SPECIAL REPORT **Subprime Crisis**

Lazard U.S. Fixed Income

4Q 2007 **Outlook**

It has been called a collapse, a virus, a contagion, a fallout, a debacle, a mess, and a disaster. We believe it must also be labeled persistent. The financial-markets crisis of 2007 has correctly been linked to a wave of defaults within the subprime mortgage category, a relatively small category of the vast U.S. mortgage market. But the impact of the subprime delinquencies will likely be deeper and more far-reaching than many in the investment community suspect.

A Many-Layered, Ongoing Financial Crisis

In August and into September, we saw the U.S. Federal Reserve (the Fed) and global central banks ramp up their liquidity-adding operations in order to unlock credit markets that had frozen in response to the subprime deterioration. A wave of market euphoria was the result. Equities rebounded as a measure of investment confidence returned and the credit markets have showed signs of ease. But this crisis is not a story built of one layer—of the incidence of subprime defaults that temporarily locked markets and dragged down the financial entities that were overly committed to this asset category. Rather, it is a tumultuous episode formed of many layers and interrelations, the unwinding of which remains complicated and difficult to predict. Just as the financial turmoil of 2007 had been building for some time—for many years, in fact—we believe it will not be disappearing anytime soon.

The initial backdrop for this crisis was set by U.S. government policy aimed at stimulating personal consumption during a recession that was accompanied by an unusual confluence of disastrous events that led to the demise of a large number of America's premier corporations. These events included the bursting of the technology-communications bubble, the attacks of September 11th, and the unraveling of U.S. corporate governance abuses. After tightening credit between mid-1999 and late 2000 the Fed began a long and steady easing process, lowering the fed funds rate from 6.5 percent in January 2001 to an extremely loose 1.0 percent in June 2003, where it held steady for the period of a year. Concurrent with the reduction in interest rates, U.S. fiscal policy focused on stimulating employment demand primarily through a broad reduction in tax rates aimed squarely at the relatively healthy consumer. At lower tax and interest rates, the housing floodgates opened, home ownership flourished, and house prices rose at an unprecedented pace.

Increased demand and prices led to higher turnover of mortgages, reductions in default rates, and increases in recoveries across all classes of consumers. Consumers with delinquent mortgages, which in prior years would have transitioned into defaults and losses for lenders, became acceptable credit risks as both the consumer and the lender were salvaged by the sale of higher-priced homes. Traditional lending practices were replaced by mathematically based lending models, as policy-induced real estate conditions gener-

