

Economics and Portfolio Strategy

Peter L. Bernstein, Inc. · 575 Madison Avenue, Suite 1006 · New York, N.Y. 10022
Phone: 212-421-8385 www.peterbernsteininc.com FAX: 212-421-8537

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THE NEXT DOMINOS: JUNK BOND AND COUNTERPARTY RISK

By Ted Seides, CFA¹

Financial history doesn't repeat itself, but it often rhymes. Earlier this year, losses from subprime mortgages revealed that the financial markets had taken to excess a good idea in the real economy. A perfect economic environment allowed the alchemists in structured finance to apply massive amounts of leverage on low quality, securitized mortgages.² When the first signs of softening in real estate prices surfaced, we learned that investors had taken on far more risk than anyone realized, and losses could not be contained.

The severity of the subprime debacle may be only a prologue to the main act, a tragedy on the grand stage in the corporate credit markets. Over the past decade, the exponential growth of credit derivatives has created unprecedented amounts of financial leverage on corporate credit. Similar to the growth of subprime mortgages, the rapid rise of credit products required ideal economic conditions and disconnected the assessors of risk from those bearing it.

The amount of outstanding corporate credit and leverage applied to it dwarfs the market for subprime mortgages. As such, the consequences of a problem in this arena may be far more severe than what happened in subprime. If we are going to experience the downside of another economic cycle, we may be in for a painful ride.

The evils that lurk from our creations epitomize Peter Bernstein's definition of risk – we don't know what will happen. By thinking through the evolution of the credit derivatives market and the storm clouds on the horizon, I hope to heighten awareness while there is still time to act.

¹ Ted Seides is the Director of Investments at Protégé Partners, LLC, a hybrid fund of funds that invests in and seeds small, specialized hedge funds.

² By alchemists I am referring to the financial engineers who, complicit with the rating agencies, turned over 85% of asset pools comprised of BBB-rated subprime mortgages into AAA-rated paper.

Credit Default Swaps: A Brief Introduction

Just a decade ago, the corporate credit market was comparatively simple. Companies seeking to fund their operations and expansion plans tapped commercial banks for loans and financial markets for bonds. Commercial banks carried these senior secured loans directly on their balance sheet. Subordinated lenders – primarily banks, mutual funds, and pension funds – evaluated the credit worthiness of the issuer and determined an appropriate compensation for the risk that the issuer might fail to meet its obligations. When the borrower offered sufficient compensation and legal protection, the company received financing. Since many bondholders owned assets to defray long-term liabilities, the corporate bond markets had relatively low turnover. Investment banks served primarily as intermediaries between corporations and capital providers to place new issues and refinance paper.

While these arrangements served most participants upon initial offer, bank loans did not exchange hands in secondary markets, and hedge funds shied away from shorting credit because of expensive borrowing costs.³ More cynically and perhaps more accurately, the absence of loan trading and “bond loan” departments left holes in the investment banks’ playbook that they could fill with a more fluid trading vehicle. In order to meet these needs, in the mid-1990s Wall Street gave birth to the credit default swap (“CDS”), the basic contract from which all credit derivatives emanated.

The CDS was an innovative financial technology that revolutionized the way credit changes hands. A CDS is a financial agreement between two parties to exchange the credit risk of a reference entity or issuer. The buyer of CDS pays a periodic premium for which it purchases credit protection on a specified, notional amount of exposure. In the event the reference entity faces a credit event – typically a bankruptcy, failure to pay, or restructuring – the owner of credit protection receives a windfall profit. In terms of exposure, a buyer of CDS is short the credit risk of the reference issuer. Conversely, the seller of protection assumes a risk comparable to owning the reference bond; the seller receives a premium for taking risk but suffers large losses in an event of default. Thus, the CDS market is a zero sum game between the buyers and sellers of protection.

While new to the credit markets a decade ago, CDS has roots in generations of related financial contracts. A CDS closely resembles an insurance contract in which the seller receives a premium and suffers losses of up to the notional amount in the event a low probability default occurs within the term of the agreement. If the market properly handicaps the probability of default, the premium on CDS should equal the yield spread of a corporate issue over Treasuries after taking into account funding costs.

