PONZI NATION

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Low volatility and easy credit are boosting asset prices. But according to the late theorist Hyman Minsky, today's stability may be sowing the seeds of its own demise.

Credit has grown rapidly in recent years. This expansion has come in many forms, from home mortgages to newfangled structured products created by clever financial engineers. There are, broadly speaking, two views about these developments. The conventional wisdom -- held by most economists and denizens of Wall Street -- is optimistic. Higher rates of credit growth and increasing levels of leverage, they maintain, are reasonable in light of increasing economic stability.

An opposing view -- held by a miscellaneous bunch, including some notable investors and Wall Street observers -- holds that the massive buildup of debt augurs ill. Drawing on the work of a little-known, deceased economist named Hyman Minsky, the pessimists contend that the recent calm has induced people to take on too much risk. "Stability is unstable," this group says, quoting Minsky. Like the differences of opinion toward the end of the last decade concerning the existence or not of a stock market bubble, the current argument will be settled only by the unfolding of events. Either the prosperity will continue in the years to come, or a financial crisis will occur.

But not everyone can afford to await the passage of time. Professional investors are paid to anticipate. Adherents to the conventional view will construct radically different portfolios from those who accept the instability hypothesis. Many investors, however, are undecided. They believe, or perhaps just hope, that prosperity will endure while at the same time they may feel uneasy about the growth of credit and other risk-taking behavior evident in today's markets. The purpose of this essay is to introduce Minsky's unorthodox ideas and relate them to recent developments in the financial world. Readers should then be better able to judge for themselves where they stand.

THE GREAT MODERATION

Just over a decade ago, a Wall Street equity strategist published a report that helped give birth to the so-called New Paradigm of the 1990s. The monetary authorities, asserted David Shulman of Salomon Brothers, had improved their handling of the economy. Recessions had become less severe and frequent, and inflation was under control. Shulman argued that as a result of these developments, equities should trade at higher multiples than in the past -- the "valuation paradigm" had changed.

The New Paradigm was later used to rationalize the lofty equity valuations at the turn of the century and was much mocked when the bubble eventually burst. But it didn't entirely go away. Rather, the New Paradigm was given a name change. According to central bankers, we currently live in the age of the "Great Moderation" -- a term coined by Ben Bernanke, now Federal Reserve Board chairman, back in 2004. His argument was very familiar, although expressed, in the argot of modern finance, in terms of risk and volatility: The world had become more stable and predictable, economic growth was steadier, and inflation didn't oscillate so violently.

This calm was reflected in the market behavior of various asset classes, including equities and bonds, which had become less changeable and were expected to remain so in the future. Because volatility is equated in theory with risk, it's safe to say the financial markets had become less risky places for investors. As Yogi Berra noted, "The future ain't what it used to be." Today the outlook appears less uncertain and less daunting than in the past.

A recent paper from the Bank for International Settlements, the central bankers' central bank, analyzes the reasons for the decline in financial market volatility. The report's authors argue that alongside more-astute monetary decision making, which has reduced inflation and extended the business cycle, several other factors should be considered. They ascribe lower volatility in part to the benefits of globalization and improvements in information technology. Rising profits and a decline in corporate leverage in recent years have also played a role.

The report draws attention to changes in financial practices. An increasing number of loans are now packaged and sold on through securitizations. The complex world of structured finance, with its alphabet soup of CDOs and CLOs, allows credit risks to be chopped up and parceled out. Credit derivatives enable lenders to insure against defaults. The sophisticated players in this multitrillion-dollar market have been improving the management of credit risk, which is no longer concentrated in banks but has shifted toward hedge funds and other new intermediaries that are more willing and able to hold it. As a result, risk premiums have fallen.

This new financial order has demonstrated its robustness. It has coped well with a variety of shocks, including the bursting of the bubble in technology stocks in 2000, the attacks of 9/11 and the subsequent war on terror, the corporate credit crisis following the failures of Enron Corp. and WorldCom, the run-up in the price of oil and other commodities, and institutional failures such as the bankruptcy of commodities brokerage Refco in 2005 and the recent collapse of Amaranth Advisors, a hedge fund that once boasted $9 billion worth of assets. The recession that appeared in 2001 was mercifully brief and shallow, a small black cloud that scudded across the blue sky and was soon forgotten.

