Does rating shopping exist in spanish securitization issues?

¿Existe el *rating shopping* en las emisiones de titulización españolas?

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Abstract:

   Debt issue credit ratings can lead to conflicts of interest as the issuer itself is entrusted with contracting and compensating the rating agency. Into the bargain, the credit rating agency may be involved in designing the issues that the same agency subsequently rates. Credit rating agencies thus could have incentives to rate issues advantageously. Given the economic importance of this issue, in this paper we have proposed to analyze this phenomenon, known as rating shopping in academic literature, for Spanish market securitization issues for the period of time comprehensive from January 1993 to December 2011. In sum 3,665 published ratings are been analysed, for an issued nominal amount of 791,090 million Euros. The results show an association between the credit rating agency contracted and the mean rating awarded. Significant differences are observed in the ratings associated to the contracting manager (or special purpose vehicle –SPV- manager firm), to the number of ratings or to the type of collateral. Furthermore, a pattern compatible with rating shopping was observed for some types of collateral: abnormally high market shares associated with certain agencies awarding unusually generous ratings. However, this phenomenon is not seen to be widespread on the rating market associated to Spanish securitization issues.

Keywords:

   Credit rating agencies (CRAs), rating, securitization, rating shopping, rating model arbitrage.

Resumen:

   Las calificaciones crediticias de las emisiones de deuda pueden plantear un conflicto de intereses al ser el propio emisor el encargado de contratar y retribuir a la agencia de calificación, y a que ésta puede participar en el diseño de las emisiones que posteriormente califica. Así, se pueden generar incentivos para que las agencias de calificación otorguen calificaciones ventajosas a las emisiones. En este trabajo, analizamos este fenómeno,

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conocido en la literatura académica como compra de calificaciones crediticias o arbitraje de ratings, para el conjunto de las emisiones de titulización realizadas en el mercado español en el periodo comprendido entre enero de 1993 y diciembre de 2011. En términos acumulados se han analizado 3.665 calificaciones de crédito o ratings, asociados a un volumen nominal emitido de bonos de titulización de 791.090 millones de euros. Los resultados evidencian una asociación entre la agencia otorgante y el rating medio otorgado, observándose diferencias significativas en los ratings asociados a la sociedad gestora contratante, al número de ratings o al colateral de respaldo. Además, para algún tipo de colateral se observa un patrón compatible con el rating shopping: cuotas de mercado anormalmente elevadas asociadas a ciertas agencias otorgantes de ratings anormalmente generosos. No obstante, este fenómeno no se observa de forma generalizada en el mercado de ratings asociado a las emisiones de titulización españolas.

Palabras clave:

Agencias de calificación, rating, titulización, compra de calificaciones, arbitraje de ratings.

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1. **INTRODUCTION**

Obtaining a reliable, objective and external rating of the quality of the securitization issue is a determining factor to perform efficiently the resource-generation and risk-transmission processes on the capital markets (Abad and Robles, 2007; Deprés, 2011; Abad *et al.*, 2012). Credit rating agencies (hereinafter CRAs) have played a particularly important role in the securitization operations performed in the financial systems of different countries (see Otero *et al.* (2013) for the Spanish market). As Blancheton *et al.* (2012) argue, the complexity and opacity of these operations help to understand the key role of the rating agencies when rating those products. In fact, different national regulations require a credit rating for an issue to proceed. However, the sharp deterioration of the credit ratings and drop in value of the securitizations has raised questions about the performance of the rating agencies.

Three sources of conflict in CRA performance can be identified on the credit rating market: (1) CRA conflict due to understating risk to attract business, (2) issuers' tendency to purchase only the most favourable ratings, and (3) the trusting nature of some investor clientele . Research, such as Ashcraft *et al.* (2010) or Mathis *et al.* (2009), has confirmed the relaxation of the rating processes for mortgage-backed securitization bonds during the years leading up to the financial crisis. On the other hand, Griffin & Tang (2012) and Hull & White (2010a) detect evidence of the subjective opinions of rating agencies allowing the ratings of the collateralized debt obligations (CDO) to be inflated.

As Bolton *et al.* (2012) indicate these conflicts create two distortions. First, competition among CRAs can reduce efficiency as it facilitates rating shopping. Second, ratings are more likely to be inflated during boom periods and when investors are more trusting. Our paper focuses on the analysis of this first distortion where the intense competition between CRAs and the problem of rating shopping are related.

