

Spanish RMBS

Rain in Spain... But Sunny on Many RMBS

- **Spanish Macro and Housing Concerns Cloud RMBS Value** — A recessionary environment, a depressed housing market, the growing risk of social unrest and even the small possibility of redenomination are all valid concerns. Yet we find that nearly half of senior RMBS are resilient to extreme defaults and offer yields of about 4%.
- **RMBS the Most Attractive Way to Benefit from a Turning Point** — Relative to assets such as sovereign, corporate and covered bonds, RMBS looks cheap and benefits from low-levered collateral and relatively attractive borrower demographics.
- **Many Senior Bonds are Well-Enhanced and Resilient to Our Stress Tests** — Credit enhancements are high relative to pool delinquencies; structures are senior-friendly; and, most importantly, half of the senior bonds we analyzed appear immune to further substantial home price drops and distressed home price sales.
- **Many Seasoned Mezz Tranches are Still Paying Pro-rata** — We identify several second-pay opportunities which benefit from higher credit enhancement; moreover, most are still paying pro-rata and many will continue to likely do so for some time.
- **Opportunity for Convexity Trades** — We identify shelves which could switch from pro-rata to sequential pay based on trigger cushions that may be breached soon, as the housing market worsens and originators reduce support for their RMBS shelves.
- **A legacy €50bn Market with Low New Issue Prospects for Now** — Regulatory incentives favoring covered bond over RMBS issuance combined with high foreign interest in distressed assets mean a low likelihood of higher quality RMBS new issue.

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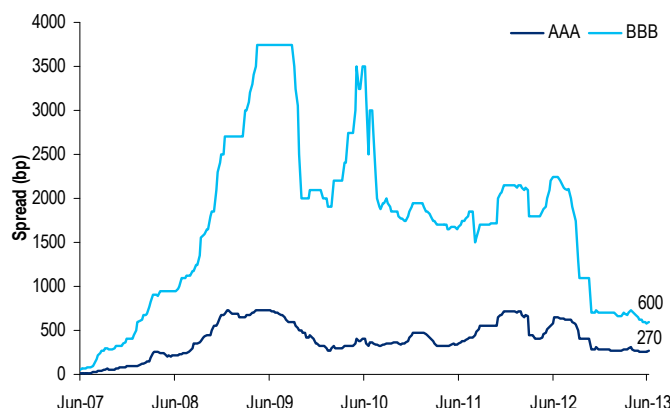
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Figure 1. Spanish Triple-A and Triple-B Rated RMBS Historical Spreads, Jun 07 – Jun 13



Source: Citi Research

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See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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Value in RMBS Despite Bleak Fundamentals

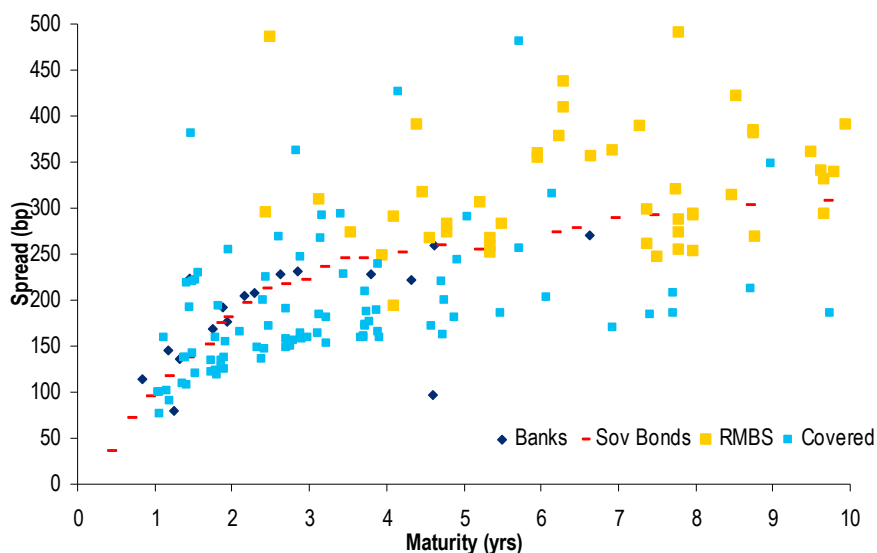
RMBS is a good way to benefit from a turning point in Spain's economy. While there is no shortage of headlines relating to stresses in the Spanish housing and banking sectors, we find that many secondary Spanish RMBS bonds, mostly first-pay but more seasoned mezz too, offer good value for the risk. The sector has been helped by originator support which may perhaps be withdrawn as banks respond to calls for greater transparency and more capital preservation plans, but even without this help, there is a positive story for the older placed bonds. The structural strengths in the securitizations make principal return very likely on the senior bonds and even provide upside on many subordinated assets, and help them to overcome the substantial sovereign-related downgrades that the sector has faced. Conversely, investors seeking to buy whole loan portfolios will need to keep abreast of the swathe of upcoming rules governing workout of non-performing loans and possible further home price drops stemming from banks increasing their currently glacial pace of asset and loan sales.

RMBS Spreads and Outstanding

Relative Value Over Peer Assets

Many senior Spanish RMBS notes offer attractive pick up over similar maturity covered bonds, unsecured bank bonds, and sovereign bonds from Spain (Figure 2). Moreover, with the fear of more bank bail-ins where investors take the risk of principal loss on bank bonds, secured risk should be attractive to investors. Even covered bonds, which are also considered secured, carry systemic Spanish bank risk if Spain's banks lose access to funding. Moreover, as a Moody's report¹ points out, the degree of over-collateralization in Spanish covered bonds is gradually falling as banks issue more covered bonds for their funding needs.

Figure 2. Senior RMBS Spreads Compared with Covered Bonds, Bank Unsecured, and Sovereigns Bonds, as of 8 May 2013 (bp)



* We use WAL as maturity for RMBS

Source: Markit and Citi Research

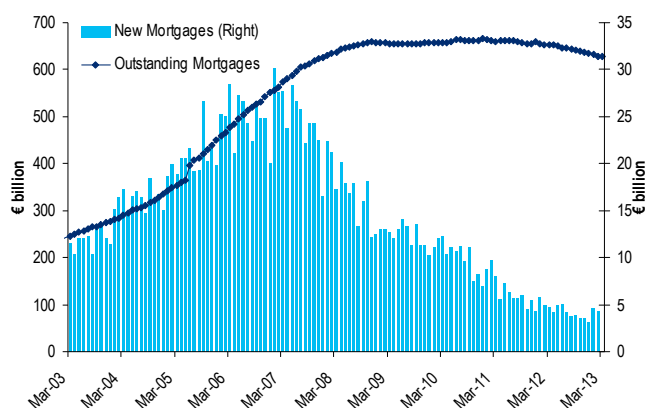
¹ Spanish Mortgage Covered Bonds: High Credit Risks, Despite Tightening Spreads in Early 2013, Moody's Investors Service, 6 Mar 2013

