The Global Securitized Debt Market

Opportunities Often Reside in the Debris of Crisis

New issuance of private-label securitizations remains at nearly non-existent levels today despite more than five years of improving investor risk appetite since the Financial Crisis. While other spread-product markets reclaimed considerable new issuance momentum shortly after 2008, many investors today are still scarred from the miserable failures of private-label securitization during the housing crisis. Convolutedly packaged collateralized debt obligations (CDOs), backed by poorly underwritten subprime collateral, not only delivered steep price declines during the Financial Crisis, but market liquidity dried up quickly which impeded investors from exiting positions at reasonable valuations. Despite recent price gains in legacy securitized issues—those issued prior to 2008—neither the economics nor the tarnished reputation of securitization will justify a vigorous rebirth of the private-label new issue market anytime soon. As a result of the slowdown in new issuance and investors' past trouble with these complex securities, many are choosing to fully avoid the legacy securitized market—eschewing exposure to both the private-label market and the more complex areas of the government-securitized market, called "agencies." For that reason a large, under-owned, and under-followed collection of legacy securitized issues are available at attractive valuations.

The legacy securitized market exhibits many of the inefficiencies that exemplify a distressed market. Those inefficiencies include all kinds of dislocations in the form of rating disparities, pricing anomalies, information asymmetry, ongoing regulatory uncertainties, unresolved legal settlements, abnormal servicer behavior, and an unclear future for housing finance. In this paper, we will demonstrate the opportunity set that we see in global securitized debt market today and discuss how Brandywine Global's investment approach can add value.

Global securitized debts are bonds backed by one or multiple pools of collateral, such as mortgage loans backing residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), or non-mortgage debt backing asset-backed securities (ABS), which include credit card loans, auto loans, student loans, aircraft/container leases, servicer payment advances, and whole business free cash flows. One common characteristic shared by all securitization deals is that the collateral originator sells the asset or collateral into a trust. Unlike corporate bonds, the performance of the securitized deal entirely depends on the performance and the qualities of collateral pool. Originators' underwriting quality is critical, but their financial well-being is much less important to the deal performance.

A VERY DEEP LEGACY MARKET

The global securitized debt market, both private-label and agency issues, is large. The total outstanding float of the market is over $9 trillion, with the majority being $7.7 trillion of U.S. securitized debt and $1.6 trillion of European securitized debt. Given the large market, investment opportunities are typically scalable. (In this paper, we will not address other smaller markets such as the Australian and Asian markets.) After the Financial Crisis, the U.S. private-label RMBS market shrank from a peak of $3 trillion to its current float of $0.8 trillion. As a result, U.S. agency MBS—those issued by Fannie Mae, Freddie Mac, known as government-sponsored enterprises (GSEs), and Ginnie Mae—took the lion's share of the global securitized market. In light of the primary goal of housing finance reform, the U.S. government aims to shrink the GSE's footprint in U.S. housing finance,

Tracy Chen, CFA, CAIA
Sr. Research Analyst - PM Mortgage-Backed Securities

- Joined the Firm in 2008, and has 15 years of investment experience

Brandywine GLOBAL

Brandywine Global Investment Management, LLC
1735 Market Street, Suite 1800 / Philadelphia, PA 19103
North America: 215 609 3500 (U.S.)
416 860 0616 (Canada)
Europe: +44 20 7786 6360
Asia: +65 6536 6213
brandywineglobal.com

For Institutional Investors Only

in part by transferring credit risk from GSE portfolios to private investors. The six GSE credit risk-transfer deals existing today highlight a regime shift in U.S. housing finance reform. These deals have garnered good investor reception and today offer some of the best liquidity found in MBS markets. The exact breakdown of the U.S. and European securitized market is shown in **Figure 1** below:

Figure 1 Size of the Global Securitized Market

US SECURITIZED MARKET	USD$BN
Agency RMBS	5,500
Non-agency RMBS	800
Agency CMBS	250
Non-agency CMBS	510
Non-mortgage ABS	650
Total	7,710

EUROPEAN SECURITIZED MARKET	USD$BN
Bank Retained	923
Publicly Placed	
RMBS	400
CMBS	96
Non-mortgage ABS	243
Total	1,662