In this line, Becker & Milbourn (2011) show that the quality of the rating is inversely related to the number of active rating agencies, concluding that the strong competition on the rating market helps to foster the cherry picking strategy by the issuers, that is, that the latter end up contracting the services of those agencies that better rate their assets (rating shopping).

We have, therefore, taken into consideration, on the one hand, the market structure of the CRAs and, on the other hand, practically all the securitization operations performed in the Spanish financial system. The Spanish securitization market is a major market as it has risen as high as third place on the world ranking. We have thus gathered information on 3,665 credit ratings for an issued nominal amount of 791,090 million euros (approximately 1 trillion USD) for the period 1993-2011.

The main objective of this paper is to establish whether there is evidence that the "*rating* shopping" phenomenon has occurred on the Spanish market. The non-uniform distribution among the agencies rating the issues, both in terms of the fund managers (SG) and in terms of types of collateral, can be considered to be an indication of rating shopping, as if fund managers have a certain preference for the services of one or other rating agency to assess certain types of securitization bonds, they can be considered to be searching for a particularly favourable rating. Thus, we extend the literature by focusing on the specific linkages between abnormally large (small) CRA's market share by type of collateral with

abnormally lower (higher) ratings. Our results do not clearly support the conclusions defended by earlier studies focused on other markets as we do not find evidence that is compatible with rating shopping.

The rest of the paper is structured as follows. The following section reviews the related scientific literature and sets out the research hypotheses. The third section analyses the characteristics of the securitizations performed in Spain, along with the market structure of the credit rating of those securitizations. The fourth section verifies the hypotheses regarding the existence of *rating shopping* on the Spanish securitization market. The last section concludes.

2. REVIEW OF THE LITERATURE AND HYPOTHESIS APROACH

Numerous studies provide evidence of the existence of rating shopping. Thus, Skreta and Veldkamp (2009) claim that the greater the complexity of the financial securities to be rated, the greater the incentives and rewards for issuers to perform rating shopping. Benmelech and Dlugosz (2010), studying a worldwide CDO (collateralized debt obligations) sample for 2005-2008, find that the tranches rated by a single agency (particularly Standard and Poor's) were more frequently downgraded than those rated by more than one agency. Specifically, in the CDO segment, Standard and Poor's was known for applying generous assumptions, which helped it to attain a dominant position in the business rating CDO issues. Thus, if we only refer to the tranches assessed by a single agency, Standard and Poor's accounts for nearly 70% of the share in this segment, compared to 20% for Fitch Ratings and 10% for Moody's (Benmelech and Dlugosz, 2010). Morkötter and Westerfield (2009) find rating patterns in a sample of 231 international collateralized debt obligation issues (CDO) between August and December 2006. These are consistent with the theoretical models developed by Fender and Kiff (2005). The latter argue that it is more feasible for the *senior* tranches (the largest volume and less risky) to be rated by Moody's –an agency that uses rating models based on expected loss–, and for *equity-mezzanine* tranches (with a smaller volume and more risky) to be rated by Fitch and Standard and Poor's –which use rating models based on the default probability. In turn, regarding the 2009 re-securitization market (on other words, securities whose collateral is asset-backed bonds: Re-Remics), Kiff (2010) finds that the DBRS rating agency obtained 43% of the market share in 2009 (compared to barely 7% in 2007) . Precisely, this agency awarded the *ratings* on the estimated default probability, which tends to rate the *mezzanine* tranches comparatively better than when other methods are used.

The series of hypotheses put forward to analyze the existence of rating shopping on the Spanish securitization market are set out synoptically in Figure 1. The proposed hypotheses are stated in three successive levels. We first present the excluding hypothesis, relating to the existence of a uniform distribution in the choice of the CRA, taking the applicant SG or the type of collateral as a factor. We consider this hypothesis to be excluding given that its verification would be highly incompatible with a scenario when practices relating to rating shopping concur. A rating market when the CRAs enjoy similar market shares, irrespective of the SG (client) and the type of collateral, is highly incompatible with widespread rating shopping. Thus, the first hypothesis, with its two sub-hypotheses, is as follows:

H1 (Excluding condition): The choice of the CRA is uniformly distributed.