There is no doubt that volatility in the financial markets has declined dramatically. In late November the Chicago Board Options Exchange volatility index, also known as the "fear gauge," which uses options prices to measure the implied volatility of stocks in the Standard & Poor's 500 index, fell to its lowest level in 12 years. The volatility of bonds, which is recorded by the Merril Lynch MOVE index, also hit an all-time low in 2006.

Various analysts have observed a strong correlation between the decline of U.S. stock market volatility and falling corporate bond spreads. It's no mystery why premiums on bonds, which compensate investors for the risk against default, have narrowed. The number of business failures has fallen dramatically. According to recent figures from the Administrative Office of the U.S. Courts, Chapter 11 bankruptcy filings are at roughly half the level of five years ago. In September defaults on U.S. high-yield bonds reached a record low of 0.89 percent, according to S&P.

The BIS authors conclude that "if the reduction in the volatility of stock returns turns out to be of a permanent nature, sooner or later the equity risk premium will have to adjust downwards." In other words, stock prices would have to rise (as, in fact, they did in the months after the report was published last August).

The Great Moderation, however, isn't generally associated with the case for more-generous equity valuations. Rather, it has been used to rationalize the extraordinary growth of credit in recent years. After all, if economic cycles are longer and less volatile, if interest rates don't jump around as much as in the past, and if the threat of bankruptcy has permanently diminished, it makes sense for everyone -- households, corporations and financial players alike -- to take on more debt.

It's only to be expected that credit should increase with economic activity. But in recent years it has been expanding more rapidly than that. Between the end of 2002 and the third quarter of 2006, total outstanding debt in the U.S. expanded by more than $8 trillion, according to Federal Reserve data. During the same period the gross domestic product increased by $2.8 trillion. That means credit has grown by nearly three times the incremental increase in economic activity.

The exponents of the Great Moderation are unfazed. They argue that as the credit system evolves and becomes more resilient, it can support greater debt levels for a given degree of activity. The rising ratio of debt to GDP is a sign of the "deepening" of the financial system. According to this view, the recent increase in liabilities has been driven by a combination of rising demand (because of greater stability) and plentiful supply (because of improvements to the financial system).

SOME CONCERNED VOICES

Not everyone is so sanguine. In the months before leaving office last January, thenFed chairman Alan Greenspan made several speeches alluding to the possibility of excessive risk-taking in financial markets. In July 2005 he warned that "vast increases in the market value of assets are in part the result of investors' accepting lower compensation for risk. . . . History has not dealt kindly with the aftermath of protracted periods of low risk premiums."

In a September 2005 speech, Greenspan commented that "extended periods of low concern about credit risk have invariably been followed by reversal, with an attendant fall in the prices of risky assets. Such developments apparently reflect not only market dynamics but also the all-too-evident alternating and infectious bouts of human euphoria and the instability they engender." He summed up the irony in words that echoed Minsky's: "Success at stabilization carries its own risks."

Several other central bankers have expressed similar thoughts. In October 2004, Malcolm Knight, general manager of the BIS, cautioned that "lending booms can boost economic activity and asset levels to unsustainable levels, sowing the seeds of subsequent instability." A large appetite for risk, Knight suggested, "can sow the seeds of subsequent problems."

Timothy Geithner, president of the Federal Reserve Bank of New York, has pointed out that "against the background of an apparently healthy financial system, market participants report a substantial rise in transactions leverage, erosion in the use of loan covenants, more favorable financing terms for hedge fund counterparties and especially a pressure to reduce initial margin against OTC derivatives exposure to hedge funds." At the Bank of England, deputy governor Sir John Gieve warned a gathering of hedge fund managers last July of the "danger that risk models are giving too much weight to the low volatility of recent times."

"There is an underpricing of risks in general in financial markets," Jean-Claude Trichet, head of the European Central Bank, told a BIS summit in Australia in November. "We don't exclude the possibility that there will be a repricing of risk." At the same meeting Australian Treasurer Peter Costello compared the current "general euphoria" to 1997 before the Asian crisis.

It's only to be expected that central bankers should attempt to jawbone market participants about taking on too much risk. "Moral suasion" is the fancy name given to this generally futile activity. However, other prominent figures in the financial world are also concerned. In a recent letter to investors, Jeremy Grantham, head of Boston fund manager GMO, observed that "long periods of stability cause all types of leverage and other risk-taking to grow. . . . This process can go on and on until finally something goes badly wrong."