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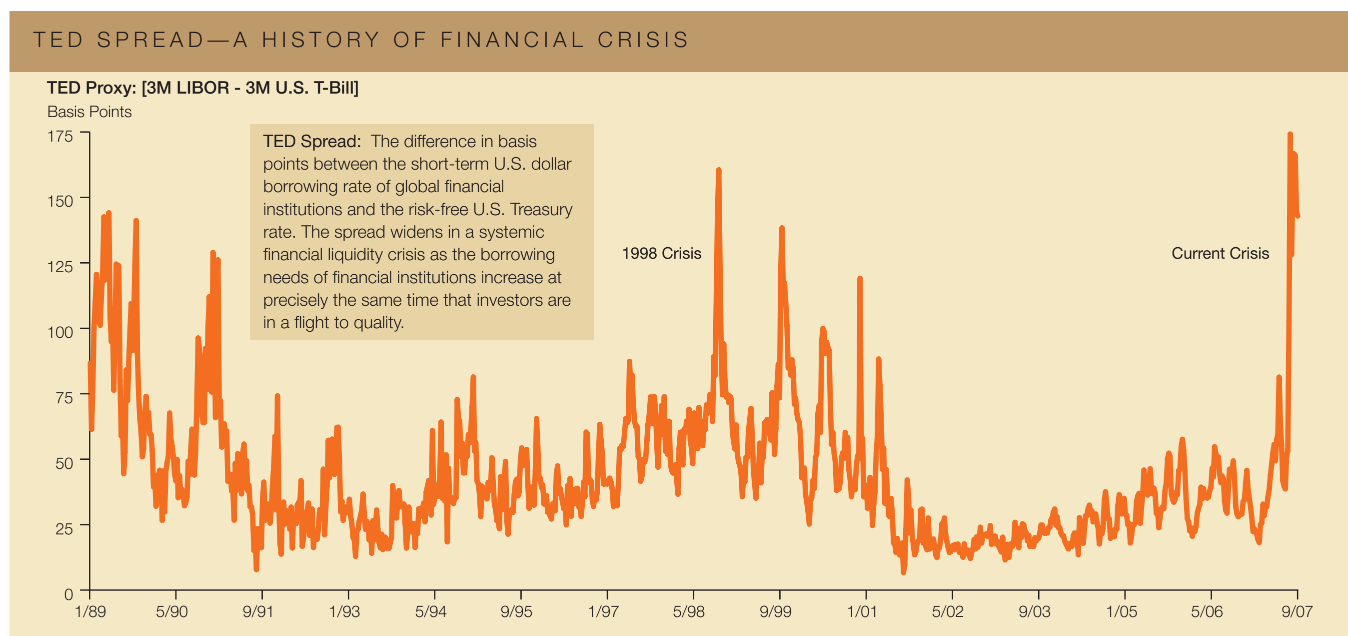
ated observable outcome data that validated their soundness. In the quest for volume-based efficiency, a variety of new generation lenders modified underwriting standards such that property values replaced income-based coverage tests, statistical database sampling of housing turnover replaced onsite appraisals, and behavioral FICO scores replaced consumer down payments. Financial innovation in the structuring of mortgage loans lowered short-term ownership costs to consumers, as long-term mortgage debt was structured with a variety of payment options designed to reduce monthly payment amounts. Payments were reduced by fixing mortgage rates to historically low inter-bank rates and/or by deferring the payment of principal into future periods. By 2003, the perfect mortgage time bomb had been created, the subprime 2/28 loan. This loan, created for the lowest credit quality homeowner, had an interest rate that was fixed for a period of only two years and was initially set at a low rate in order to generate extremely affordable loan payments. However, it was designed from inception to become unaffordable to the homeowner on the first reset date of the underlying mortgage rate. The 2/28 loan became the ultimate expression of the new lending dictum that observations about consumer payment behavior and housing market valuations were better predictors of default and recovery than the long-term affordability of the home. The 2/28 loan was often issued to high FICO score subprime borrowers without any income and debt verification, allowing the borrower to effectively leverage 100 percent of the market value of the home. Once the 2/28 time bomb was set in place, a default crisis in residential lending became inevitable. The critical fuse for this time bomb was to be lit in February 2006, in the form of what would become the first of many material interest rate resets for subprime borrowers. By the beginning of 2004, the only open variable with regard to this pending crisis would be its size, which would be determined by how deeply distributed the time bomb was to become.

Concurrent with the financial innovation of mortgage originators was the financial innovation of the securitized loan market, also known as the structured products market. Rating agency models, relying heavily on favorable historical credit transition matrices, allowed consumer mortgage debt to be easily pooled and restructured into senior/subordinated classes of debt in a manner that permitted the majority of the issuance to occur at the AAA senior debt level (A1/P1 for commercial paper). Taking advantage of this relationship, Wall Street created an enormous supply of AAA rated assets by securitizing residential mortgage debt. This issuance was demanded by an investor market that was devoid of high-quality spread assets and characterized by a high degree of underutilized balance-sheet capital. The limiting factor to this profitable AAA rated issuance activity was the inability to place the lower-rated subordinate classes of debt, which required relatively high capital commitments if they were to be retained on Wall Street's own balance sheets. Financial innovators responded to this limitation by