> *H1a: The choice of the CRA is uniformly distributed by applicant SGFT.*
> *H1b: The choice of the CRA is uniformly distributed by type of collateral.*

The second analysis level, considered in case of the previous hypothesis (HI) being rejected, refers to significant differences existing in the rating awarded by the CRAs and by the number of participating CRAs. Thus, even though a CRA enjoys an abnormally high market share (for a specific SG or type of collateral), if the mean rating awarded is not significantly different to the one awarded by the other CRAs, rating shopping cannot be concluded to exist. Similarly, given that rating shopping is based on choosing the CRA based on looking for a more favourable rating, the concurrent publication of several ratings simultaneously awarded by different agencies must reduce and, in extremis, eliminate the practice of rating shopping. Thus, the existence of a direct relationship between the number of participant CRAs and the mean rating offered is another indication of the existence of rating shopping. Therefore, we consider this second condition to be necessary for rating shopping to be deemed to exist and the relevant hypothesis is written as follows:

H2 (Necessary condition): There are significant differences in the rating awarded by the different CRAs.

> *H2a: There are significant differences in the rating awarded by the CRA.*
> *H2b: There are significant differences in the rating awarded by a number of CRAs.*

If the previous hypothesis is accepted, we complete our study by analysing correspondences aimed at establishing whether the CRAs that have abnormally high (small) market shares for specific segments, offer abnormally high (reduced) ratings in those same segments. We consider this relation to be sufficient, given that its verification would imply the existence of rating shopping. Thus, the third and final propose hypothesis is as follows:

H3 (Sufficient condition): The favourable (unfavourable) bias in the rating awarded by a CRA is related to an abnormally high (reduced) market share associated to that CRA.

Figure 1

Proposed hypothesis to test the existence of rating shopping
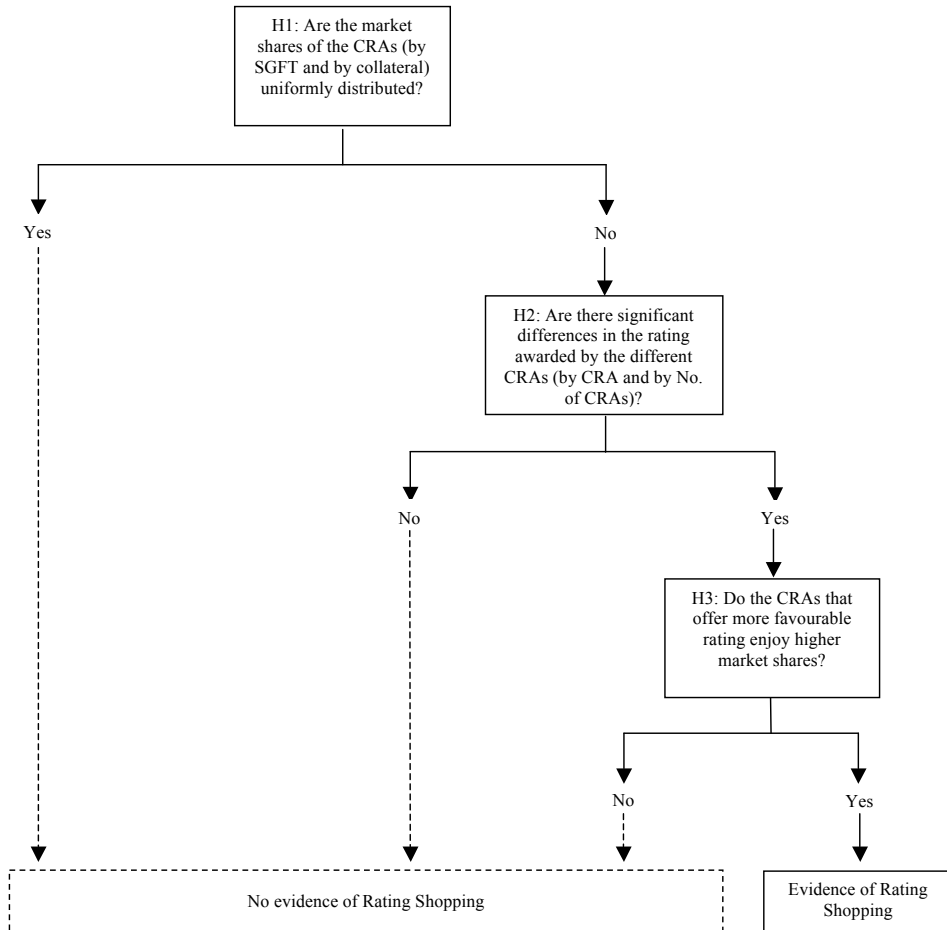
3. CHARACTERISTICS OF THE SECURITIZATION IN SPAIN AND MARKET STRUCTURE OF THE RATING AGENCIES