Those who are concerned about excessive leverage often cite the work of economist Hyman Minsky. Grantham credits Minsky as the source for his observation that "stability is unstable." Over the course of the past year, Paul McCulley, Fed watcher and investment committee member at bond powerhouse Pacific Investment Management Co.; Michael Hughes, chief investment officer of Barings Asset Management; and James Grant of influential investment newsletter *Grant's Interest Rate Observer* have all cited Minsky to support their assertion that risks are rising as the rewards for taking risk have declined.

WHO IS HYMAN MINSKY?

The name of Hyman Minsky, who died just over a decade ago, isn't well known in financial circles. He never won a Nobel Prize or published a best-selling book. In fact, he spent most of his professional life in the relative backwater of Washington University in St. Louis. Nevertheless, Minsky has attracted something of a cult following over the years. Conferences are held in his honor, and collections of learned (and largely unreadable) essays are published to celebrate his legacy. Hard-core Minsky fans pay upwards of $3,000 for used copies of his last work, *Stabilizing an Unstable Economy,* published in 1986.

Born in 1919 to Russian immigrant parents and raised in Chicago, Minsky was educated at Harvard University, where he came into contact with famed Austrian economist Joseph Schumpeter. From Schumpeter, Minsky learned about both the potential destructiveness of competition and the centrality of credit to economic development. Minsky also greatly admired John Maynard Keynes. These two great economists shaped Minsky's thought, along with a number of other influences, including John Stuart Mill, Karl Marx and Irving Fisher. Given this unorthodox mélange, it's hardly surprising that Minsky's ideas aren't taught in Econ 101.

Most economists see the world in terms of production and exchange, with money added on somewhat as an afterthought, but Minsky had a very financial understanding of the capitalist system. He looked at all participants in the economy -- whether households, companies or financial institutions -- in terms of their balance sheets and cash flows. Minsky's experience as a consultant and later director of the Mark Twain Bank of St. Louis (acquired in 1997 by Mercantile Bancorp.) probably contributed to this strikingly original perspective. Balance sheets are composed of assets and liabilities, while cash flows validate the liabilities. Minsky's economy comprises what he calls a "web of interlocking commitments" -- a vast and complex network of interconnected balance sheets and cash flows that is always changing and evolving.

During periods of stability people feel more confident. According to Minsky, they respond by increasing their liabilities relative to income. Borrowing the phrase of Warren Buffett's mentor, the noted value investor Benjamin Graham, Minsky suggests that the "margin of safety" declines.

Minsky created his own categories of balance sheets, which reflected the degree of risk market participants assumed. The riskiest of these he categorized as "Ponzi finance," named after the swindler Carlo Ponzi, who operated a notorious pyramid scheme in Boston in 1920.

The key feature of a Ponzi scheme is its need to attract ever greater sums of money. Ponzi finance, in Minsky's terminology, describes the condition of those who can neither repay the principal on their liabilities nor meet their interest payments from current cash flows. To survive they must refinance, either by selling assets or by raising more debt. For this to happen asset prices must continue to rise. Ponzi finance typically

emerges during a speculative bubble, when the margin of safety has been extinguished.

Stability is not the only factor that induces people to engage in risky behavior. Competition also plays a role. Minsky observed that financial institutions compete furiously, both when investing and providing credit to others. We read a lot nowadays about Schumpeter's notion of "creative destruction" in relation to developments in technology. Minsky saw this in a rather different light. "Nowhere," he wrote in "Schumpeter and Finance," a 1993 essay, "is evolution, change and Schumpeterian entrepreneurship more evident than in banking and finance and nowhere is the drive for profits more clearly a factor in making for change." Anyone who has spent some time observing the behavior of Wall Street will understand what he means.

In the financial world, according to Minsky, competition goes hand in hand with innovation. This tends to increase the availability of finance, which boosts the demand for existing assets, pushing up their prices. Higher asset prices, in turn, allow even more debt to be taken on, thereby increasing the demand for finance. There is, however, a dark side to financial innovation: It can be used to bypass existing regulations intended to safeguard the credit system. In his 1982 book, *Can "It" Happen Again?,* Minsky observed that in periods of stability there is "the reappearance of prohibited practices in new and unprohibited forms."