RMBS Share in Spanish Mortgage Market

Placed Spanish RMBS is a €51 billion market spread across vintage and ratings

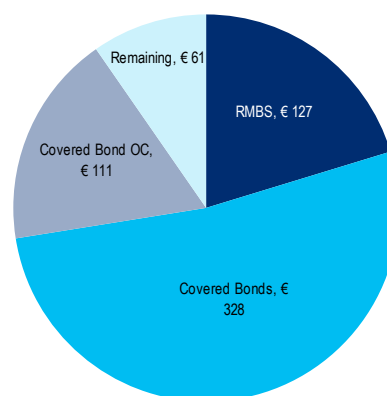
Total residential mortgage loans in Spain stand at around €627 billion, according to Bank of Spain data. The market has been shrinking slowly since 2008, as banks are deleveraging and new mortgage origination is more than 80% down from the peak of 2007 (Figure 3). Only 20% of Spanish mortgages are securitized while the remaining is held on bank balance sheets, a good portion of which is collateral for mortgage covered bonds. The size of the Spanish mortgage covered bond market is approximately €328 billion (Figure 4) and adjusting for over-collateralization and non-residential mortgages in cover pools, we estimate that roughly €439 billion of residential mortgages are tied to covered bonds. That leaves a remaining pool of €61 billion of mortgages (or approximately 10% of total mortgages) which are likely not eligible as covered bond collateral.

Figure 3. Total Mortgage Outstanding and New Mortgage Origination, Mar 03 – Mar 13 (€ billion)



Source: Bank of Spain and Citi Research

Figure 4. Funding Distribution of Outstanding Mortgage Loans in Spain, as of Mar 2013 (€ billion)



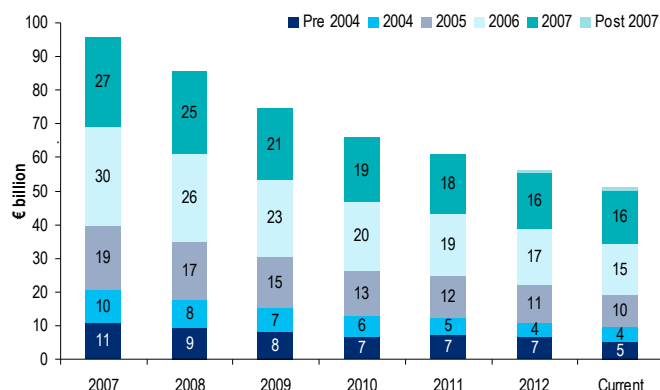
Source: Bank of Spain, AFME, IM Titulizacion and Citi Research

Placed RMBS Outstanding by Vintage and Rating

Of the €127 billion of mortgage loans that are contained within securitizations, less than half are found within the placed RMBS market. The remainder comprise collateral within retained deals.

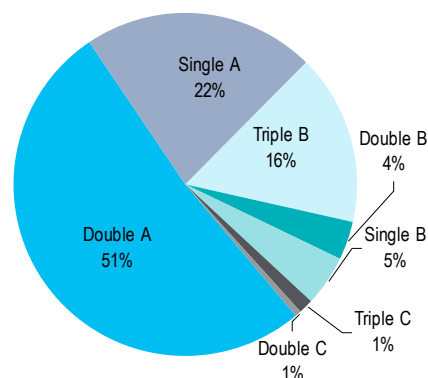
- **Market Size €51 Billion.** We estimate that the size of tradable Spanish RMBS universe is about €51 billion (Figure 5). The market has shrunk 47% from the peak of 2007 because of a lack of new placed issuance, originator buybacks, and amortizations. We expect that supportive technicals will persist in the near term as the reopening of peripheral securitization primary markets would take some time.
- **90% Investment Grade.** Most of the placed Spanish RMBS market is investment grade, based on the best available ratings from Fitch, Moody's, and S&P. Moreover, almost 73% of the outstanding €51 billion is rated higher than Spain's sovereign debt rating (Figure 6).
- **37% from Older Vintages.** 2005 and earlier vintages comprise roughly 37% of total placed Spanish RMBS. These seasoned deals have lower LTVs and as demonstrated in our stress analysis (see later) are capable of withstanding high defaults.

Figure 5. Outstanding Balance of Investor Placed Spanish RMBS by Vintage, 2007 – Current (€ billion)



Source: Bloomberg and Citi Research

Figure 6. Current Investor Placed Spanish RMBS by Best Available Rating, as of June 2013 (%)



Source: Bloomberg and Citi Research

What's on offer? Collateral and Structural Diversity

Bonds differ in structural features and regional exposure

Over and above the notional of €51 billion that is the size of the placed RMBS market, investors have some choice on what bonds they choose to buy. Pools differ on vintages and geographical concentrations (which will have an impact on credit metrics such as LTV), and there are nuances in structure too.

Specifically, Spanish RMBS tranches benefit from cash diversion mechanisms which can lead to accelerated payments to senior bonds (for example, due to artificial write-off and interest deferral). More interestingly, a part of the universe is paying pro-rata between senior and subordinates while others are paying sequentially. We recommend trades at the end of this note that capture the shift between the two methods of tranche payment. Many deals have fully funded reserve funds while others have reserve deficiency because of cash diversion due to artificial write-off feature. Finally, as with all securitizations, Spanish RMBS deals benefit from subordination, although total amount of credit enhancement varies.

To illustrate some of these differences, we tabulate the structural features and collateral composition of 61 placed Spanish RMBS deals from top eight originators (see Appendix 1 at the end of this note). These deals span across 2001-2007 vintage and cover about 69% of the tradable Spanish RMBS market. We make the following general observations:

- **Older Vintages Better.** Deals originated before 2005 are better performers relative to post-2005 vintage deals based upon various structural and collateral metrics. A big majority of pre-2005 vintage deals in contrast to only one-third of the post-2005 deals have fully funded reserve funds. Indexed LTVs for pre-2005 deals range from 19-66% whereas for post-2005 vintage deals they range from 57-126%.
- **Barclays' AYTGH Shelf Stands Out.** Tight underwriting with low original LTVs, low delinquencies, fully funded reserve funds, and exposure to Madrid makes this shelf stand out among Spanish RMBS shelves. Due to low delinquency levels, second pay notes of 6 out of 7 deals are amortizing pro-rata and have relatively short WALs of 7-9YR compared to fully sequential second pays of other deals having 13-24YR WALs.

