

# THE PRIMARY YIELD DETERMINANTS OF THE SPANISH ASSET BACKED SECURITIES AND THE RELEVANCE OF MULTITRANCHE STRUCTURE

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## ABSTRACT:

We analyze the primary yield determinants of the Spanish mortgage backed securities (MBS) and asset backed securities (ABS) issuances between 1993 and 2011, when the Spanish market took over as the leading one in mainland Europe. The results of the analysis of 2156 different tranches configured using 650 issuances show that the multi-tranche structuring of the MBS helped to reduce the perceived global risk of the issuances. This was achieved by generating more comprehensive markets and reducing the problems arising from the asymmetric information. The credit institutions, in general, retained the primary loss tranches, which contributed to the yield offered by the ABS bonds being held at very low levels (under the sovereign debt yield).

JEL Classification: G12; G21; G24; G32 Keywords: securitisation; asset backed securities; spreads; primary yield; tranche; subordination; asymmetric information

## PURPOSES

- 1.- To analyse the factors explaining the yield offered by senior securities (AAA).
- 2.- To analyse the efficiency of multi-tranche structures in determining the yield of the senior issues.
- 3.- To determine the mechanisms that enable the multi-tranche structure to lower the risk premium set for triple-A issues.

Why do we focus on triple-A issues?

- Because they account for the majority traded on the markets (and therefore their yield premium provide greater information value).
- Because they are the most representative tranches (they account for 93% of the total issues)

## ORIGINALITY/ VALUE

We believe our paper contributes to the LIMITED existing literature as the securitization Spanish market is analysed comprehensively for the first time, by combining the internal structure of the SPV and the primary yield of the issues in a single explanatory model. From the methodological perspective, we consider our contribution to be relevant as it enables the Path Analysis model to incorporate (i) explanatory variables in more than one level and (ii) the correlations between the factors.

## MAIN LITERATURE REVIEW

Study	Sample	Database	Model
Firla-Cuchra (2005) Firla-Cuchra and Jenkinson (2006)	All European securitization issues: 1987-2003	JP Morgan	univariate OLS regression logit regresión
Schaber (2008)	European combination notes: 2002-2007	HypoVereinsbank /UniCredit Global Markets	univariate OLS regression logit regresión
Vink and Thibault (2008a)	765 non-US ABS issues: 1999-2005	Structured Finance International Magazine (Euromoney Institutional Investor Plc.)	univariate OLS regresión
Vink and Thibault (2008b)	Non-US ABS (765), MBS (760) and CDO (514) issues: 1999-2005	Structured Finance International Magazine (Euromoney Institutional Investor Plc.)	univariate OLS regresión
Vink and Fabozzi (2009)	Non-US ABS (186 issues/831 tranches): 1999-2006	Structured Finance International Magazine (Euromoney Institutional Investor Plc.)	OLS regresión
Gorton and Metrick (2011)	US and non-US asset classes and others: 2007-2008	- Dealer banks (Goldman Sachs, Morgan Stanley, Lehman Brothers, Merrill Lynch and Bear Stearns)	univariate OLS regresión

## HYPOTHESES

**H1 (efficiency of the multi-tranche structures):** There is a significant and negative relationship between the number of tranches [Ntranches] and the yield provided by the triple-A securitization issues [Yield\_AAA]

**H2.1 (complete markets):** There is a significant and positive relationship between the total size of the issue [Size] and the number of tranches [Ntranches].

**H2.2 (moral hazard):** There is a significant and negative relationship between the quality of the assigned assets [WAR] and the number of tranches [Ntranches].

**H2.3 (adverse selection):** There is a significant and positive relationship between the quality of the assigned assets [WAR] and the number of tranches [Ntranches].

## SAMPLE

The population being studied is the series of MBS/ABS issued by the SPV constituted in Spain in Q1-1993/Q3-2007 (286 SPVs, 1147 tranches, €260 billion), a period when the triple-A issues were taken up by investors on the primary markets (N.B.: From 2008 onwards, the issues were not traded on the market, but were taken up by their issuers to obtain funding on the Euromarket. In fact, the pattern observed in this second period (2008-2011) differs from the one observed in 1993-2007).

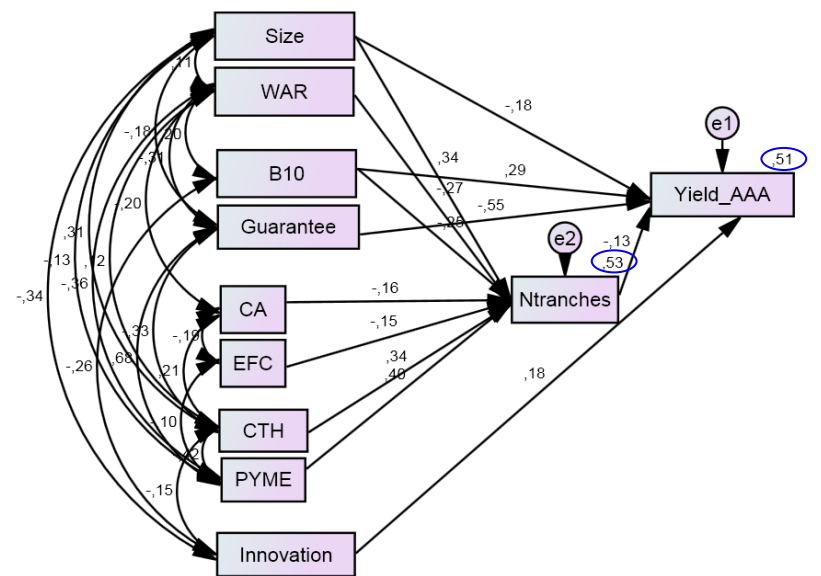
## DESIGN/METHODOLOGY

A system of structural equations without latent variables (Path Analysis) at two levels is presented and which describes: (i) the primary yield of the senior bonds (AAA) and (ii) the number of tranches by incorporating the following explanatory variables or factors (with the main variables studied in bold):