Minsky also incorporated into his analysis Keynes's notion of the fundamental instability of market expectations. Keynes's General Theory holds that there are no rational or probabilistic grounds for valuing share prices. Rather, our perceptions influence our activities, whether we are borrowing or investing, and these determine future outcomes. This process is inherently unstable, according to Keynes, and subject to sudden revisions. The capitalist system, in the view of Keynes and Minsky, holds itself up by its bootstraps. "Mere ideas about the future become realities as they become embedded in financial relations," Barnard College Professor Perry Mehrling quotes Minsky as having said in "The Vision of Hyman P. Minsky" in the *Journal of Economic Behavior & Organization.* There is a danger that we may misjudge our future income and not be able to make good the cash payments on our liabilities.

"In economies where borrowing and lending exist," wrote Minsky in his 1975 book, *John Maynard Keynes*, "ingenuity goes into developing and introducing financial innovations. . . . Financing is often based upon an assumption 'that the existing state of affairs will continue indefinitely' [a quotation from Keynes]. . . . As a recovery approaches full employment, the current generation of economic soothsayers will proclaim that the business cycle has been banished from the land and a new era of permanent prosperity has been inaugurated. Debts can be taken on because the new policy instruments -- be it the Federal Reserve System or fiscal policy -- together with the greater sophistication of the economic scientists advising on policy assure that crises and debt deflations are now things of the past. But in truth neither the boom, nor the debt deflation, nor the stagnation, and certainly not a recovery or full-employment growth can continue indefinitely. Each state nurtures forces that lead to its own destruction."

This yin-yang view of financial life lies at the heart of Minsky's financial instability hypothesis, a view that is best summarized by his oft-repeated comment, "Stability is destabilizing."

Orthodox economics teaches that capitalism is essentially stable and that it tends toward equilibrium. Crises are either the result of preventable policy errors -- such as when a central bank pursues an overly restrictive monetary policy (an accusation commonly leveled against the Federal Reserve for its actions at the onset of the Great Depression) -- or they result from uncontrollable external shocks, such as the OPEC oil price hike in the early 1970s. Economists refer to such shocks as "exogenous." Minsky's view is radically different. He suggests that the crisis builds up inexorably from within, as people continually accumulate fixed liabilities in a world where future cash flows are uncertain. His crisis is "endogenous."

Minsky's cycle goes something like this: During a period of stability, financial relations become increasingly precarious. Ponzi finance is common. Banks and other financial institutions find novel ways to evade prudential regulations. Long-term assets are financed with short-term liabilities. Under such circumstances, it doesn't take much to trigger a crisis. As debt increases, the maximum rate of interest that an economy can sustain diminishes. The system becomes vulnerable to even a small rise in interest rates. Alternatively, an unexpected drop in profits or the failure of a financial institution may be all that it takes to generate a crisis.

Following the teaching of celebrated American economist Irving Fisher, Minsky held that the crisis has a deflationary impact as people seek to pay off debts. His prescription was conventional: More government spending and lower interest rates from the central bank could prevent debt deflation. His view on the consequences of these actions was less conventional. Minsky contended that successful interventions during crises discouraged financial conservatism. "If the boom is unwound with little trouble," he wrote in *Can "It" Happen Again?*, "it becomes quite easy for the economy to enter a 'new era.'" People respond to the fact that the authorities are protecting them from financial catastrophe by plunging anew into risky activities. The successful resolution of a crisis creates a moral hazard.

Minsky's notion that stability induces people to take on more risk is supported by recent work in safety studies. John Adams, a British safety expert and author of *Risk* (Routledge, 1995), asserts that we all come equipped with a "risk thermostat" that seeks to maintain the same level of risk. "People modify both their levels of vigilance and their exposure to danger in response to their subjective perceptions of risk," he writes.

People balance risk with reward. Incremental improvements in safety are likely to be accompanied by more risk-taking activity. When motorcyclists don helmets, they open up the throttle a little further. Contrary to common belief, the introduction of seat belt laws didn't produce a decline in accident levels. Risk was transferred rather than diminished. Faster cars ended up killing more pedestrians and cyclists. Safety interventions that don't affect the settings of our risk thermostat are likely to be frustrated by our behavioral responses.