Weak Fundamentals but RMBS Outperforms

The recent history of Spain's loan market shows that delinquencies are rising, and the near-term housing outlook is also poor. If asset sales increase, as regulators claim they want to see, home prices could drop further. Nonetheless, bank loan performance within securitizations has been helped by implicit support from originators. Finally, there are legal challenges to foreclosures that will affect the credit performance of mortgage loan performance, whether securitized or not, but we do not believe their impact will be draconian and will be much lower in RMBS.

Originator support behind lower RMBS delinquencies

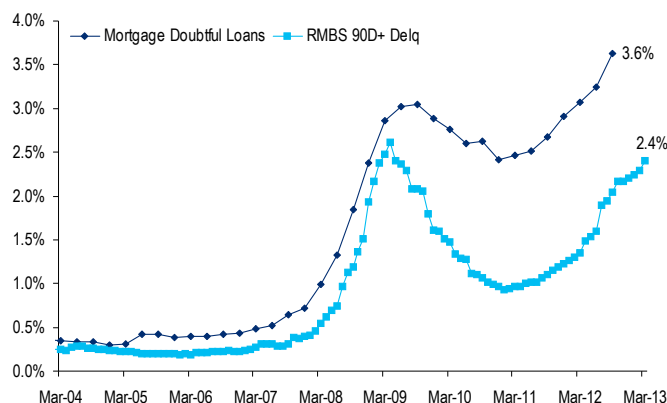
The proportion of 90D+ delinquent loans in Spanish RMBS is much less than the percentage of doubtful loans in the broader mortgage market, although both the ratios are deteriorating after registering some improvement in 2009-2010 (Figure 7). A quick comparison of RMBS and covered pool delinquencies of select originators also reveals a similar story — RMBS delinquencies are lower than covered bonds (Figure 7).

The superior performance of RMBS does not necessarily mean that the underwriting of securitized mortgage loans was better than other mortgages. Many originators are believed to have supported their securitizations by repurchasing delinquent or risky loans from RMBS pools, according to a study carried out by Fitch in 2010.² These repurchases were effectively treated as prepayments and they removed poor credit quality loans from the pool. There were many motivations for originators to do so:

- **Maintain Ratings for ECB Repo Eligibility.** Most Spanish banks rely on ECB's repo operations for their liquidity needs and have been using ABS as collateral. The deteriorating collateral performance would have triggered rating downgrades of securitizations, risking their repo eligibility.
- **Flexibility in Loan Modifications.** Originators have more flexibility in restructuring mortgage loans that are not securitized as securitization structures generally allow only limited restructurings.
- **Independent Management of Repossessed Properties.** Many originators buy back repossessed properties to facilitate efficient and independent disposals. In contrast, the originator is required to take approvals from the management company ("gestora") if those properties are within the securitization.
- **Preserve Securitized Market Access.** Banks want to keep their future funding options open and securitized markets could play an important role in providing a balanced funding mix. Originators may fear that widespread collateral losses and rating downgrades could impair the credibility of their securitization vehicles and drive investors away from Spanish RMBS.

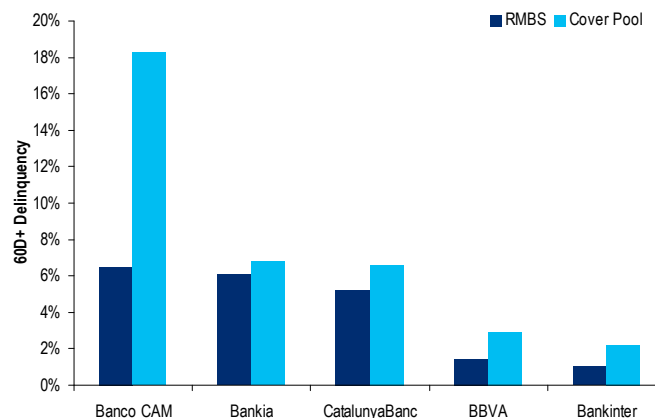
² "Originator Support for Spanish Structured Finance Transactions", Fitch Ratings, 16 Nov 2010

Figure 7. RMBS 90D+ Delinquency Compared to Overall Mortgage Arrears in Spain, Mar 04 – Mar 13 (%)



Source: Bank of Spain, Moody's and Citi Research

Figure 8. 60D+ Delinquencies for RMBS and Cover Pools by Originators, as of March 2013 (%)



Source: Moody's and Citi Research

Impact of Different Foreclosure Strategies

Foreclosure strategies have a significant impact on recoveries.³ Investors need to get comfortable with the workability of past strategies for estimating future recoveries. Fitch found that foreclosed properties are sold at an average discount of 29% below valuation at time of foreclosure but that the discount varies significantly across transactions. Many RMBS originators used strategies that minimized losses to the trust by buying back loans at par or through surprisingly high sale prices to captive buyers. We outline the different strategies as reported by Fitch:

- **Intra-group Sales.** Several originators support their transactions by selling repossessed properties to intra-group companies above market prices. For instance, properties serviced by Catalunya Banc/CX have high recoveries due to a large number of repossessed properties sold to sister companies.
- **More Certain Recovery Price.** Some servicers fix a recovery price and do not wait for a realized sale price. SPVs managed by IM, for example, buy back the loans at par, which is beneficial for the RMBS. Others, such as GestiCaixa, pay the auction price, which is roughly 50-60% of the original valuation.
- **Fire-sale versus Longer Workout.** Some originators prefer a quick sale of repossessed properties and do not want to hold them on their balance sheet due to capital constraints. The accelerated disposal of properties leads to lower recoveries.
- **Deed-in-Lieu versus Auction.** Deed-in-lieu strategies (payment in kind whereby the borrower discharges the mortgage debt by surrendering the property) achieve better recoveries than property auctions because of better valuation and marketing prospects for the foreclosed properties.

³ "Repossession Analysis in Spanish RMBS", Fitch Ratings, 15 Dec 2011

Less than 10% of total mortgage
borrowers eligible to benefit from
new foreclosure rules

Legal Foreclosure Challenges but RMBS Impact Muted

The Spanish Government has passed several amendments to mortgage laws in the past couple of years to deal with the social problem of rising home evictions of defaulted mortgage borrowers. We think that given very high unemployment and the bleak outlook of economic recovery in the near term, new policy measures to support home owners will continue to make it difficult for lenders to foreclose properties. This could increase delinquencies as more borrowers strategically default (being less fearful of evictions); on a slightly positive note, delay in evictions could reduce the sale of foreclosed properties.