Source: Barclays

SOURCES FOR EXCESS RETURN POTENTIAL

1. COMPLEX DEAL CAPITAL STRUCTURE

The global securitized debt market presents complexity in that each securitized deal creates many different securities with unique characteristics based on how cash flows are sliced into various risk tranches which are backed by similar or different groups of collateral. Tranches can include, but are not limited to, listed in order from least investor risk to most risk, super senior, senior support, mezzanine, and subordinate. The pecking order of each tracnche determines the allocation of principal, income payment, and loss allocation. As a result, investors have a wide range of choices according to their risk appetite, yield target, duration preference, rating limit, and volatility tolerance. Investors can take calculated risks based on many intricate deal structure dynamics, including cash-flow allocation triggers and credit support mechanisms, which are designed to protect senior tranches from losses and ensure they benefit from payment priority. Triggers usually are utilized to toggle between pro rata and sequential payment by diverting cash flow from subordinate to senior tranches if the deal fails certain performance metrics. Credit support mechanisms include overcollateralization, excess spread, reserve funds, and credit enhancement. Complex deal structure and collateral detail analysis also require sophisticated model simulation that runs myriad cash-flow paths. Given the complexity, investors tend to have different views on the valuation of each tranche as different cash-flow models simulate different assumptions that result in different cash-flow payout scenarios across different time frames. This complexity creates barriers to investment entry and diverse opinions. Therefore, investors may experience less liquidity on securitized debt than on other credit instruments such as corporate bonds which have high price transparency and less structural ambiguity. However, we believe this complexity is one reason why investors can generate alpha in securitized debt markets. Moreover, investors typically are compensated with additional yield due to illiquidity in the sector.

2. GRANULARITY OF COLLATERAL RISK ATTRIBUTES

The debacle of the U.S. subprime crisis proved how critical it is to peel through the multiple risk layers of underlying collateral to understand how various risk attributes interact and overlay with each other. The primary drivers behind collateral credit risk are the originators' underwriting standards, such as borrowers' documentation type, asset and income verification, credit score, and debt service ratio. Other granularities of collateral risk attributes are also pivotal, including detailed geographical location down to zip-code level, loan-to-value ratio, purchase type, lien type, and occupancy type. These risk layers will determine whether the borrower is eligible to refinance or likely to become delinquent or default. Loan modification status is another focus area as servicers implement various loan modification methods to help borrowers stay current. Servicers can lower the loan rate, extend loan terms, or forbear or forgive principal. Servicer behavior becomes increasingly important in analyzing deal performance. For example, when the borrower becomes delinquent, usually servicers will advance the payment if they deem the borrower can be cured in the future. So whether servicers advance payment will affect the subsequent loss severity of a loan. Investors have to take all of the above intricacies into consideration when valuing a bond.

Each collateral type and quality has unique characteristics. Mortgage loans, car loans, credit card loans, and student loans have different characteristics such as payment structure, payment timeline, revolving or not revolving, and coupon type. In the mortgage loan quality category, there are jumbo prime, Alt-A, subprime, non-performing and re-performing loans, etc. The wide spectrum of collateral types and qualities result in further segmentation of the market into various sub-sectors.

3. ASYMMETRY OF EMBEDDED OPTIONALITY AND CONVEXITY

The performance of securitized debt investment essentially hinges upon how well the investor can predict whether each borrower will prepay, pay on schedule, become delinquent or default on the loan. There are three major variables that can calibrate the embedded optionality and convexity of securitized debt, including voluntary prepayment speed, involuntary prepayment (default), and loss-given-default (loss severity). The credit risks of securitized debt are driven not only by collateral quality but more importantly by the attachment/detachment point of each tranche in the capital structure. Good deal structure sometimes compensates for less ideal collateral quality by embedding more credit enhancement protection. The art of investment is to balance the collateral quality and the leverage of a deal structure in capturing the asymmetry of upside versus downside. For example, in a recovering housing market, we believe investors should go down the capital stack and accept lower collateral quality to be leveraged to the housing recovery. In a rising interest rate environment, we think equity-like tranches should offer value as their lower dollar price should have less sensitivity to rate movement and also should benefit more from improving economic conditions. In addition, as securitized bonds are mostly amortizing, they provide investors with shorter duration and reinvestment opportunities. As a result, it serves as a better cushion for a rising interest rate environment.