A BRIEF MINSKIAN ACCOUNT OF THE PAST DECADE

Minsky died in 1996. However, it's possible to construe how he might have interpreted developments in the financial world over the past decade. As we have seen, the New Paradigm made its first appearance in the mid-1990s. Volatility in the stock market dipped to very low levels at around that time. This emboldened market participants. In the fall of 1998, a sudden crisis occurred after the near failure of Long-Term Capital Management, a hedge fund that had taken on extraordinary amounts of leverage.

The Federal Reserve responded to LTCM's problems by organizing a bailout and cutting interest rates. As Minsky might have predicted, this "Greenspan put" encouraged yet more risk-taking. Shortly afterward a bubble appeared in the stock market. During the dot-com frenzy many telecommunications and Internet businesses represented classic examples of Ponzi finance. Their income was insufficient to meet their expenditures, whether for new investment or to meet their debt payments. But as long as the valuations continued to rise, these Ponzi companies were able to attract new finance. When the market turned their fate was sealed.

U.S. companies in general greatly increased their debt levels in the late 1990s. The failure of Enron and WorldCom precipitated a corporate credit

crisis. As risk premiums on loans soared, companies moved rapidly to pay down their debts. Many commentators, including present Fed chairman Bernanke, expressed a fear that deflation would ensue. The authorities responded in an appropriate manner. Government spending soared, and short-term interest rates were slashed. The Great Moderation was born.

MR. PONZI BUYS A HOUSE

If one is looking for contemporary evidence to fit Minsky's financial instability hypothesis, there is no better place to start than with the U.S. residential real estate market. Since the economy came out of recession in 2002, the outstanding mortgage debt of U.S. households has increased by more than 60 percent, to $9.5 trillion. This increase is larger than GDP growth over the same period.

As the housing market has boomed, lending standards have deteriorated. The margin of safety has declined both for borrowers and lenders. Banks have raised the maximum they are prepared to lend relative to the value of the property. "Piggyback" loans have allowed borrowers to take out simultaneous second-lien mortgages, further reducing the amount of equity they are required to put into the home. Piggybacks also have enabled borrowers to evade the rules requiring mortgage insurance on highly leveraged home purchases.

Mortgage providers reduced minimum credit scores required of borrowers. The market for so-called subprime lending has experienced explosive growth: More than $2 trillion worth of subprime mortgage loans have been made since 2002. The dangers posed by these loans have been concealed by strong house price inflation. As long as home prices kept rising, credit was available for fresh loans, and delinquencies could be kept in check. Between 2001 and 2003, defaults of subprime loans fell by half.

A number of other corners were cut to make homes more affordable to those without deep pockets. Although the Fed kept interest rates low, borrowers were tempted to take out adjustable-rate mortgages, which had lower monthly payments than traditional 30-year fixed-rate loans. And when the Fed nudged up short-term rates, lenders pushed so-called affordability mortgages with deferred interest payments. Interest-only loans and mortgages with negative amortization became particularly popular in the hottest housing markets, like California, where affordability was the most stretched.

On top of all this, banks are prying less into the private lives of their mortgage applicants. Traditionally, lenders wished to know something of the borrowers' background -- their jobs, their wealth and so forth. In an age of perennially rising home prices, these tedious details could be dispensed with. "Low doc" and "no doc" loans have proliferated. One mortgage provider, HCL Finance, advertises itself as the "home of the 'no doc' loan." Among the products listed on its Web site is the NINJA loan: Even borrowers with "No Income, No Job and No Assets" are welcome to apply.

Then there is the "stated income" loan, known in the trade as the "liar loan." These loans typically require only the applicants' verbal verification of their job history and stated income, not a W-2 form or tax documents. It comes as no surprise that certain borrowers choose to put a gloss on their circumstances when applying for these loans. A survey commissioned by the Mortgage Bankers Association of 100 stated income loans found that more than half of the borrowers had exaggerated their incomes by 50 percent or more.

In August, Larry Goldstone, president of Thornburg Mortgage in Santa Fe, New Mexico, told the *Wall Street Journal* that "greater competition and the desire to simplify and quicken the loan origination process has led more lenders to extend stated income loans to borrowers with lower credit scores, and higher loan-to-value and debt-to-income ratios than traditionally allowed." Underwriting standards have continued to decline even as the housing market has slowed.