3.1. **Target population and information sources**

The object of study of this research includes all asset-backed bonds issued in Spain from when they were first released in 1993 until 2011, irrespective of their legal status or trading market. Specifically, all the securitization funds are considered whose issue prospectuses were registered with the Spanish Securities and Exchange Commission. The funds have been excluded whose asset-backed bonds are not aimed at being placed on the

Spanish fixed yield markets, mainly the AIAF market and, to a lesser extent, the Barcelona Stock Exchange. It should be noted that the funds that do not fulfil this condition ("private funds") are very rare and account for a residual volume as regards the total. In turn, and given that the object of our analysis is securitization by means of issuing asset-backed bonds, we have here discarded the securitization funds that issue promissory notes instead of bonds. In the same way as in the previous case, the number of funds based on promissory notes is very scarce. Thus, out of a total of 653 securitization funds, only five have been funded by means of promissory notes, compared to 648 that were via asset-backed bonds.

The set of 648 securitization funds included in our analysis have issued a total of 791,090 million euros, based on 2,156 different series of asset-backed bonds. They were established on the basis of 2,052 asset transfers during the 19 years in the study, meaning that there were 3,665 credit ratings. The ratings analysed refer to the ratings awarded to the securitization bonds at the time of issue. Information prospectuses that the Securitization Fund Managers (SGFT) filed to be verified and registered by the Spanish Securities and Exchange Commission (CNMV), associated to each of the securitization funds set up in Spain between 1993 and 2011, are the main information source used in this paper.

3.2. **Legal status and type of securitization funds set up in Spain**

There are two figures in the Spanish legal system that provide the legal basis for establishing of securitization funds or what are commonly known as *Special Purpose Vehicle* –SPV–: Mortgage Securitization Funds (MSFs or "Fondos de Titulización Hipotecaria" – hereinafter FTH–) and Asset Securitization Funds (or "Fondos de Titulización de Activos" –hereinafter FTA–). Their differential characteristics are indicated below.

The MSFs are fundamentally governed by the Unit Trusts and Mutual Trust Companies and Mortgage Securitization Funds Act 19/1992, of 7 July, and may only be set up to convey mortgages by means of the so-called Participaciones Hipotecarias (hereinafter PH). The "eligible" or prime mortgage loans that underwrite their setting up must meet the demanding requirements set by the Mortgage Market Act (Act 2/1981, of 25 March, amended by Act 41/2007, of 7 December). This legislation envisages that they are underwritten by the first mortgage on the freehold of the whole property and that, in general, the loan/value ratio (*Loan to Value* or LTV) is 60%-80%, that is, the nominal amount of the loan does not exceed 60% of the appraisal value of the mortgaged assets, or 80% if the constructing, refurbishing or purchasing of housing is being financed.

Unlike the above, the FTA, regulated by Royal Decree 926/1998, of 15 May, can be used to assign any type of credit or future or present collection right. In fact, even though the FTA can also be used to transfer mortgage loans by means of PH, Mortgage Transfer Certificates (MTCs or "Certificados de Transmisión Hipotecaria" –hereinafter CTH–) are most frequently used in the case of mortgage loans being transferred. These securities enable the transfer of mortgage loans that do not comply with the requirements of the aforementioned PH.