However, Moody's estimates that only a small percentage of total mortgage borrowers satisfy the strict eligibility criteria for availing restructuring, partial debt forgiveness, or eviction moratorium. Furthermore, securitization laws do not allow loan modifications beyond a limit and the new laws may force originators to repurchase loans from RMBS pools before restructuring. So overall, the new mortgage laws might end up benefitting some securitizations due to a slight uptick in prepayments. Nonetheless, investors should evaluate such risks when investing in subordinate RMBS tranches and whole loan portfolios. Below we discuss some of the recent proposed amendments affecting mortgage foreclosures and recoveries:

■ **March 2012 Decree Allows Several Forms of Modification.** The Real Decreto Ley 6/2012 came into effect in March 2012 and requires consenting banks to restructure, partially forgive, or cancel mortgages of eligible borrowers. Although around 95% of Spanish banks have agreed to the Code of Best Practices outlined in the decree, Moody's estimates that less than 10% mortgage borrowers may be eligible due to strict eligibility criteria. The banks are required to offer the following to eligible borrowers:

- The bank must extend the mortgage loan to up to 40 years total term, reduce interest margin to EURIBOR +25bp and take only interest payments for four years.
- The borrower may ask for debt forgiveness if the above restructuring does not reduce the mortgage payment-to-income below 60% but the bank may decline the request at its discretion.
- If no further modification or partial forgiveness is possible and mortgage payment-to-income is higher than 60%, then the bank will be forced to accept "dación en pago (payment in kind)"⁴ on borrower's request.

In a November 2012 update, Spanish finance minister proposed some changes to mortgage laws to allow partial debt forgiveness for defaulted borrowers. If the borrower has paid more than 65% of the remaining debt (after deducting property sale price) within five years or 80% within 10 years of repossession, the balance shortfall would be discharged.

■ **Eviction Moratorium Until November 2014.** The Real Decreto Ley 27/2012 came into effect in November 2012, allowing a two-year moratorium on eviction from repossessed properties for certain eligible borrowers. The decree affects all foreclosures initiated before November 2012. While the foreclosure proceedings will continue normally, the eviction would be postponed until November 2014 if the borrower satisfies the eligibility criteria⁵.

⁴ Under this arrangement, the borrower hands over the underlying property to the lender in exchange for full discharge of the debt

⁵ "Spanish Eviction Moratorium Slightly Weakens the Creditor's Financial Position in the Spanish Mortgage Market but Will Have Limited Impact for Spanish RMBS", Moody's, 28 November 2012

Investors Accept Rating Downgrades and Sovereign Risk

Investors understand that investing in Spanish mortgage-related products – whether loan portfolios, RMBS, or covered bonds – carries significant systemic risk. Some of that risk has led to significant downgrades of European peripheral structured finance deals. European ABS and RMBS downgrades from Moody's reached record highs of 34% and 29%, respectively, in 2012. The biggest driver of the negative rating actions was sovereign credit quality deterioration and agencies lowering of country ceilings, i.e. the highest rating for a structured finance bond above the sovereign rating. Moreover, the credit enhancement required to achieve such an enhanced rating was also increased. In addition, agencies have penalized securitizations with linkages to counterparties (such as banks) which are downgraded. Should Spain get downgraded further, there will be a direct impact on the RMBS ratings.

While we do not downplay the severe impact of any sovereign disorderly default (banking system collapse, euro exit, counterparty default, and extreme collateral losses) we want to temper that with the reduced probability of such an Armageddon scenario. The risks of such an event are somewhat reduced, perhaps less than the current market perceptions, largely due to efforts by the ECB to preserve the euro, spurred by the announcement of its Outright Monetary Transactions (OMTs) program last September. In this light, we view Spanish RMBS as a recovery play, an asset class that is relatively cheap to many peer assets, and where the spread premium for such a tail-event may be unjustified.

Future Support from Banks Also Less Likely

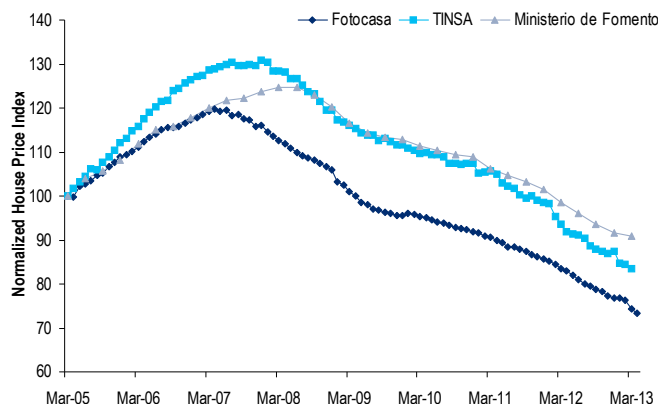
While RMBS investors have benefited from originator support so far, they cannot blindly rely on that in the medium term, and must, instead, look to the structural strengths of the securitized bonds. With news of support more widely telegraphed and increased calls for transparency from bank regulators, who are simultaneously more willing to support banks' liquidity needs, we feel the need for window-dressing securitized pools will reduce. At the same time, mortgage defaults and repossessions will increase as originators stop supporting their securitizations and foreclosure strategies employed by different servicers will be critical in determining recoveries. In such an environment the evolution of future home prices and, as a result, potential losses on defaulting mortgage loans are important concerns for investors.

Near-term Housing Outlook Negative

Prices Have Not Bottomed

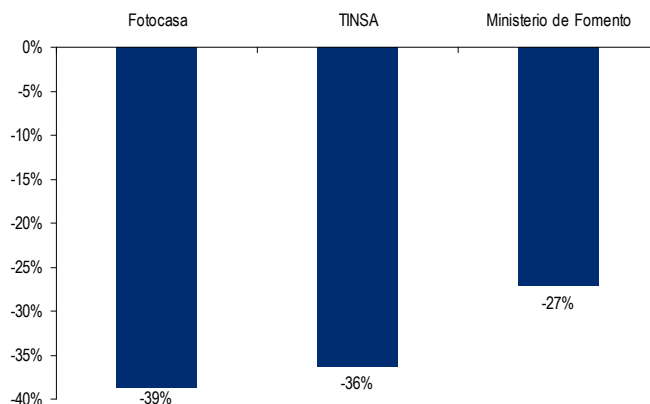
Average house prices in Spain are 27% down from the peak of 2008, according to official Ministerio de Fomento estimates. Some other independent appraisers estimate the decline to be much higher. For instance, Fotocasa estimates peak-to-current house price declines of roughly 39% while TINSA's figure is about 36% (Figure 9 and Figure 10). However, we have not reached the bottom yet.