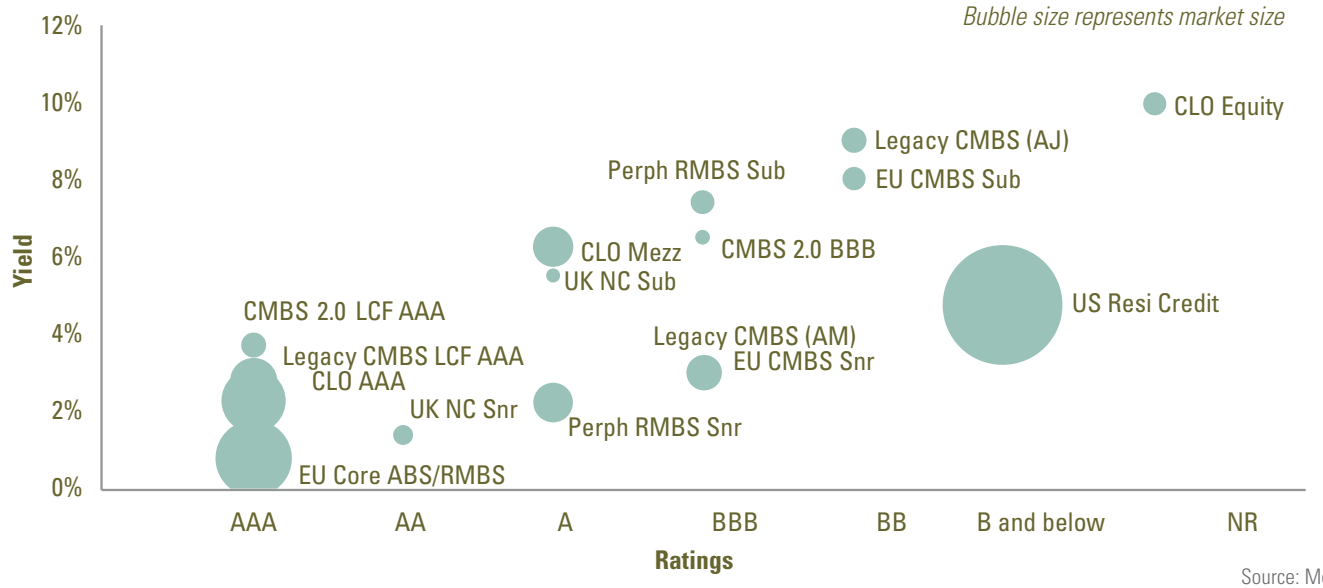
4. LESS CORRELATION WITH MACRO MARKET AND LESS VOLATILITY

Historical performance data indicate that less liquidity begets less volatility in the securitized market when compared to corporate bonds or sovereign bonds. This phenomenon exists because institutions often sell more liquid assets first when markets turn down. Even on weak market-sentiment days, the securitized market usually holds up better and ultimately is less correlated with macro developments. Lack of price discovery and trade data transparency also contributes to the lower volatility phenomenon.

5. A DIVERSE AND SEGMENTED OPPORTUNITY SET IN AN INEFFICIENT MARKET

As a distressed market with various dislocations, the global securitized debt market offers substantial opportunity for alpha. Given the high amount of diversity and complexity in the securitized market, a general lack of benchmark indices exist, apart from the benchmarks tracking the U.S. agency MBS market. Today, the value in this market resides in recovering global housing markets, rating disparities, pricing anomalies, information asymmetry, regulatory uncertainty, ongoing and unresolved legal settlements, higher barriers to entry, abnormal servicer behavior, and an unclear future of housing finance. Below is Morgan Stanley's recent snapshot of the various yield levels offered in the global securitized debt universe, grouped by different ratings. The global securitized debt market offers a wide spectrum of yields and ratings and a diverse set of opportunities. Currently, we see the most value in peripheral European RMBS senior and subordinated debt, U.K. non-conforming subordinated debt, European CMBS subordinated debt, U.S. CMBS junior AAA and 2.0 BBB- rated bonds, and selective U.S. non-agency RMBS. We believe these sectors offer high loss-adjusted yields with moderate duration and a high margin of safety. The favorable market technicals due to lack of new issuance and fast pay-downs increase the scarcity value of those bonds. Low supply should continue to drive prices higher. With that being said, bond selection is critical and dissecting idiosyncratic risk profiles is key to achieving excess return.

Figure 2 Securitized Credit: A Diverse Set of Opportunities



Source: Morgan Stanley

The above characteristics of the securitized market encourage diverse investor opinions and potential for excess returns. Often, securitized bonds have split ratings with quality differences of multiple notches when rating agencies hold different views of the bond. Value in the global securitized debt market is also supported by improving fundamentals as they are shown below.

RECOVERIES OF VARIOUS HOUSING MARKETS

The recovery in the U.S. housing market, which started in late 2011, is supportive for U.S. RMBS fundamentals and RMBS prices. Case-Shiller indices indicate that U.S. home prices declined over 33% on average from peak to trough and have since recovered more than 11%. Furthermore, Morgan Stanley analysis below indicates that on a price-to-income basis, U.S. housing prices remain 10% below the long-term average. Moreover, we believe the U.S. household deleveraging is mostly complete.

At the beginning of this year, U.S. housing data continued to disappoint, partially due to the cold weather. We believe the housing recovery will decelerate due to the following five major reasons: First, fundamental valuation metrics indicate house prices are close to long-term historical averages; second, distressed supply, which has served as a driver behind the strong rebound in housing prices, is decreasing; third, investor purchases through cash are losing momentum as returns moderate; fourth, lending standards are still historically tight albeit some lenders have loosened their credit box slightly; lastly, demographic trends show household formation still hovers around its historical mean due to the younger generation's inclination to postponing house purchase, a preference on residing with parents, or renting.