Explanatory variables:	Dependents variables:	
	[Yield_AAA]	[Ntranches]
SPV internal structure-specifics: Ln Num of Tranches [Ntranches]	-0,133*** → H1 ✓	
MBS credit quality-specifics:		
Weighted Average Rating [WAR]		-0,273*** → H2.2 ✓ ✗
Number of ratings [Nrating]		
% Guaranteed Issue [Guarantee]	-0,555***	
Collateral (dummies variables):		
Prime Mortgage Loans (LTV < 80%) [PH]		+0,342***
Other Mortgage Loans [CTH]		
Whole Business Loans [BUSINESS]		
SME Loans [PYME]		+0,398***
Consumer loans, card receivables [CONSUMER]		
Leasing [LEASING]		
Public Administration [PUB_ADM]		
Others [OTHERS]		
SPV financial characteristic-specifics:		
Maturity (years) [Maturity]		
Ln Issue (mill. €) [Size]	-,13*** (-,177 + ,341x, 133)	+0,341*** → H2.1 ✓
Especificas de los originadores:		
Dummy Commercial Banks [B]		-0,164***
Dummy Savings Banks [CA]		
Dummy Credit Cooperatives [CC]		
Dummy Specialised Credit Institution [EFC]		-0,149***
Number of Originators [Nissuers]		
Time-specifics: Dummy 1993-1995 [Innovation]	+0,179***	
Especificas de los mercados financieros:		
10 year Bond rate [B10]	-,32*** (0,29+ ,25x, 133)	-0,253***
10y - 2y Bond rate [Slope]		
Primary Market [Market] (1: AIAF; 0: BARNA)		
<b>Squared Multiple Correlations</b>	<b>50,6%***</b>	<b>52,7%***</b>

a. Total effects (included only standardized estimates with p-values < 0,1): \* < ,1; \*\* < ,05; \*\*\* < ,01.

## PROPOSED MODEL



MODEL FIT									
$\chi^2$	$\chi^2/d.f.$	R <sup>2</sup>	CFI	GFI	AGFI	NFI	TLI	RMSEA	
40,58	df=25 p=0,025	1,623	0,51 & 0,53	0,981	0,975	0,934	0,955	0,959	0,047

## MAIN RESULTS AND CONCLUSIONS

- Until the 2007 subprime crisis, there was an intense increase in asset securitization on the international markets, in general, and in Spain in particular, and a greater degree of sophistication was progressively reached.
- The reasons for the rapid expansion of the MBS/ABS include those indicated herein:
  - First, the MBS enjoyed high ratings, which meant that they were warmly welcomed among the international and national institutional investors.
  - Thus, the investors demanded a minimal risk premium for this type of financial assets, the majority of which had a maximum credit rating (triple-A). In fact, the yield offered by the benchmark fixed income assets (10-year government bonds) was higher than that required by the MBS/ABS.
  - Conversely, the structure of the SPV has allowed small credit institutions to enjoy economies of scale due to the possibility of participating in securitization operations by means of grouping the assets assigned by different entities, by sharing the fixed costs arising from this funding and by offering a portfolio of more geographically diversified assets as collateral.
  - Finally, there exists the possibility that the SPV offer to establish a series of MBS/ABS tranches with differentiated yield and risk profiles has allowed access to a wider type of investors, thus completing the capitals market.
- To assess the effect of the constitution of multi-tranche securitization structures on the perceived quality of the MBS/ABS issued in Spain (1993-2007), measured by means of its primary yield, we focus on the information value provided by the most characteristic aspects of the designs of the securitization operations, that is, the number of tranches [Ntranches] into which the issues are divided.
  - It is evident that [Ntranches] has a negative and relevant relationship with the spread premium offered [Yield\_AAA]. These results, in keeping with those presented by Firla-Cuchra and Jenkinson (2006), Vink and Fabozzi (2009), further support the theoretical forecast that greater a sophistication of investors and a progressive market development should be associated with further tranching.
  - The significant and positive relationship existing between the generation of a greater number of tranches and both the size and risk of the issue enables us to deduce that the underlying reasons for the MBS/ABS tranche stratification are:
    - On the one hand, that it meets the needs of a greater diversity of investors (completes the market, which is consistent with what was obtained by Firla-Cuchra and Jenkinson (2006) or Schaber (2008)).
    - On the other hand, it reduces the moral hazard inherent to this type of assets.
    - In contrast, the cost reduction arising from the adverse selection seems not to be a priority in the tranche generation.
    - Thus, the investors can discriminate the good from the bad MBS/ABS, with the signals generated by the issuers being sufficient (quality indicators such as the weight of the subordinate tranches issued). On the other hand, the MBS/ABS issuers with poor quality assets as collateral are those that must most sacrifice the liquidity of their issues in exchange for offering a greater safeguard for the senior tranches by means of generating a greater number of tranches. In short, we find evidence that the generation of multiple tranches reduces the information asymmetries by means of reducing the moral hazard, not by means of adverse selection, contrary to what is argued by Schaber (2008).

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