Figure 9. Spain House Price Indexes, Mar 05 – Mar 13



Source: Ministerio de Fomento, Tinsa, Fotocasa and Citi Research

Figure 10. Peak-to-Current House Price Declines, as of Mar 2013



Source: Ministerio de Fomento, Tinsa, Fotocasa and Citi Research

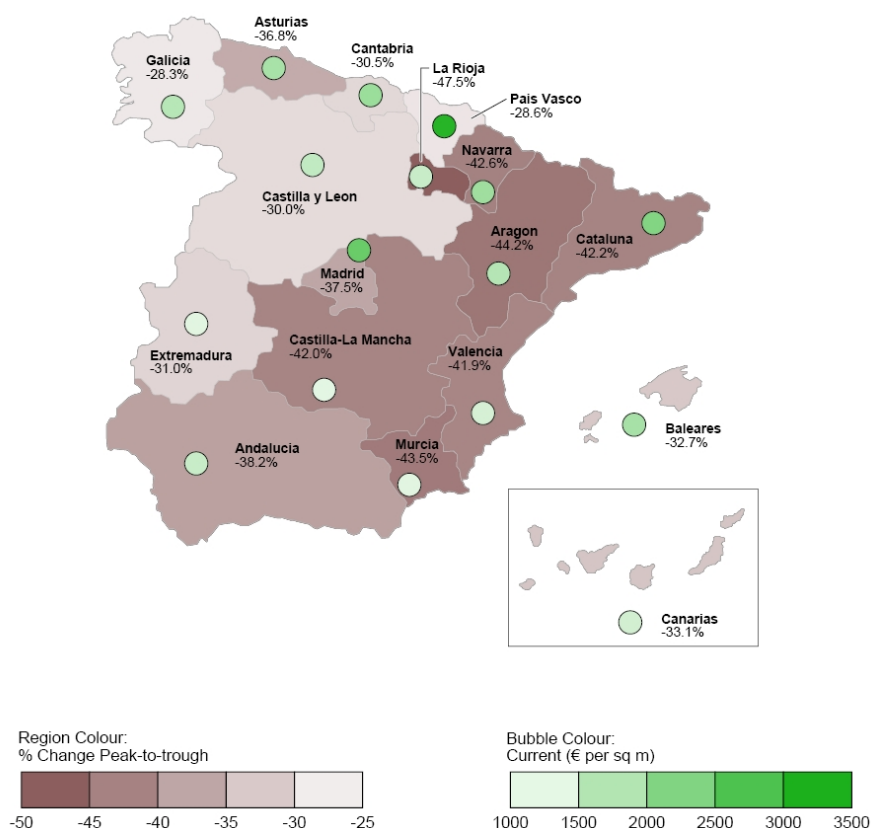
The outlook for house prices is challenging because of a significant overhang of unoccupied properties, scarcity of financing, and very high unemployment of 27%. A recent analysis by Moody's suggests that Spanish house prices will continue to fall for more than five years while S&P forecasts a further 20% drop over the next four years. We outline some of the challenges facing the Spanish housing market below and think that it would take a while before house prices bottomed out.

- **House Prices Still High Relative to Income and Rents.** Average house prices in Spain are still high compared to historical averages, suggesting further declines are likely. Spanish housing market is roughly 16% and 15% overvalued based on long-term price-to-income and price-to-rent ratios, respectively.
- **Housing Inventory Overhang.** The significant inventory of unsold homes and low housing sales volumes would continue to exert downward pressure on home prices in the near term. There are around one million new built homes for sale in Spain currently, according to Fitch estimates, in addition to more than 200,000 repossessed properties. It could take more than five years to clear this inventory at current annual home sales volume of 250,000-300,000 units.
- **Distressed Supply to Push Prices Down Further.** The accelerated sale of distressed foreclosed properties will push down home prices further, in our view. SAREB, the state run bad bank plans to sell almost 42,500 housing units in the next five years and about €1.5 billion worth of properties in 2013 alone. Having said that, the sale of foreclosed properties is the first step in cleaning up the significant inventory and would also provide valuable data points for pricing Spanish real estate risk.

Regional Differences Noteworthy

While all regions in Spain have experienced a housing downturn during the past five years, some regions are particularly affected. Peak-to-current house price declines in Spain range from 28-48%, depending on the region. As highlighted in Figure 11, house price declines in eastern and southern regions have been much severe than northern and western regions. Since Spanish RMBS have considerable regional concentration (see Appendix 1 at the end of this note), regional house price differences could be key for estimating recoveries.

Figure 11. Regional Peak-to-Current House Price Declines and Current Price per Square Meter, as of Apr 2013 (% and €)



Source: TINSA and Citi Research

Some Silver Linings

- Exports Benefiting from Improved Competitiveness.** Citi economists think that Spain is among one of the best placed countries in the euro area to experience export outperformance in coming quarters. Spanish exports are benefiting from improved competitiveness as unit labor costs have declined 7.2% since 2010 Q1. Please see [Global Export Bounce: Greece, Ireland & Spain Set to Outperform](#) for details.
- Regulatory Initiatives Could Pave the Way for New Lending.** The stricter provisioning requirements and bank regulators' call for more transparency would incentivize banks to dispose off properties on their balance sheets and write-down non-performing mortgage loans. The ensuing clean-up of bank balance sheets would allow banks to originate new loans. The ECB too has sporadically shown enthusiasm for stimulating bank lending which could boost GDP and employment, but we see no near-term commitment.
- International Investors Showing Interest in Spain.** Certain investors are of the view that Spain is on right track to tackle its financial crisis and could follow Ireland's success story. For instance, US billionaire Wilbur Ross recently indicated interest in investing in Spanish banks and distressed loans, according to Bloomberg. Also, the *FT* recently reported that several US private equity buyers have shown interest in SAREB's planned property sale. It is also noteworthy that there are non-Spanish investors in SAREB's equity.

- **Much Lower Unemployment within Mortgage Borrowers.** Unemployment is highest among Spain's younger population and we do not believe that this age group comprises a dominant part of mortgage borrowers within securitization.
- **Full Recourse Limits Strategic Defaults.** Borrowers capable of making their mortgages payments are unlikely to walk away even if they are underwater because Spanish mortgages are full recourse. Lenders have the right to recover unpaid mortgages through other personal assets and future income of the borrower. However, as discussed earlier, many lenders give up their full recourse by signing a "dación en pago (payment in kind)" agreement with the borrower.

Specific RMBS Opportunities

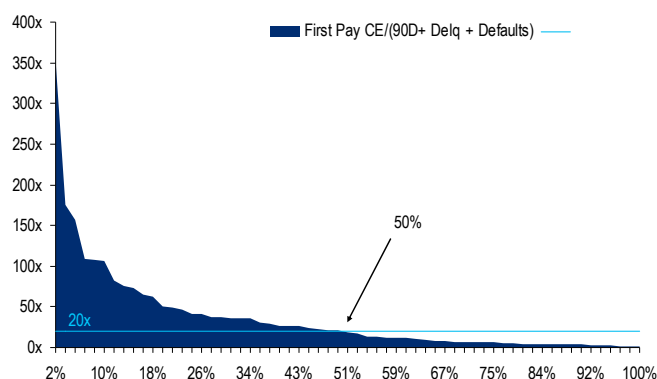
Low Principal Risk on Seniors, and Some Second-Pays

We look at the robustness of Spanish RMBS by initially comparing the credit enhancement with the total amount of defaulted and seriously delinquent loans, and then calculating tranche breakeven default rates. We estimate loss severities based on fairly draconian house price decline scenarios.