CDS also share characteristics with put options. Buyers of put options pay a small premium and have the opportunity to make a large sum should the underlying stock fall precipitously. However, unlike options that trade on organized exchanges, CDS

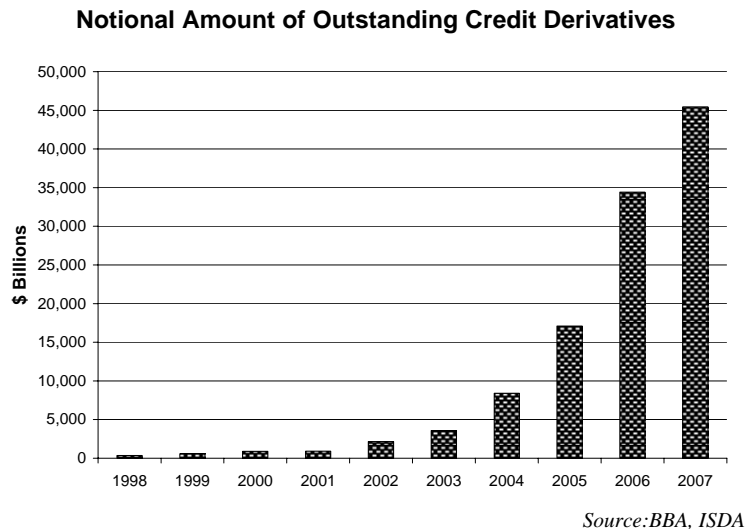
³ An investor with a short position in bonds must borrow the security and pay out the coupon to the lender. Since coupons are a significant component of bond returns, shorting the securities can be an expensive proposition.

transact only between two counterparties, carrying an additional counterparty risk absent in listed options markets.

Credit Default Swaps in Practice

CDS loosened the reigns on the rigid credit markets and introduced a dizzying array of new applications to trade credit. For the first time, bank loans traded actively in the secondary market, and investors shorted debt across the credit spectrum for a modest cost.⁴ Investment banks created a host of indexes to replicate broad exposure to the loan and bond markets, further augmenting the menu of hedging alternatives. CDS are commonly used to reference single-name credits, indexes of credit baskets, and synthetic exposure in other financial technologies such as collateralized debt obligations (“CDOs”) and collateralized loan obligations (“CLOs”). Each of these broad categories comprises roughly one-third of the total notional amount of outstanding CDS.⁵

The introduction of CDS coincided with a favorable economic climate for creditors and debtors. Since the nadir of the last credit cycle in 2002, creditors had a uniformly positive lending experience with virtually no defaults. The CDS market blossomed and the issuance of credit expanded, untethered by considerations of risk. From a modest infancy, the notional value of CDS today surpasses the amount of underlying cash bonds by an order of magnitude.⁶ CDS contracts now total \$45.5 trillion of outstanding credit risk, *growing an amazing nine-fold in the last three years alone*. Putting such a large number in some perspective, \$45 trillion is almost five times the U.S. national debt and more than three times U.S. GDP.



⁴ Buyers of CDS pay out only the yield spread of the bond over Treasuries.

⁵ British Bankers’ Association, “Credit Derivatives Report 2006,” pg 6.

⁶ JPMorgan Corporate Quantitative Research, “Credit Derivatives Handbook,” December 2006, pg 6.

An Insurance Market with No Loss Reserves

One way of thinking about the CDS market is that of a huge, new insurance industry whose providers reserve nothing for future losses. Imagine what would happen if \$45 trillion worth of insurance policies experienced an actuarial average of 5% losses and no one had \$2.25 trillion sitting around to foot the bill!⁷

This woefully undercapitalized market may be a frightening reality. Sellers of credit protection post margin for marked-to-market moves, but CDS contracts are generally uncollateralized. Further, investment banks that hold one side of each CDS transaction claim to be hedged, but their financial statements show neither loss reserves nor bad debt reserves for potential counterparty failure. The absence of collateral and significance of counterparty risk have important implications discussed below.

For a number of years, credit spreads have tightened to historical lows. During this time, CDS took over cash bonds as the primary form of trading in credit markets. Is it too much of a stretch to consider that spreads have been abnormally tight in part because sellers failed to price in a reserve for future losses and thus systematically underpriced risk?

