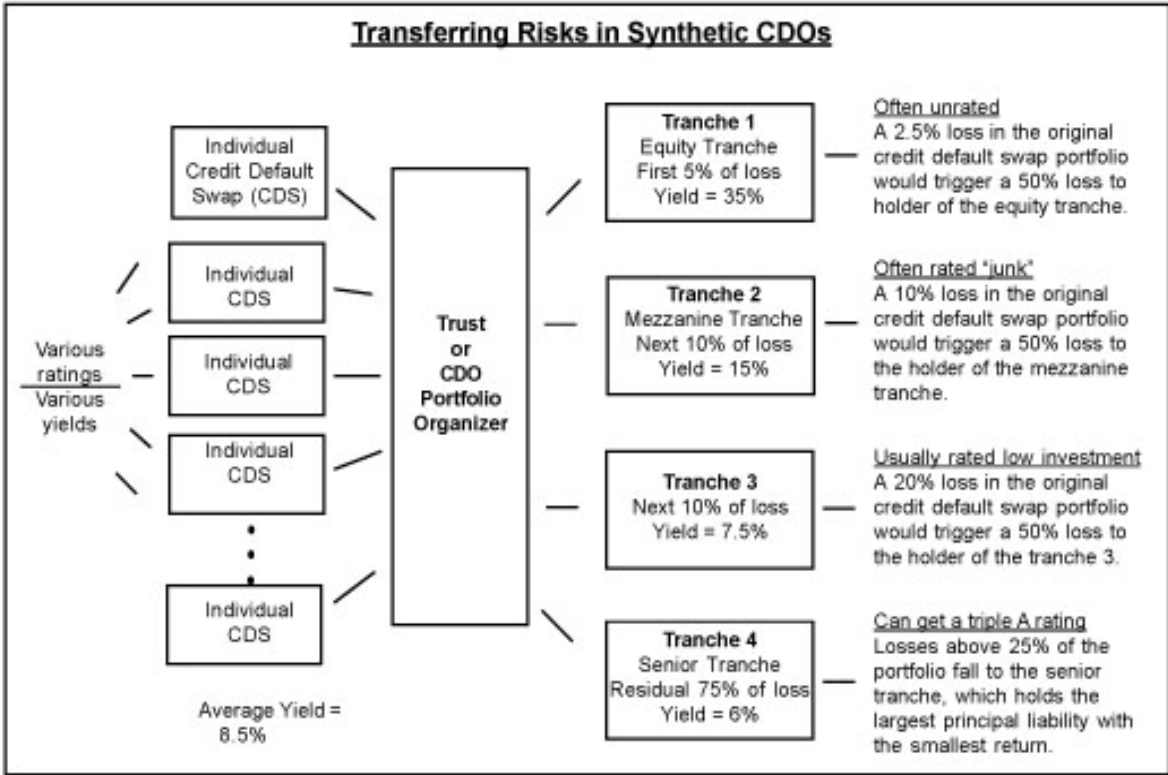
Synthetic CDOs are organized ways to disperse – or more precisely, to reorder – risks associated with debts, by aggregating credit swaps into a portfolio and then segmenting them into tranches, which are essentially packets of debt, each one assuming a different level of risk for the original debts. Rather than hold one debt from one debtor, the buyer owns a level of liability and a portion of the overall risk for all debts in the portfolio. The first tranche, misleadingly named the equity tranche (no “equity” is involved), assumes all risk for, say, the first 5 percent of the portfolio’s overall debt obligations – that is, should anything go wrong with any portion of the original debt swaps, the holder of the equity tranche would be liable for the first 5 percent of losses to the principal. For that, the equity tranche may receive 3,000 basis points per annum. Next, the so-called mezzanine tranche assumes liability for principal risks between 5 and 15 percent and may receive a risk premium in the area of 1,000 basis points. By the time the tranches reach the fourth level, the so-called senior tranche, even though that level may hold responsibility for a large chunk of the principal – say, the final 75 percent – its protection from liability by the other tranches actually results in this level receiving an investment grade rating. In this way, segments of debts with questionable ratings at the outset get “laundered” through CDOs to receive investment-grade ratings.

When a portfolio organizer aggregates numerous CDOs into a meta-CDO, these debts become even more dispersed – and harder for either the buyer or debt-rating agencies to assess or follow. Holders of these “CDO squareds” essentially do not know what they hold. “CDO cubes” – CDOs of CDOs of CDOs – add another layer of opacity to the process. One derivatives analyst explained, “It creates a kind of shell game – you don’t know where the credit risk is anymore.”