Many Seniors and Certain Subordinates Well Protected

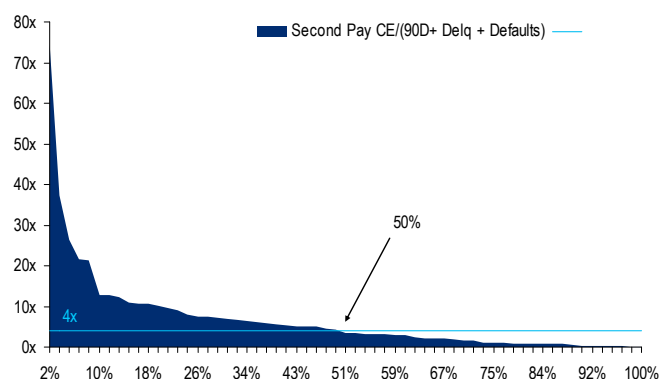
- **Substantial Senior Credit Enhancement ('CE').** The Spanish RMBS deals we examine have substantial senior credit enhancement. More than 50% of deals have a ratio of CE to 90D+ delinquency plus defaults greater than 20 times (Figure 12). Senior credit enhancement is provided by the reserve fund, excess spread and subordination.
- **Some Juniors Safe: Abundant CE and Pro-Rata Amortization.** Declining house prices and high unemployment prevent us from wholeheartedly recommending junior Spanish RMBS but we note that the ratio of CE to 90+ delinquency plus defaults exceeds four times for almost half of the universe (Figure 13). Pro rata amortization of some of the juniors has shortened their WAL, further reducing back-ended risks. However, it should be noted that pro-rata amortization is primarily dependent on 90D+ delinquencies and can cease if delinquencies spike up, leading to extension of the notes.

Figure 12. Distribution of Spanish RMBS Senior Notes by the Ratio of First Pay Credit Enhancement to Total 90D+ Delinquencies and Defaults



Source: Bloomberg, Intex, Investor Reports and Citi Research

Figure 13. Distribution of Spanish RMBS Second Pay Notes by the Ratio of Second Pay Credit Enhancement to Total 90D+ Delinquencies and Defaults



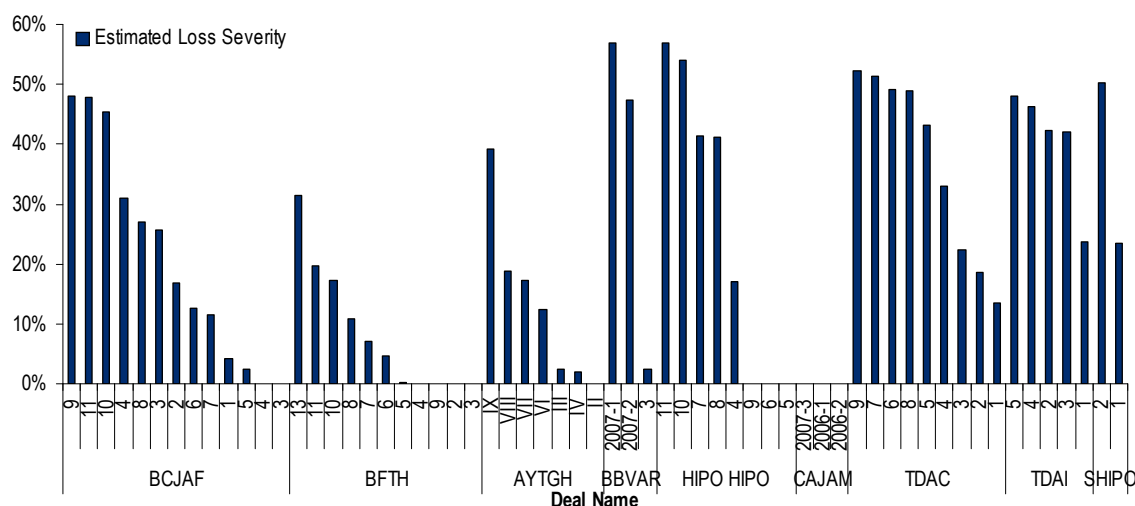
Source: Bloomberg, Intex, Investor Reports and Citi Research

While comparing tranche CE with the amount of delinquent loans in the pool is a good way of screening for deals that have high protection, it does not take into account the collateral composition and structural nuances of different deals. In order to carry out a more comprehensive analysis of different bonds, we estimate collateral loss severities and tranche breakeven default rates.

Loss Severity Estimates Differentiate Shelves

We estimate that loss severities on Spanish RMBS deals range from 0-57% based on assumed severe house price discounts. Most of the older vintage deals (2001-2005) have very low severities (0-27%) because of significant amortization and modest house price declines. 2006 and 2007 vintage deals have much higher loss severities ranging from 39-57%, barring a few exceptions. Moreover, Barclay's AYTGH and Bankinter's BFTH shelves have lower loss severities than BCJAF, BBVAR, HIPO HIPO, TDAC, TDAI and SHIPO shelves (Figure 14).

Figure 14. Estimated Loss Severities for Select Spanish RMBS Deals



Source: Citi Research

Loss Severity Calculation

We utilize current reported LTV buckets and apply origination-to-current house price decline to estimate current indexed LTV buckets. We use the national house price index by TINSA because the official house price index underestimates home price declines. To estimate loss given default (LGD), we apply an additional 20% house price correction over the peak-to-current decline and, then, another 30% discount over that to account for lower prices achieved in foreclosing repossessed properties. Once we have LGD for each LTV bucket, we estimate weighted average loss severity for the deal using the proportion of loans in each bucket.

We demonstrate the methodology of calculating loss severity for a representative deal in Figure 15 below.