Figure 3 Home Price Indices

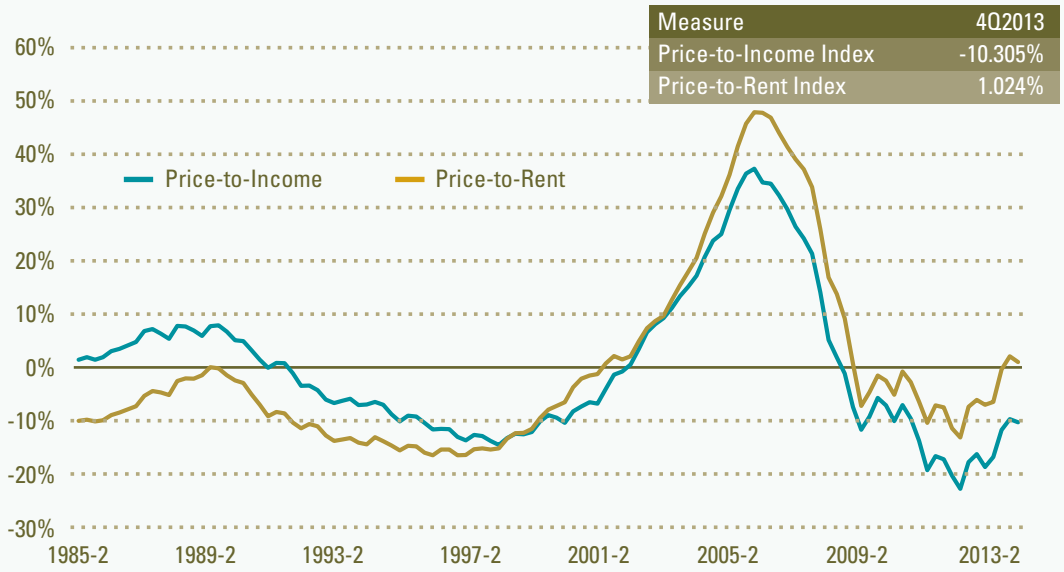
INDEX	LEVEL	MONTH OVER MONTH	YTD	YEAR OVER YEAR	PEAK TO CURRENT	PEAK TO TROUGH	TROUGH TO CURRENT
Case-Shiller[1,2] *seasonally adjusted*	168.03	0.85%	0.85%	13.29%	-18.67%	-33.64%	22.56%
Case-Shiller[1,2]	165.50	-0.08%	-0.08%	13.24%	-19.86%	-35.08%	23.44%
Case-Shiller National[1] *seasonally adjusted*	151.52	NA	11.38%	11.38%	-20.67%	-33.64%	19.55%
FHFA	331.12	NA	0.00%	4.81%	-12.41%	-18.17%	7.03%
CoreLogic	165.79	0.79%	1.41%	12.21%	-16.86%	-32.61%	23.38%

[1] Case-Shiller National and FHFA numbers reflect December 2013 data, Case Shiller 20-City data represent the January 2014 release. Corelogic's numbers come from their February 2014 release.