The Second Domino: “High”-Yield Bonds⁸

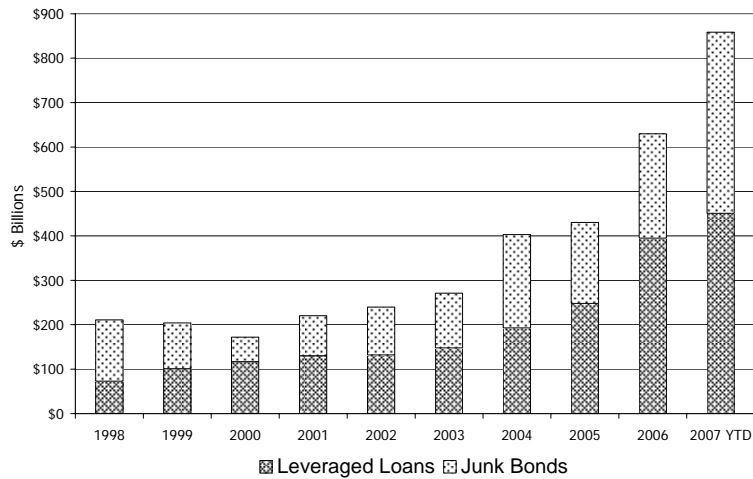
The economic climate that enabled a transformation in the credit markets over the last five years simultaneously prevented the system from being tested. The machine hummed at ever increasing velocity as long as companies received cheap financing, borrowers repaid lenders, and expectations remained cheerful. A downturn in the real economy, or just expectations of pending credit problems, needed to arise before the imbedded leverage in the system could cause harm. As soon as either occurred, however, the machine would screech to a halt.

Given their subordination in the capital structure, junk bonds (or, euphemistically, high-yield bonds) are a logical place to look for the first signs of trouble. Statistics of high-yield issuance reveal relaxed lending standards in a marketplace determined to ignore risk. In each year since 2004, more than 40% of all new debt held ratings below investment grade. For perspective, the proportion of new paper of such poor quality issued in each of the last four years far exceeded the proportion of such issuances in any year since the late 1980s.

⁷ Assuming recovery rates on defaulted debt of forty cents on the dollar, the tab to the insurers would still run \$1.35 trillion, far surpassing the amount of capital available to pay.

⁸ I use the adjectives “high-yield” and “junk” interchangeably to describe less-than-investment-grade debt. It pains me to use “high” to describe bonds that offer single-digit yields to maturity. The nomenclature reminds me of my disappointment in seeing the size of London’s legendary clock tower for the first time, after which I referred to the monument as either “Medium Ben” or “Big Benji.”

Leveraged Loan & Junk Bond Markets

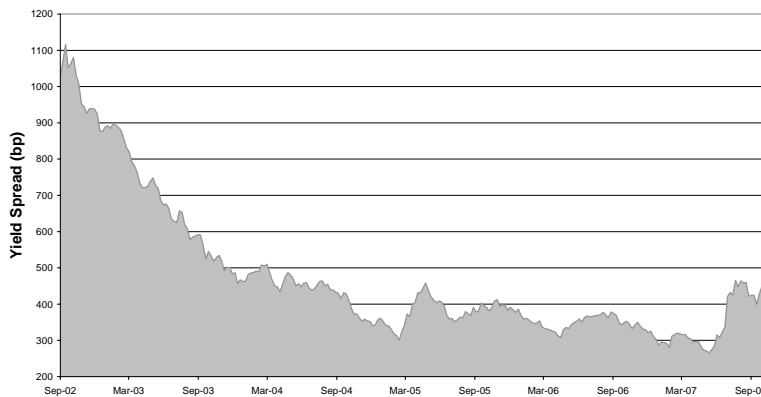


Source: Markit.com, Reuters

High-yield bonds are dubbed junk for good reason. Corporate mortality tables indicate that defaults of high-yield bonds within five years of issuance occur 28% of the time for those just below investment grade and 47% of the time for those with the lowest ratings. Past instances of high default rates lagged periods of strong junk issuance by 4 to 5 years, coinciding with recessionary periods in the economy.⁹ In good times, issuance is high, underwriting standards are low, and investors forget that risky credits may actually default. A few years later, the economic cycle turns and junk bonds reveal their flawed character.