Figure 15. Illustration of Loss Severity Calculation Using LTV Distribution, HPD* Forecast, and Foreclosure Discount

Origination-to-Current HPD	20% (depends on origination date)	(A)
Further HPD	20% (assumption)	(B)
Foreclosure Discount	30% (assumption)	(C)

LTV Bucket (D)	Proportion of Loans (E)	Est Loan-to-Liquidation Value (F) = mid(D) + (B) + (C)	Loss on Liquidation (G) = E X (F - 100%)/F
< 30%	5%	< 100%	0%
30%-40%	5%	105%	5%
40%-50%	10%	115%	13%
50%-60%	10%	125%	20%
60%-70%	15%	135%	26%
70%-80%	20%	145%	31%
80%-90%	20%	155%	35%
90%-100%	10%	165%	39%
100%-110%	5%	175%	43%
Estimated Loss Severity	SUM (E X G)		27%

* HPD = House Price Depreciation

Source: Citi Research

The deal level loss severity estimates allow us to calculate the breakeven default rates at which these bonds would lose principal. It also allows us to compare breakeven lifetime defaults (corresponding to breakeven CDRs) with the total amount of current seriously delinquent and defaulted assets in the pool.

Half of Senior RMBS Can Withstand Extreme Losses

A conventional way of comparing tranche break-even annual default rates with recent pool default rates is incomplete because of differences in the definition of default versus delinquencies in many Spanish RMBS shelves. To get around this problem, we compare breakeven lifetime defaults with the current stock of defaulted and seriously delinquent loans.

Our analysis of 61 Spanish RMBS deals in INTEX, using our estimated loss severities, shows the breakeven defaults is more than 20 times the total pool of currently seriously delinquent loans (90D+ delinquent plus defaults) in 70% of the deals we examined. To calculate the breakeven defaults, we first calculate breakeven CDR assuming constant last reported prepayment rate and 90D+ delinquencies for each deal (for the purposes of calculating trigger failures). Breakeven CDR is the minimum constant default rate at which the tranche in question will experience first euro loss. We then calculate lifetime cumulative default levels corresponding to breakeven CDR using INTEX. The lifetime cumulative defaults (the proportion of current outstanding pool balance required to default for the tranche to experience one euro loss) is compared with the current proportion of 90D+ delinquent and defaulted loans.

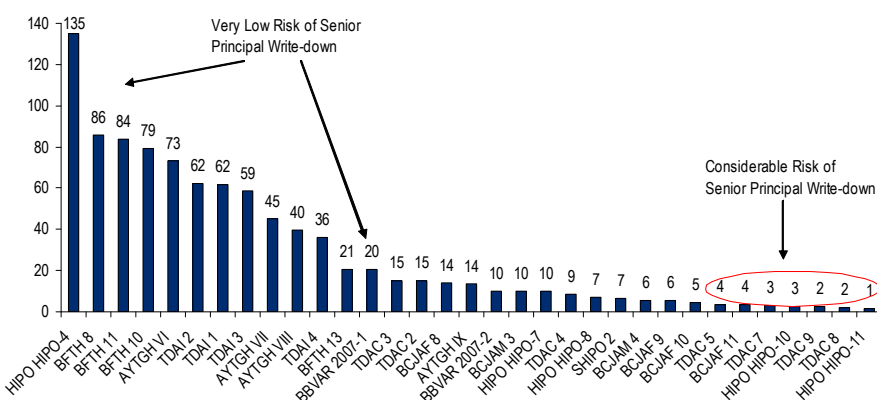
We find that senior tranches in almost half of the deals will not experience any losses even if the whole pool defaults, subject to our loss severity assumptions. The breakeven cumulative defaults for most of the remaining deals is greater than five times of current seriously delinquent loans while roughly 11% deals have less than five times coverage.

- **46% Deals Unbreakable.** Senior tranches of 28 out of 61 deals we examined do not experience any credit loss even if 100% of the pool defaults because the available tranche credit enhancement exceeds the estimated pool loss severities. Most of these deals are older 2001-2005 vintage. **Older vintage BCJAF, BCJAM, BFTH, AYTGH and HIPO HIPO shelves fall in this negligible risk category.**

Breakeven lifetime defaults more than 20 times current seriously delinquent loans in 70% of the deals

- **43% Have More than Five Times Coverage.** In addition to the above negligible risk deals, a good portion of the remaining deals have senior breakeven defaults higher than five times of current seriously delinquent plus defaulted loans. **We assign a low risk of senior principal write-downs in deals with multiples greater than 20, which include BFTH, AYTGH and TDAI shelves and HIPO HIPO 4 deal** (Figure 16).
- **Remaining Few Relatively Vulnerable.** Senior tranches of seven of 61 deals we examined have breakeven default rate of only 1-4 times the current seriously delinquent plus defaulted loans (Figure 16). **2006 and 2007 vintage deals from BCJAF, TDAC and HIPO HIPO shelves fall under this high risk category.**

Figure 16. Breakeven Cumulative Defaults as a Multiple of Current Seriously Delinquent Plus Defaulted Loans



Source: INTEx and Citi Research

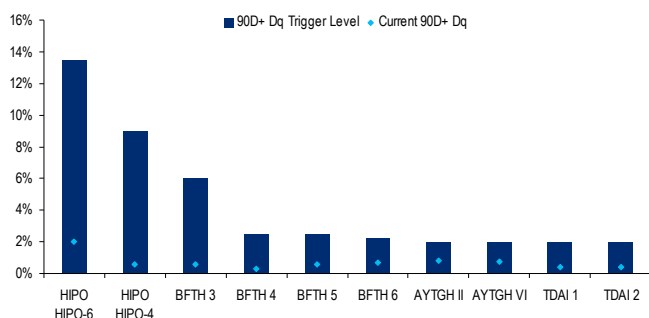
Opportunities in Pro-Rata to Sequential Pay

Our analysis also identified some opportunities which could benefit from deals going from pro-rata pay (between senior and junior bonds) to a sequential pay structure. 53 out of the 61 deals we analyzed have a pro-rata amortization feature and 23 among them are paying pro-rata. Pro-rata amortization is contingent on a combination of 90D+ delinquencies, principal deficiency and proportion of the junior notes outstanding. Deals that are paying pro-rata have much shorter junior note WALs than sequential deals, while senior WALs are slightly longer. We discuss the impact of this feature in more detail below.

- **Certain Deals Likely to Remain Pro-Rata.** We identify 10 pro-rata amortizing deals that have delinquencies well below their pro-rata to sequential trigger levels. These deals are expected to remain pro-rata unless delinquencies increase significantly (Figure 17). The pro-rata class B notes of these deals have 7-12YR WAL, which is about 40% shorter than 12-20YR WAL of other sequentially amortizing subordinates.
- **Some Pro-Rata Deals Could Turn Sequential.** Senior notes of certain Spanish RMBS could benefit from the switch to sequential amortization. We have identified 11 pro-rata amortizing deals that could turn sequential as their 90D+ delinquency levels are close to trigger levels (Figure 18). Pro-rata to sequential switch would increase class B WAL by approximately 50-120% and decrease class A WAL by about 10%.