TED SPREAD—A HISTORY OF FINANCIAL CRISIS



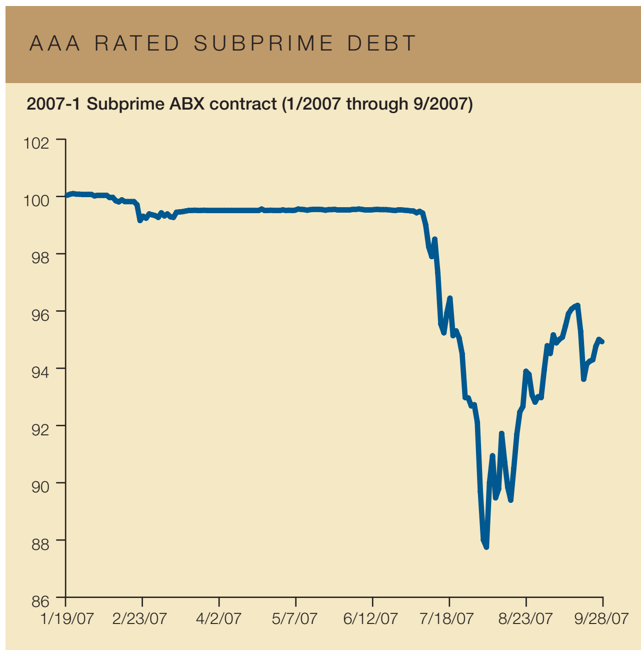
Source: Bloomberg

manufacturing a buyer of the subordinate debt utilizing the same technology and rating agency models that were utilized in the securitization of the underlying mortgage loans. This manufactured buyer, referred to as the Asset Backed Securities CDO manager, is hired by a special purpose vehicle, known as a CDO (Collateral Debt Obligation), created for the sole purpose of buying and managing subordinated debt issued through the securitization of asset backed loans. The CDO is itself financed through the issuance of senior/subordinated debt that, by design, also creates a very large AAA senior level of debt. The CDO AAA senior debt added to the available inventory being purchased by the high-quality institutions that were already participating in the AAA senior level subprime debt. The added leverage or gearing inherent in the CDO raised the expected return on CDO subordinated debt and equity to a level that was attractive to private equity/hedge fund capital. Low expected returns in traditional equity markets had led to significant growth in the pool of investment capital available to entities that managed alternative alpha-based strategies, increasing the demand for new types of alternative investments. The confluence of financial technology, excess capital, and consumer housing demand created a financial securitization boom. As the returns to CDO managers and their subordinate investors met with success, Wall Street created the financing for manufacturing more ABS CDO managers. When the CDO structure became fully priced, Wall Street turned to alternative structures, such as enhanced SIVs (Structured Investment Vehicles) and CDPCs (Credit Derivative Product Companies). Soon, the available supply of subordinated subprime debt was insufficient to meet the demand created by the pool of available investors. The response was to create a virtual supply of subprime debt through the credit derivative market and to develop structures whereby CDO managers would invest in the subordinate debt of other CDO managers invested in such derivatives. All of this activity served to amplify the supply of the senior AAA layer of risk, which broadly distributed the subprime time bomb throughout the global financial system at ever-increasing levels of levered instability. Rather than relying on their own due diligence, many AAA (A1/P1) buyers relied on the combination of rating agencies and misplaced assumptions about the homogeneity of residential mortgage loans to determine their allocations to the sector.

As the Fed lifted its target rate between mid-2004 and early 2006 and the February 2006 fuse was lit, there was still no meaningful fallout in demand and subprime-based securitizations continued unabated. But soon the strain would become too much. As more subprime resets kicked in, houses for sale exceeded demand, which adversely affected home prices and led to unexpected increases in loan defaults. By early 2007, a true crisis was evident, as margin-based buyers of the AAA risk layer imploded and mortgage-lending entities with concentrated subprime exposures closed their doors at an increasing rate. By the beginning of the summer, the divergence of subprime defaults from expectations could no longer be ignored. In July, the AAA rated layer of the popular 2007-1 Subprime ABX contract, which had previously traded with the stability of a money market instrument, declined to a price of 88, implying the market's expectation of a nine-notch downgrade to BBB-.