A disproportional amount of low-grade paper hit the market in recent years, but that was not all. Investors also received meager compensation for taking risk. High-yield spreads over Treasury yields have hovered around historical lows for nearly four years, indicating that investors have paid little attention to the real possibility of loss.¹⁰

CS High Yield Index Spread Over Treasuries



Source: Bloomberg

⁹ Presentation by Dr. Edward I. Altman, "Current Conditions in Global Credit Markets," October 2007.

¹⁰ Ibid.

Making matters worse, approximately one-third of all outstanding, single-name CDS are derivatives of credits with ratings below investment grade.¹¹ When investors have insatiable appetites for yield, the food stinks, compensation for it comes in small portions, and customers still can't get enough.

Subprime Revisited in High-Yield: A System with Faulty Design

The anatomy of the high-yield bubble started with a virtuous cycle. When both the markets and the economy were strong, investors paid little attention to risk. The more investors assumed risk, the more they received rewards. Companies seized the opportunity to obtain inexpensive financing and issued paper to the market on attractive terms. As leverage increased, private equity buyers drove up asset values. Higher asset values enhanced collateral and allowed companies to borrow more or refinance their way out of trouble. Without defaults, creditors were willing to lend on ever more egregious terms. As the cycle grew stronger, buyers received less compensation for the risks they assumed.

Hidden leverage and conciliatory lending standards should be a sign of caution, and this particular cycle looks familiar. The recent history and current state of the high-yield market shares a close resemblance to the ascendance and positioning of the subprime mortgage market prior to the pricking of its bubble earlier this year.

First, subprime mortgages and high-yield bonds were successful financial innovations that served an unmet need, but both good ideas rode a wave to excess on the crest of strong economic conditions. Initially, subprime mortgages made housing available for those just beyond its reach. Later, the confluence of rising home prices, low interest rates, abundant liquidity, and creative structures fueled an unprecedented growth of mortgage issuance with deteriorating underwriting standards. Similarly, while investors once accepted the high risk-high reward proposition of junk bonds only on occasion, over the last five years low interest rates, a strong economy, and minimal market volatility combined to foster massive issuance of high-yield paper with poor promised returns and weak protections for lenders.

Second, investors bid for structured products at remarkably low yields, accompanied by paltry lending standards. In order to meet client demands, investment banks created CDOs to deliver investments that maximized yield for a given credit rating.¹² Through the magic of financial engineering, CDOs turned low quality assets – many of which contained subprime mortgages, leveraged loans, and high-yield debt – into a blend of high- and low-rated paper. In contrast to the zero sum nature of CDS, CDOs became a positive sum game in which increasing securitization provided additional capital to com-

¹¹ BBA Credit Derivatives Report 2006, pg 23.

¹² CDOs are effectively financial service companies whose assets are debt issues and liabilities are parsed into a capital structure and sold to investors. Relying on historical correlation analysis of defaults, rating agencies mark senior paper with a rating of AAA, senior subordinated rated AA, and so forth down to below investment grade and equity. The ratings provided investors with paper with a range of ratings quality independent of the quality of the underlying assets held by the CDO.

panies while adding leverage in the system. In the process, banks, rating agencies, and CDO managers were agents with collective economic incentives to deliver quantity over quality.

Third, CDOs brought the unwelcome side-effect of segregating the risk-takers from the risk-assessors. Mortgage originators found every way possible to increase their production volume, and mortgage companies sold off the loans to investment banks. The banks securitized loans into mortgage-backed securities (“MBS”), which they then sold to investors. Banks also arranged for CDOs to pool a group of MBS into a portfolio that had sufficient statistical diversification to receive the imprimatur of the rating agencies. By the time investment banks sold the CDO to clients, the ultimate risk takers were three or four degrees of separation from an opaque pool of underlying assets. Employing the financial “innovation” of statistical default analysis, leveraged pools of credit with customized risk and reward profiles for each investor replaced good, old-fashioned credit analysis. In the high-yield market, the passing of the baton from issuer to investment bank to CDO to ultimate principal and the corresponding shift in credit risk from those with the best ability to analyze it to those with the least are identical to what transpired in the subprime sector.