[2] Represents Case-Shiller 20 City Index

Source: Morgan Stanley

Figure 4 Price-to-Income Valuation Remains Supportive



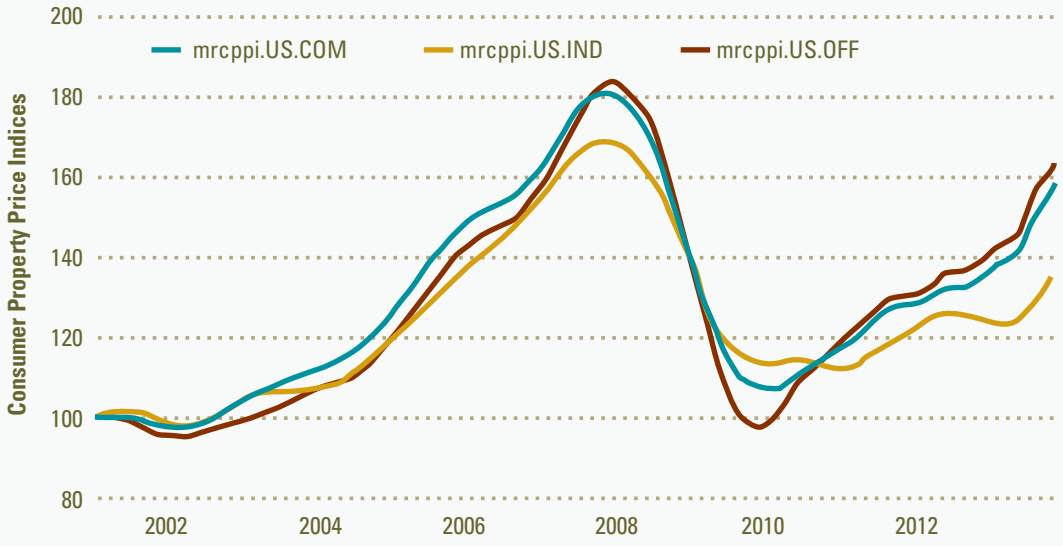
Source: Morgan Stanley

Given the above, improving labor markets, as evidenced by strong payroll data combined with increasingly expensive rent, should continue to support the U.S. housing recovery. Higher home prices help to bring more underwater borrowers above water. As a result, they should become eligible to refinance and less likely to default. RealtyTrac reported that 17% of U.S. properties are seriously underwater, down from 26% a year ago.

U.S. commercial real estate prices showed broad gains over the past year. The Moody's/RCA Commercial Property Price Indices (CPPI) index printed double-digit percentage growth over the previous 12-month period as the pricing recovery extended to smaller markets and secondary property types. The office sector enjoyed the strongest recovery. We believe this fundamental recovery should support most of senior mezzanine tranche performance along with the resolution of problem loans (see **Figure 5**).

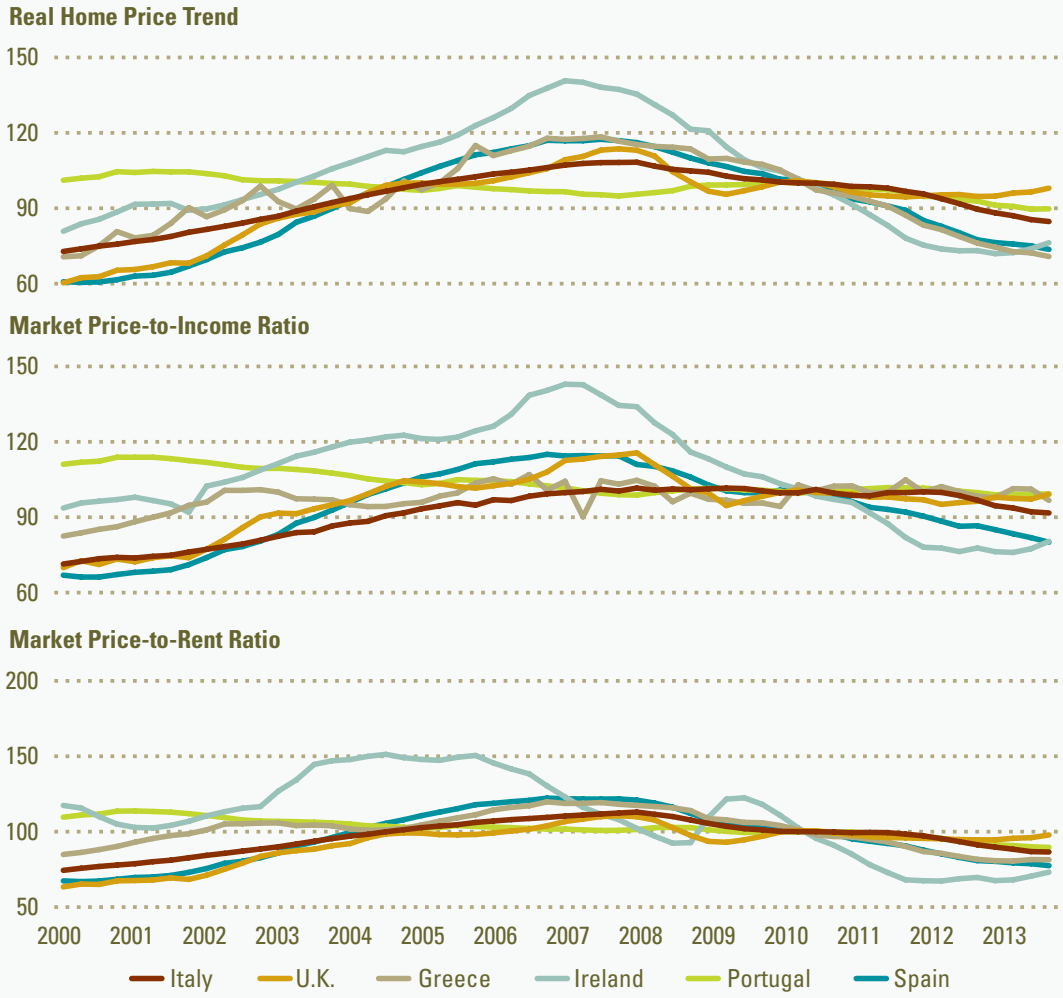
On the other side of the ocean, residential housing markets in most European countries have mostly completed their price adjustment. Ireland adjusted down the most, with Spain and Greece following, whereas the U.K., Italy, and Portugal did not adjust as much. Valuation metrics, such as price-to-income and price-to-rent ratios, indicate that most of the adjustment is behind us (see **Figure 6**).