Even though only these two securitization fund figures legally exist, we have deemed it appropriate to differentiate explicitly a specific type of securitization funds, within the FTA: what we could call "FTA Cédulas Multicedentes –FTA-Cover Bonds or FTA-CM–",

as they are the means for the transfer of Covered Bond (CM) ("Cédulas Hipotecarias" – hereinafter CH–) and Regional Covered Bonds (RCB) ("Cédulas Territoriales" –hereinafter CT–). In fact, the name of the FTAs that have CH or CT as collateral includes the term "Covered Bonds" (–hereinafter CB–), "Note" or similar. Focusing on the most relevant sub-category[3], the CB are mortgage market securities that are backed by the whole mortgage portfolio of the transferring entity and which is not already being used as collateral for other issued mortgage securities. Therefore, CB securitization can be considered to come under CDO (*Collateralized Debt Obligations*) securitization, given that the collateral of those funds is a reduced number of CBs (usually a single security transferred by each assignor), but with a very high individual nominal amount (per covered bond). Another differentiating characteristic is that a very high number of issuers (or assignors) usually participate. In fact, there is a separate section for this type of securitization bonds on the AIAF market, referring, precisely, to the high number of entities that act as asset assignors: "Asset Securitization Bonds - Multi-seller Covered Bonds" (FTA Cédulas Multicedentes –hereinafter FTA-CM–). Moreover, the issues of FTA-CM securitization bonds have a further two differentiating characteristics. On the one hand, all the issues have had a maximum rating (AAA) and even though different series of tranches are issued for each fund, the internal structure of these issues are not designed for some tranches to be guarantees or credit enhancement over others. On the other hand, the majority of those securitization bonds have fixed-rate coupon bonds, which is not the case of the other FTAs and the FTHs, whose issues offer, in their vast majority, indexed and variable-rate coupon bonds.

In short, we believe it appropriate to begin by analyzing the securitization funds set up in Spain and their securitization bonds issued. We will start with the aforementioned classification: FTH (Mortgage Securitization Funds), FTA (Asset Securitization Funds) and FTA-CM (Asset Securitization Funds - Multi-seller Covered Bonds). Table 1 shows the nominal amount issued for each of these types of fund in each of the years studied.

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[3] CTs, which account for less than 2% of the collateral of all the FTA-CMs, are similar securities to the CHs, but they are backed by the loans and credit awarded by the issuer to the State, Autonomous Regions, local entities and dependent regional institutions.

Table 1

Volume of securitization bonds issued in Spain (in million €) classified by type of securitization funds and years

FT type	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
FTH	241	490	655	18	705	3,870	6,452	2,605	5,113	6,776	5,030	4,890	6,850	4,300	4,740	800	817	0	2,100	56,451 (7%)
FTA	0	0	0	1,935	0	0	0	4,704	2,137	8,527	20,860	26,961	37,130	61,542	110,070	98,997	64,346	45,078	72,001	554,288 (70%)
FTA-CM	0	0	0	0	0	0	0	0	4,548	3,500	12,050	18,685	25,395	23,125	22,195	34,850	16,043	17,610	2,350	180,351 (23%)
Total	241	490	655	1,953	705	3,870	6,452	7,309	11,797	18,803	37,940	50,536	69,375	88,967	137,004	134,647	81,206	62,688	76,451	791,090

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. Note: FTH means "Fondos de Titulización Hipotecaria" or Mortgage Securitization Funds; FTA means "Fondos de Titulización de Activos" or Asset Securitizations Funds; FTA-CM means "Fondos de Titulización de Activos – Cédulas Multicedentes" or Asset Securitization Funds - Multi-seller Covered Bonds.

Table 2

Accumulated and annual market share of the official rating agencies in Spain

CRA	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
DBRS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	31.1%	3.3%
FITCH	0.0%	0.0%	35.5%	0.0%	0.0%	7.8%	15.9%	26.7%	32.2%	21.7%	25.2%	25.6%	29.1%	26.9%	21.9%	19.2%	11.0%	12.6%	12.7%	21.1%
MOODY'S	66.3%	100.0%	52.7%	100.0%	87.6%	87.9%	74.6%	51.7%	53.4%	44.0%	43.2%	39.5%	37.5%	38.6%	38.6%	47.5%	51.0%	45.6%	42.4%	42.5%
SP	33.7%	0.0%	11.8%	0.0%	12.4%	4.3%	9.6%	21.6%	14.4%	34.3%	31.6%	34.9%	33.5%	34.4%	39.5%	33.4%	38.1%	37.7%	13.8%	33.1%

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011.