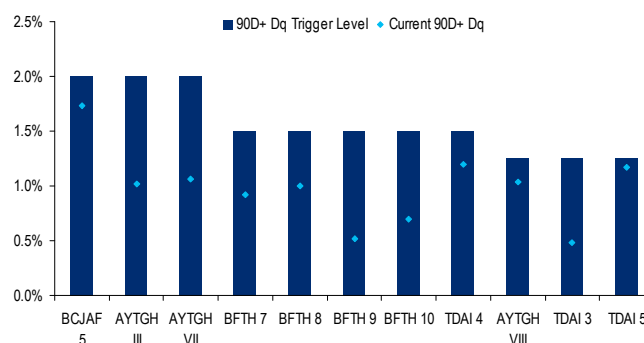
- **Sequential Deals Close to Pro-Rata Threshold.** Certain sequential Spanish RMBS deals are just passing their sequential triggers and should continue to do so since the pool delinquencies are increasing. We think it's worthwhile keeping an eye on delinquencies of these deals as any improvement could result in trigger switches.

Figure 17. Sequential Trigger Levels and Current 90D+ Delinquency of Pro-Rata Deals Unlikely to Turn Sequential*



We use a 1pt difference in delinquencies to determine likelihood of switching
Source: INTEX and Citi Research

Figure 18. Sequential Trigger Levels and Current 90D+ Delinquency of Pro-Rata Deals that Could Turn Sequential*



We use a 1pt difference in delinquencies to determine likelihood of switching
Source: INTEX and Citi Research

Prospects for New Activity

We believe that the immediate outlook from originators is for capital and balance-sheet optimization transactions rather than any significant new RMBS issuance. As we stated at the beginning of the note, new lending is 80% down from peak levels but the total volume of outstanding mortgage loans have fallen only slightly as a result of low prepayments. Banks therefore have the twin pressure of being unable to generate enough margin from higher-coupon new loans and at the same time facing pressures to boost capital. As such, optimization of these two parameters is at the forefront of banks' concerns.

To boost capital ratios, many Spanish banks have already tried RMBS buy-back programmes. The resulting capital gain from buying bonds at discount helped to improve capital ratios. While some banks may continue such programmes in the future (or engage in other one-off deals); we believe the amount of capital generated and the support for RMBS spreads from such buybacks would be modest because of the small size of the placed RMBS market.

Consequently, banks will need to increase their provisions and offload non-performing assets at distressed prices to clean up their balance sheets. While such distressed sales could create negative technicals for asset prices in the short-term, the ensuing cleanup would enable banks to start new mortgage lending and support a housing recovery. Moreover, greater transparency in the market prices and recovery values of impaired assets would improve investor confidence in buying Spanish mortgage products.

Summary

We identify opportunities in the Spanish RMBS sector that benefit from the low risk of principal loss on mainly senior, and certain subordinated bonds. We have also highlighted more convex opportunities where investors could take a view on bonds becoming sequential-pay from pro-rata and vice-versa. Our view is that despite the sovereign and macro-headlines (and in many cases poor outlook) Spanish mortgage bonds offer relative value versus peer assets. The sector has been helped by originator support which may perhaps be withdrawn as banks respond to calls for greater transparency and more capital preservation plans, but even without this help, there is a positive story for many securitization structures. Investors can alternatively look at the non-securitized parts of the mortgage loan market but they need to be more aware of the swathe of upcoming rules governing workout of non-performing loans, the differences in recovery procedures between originators, and possible further home price drops stemming from more distressed sales.

Appendix 1 — Overview of Placed RMBS Shelves from Top Originators

Figure 19. Structural and Collateral Overview of Select Placed Spanish RMBS

	BCJAF (9 deals)	BCJAM (4 deals)	BFTH (11 deals)	AYTGH (7 deals)	BBVAR/BBVAH (3 deals)	HIPO HIPO (8 deals)	TDAC (9 deals)	CAJAM (3 deals)	TDAI (5 deals)	SHIPO (2 deals)
Originator	Bancaja	Bancaja	Bankinter	Barclays	BBVA	Caixa Catalunya	CAM	Caja Madrid	Ibercaja	Santander
Collateral Balance (€)	146-1529MM	104-934MM	32-881MM	228-1017MM	155-3029MM	53-668MM	218-931MM	956-1796MM	162-718MM	586-865MM
Structural Overview										
Note Paydown	Sequential/Pro-Rata*									
Senior CE	8.2 - 21.2%	10.0 - 29.8%	8.0 - 16.9%	7.6-9.5%	5.8-48.8%	9.2-25.8%	7.6-17.2%	14.9 - 21.3%	7.9 - 10.4%	16.9 -30.7%
Pro-Rata Amort. Stop Trigger	Combination of 90+ delinquency/Reserve fund at target/PDL Level									
90D+ Delq	1.7-8.2%	3.6-7.5%	0.3-1.8%	0.4-1.6%	1.6-9.0%	0.6-8.4%	2.8-13.3%	12.2-14.3%	0.4-1.2%	0.2-1.5%
Pro-Rata Delinquency Trigger	1.1-3.0%	1.3-1.5%	1.5-6.0%	1.3-2.0%	1.3-1.3%	1.5-20.0%	1.25%	2.0% - 2.0%	1.25 - 2.0%	-
Artificial Writeoff	None - 18 Month	18 Month	None - 18 Month	18 Month	12 Month	12 Month	None/12 Month	6 Month	None/12 Month/18 Month	18 Month
Reserve Fund	0-27MM	7-23MM	0-20MM	6-17MM	0-17MM	0-22MM	0-17MM	0-1MM	4-11MM	0-19MM
Reserve Fund Deficiency	Yes-4/No-5	Yes-3/No-1	Yes-3/No-11	No-7	Yes-2/No-1	Yes-5/No-3	Yes-11	Yes-3	No-5	Yes-1/No-1
Junior Notes Interest Deferral	Combination of Principal Deficiency/Accumulated Defaults/90+ Delinquencies									
Juniors Amortizing	Yes-3/No-6	No-4	Yes-8/No-3	Yes-6/No-1	No-3	Yes - 3/ No-5	No-11	No - 3	Yes-3/No-2	No-2
Collateral Overview										
Indexed LTV	22-102%	38-75%	19-76 %	35-87%	97-118%	60-125%	64-77%*	94-98%*	44-77%*	65-105%
Geographic Concentration	Valencia (33-58%)	Valencia (65-71%)	Madrid (23-34%)	Madrid (23-42%)	Cataluna (20-25%)	Cataluna (68-86%)	Alicante (25-42%)	Madrid (56-70%)	Madrid (30-35%)	Valencia (17-29%)

* Original LTV

Source: Moody's, Bloomberg, Intex, Investor Reports and Citi Research

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Notes

Notes

Appendix A-1

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