Source: National Association of Realtors

By early August, the crisis spread to the point where the credit markets became locked, as what began as a subprime virus turned into a global contagion of AAA rated debt. ABS A1/P1 rated commercial paper auctions failed, triggering drawdowns and extensions of bank credit lines to fund warehouses of originated subprime loans that could no longer be redistributed through the securitization markets. Mortgage originators that had no liquidity alternatives shuttered operations. Numerous high-quality institutions that were stuck with illiquid AAA rated assets were forced to sell prime assets at a loss in order to meet unrelated liquidity needs.



Source: JPMorgan closing price

Other healthy financial entities required injections of capital or guarantees simply to continue to function without triggering adverse covenants. A number of financial institutions simultaneously contracted balance sheet operations, as the crisis triggered unexpected uncertainty and correlation in balance sheet risk exposures.

Given the dramatic speed of the reduction of available funding and liquidity in the subprime securitization market, sales of U.S. Agency mortgage-backed securities became the most effective method for otherwise healthy real estate lending institutions to obtain liquidity which opened a window of opportunity for value-oriented buyers like Lazard. However, the resulting flight to quality also became the central cause of the systemic spread-widening that has dramatically reduced trading activity and increased financial risk. Of particular concern is the re-pricing of healthy consumer-based securitizations to historically high spreads and the effect that this re-pricing will have on the economy, as the combination of reduced credit availability spirals down to healthy consumers in conjunction with unwarranted increases in their relative borrowing costs.

The Subprime Spiral Effect

Where is the cavalry that will purchase the large inventory of AAA assets in question, presumably at a bargain price? Unfortunately, many of the high-quality entities that are the first responders to this type of a financial crisis, such as investment banks, money center banks, and monoline insurance companies, all have direct exposure to this AAA risk. As a result, they have no room for more exposure given their inability to transfer out current exposure, either through sales, securitizations, or reinsurance treaties.

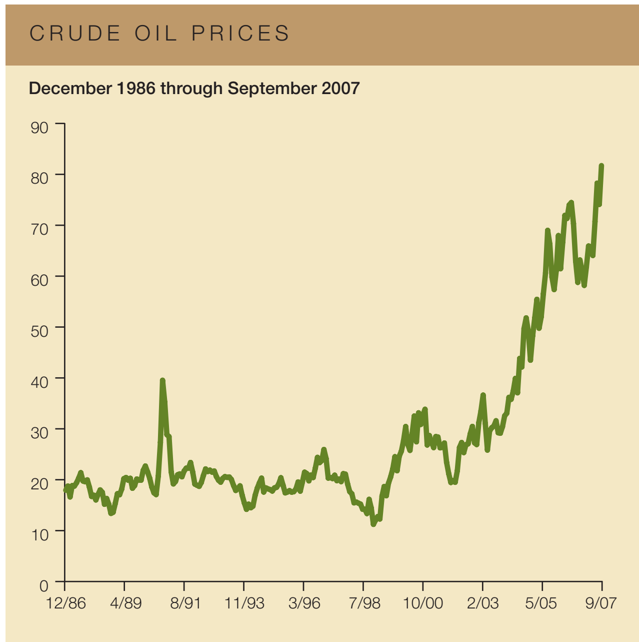
And what about that paper itself? It certainly does not warrant its AAA rating. But what will the downgrade look like? A? BBB-? BB? How low will this paper go? Given the pending calendar of outstanding resets, how low will housing prices go? What will this do to expected recoveries? Will there be material write-downs, in addition to downgrades?

Until the financial entities with stakes in this risk have a clear picture of the ultimate downgrade and write-down potential of the heavily distributed AAA rated class, they will not be able to bring out a natural buyer nor determine their own capital needs. Concurrently, as this waiting game plays out, we believe earnings at these financial institutions will take a hit. In turn, ratings agencies may place more institutions on their watch lists, as they reassess the credit and correlation assumptions embedded in the modeling of these AAA securities.