3.3. **Rating agencies**

Four agencies were operating on the securitization bond credit rating in Spain during the period in question. Listed in order of importance, the agencies were Moody's Investor Service (Moody's), Standard and Poor's Rating (SP), Fitch IBCA (Fitch) and DBRS. Moody's and SP began operating in Spain in 1993, Fitch in 1995 and DBRS in 2010. Table 2 shows the market share of these four agencies broken down by years. It should be noted that the ratings were awarded to the different securitization bond tranches into which the securitization funds are divided. In turn, the same agencies rated all the tranches in practically all of the securitization funds. In other words, if one or several agencies rated the senior or privileged tranches, those same agencies rated the other tranches. The market share for each agency and year has been calculated taking into account the rated volume for each agency, with respect to the total volume of rated bonds in that same year. Given that a single bond tranches is frequently rated by more than one agency, the volume of rated tranches is higher than the volume of tranches issued.

Table 2 shows that, at least three rating agencies always participated, SP, Moody's and Fitch, except in four of the five first years. As has already been indicated, the fourth agency, DBRS, entered the equation in 2010. By global market share (see last column), it can be seen that Moody's is in first place, not only as an aggregate, with an average share of 43%, but also in each of the years studied. SP is in second place, with nearly a third of the rating. It also held this second place for 17 out of the 19 years studied. Fitch was in third place in order of importance, with 21.2% of average market share. The importance of this agency was the one that most fluctuated during the period, between the second or fourth place. In fact, the appearance of DBRS, with a modest stake in 2010 (4.2%) and a key role in 2011, when it was in second place with 31% of the market share, relegated Fitch to fourth place in the last year of the study period. It can also be noted that the market share obtained by DBRS can basically be attributed to the drop in the SP share.

The first conclusion that can be reached is that the market structure of the credit rating of Spanish securitization is oligopolistic, given that there are very few companies offering this service.

3.4. **Collateral assets used in the securitization operations**

Even though the legal status of the securitization funds conditions the type of asset used as collateral, we believe it to be highly relevant to delve further into this aspect to analyze the main aggregates mobilized by means of the securitization operations in Spain.

Table 3 shows the main types of assets assigned in securitization operations. In first place, by order of importance, is the segment of the securitization bonds guaranteed by CTHs in the framework of the FTAs, representing more than one third of all issues. It should be noted that the funds that are frequently established on this type of collateral (CTH) also have PH as secured assets. In other words, that part of the portfolio of mortgage loans used as secured assets in the same securitization fund, complies with the requirements of the Mortgage Market Act to become "eligible" loans (PH) and another part does not (CTH).

CH, mortgage market securities covered by the whole of the mortgage portfolio of the issuing credit institutions are in second place. This type of collateral accounts for most of the FTA-CM.

In third and fourth place are the loans awarded to non-financial companies in general (14%) and SMEs in particular (9%). This last category would include loans to the self-employed. Loans to SMEs are credit rights deriving from loans awarded to Spanish non-financial companies that comply with the definition of an SME by the European Union or by the national legislation. These loans are frequently encouraged by the State to improve the business financing conditions. In fact, some series of securitization bonds of many funds established on loans to SMEs are underwritten by the State or the ICO, and to a less extent, with the endorsement of other institutions (above all the Generalitat de Catalunya - the Autonomous Government of Catalonia). This means that the issues are placed under better conditions, in exchange for the credit institutions undertaking to reinvest the liquidity obtained into new lines of funding for SMEs. The sum of these two last categories come to 23.6% and if the 1.3% of the securitization bond operations whose collateral is leasing operations is then added, it can be concluded that a fourth of the securitization issues are directly related to business activity. In any event, many of the loans to companies and to SMEs are in turn secured by mortgages.

The fifth major block (7%) is made up of the PH, the basis of the FTH in Spain and representing the best mortgage credits (*prime* mortgage). They are followed by personal and consumer loans (5%), which include loans to buy cars.

The mediation lines of the Official Credit Institute (2%), the financial leasing agreements (1.3%), the collection rights deriving from the Nuclear Moratorium (1.3%), the rights deriving from the Tariff Deficit (1.3%), the CT (0.04%) and credits to Public Administrations (0.4%). The "Others" category (2%) includes the CDO securitizations (treasury bonds, simple bonds, etc.), wind power collection rights, subordinated debt, etc.