Figure 5 Moodys/RCA Commercial Property Price Indices (CPPI) Trend



Source: Moody's, RCA

Figure 6 Major European Countries Housing Data



Source: OECD and JP Morgan

BRANDYWINE'S UNIQUE INVESTMENT APPROACH

Brandywine Global manages various strategies with investment in global securitized debt markets, including the RMBS, CMBS, and ABS markets. Our approach is predicated on bottom-up analysis and guided by our global macro view, with primary emphasis on macro country analysis, securitized market sub-sector relative value analysis, followed by collateral and structural analysis, and stress testing. The violent gyration in global RMBS, CMBS, and ABS markets after the Financial Crisis, including huge collateral losses and frequent rating downgrades, have resulted in severe market dislocations. Our investment strategy in these markets focuses on opportunities resulting from dislocations in the global securitized debt market. We seek high loss-adjusted yields and absolute return with a high margin of safety to weather through market volatility. We look to identify pricing anomalies due to various dislocations, idiosyncratic situations, and unusual market technicals. Our strategy aims to benefit from our loan-level proprietary research, valuation models, and rigorous stress tests. Additionally, our strategy seeks to offer an attractive unleveraged return through an emphasis on credit analysis of the underlying investments.

Our investment process has the following major steps:

- Macro analysis on countries: we conduct research on the entire global securitized debt market, including housing and consumer debt markets, by filtering pricing anomalies in distressed markets.
- Sector relative value analysis: based on our global macro view, we compare sectors offering the best relative value and then focus on the following analysis:
- Perform deep-dive, loan-level collateral analysis by dissecting various risk layers and attributes that can drive positive convexity and optionality
- Analyze each deal's capital structure and select the attachment point in the capital structure to capture the optimal leverage to the housing recovery by calibrating key model assumptions
- Perform various stress tests to ensure a high margin of safety even in a very draconian market simulation
- Optimize allocation with the right level of concentration, commensurate with level of conviction
- Identify and mitigate downside risk, while improving and maintaining the upside performance potential
- Implement sell-discipline by comparing the asymmetry between upside and downside and minimize opportunity cost.

We are a research-driven value investor and emphasize purchasing bonds at attractive attachment points with a high margin of safety. We believe our proprietary research and conservative valuation analysis provide an opportunity to generate alpha, particularly in inefficient markets. We rotate among sectors in the global securitized debt market with the most attractive value propositions and move nimbly to capitalize on identified opportunities or dislocations. The following investment case illustrates our investment approach.

EXAMPLE OF THEMATIC INVESTMENT CASE

We started to invest in European RMBS at the beginning of 2014 with an emphasis on Spanish RMBS. Various signs show that economic growth in Spain and Portugal should outperform the euro-zone average over the next two years. In this vein, we view the attractiveness of Spanish RMBS as an instrument to play this fundamental recovery theme. Among the $400 billion publicly distributed outstanding European RMBS, we believe Spanish RMBS, among other peripheral RMBS, offer the best scalable and higher-yielding opportunities, with a high margin of safety and good liquidity.

1. IMPROVING FUNDAMENTALS AND TECHNICALS

- The rise in Spanish labor productivity as a result of various labor reforms has been encouraging.
- Spain's improved competitiveness is reflected in its export performance. Spain's share of total euro-zone exports has increased and Spain's trade balance has significantly improved to a 2.5% surplus from a 7% deficit.
- Spain's continuously rising Purchasing Manager's Index (PMI) data indicate that the breadth of Spain's recovery goes beyond export sector, implying a broader growth trajectory.
- Housing fundamentals have lagged Spain's overall economic recovery and have yet to show signs of sustainable improvement. But Spanish housing fundamentals are beginning to stabilize as is reflected in the Spanish housing price trend, shown in figure 6. Performance trends in Spanish RMBS pools are beginning to show signs of stabilization, too. Both early stage delinquencies and late-stage delinquencies have started to improve.

- We believe the majority of rating downgrades is behind us. We actually are seeing rounds of upgrades. Spain's real house prices are close to the same level as 2001. Existing home transactions have stabilized and are seeing a moderate uptrend. This recovery should lead to quicker inventory clearance and a shorter recovery lags, potentially positive for RMBS.
- In addition, policymakers are discussing the potential for a next round of European Central Bank (ECB) quantitative easing being focused on buying European ABS.