Fourth, as long as the economic environment was robust, the complicit players in the game cooked up increasingly dubious ways to offer more risk without adequate compensation. The subprime mortgage market is now notorious for extending no documentation, “liar loans” and negative amortizing mortgages. In the last year, the high-yield market welcomed covenant light and PIK-toggle notes.¹³ Both cases reached extremes of weakening protections and lowering interest payments. Investment banks even created a host of products with acronyms like CDO-squared, CPDO, and SIV that accompanied the CDO structure itself. Each new vehicle offered a greater degree of leverage, less transparency, and another degree of separation from the underlying credit risk.

Finally, when the real economy no longer cooperated, the music stopped in the markets for subprime mortgages, and financial institutions throughout the world were left holding the bag. As subprime mortgage pools created in 2006 and 2007 manifested high rates of early delinquent payers, the expectation of losses and subsequent rating agency downgrades triggered widespread sales. The resulting collapse in CDO valuations threatened to provoke a forced unwind of leveraged structures whose stability depended on a mortgage payment experience that resembled those of the past. The unraveling of leverage in CDO structures has yet to see its bottom in subprime, and financial observers cannot measure the depth of the abyss. As described by Orin Kramer, Chairman of the New Jersey State Investment Council, “We simply don’t know how the enormous growing role that credit derivative products play in the global financial architecture has altered the fundamental correlation assumptions upon which the entire edifice is built.”¹⁴

¹³ A “PIK-toggle” note gives a borrower an option to defer cash interest payments on bonds, toggling from a cash pay instrument to a pay-in-kind indenture. The fancy instrument was a recent example of clever structuring employed by private equity firms to finance leveraged buyouts.

¹⁴ Orin Kramer, “Speech on Credit Derivatives,” April 23, 2007. The statement is another example of physicist Werner Heisenberg’s contention that you cannot measure something and observe its movements

Should a recession expose weakness in credit fundamentals, high-yield bonds may suffer a similar fate. As much as the situation has been set in motion by the financial economy, the tipping point will be a fundamental deterioration in the real economy. With current default rates around 1% and the lowest since 1981, a consumer recession or business slowdown thus far are little more than the prognostications of bearish economists. When the cycle turns and defaults rise, however, falling prices of CDOs backed by high-yield collateral and forced sales of CDOs could mimic the catastrophic declines of subprime CDO prices. A large amount of high-yield paper at low rates with weak covenants is already out in the marketplace and worth a good deal less than the values at which it may be carried on investors' books today. So the stage is set for the drama to unfold, as the positive sum game reverses and becomes a negative sum game for all participants.

The Third Domino: Counterparty Risk

As derivative markets replaced cash markets in the trading of debt, another novel form of risk entered the fray – counterparty risk. Each CDS is a swap between two counterparties, and a broker-dealer is on one side of every transaction. In the cash markets, the performance of the debtor is the creditor's only concern. In the derivative markets, the lender must also be concerned with the performance of the counterparty.

Counterparty risk in the CDS market lies with the sellers of protection, or the insurers of risk. Banks are the primary sellers of CDS, totaling 40% of all written CDS and representing notional exposure of \$18.2 trillion.¹⁵ Banks claim to run hedged books, effectively serving as a market-maker in the CDS market. As should be evident from the events in subprime, even the most sophisticated systems are often unable to fully hedge risks of this size and degree of complexity. If printed materials are any indication, banks may be asleep at the switch. The “Counterparty Considerations” section in the Credit Derivatives Primer of market share leader JP Morgan is a single paragraph on the last page of the volume, which proclaims “*the likelihood of suffering (counterparty default) is remote.*”¹⁶ (italics added)

Hedge funds appear to be in over their heads as well. According to printed statistics and consistent with anecdotal evidence, hedge funds are sellers of 32% of all CDS, insuring exposure of \$14.5 trillion.¹⁷ Recent estimates indicate that the entire hedge fund market is approximately \$2.5 trillion in net assets under management. Thus, hedge funds are bearing risk in excess of their ability to pay the piper if anything goes wrong.

at the same time, because the act of measurement alters the character of the motion. See Peter L. Bernstein, “Can We Measure Risk with a Number?,” EPS, June 15, 2007.

¹⁵ BBA Credit Derivatives Report, pg 18.

¹⁶ JPMorgan Credit Derivatives and Quantitative Research, “Credit Derivatives: A Primer,” January 2005, pg 25.

¹⁷ BBA, pg 18.