The booming real estate market has tempted consumers to cash out their burgeoning home equity. Mortgage equity withdrawal reached an estimated $500 billion in 2005. In recent years U.S. household savings disappeared as consumer borrowing soared. Paul Kasriel, head of economic research at Northern Trust Co., estimates that household borrowing surged from about 5 percent of disposable income in the early 1990s to nearly 15 percent in 2005, before falling back below 10 percent in 2006. In aggregate, the household sector has been running a financial deficit -- the excess of expenditure over income -- equivalent to about 6 percent of GDP.

The behavior of U.S. households during the real estate boom closely resembles the Ponzi finance described by Minsky. The danger is that when home prices stop climbing, households may have to rein in their spending or sell assets to make good on their debts. When U.S. corporations followed the same course of action after the technology bubble burst in 2000, they induced a recession, followed by a credit crisis and a deflation scare.

OUTSIDE THE HOME

Away from the housing market, much that has occurred in the financial world appears to conform with the type of behavior described by Minsky. A deflationary bust was avoided by the authorities in 2002. But the very success of central bankers' easy-money policies has encouraged people to play with fire. Debt has escalated. Competition among financial institutions has contributed to looser lending standards. New entrants into the credit markets and financial innovations have eroded the power of old regulations to protect the credit system. In many financial transactions the margin of safety has been whittled away.

There's ample evidence that people have responded to more-stable markets by placing larger and more-hazardous bets. The greatest beneficiaries from the decline in volatility have been riskier types of securities. In the stock market that's meant a "dash to trash" as small caps, cyclicals and emerging-markets stocks have outperformed blue chips, which tend to have large market capitalizations and are less exposed to the vicissitudes of the business cycle. Likewise, emerging-markets and high-yield bonds have proved a better investment than government or corporate bonds.

Jan Loeys, the global markets strategist for J.P. Morgan Securities in London, finds "strong evidence that bond managers, credit managers, banks and hedge funds raise leverage when volatility is low." This is hardly surprising. Modern techniques of risk measurement, such as the widely used value-at-risk (VaR) approach, use historical volatility as a proxy for risk. As volatility declines, financial institutions are obliged to increase their leverage to maintain the same risk level. The VaR technique is a kind of financial version of Adams's risk thermostat.

As inflation fears have subsided and the Federal Reserve's moves have become more predictable, Treasury bonds have also become less volatile. Bond market leverage, as measured by primary dealer borrowing in the repo market, has doubled over the past three years, to about $1.25 trillion, according to investment research firm Bianco Research.

Recent surveys by both the Federal Reserve and the U.S. Office of the Comptroller of the Currency point to looser lending practices. The Fed's Senior Loan Officer Opinion Survey in October reported that "all domestic and foreign respondents that have eased their lending standards . . .

pointed to more aggressive competition from other banks or nonbank lenders as the most important reason for doing so." The banks in the OCC's contemporaneous survey also alluded to competition, as well as a higher risk appetite and the more benign economic outlook, as among the chief reasons for their easing underwriting standards for the third year in a row.

Banks are not the only financial institutions competing fiercely with one another for profits. Hedge funds play an increasingly important role in the credit markets, providing liquidity to the housing market by buying mortgage-backed securities and fueling the growth of leveraged buyouts and structured finance. The Bank of England's Gieve has warned that competition among hedge fund managers could lead to trouble in the future. "The history of financial crises," he observed last July, "is replete with injudicious attempts to 'keep up with the Joneses.'"

As hedge funds are lightly regulated, little is known about the true extent of their leverage or the positions they are taking. However, their capacity to leverage is potentially enormous. A July 2005 paper by Fitch Ratings suggests that by borrowing five times its assets and investing in the riskiest part of a structured security such as collateralized mortgage obligations, a credit hedge fund could in theory become the marginal lender on $850 million worth of residential securities by committing just $10 million of its own funds.

Hedge fund managers have a huge incentive to take outsize risks, as they generally keep 20 percent of the gains while losses fall elsewhere. Performance fees are paid annually. Because credit busts are infrequent, managers stand to amass large personal fortunes even when making loans that are fated to produce losses over a long stretch. Fitch also observes that many credit hedge funds rely on short-term financing to pursue leveraged strategies and warns of "a synchronous deleveraging of credit hedge funds as a new risk element in the credit markets."