2. DEAL PERFORMANCE IMPROVEMENT:

- Average deal performance has been relatively stable vis-à-vis other peripheral collateral and the U.K. RMBS sector. Spanish defaults have been very low, due in part to the artificial write-off mechanism embedded in many Spanish deals. Defaults in Spanish RMBS include written-off collateral with an assumed 0% recovery. Any recovery from the workout of this bucket adds cash inflow to the structure, which provides further upside. All loans are amortizing and have recourse power; no interest-only loans.
- Most of the European RMBS collateral is of prime quality, as a contrast to its American cousins. We believe that some of those European RMBS senior bonds remain well protected from the most stressed loss scenarios.

3. INVESTMENT THEMES:

Figures 7 and 8 show RMBS spreads of major European countries and also Spanish RMBS spreads vs. other Spanish sectors. Utilizing the thematic European RMBS investment idea, we intend to capitalize on three-layered spread compression and dual upside optionality.

Figure 7 Major European Country RMBS Spread

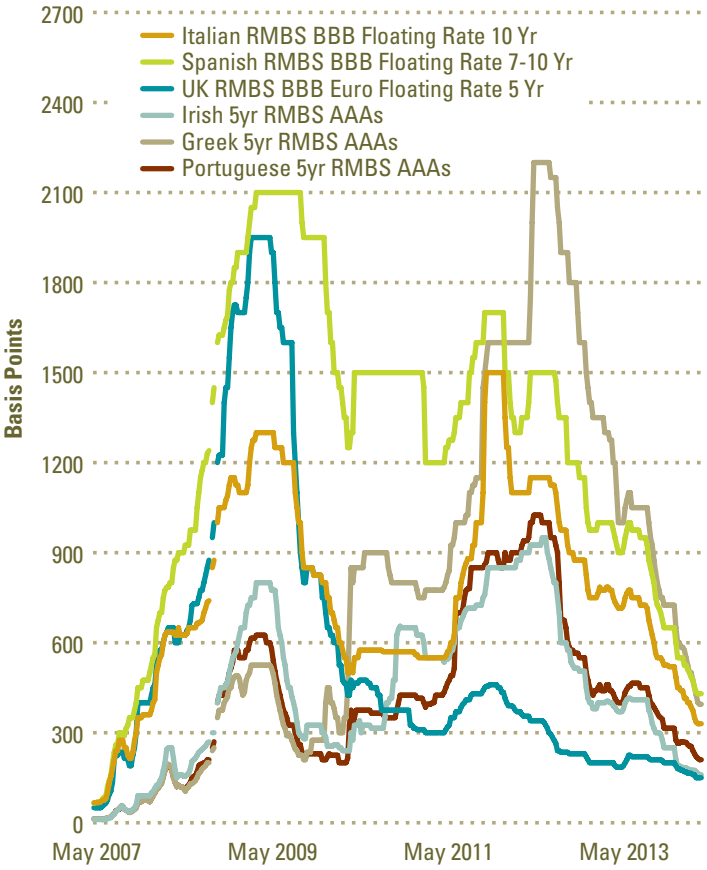
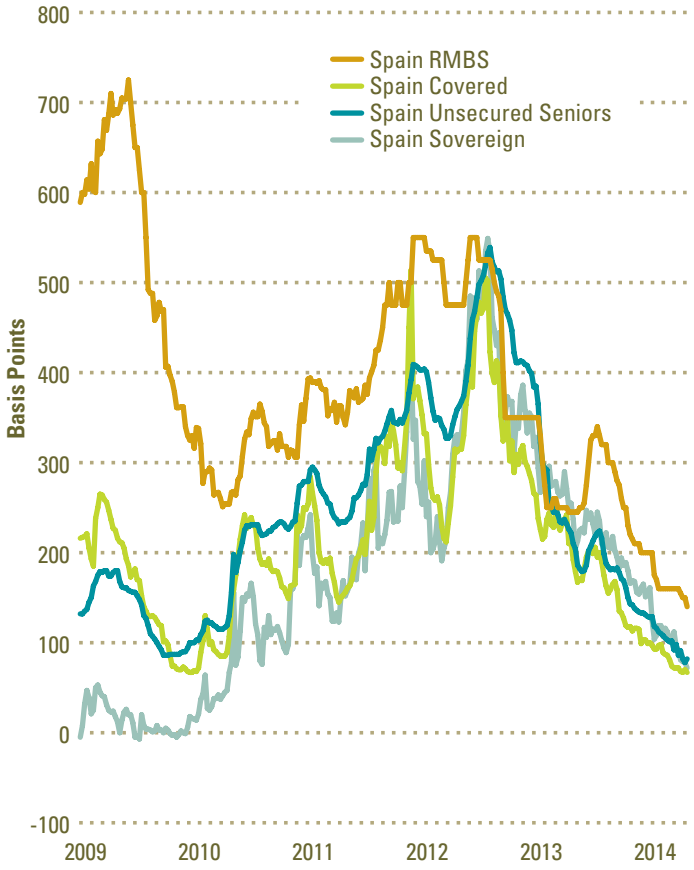