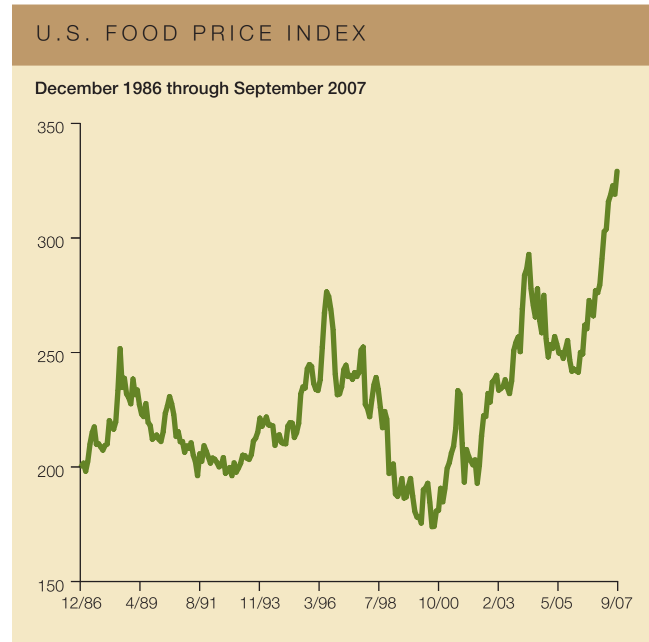
This spiral effect is truly remarkable. What began with an increase in defaults in one small corner of the mortgage business infected financial institutions with all manner of uncertainty and sparked a systematic re-pricing of the credit markets.

Logically, a measure of consumer indigestion should follow. Should healthy consumer-based asset-backed securities stay at wide levels for an extended period of time, the added cost will be transferred directly to the consumer. Longer term, we believe the re-pricing of credit risk is very healthy for the market, as the relationship between risk and reward will return to saner, more sustainable levels. But in the shorter term, the re-pricing will squeeze consumers at precisely the wrong time.

As the charts on the next page demonstrate, the path of the U.S. economy weaves directly into this spiral. Suddenly, higher-priced credit may collide with consumers who rely on their balance sheet for savings. This collision may occur right when these household balance sheets are being damaged by lower home prices and higher costs of living, the latter a result of increased global demand for food and energy. (Commodity prices, we note, continue at high levels.) The upshot may be a dramatic loss of consumer



Source: New York Mercantile Exchange



Source: Commodity Research Bureau

confidence—even among healthy, credit-worthy consumers—enough to push the economy into recession.

Clearly, a recession based on these circumstances would be consumer-led, not business-led. This is an important distinction. The recessions that took place within the last two or so decades were mild and brief for good reason: they were business-led and, as a result, could be cured with capital—through reduced tax rates and/or monetary easing. At the same time, the consumer remained strong during recent recessions, providing the necessary demand to pull businesses out of their slump.

But consumer-led recessions, marked by low consumer confidence, are much different animals. Should a recession develop that damages consumer confidence, we believe economic activity will dry up, despite fiscal or monetary countermeasures.

The Fed is in a difficult situation as it weighs the extent of the current (and future) credit-market fallout against the inflationary pressures evident in high commodity prices. In August, when the Fed first reacted to the crisis, it did so by adding liquidity through open market operations and lowering the discount rate, while simultaneously modifying collateral rules for borrowing at the discount window—moves that smoothed global currency dislocations, eased inter-bank rates, and provided direct relief to crunched financial entities that had healthy assets. Then, in September, it lowered its key interest rate by a full half-point, a move designed to offset the economic impact of the housing slowdown on the real economy. These moves were sufficient to give markets confidence that the Fed is paying attention to the dynamics of the crisis. However, we believe these moves are insufficient to prevent a marked decline in economic activity as this housing crisis continues to unfold. The fact that the markets have become functional does not imply that this crisis is behind us. In the long run, we are at the beginning of a significant wave of monthly subprime resets that will continue well into 2008. The majority of these borrowers will default. The full effect of these defaults will not be evident until well into 2009. In the short run, there is still a large overhang of loans (subprime residential, LBO deals, AAA ABS CP, etc.) that are being bridge financed by financial institutions, which cannot retain such loans on their balance sheets indefinitely without consequences to their capital requirements, and ultimately to their ratings.