The financial innovations of recent years have taken risk off the balance sheets of banks. Lenders can now use credit derivatives to protect themselves against the possibility of a default. Loans are increasingly insured, parceled up and sold in the secondary markets to hedge funds and others. Yet innovation in structured finance is also being used to bypass regulations intended to safeguard the credit system, as Minsky suggested would be the case.

The sellers of credit default protection are not required to hold the same capital reserves as banks. Regulatory arbitrage, together with the search for more yield in an age of low interest rates and declining risk premiums, appears to lie behind much recent invention in this field. Satyajit Das, a derivatives expert and the author of *Traders, Guns & Money* (FT Prentice Hall, 2006), suggested in an interview with *Financial Engineering News* that "the level of product innovation has run far in advance of the capacity to utilize these products and the ability to understand the risks and long-term consequences."

The recent surge in leveraged-buyout activity is another consequence of the decline in financial volatility. Private equity funds have raised more money than ever before. The amount of leverage the private equity outfits pile onto the companies they acquire -- as measured by the ratio of debt to pretax cash flow -- has crept ever higher. And the amount of equity that buyout firms inject into their deals has diminished. Joshua Galaun, a credit strategist at Dresdner Kleinwort, contends that in some cases private equity firms have dispensed with equity and are financing their acquisitions entirely with debt.

The risks are also rising for those who lend to buyouts. Leveraged loans and high-yield bonds come with covenants that are intended to protect creditors. Yet despite record loan volumes, the average number of covenants has been declining, according to Fitch Ratings. Buyouts are also being financed with riskier debt, such as subordinated second-lien loans and payment-in-kind provisions, which allow borrowers to decide whether to pay coupons in cash or with an additional issue of bonds. Furthermore, large LBOs are occurring in sectors, such as technology, whose cash flows used to be considered too volatile to support high debt levels.

Low numbers of defaults and a less volatile bond market make high-yield bonds appear safer than in the past. But junk has never been junkier. The high-yield-bond market is now populated by companies with much lower credit ratings than at the end of the Michael Milken era in the late 1980s. Martin Fridson, editor of *Distressed Debt Investor*, recently warned that a recession as mild as that of 1990'91 could produce a default rate for non-investment-grade bonds even greater than that witnessed during the Great Depression.

LIQUIDITY AND CREDIT

Credit has a paradoxical effect on stability. Although debt and leverage raise the level of risk, credit provides the markets with liquidity that serves to dampen volatility. Stock market volatility is inversely related to corporate profits. Credit growth boosts earnings, which in the U.S. have recently touched 40-year highs relative to GDP, thereby reducing volatility. Fridson suggests that the low current levels of distressed debt can partly be explained by the fact that many potentially troubled companies have access to finance. This keeps them out of the bankruptcy courts. Finally, Pimco's McCulley points out that the increased demand for risky assets has served to push down their volatility.

At the close of 2006, the markets were flush with liquidity. If credit were to take flight, however, the rocks submerged by this tide of liquidity might suddenly be revealed. This process already appears to be under way in residential real estate, where slowing home price inflation has been accompanied by a decline in mortgage growth, a drop in home sales and a rise in delinquencies on subprime loans.

Two contrasting hypotheses can explain recent developments in the financial world. The Great Moderation holds that owing to better policymaking and structural improvements to the financial system, both the economy and markets are more stable than in the past. The newfound stability is viewed as a secular development. In other words, it's here to stay. Therefore lower credit spreads and higher levels of leverage are justified. Investors persuaded by this view will have few qualms about buying risky assets despite their historically low yields.

Hyman Minsky, on the other hand, suggests that people's response to stability engenders instability. Such behavior is not necessarily irrational, as there are profits to be earned and bonuses to collect as long as the good times last. In fact, the cycle may extend as long as credit flows and people are hungry for risk. Yet Minsky's credit cycle heads inexorably toward a bust. Investors who accept this analysis will probably conclude that risk and reward are currently out of whack. They will position their portfolios defensively, keeping cash on hand to spend when the rewards for taking risk appear more compelling.

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