Jeremy Grantham of GMO recently predicted that a major bank will fail in the next five years.¹⁸ I would take his vision a step further and offer two ways that outcome might occur. First, a bank could simply collapse under the weight of its written CDS obligations. This event would not be the first time that massive high-yield issuance followed by a change in credit cycle induced bank failure – remember Drexel Burnham? Second, imagine what would happen in the unlikely event that banks have perfectly hedged CDS exposure on paper. In a wave of defaults, banks would be obliged to pay where they are long credit and may experience counterparty defaults from hedge funds or others sellers where they are short. Losses would shift to the bank's balance sheet, and sufficient losses could wipe out their equity capital.

It seems logical that a market of this size with expected defaults should be housed on an exchange, obviating the need for counterparty involvement. The issuance of CDS today falls under standards set forth by the International Swap Derivative Association (ISDA), which is a big step forward from the early days when no two contracts looked alike. Nevertheless, the CDS market remains over-the-counter, so perhaps banks earn a pretty penny coming in between buyers and sellers and would rather maintain the revenue stream than be concerned with the risk of a fat tail event.

Counterparty risk management supposedly ensures that sellers of protection post adequate collateral and do not exceed safe limits. Even if we make the bold assumption that risk management is effective, the implementation of such techniques could cause a violent downward spiral. In a volatile market, the vast amounts of leverage created by CDS would be withdrawn from the market suddenly and simultaneously, leading to a market paralysis comparable to or worse than the crisis of last August.

Who's Holding the Bag?

One of the uncertainties about risk in this complex system results from the unprecedented degree of financial leverage placed on real economy capital structures. Never before have we entered a downturn of an economic cycle with so much paper riding on the fortunes of companies known to have such poor credit quality. Those left holding the bag will be the sellers of CDS (the insurers), owners of CDOs, financial guarantors of CDOs, and may include another link in the food chain.¹⁹ Regardless, in the aftermath of the subprime mess, no one will fess up to holding politically toxic securities before they must. In short, the separation of risk production and risk taking makes any definitive assessment of risk in this market unattainable.

When subprime mortgage losses surfaced in February and again over the summer, the success of structured finance in dispersing risk was more than offset by the exceedingly high degree of risk taken across the globe. Not only did direct participants like subprime mortgage originators meet their demise, but also U.S. investment banks, Euro-

¹⁸ Jeremy Grantham, "The Blackstone Peak and the Turning of the Worms (The Slow Motion Train Wreck Continues)," GMO Quarterly Letter, July 2007.

¹⁹ For example, should sellers of CDS default, the buyers of CDS would find their alleged protection worth substantially less than was promised.

pean insurance companies, Chinese state-owned institutions, hedge funds promising a low risk profile, and even money market mutual funds suffered write-downs on their balance sheets.

Unfortunately for our financial system, the magnitude of risk in corporate credit is a multiple of that in subprime mortgages. Each written CDS exchanges a risk that cannot be eradicated no matter how broadly aggregate risk is dispersed. Sinking valuations of CDOs and a commensurate leverage unwind could trigger a vicious cycle of financial losses. By implication, the problems that might ensue could make the subprime mortgage problem look like a walk in the park.

I cannot be sure these assertions are true, but I suspect that it would be just as difficult to provide evidence that they are not. I have listened to arguments against systemic risk, suggesting that the double counting of CDS, matched books of investment banks, and increasing sophistication of risk management techniques make the eye-popping numbers of notional risky debt larger than they seem. Nevertheless, I remain skeptical. We've seen similar movies before, and they don't end well.

Only Time Will Tell

Earlier this summer, we saw the first tremors of change in the credit markets, as liquidity dried up, spreads widened, volatility returned, CDO issuance all but disappeared, and the private equity markets took a pause. The continued absence of liquidity in the commercial paper markets makes us wonder what might come around the next corner. Though Wall Street may have witnessed the beginning of the end of the good times, Main Street has yet to encounter problems. Sure enough, in the months following Chairman Bernanke's intervention, spreads tightened as if everything was good again.

So long as we no longer have economic cycles and defaults do not occur, we can all shrug off the possibility of a calamity and go on our merry way. But the tide will go out – it's not a question of if, but when. And when it does, we may experience the harrowing affects of real financial hardship.

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