Within this environment, there is a certain risk that consumer confidence will break, as the Fed maintains its guarded discipline in responding only to readily observable economic conditions. Under these circumstances, it is possible for consumer confidence to become so damaged that consumers will not borrow at lower rates when and if the Fed decides that current conditions have changed significantly enough to warrant action. This is the old “pushing on a string” concept, which suggests that the Fed is only effective at invigorating the economy when confidence is

adequate. In other words, the Fed can react to this crisis by easing policy and making liquidity more available, but banks cannot be forced to convert this liquidity into loans, and consumers cannot be made to take out loans. Place a string on a table and push one end and only one end will move. When confidence is low, the Fed may push as hard as it wants, but to no effect.

As for positive signs, we do note that final goods inflation is still contained by low global labor costs and efficiencies. Emerging-markets economies, at approximately 30 percent of global GDP, continue to transition into consumption economies, enabling them to pick up a certain level of slack in U.S. consumption. A continued weak dollar could further spur demand for U.S. goods, increasing the possibility that a decline in consumption could transition to exports and keep unemployment at low levels. Taken together, these developments could lessen the impact of the expected consumer-led downturn. Finally, there is also the reality that prime borrowers—both individuals and businesses—make up a healthy percentage of the credit markets. Homeowners and companies with low leverage and lots of resources do not walk away from their physical assets when economic conditions slacken.

On the other hand, none of these positives will mitigate the subprime defaults, and contagions are contagions. They infect, they spread, and they reduce the performance of the whole. (Third-quarter data already show decay in consumer debt-to-income ratios.) Until these defaults run their course and remedies for the entities caught in the middle of this subprime contagion are located and implemented—and until a downgrade of the broadly diffused AAA paper is complete and a buyer is determined—it will persist.

The bottom line is that this crisis is real. And we believe it's far from over.

Lazard U.S. Fixed-Income Implications

We note that our portfolios were wisely positioned during the buildup and incidence of this crisis. First and foremost, we never had an exposure to the asset class in question since our investment analysis invalidated the underlying metrics. In short, we did not think that the AAA layer was truly AAA—a diagnosis that turned out to be both accurate and prescient.

Prior to the emergence of the crisis, when there was ample liquidity in the market (resulting in easy money, easy credit, and excessive demand for spread products), we underweighted all spread assets, as excess spreads did not compensate for either bottom-up investment risk or top-down systemic risk. As the crisis unfolded in early 2007, we selectively increased exposure to U.S. Agency MBS as mortgage assets re-priced relative to alternatives, while still maintaining an underweight to all spread product. At the end of August 2007, we overweighted U.S. Agency MBS as an asset class. As noted, these prime government assets widened as the crisis built (they were what financial institutions had to sell), which created an opportunity to buy available supply at attractive levels.

For the fourth quarter, although there has been much positive commentary about the Fed's recent activity, U.S. investment-grade spreads remain wide on both an absolute and relative basis. In addition to U.S. Agency paper, AAA-rated prime credit-card paper and investment-grade industrials are trading at attractive levels. However, we are focused on ascertaining the depth of this crisis before committing capital to these investments. We believe that there may be better opportunities to pick up this quality product, as institutions negotiating this crisis may become forced sellers, or the possibility of recession becomes self-evident. In addition, we would prefer to buy this paper at tighter spreads with better clarity about this crisis, rather than buy at current spreads within the current environment of uncertainty.

Portfolio positioning with regard to a curve steepening is the other factor that contributed positively to our returns. Although the drivers for the curve reshaping were not evident at the time that we positioned our portfolio, our portfolio construction discipline warranted the positioning based on our fundamental analysis of historical curve shaping.