Grasping the size of the CDO market can be difficult, but a glance at the default swap market, the starting point for CDOs, does offer some insight into the pace at which this market has been growing. CDOs involve credit default swaps, and that market has ballooned from roughly \$1 trillion in 2001 to \$8 trillion last year, adding \$6 trillion in the past 18 months alone. Those watching these markets surmise that roughly two-thirds of the swaps go into synthetic CDOs, the most leveraged of the CDO instruments. More skeptical observers have put the total market at about \$2 trillion. Either way, financial exposure in these markets is substantial and has recently grown at a quickening pace as more hedge funds have gotten into the game. (*Investment Dealers’ Digest*, 5/16/05)

These instruments have become popular because they offer a wide array of ways to speculate on credit spreads – between debt markets, debt of different issuers, different classes of debt and single-company balance sheets. At its most basic level, premiums paid for debt swaps fund the coupons paid to the holders of the tranches. When buyers borrow to purchase these leveraged instruments, however, unwinding the investment becomes both cumbersome and difficult. (*Journal of Derivatives*, 9/04)

How aggregators price their CDOs may be an indicator of how little buyers and sellers understand the risks buried in synthetic CDOs. Evidently, putting a price tag on the credit-swap premium is close to putting a price tag on a used car: Make an offer. One would-be buyer of a senior tranche (that is, a low-risk tranche, in this instance, with a triple-A rating) thought the price she was offered was not appropriate. "I said, 'This wouldn't merit a triple-A by Moody's,' and the salesman said, 'Well, if you want more spread, you can have it.'" She said she wanted a spread associated with a double-A, and the salesman responded, "You can give me a bid at a double-A level." In another pricing example, a "quant jock" was more direct. He told a professor studying credit debt swaps, upon which synthetic CDOs are based, "We can't accurately price them, although we're confident that we're getting a good price on them." (*Investment Dealers' Digest*, 5/16/05)



To this lack of clarity as to the value and risk in the synthetic CDO market, hedge funds have added more leverage. For instance, even though returns on investment in an equity tranche can reach 35 percent (with an equally leveraged downside risk should any part of the overall portfolio change rating status), hedge-fund investors have pushed that return potential by adding another layer of risk. The so-called "correlation trade" involves buying the riskiest piece of the CDO, or the equity tranche, and then selling short the mezzanine tranche. This creates a "positive carry" – that is, the holder receives a profit while holding those positions.

Such leverage on top of leverage, however, works only if the broad range of debt covered in the CDO moves in concert. When two different covered debts do not move together, the leveraged bet unravels. That is what happened when GM and Ford received their downgrades, while other debt issuers maintained their same ratings. Given the lack of transparency as to who owns which liabilities in the CDOs, a kind of panicked rush to the door overtook the market, and holders were, in the colorful language of credit-market traders, "puking CDO tranches." (*Financial Times*, 5/12/05)



The Housing Earthquake and Economic Tsunami

Waves

IV

III

II

I

- **Retirees squeezed**

- Property tax revolts
- Grassrotts/lawsuits

- **Chinese exporters cut prices**

(from Wave III)

- Demand for raw materials declines
- Oil demand & prices fall
- Transport/construction down

- **Federal government spending cut**

(from Wave III)

- **U.S. households sell liquid assets**

- Stocks/bonds

(from Wave III)

- **State & local government squeeze**

- **Health care squeeze**

- **Federal tax increase**

- **U.S. second home market weakens**

- **U.S. Economy weakens**

- Layoffs lead to house sales
- Recession
- Middle class slide
- Stock market hit

- **Fed funds rates decline**

- **Dollar weakens**

- Gold prices up

- **Chinese manufacturers hit by reduced demand**

(from Wave II)

- **European economies weaken**

- **High-end pullback**

(from Wave II)

- **Discretionary Spending down**

- Home furnishing
- Remodeling
- Vacations
- Restaurants
- Generics benefit
- Low-end retail

- **Financial Transactions Hurt**

(from Wave IV)

- Banks with mortgage business hurt (from Wave I)
- Securitized mortgage market hurt (from Wave III)

- **Non-housing related job cuts**

- **GDP hit**

- **Flattening Business Spending**

- Business protects earnings
- Business protects productivity
- Layoffs (?)

- **Housing related companies hurt**

- Homebuilders
- Mortgage cos
- Brokers
- Building supplies

- **Rental properties benefit**

- **Stock market volatility increases**

- **Fed interest rate increases stop**

(from Wave II)

- **Foreclosures up**

- Lawyers benefit (from Wave IV)

- **Delinquencies up**

- **Housing Related Job Cuts**

- **Home lending standards tighten**

(from Wave IV)

“You can’t predict earthquakes, but you can predict tsunamis.”
-Samith Dhammasaroj, Thailand’s Head Seismologist

HOUSING EARTHQUAKE!!!!