Figure 8 Spain RMBS spread vs. covered, unsecured seniors and sovereign



Source: JP Morgan

Three-Layered Spread Compression:

1. Asset-class spread compression: Spreads are wide between Spanish RMBS and senior unsecured, covered bonds and sovereign bonds. We believe they should continue to narrow as investors searching for yield continue to focus on higher-yielding segments. The phenomenon of RMBS spreads trading over senior unsecured spreads seems unjustified to us, because RMBS is secured debt and they are trading wider than senior unsecured debt. This presents an upside opportunity if the deal is consolidated. This upside opportunity should eventually be priced into the market because a financial institution can issue unsecured bonds to buy consolidated RMBS at wider spreads to realize interest income and capital gains. By the same token, as covered bonds are backed by similar collateral with RMBS, the wide spread is not well justified either.
2. Core and peripheral spread compression: Spreads are wide between Spanish RMBS and U.K. RMBS that are of similar collateral quality and ratings. Buying good collateral in peripheral countries should be a good relative value trade.
3. Senior and mezzanine/subordinate tranche spread compression: Spreads are wide between senior and mezzanine/sub tranches even when they are both money-good. For investors willing to go further out the maturity spectrum, the sub/mezzanine tranches provide structural leverage to play the Spanish recovery theme. Credit selection remains particularly important here due to the thinness of most mezzanine and subordinated bonds.

Two Upside Potentials:

1. Upside optionality due to unique deal structure: Automatic write-offs of delinquent pools in peripheral European RMBS allow more upside if any principal payment can be recovered. The credit enhancement in these deals is ex-write off, which means higher de facto credit enhancement than in U.S. RMBS deals.
2. Upside optionality due to potential tender: On an absolute yield level, the European RMBS trade may seem to be less compelling given the sharp tightening that has occurred. However, the value of European RMBS does not reside only in its cash flow. The underlying financial intuition sponsors of European RMBS have multiple funding vehicles like deposits, unsecured, covered bonds and ECB support. In "consolidated" ABS transactions, the sponsor institution retains equity in the deal. Mandated by liability management regulations, and encouraged by bank consolidation, sponsors can tender outstanding ABS at a discount price in order to boost bank capital. The upside provided by tendering is also significant.

4. GOOD LIQUIDITY

The Spanish RMBS/ABS market is the largest in the peripheral European space in terms of outstanding values and the diversity of the collateral profile. Trading volumes have increased dramatically in 2013 as real and fast money traded actively in the space with 0.5 to 1.0 point bid/ask spreads.

Given the above, we believe the European MBS sector presents compelling value and should offer a solid investment return in the intermediate term.

CONCLUSION

We believe the various dislocations in the global securitized debt market, combined with its intrinsic complexity, offer high alpha generation potential. Along with the synchronized global recovery, the distressed securitized market should also be supported by improving collateral fundamentals. Currently, European ABS provides the most compelling value in our opinion. Brandywine Global's unique value investment approach, characterized by macro-driven, bottom-up, and deep-value analysis, should be able to add value for investors in this market.

The views expressed herein represent the opinions of Brandywine Global Investment Management, LLC ("Brandywine Global") and are not intended as a forecast or guarantee of future results. All information obtained from sources believed to be accurate and reliable. There may be additional risks associated with international investments. International securities may be subject to market/currency fluctuations, investment risks, and other risks involving foreign economic, political, monetary, taxation, auditing and/or legal factors. These risks may be magnified in emerging markets. International investing may not be suitable for everyone. Derivatives transactions may increase liquidity risk and introduce other significant risk factors of a complex character. All securities trading, whether in stocks, options or other investment vehicles, is speculative in nature and involves substantial risk of loss. Characteristics, holdings and sector weightings are subject to change and should not be considered as investment recommendations. Indices are unmanaged and not available for direct investment. All data as of April 30, 2014 unless otherwise noted. This information should not be considered a solicitation or an offer to provide any Brandywine Global service in any jurisdiction where it would be unlawful to do so under the laws of that jurisdiction. **Past performance is no guarantee of future results.**

©2014, Brandywine Global Investment Management, LLC. All rights reserved.