Going forward, we continue to emphasize high-quality U.S. government investments with a curve-steepening bias in all of our fixed-income strategies. We remain ready to increase exposure to key asset classes when conditions warrant. In consumer ABS, we are focused on prime securities that have the highest underwriting standards and established track records across a multitude of business cycles. In the corporate class, we are biased toward large-cap, investment-grade, U.S.-domiciled industrials.

At Lazard we are constantly testing our underlying assumptions about the expected paths of the economy and markets. At the same time, we diligently inspect individual assets to ensure that our final array of investments is consistent within our discipline. Security selection is, in fact, the biggest factor in our returns. And while it is true that we will miss moments of greed (we missed the entire upside of the subprime cycle), our clients will be much better served through investment cycles by our attention to financial soundness.

Will Rogers said, "I care more about the return of my money than the return on my money." The wisdom of that simple sentiment becomes self evident in troubling financial times.

About Lazard's U.S. Fixed Income Strategies

In developing an optimal allocation to the universe of fixed-income assets, Lazard incorporates a dual methodology that is both bottom-up (security selection) and top-down (portfolio construction). From a bottom-up perspective, we focus on identifying investment opportunities that are financially sound. Financial soundness is analytically determined by the combination of a comprehensive parametric review of an investment's structure (financial engineering) and a disciplined credit review of an investment's recovery potential (intrinsic value). The parametric analysis focuses on the underlying drivers of return and the reliability of the investment's expected total return behavior to changes in those underlying drivers. The credit analysis focuses on an understanding of the steps required to secure a recovery as well as the probability and value of the expected recovery. Investments with acceptable risks are then considered subject to a multi-disciplinary valuation process designed to identify the relative attractiveness of competing alternatives. From a top-down perspective, we pay close attention to shifts in public policy, business cycles, consumer habits, and key economic variables, such as inflation, interest rates, and unemployment. These shifts tend to be gradual and can guide our assumptions about the volatility and nature of the probable scenarios that will affect fixed income market returns. We then use these scenarios in our portfolio construction process to gain a comprehensive understanding of the macro bets that may be inadvertently embedded within our security selection process. This discipline of supplementing traditional quantitative portfolio risk analysis with fundamentally derived scenarios enables us to combine investment opportunities within a dynamic framework that protects the final invested portfolio from unintended consequences that may otherwise not be apparent. Many times what appears to be an attractive investment on a stand-alone basis gets trimmed or eliminated as a result of this dynamic construction framework.

Ultimately, by focusing on individual investments that are financially sound within a dynamic top-down framework, we strive to consistently outperform both markets and the competition through the uncertainty of investment cycles at relatively low levels of risk.

About the Author

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Joe Ramos rejoined Lazard in 2006 as the lead Portfolio Manager responsible for the U.S. Fixed Income platform. Prior to rejoining the Firm, Joe was the Chief Investment Officer of Ambac Financial Group, Inc., where he was responsible for the oversight and management of Ambac's various investment strategies including the Excess Liquidity, Core Capital, and LIBOR+ LDI portfolios. Prior to joining Ambac at the end of 1999, Joe was a senior member at E.H. Capital Group, LLC, where he co-managed an Alpha strategy that derived a significant portion of its high yield returns from subordinated Structured Products securities backed by consumer and corporate sector assets.

Joe has been actively involved in the Structured Products market since its inception in the early 1980s. He began his career in 1978 as a Fixed Income Analyst for Lehman Brothers, where he developed software tools for analyzing Mortgage Backed Securities and beta-based portfolio risk. In 1982, he joined Lehman's asset manager to create and manage their Structured Products investment platform. While at Lehman Management Co., he was responsible for the management of a variety of strategies invested in the MBS, ABS, and Corporate sectors. These included investment mandates for financial institutions, CMO issuer arbitrage, Enhanced Core and LDI clients. He originally joined Lazard in 1989 to manage Lazard's LDI and Structured Product strategies. Prior to leaving Lazard in 1995 to form E.H. Capital Group, Joe was the Senior Portfolio Manager responsible for Lazard's U.S. Institutional Fixed Income investment platform and directly managed Lazard's Core, LDI, and Structured Alpha strategies.

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