It should be noted that the mortgage secured credit portfolio of the credit institutions accounted for the largest collateral used in the Spanish securitization operations. It represents all of the PH, CTH and CH segments (63.1%) of the total, plus an important part of the financing awarded to companies and SMEs (23.6% in total) that, even though it is classified in those epigraphs, can also be mortgage secured.

Table 3

Volume of securitization bonds issued in Spain (in million €) classified by type of collateral and years

Collateral	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
PH	241	490	655	18	705	3,870	6,452	2,605	5,113	6,776	5,030	4,890	6,850	4,300	4,740	800	817		2,100	56,451
CTH								847	1,356	4,247	10,478	13,113	22,196	34,578	58,217	63,775	24,381	17,852	11,814	262,851
Ent. loans								1,115		320		475	4,388	5,536	19,250	10,750	29,275	7,088	29,714	107,911
SME loans								1,537	550	3,110	7,453	8,964	6,369	12,285	10,150	11,767	1,510	3,210	3,689	70,594
P&C loans									231	850	2,630	2,085	1,000	6,888	6,432	7,944	5,641	2,064	5,696	41,460
Leasing														500	2,500	3,080	980		2,920	9,980
Admin.								1,205				1,850								3,055
ICO																		14,865		14,865
Tariff Def.																			9,906	9,906
Nucl. Mor				1,935															8,263	10,198
Others											300	474	3,178	1,756	13,521	1,682	2,559			23,469
CH									4,548	3,500	10,650	18,685	24,730	23,125	22,195	34,400	15,078	17,610	2,350	176,871
CT											1,400		665			450	965			3,480
TOTAL	241	490	655	1,953	705	3,870	6,452	7,309	11,797	18,803	37,940	50,536	69,375	88,967	137,004	134,647	81,206	62,688	76,451	791,090

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. Note: PH denotes "Participaciones Hipotecarias" (prime mortgage loans); CTH denotes "Certificados de Transmisión Hipotecaria" (Mortgage Transfer Certificates); Ent. loans denotes "Enterprise loans"; SME loans denotes "Small and Medium Enterprise loans"; P&C loans denotes Personal & Consumer loans; Admin. denotes credits to Public Administrations; Others includes the CDO securitizations (treasury bonds, simple bonds, etc.), wind power collection rights, subordinated debt, etc.; ICO denotes "Instituto Oficial de Crédito" or Official Credit Institute loans; Tariff. Def. denotes the rights deriving from the Electric Tariff Deficit; Nucl. Mor. denotes Nuclear Moratorium; CH denotes "Cédulas Hipotecarias" or the Mortgage Covered Bonds, and CT denotes "Cédulas Territoriales" or Regional Covered Bonds.

3.5. **Securitization Fund Managers (SGFT)**

Spanish legislation envisages a key role for the Mortgage Securitization Fund Manager, in particular (Act 19/1992), and to the Securitization Fund Managers (Sociedades Gestoras de Fondos de Titulización or SGFT), in general, when this type of funds were regulated (RD 926/1998). Precisely, Article 12 of that Royal Decree establishes the corporate purpose of the SGFT, specifying that their exclusive purpose is to set up, administer and the legal representation of the securitization funds. In turn, they will be tasked, as managers of external businesses, with the representation and defence of the interests of the holders of the securities issued against the funds that they administer and of their remaining ordinary creditors.

Having reached this point of the descriptive analysis of securitization in Spain, we consider it to be of interest to analyze how the securitization business is distributed among the different authorized managers in Spain. There are seven SGFTs in Spain that have been operating, practically, since the start of the historical securitization process in Spain.

1. Ahorro y Titulización, S.G.F.T., S.A. (AyT): Incorporated in 1993. There is a particular prevalence of savings banks, even though it welcomes other stakeholders in principle. It is the leading SGFT operating in Spain, in terms of the nominal amount of the established and managed securitization funds (22.8%).

2. Titulización de Activos, S.G.F.T., S.A. (TdA): Incorporated in 1992. It is the second SGFT in terms of volume of assets managed (21.1%).

3. Europea de Titulización, S.G.F.T., S.A. (ET): Incorporated in 1993. It is in third place in terms of market share (20.6%).

4. Santander de Titulización, S.G.F.T., S.A. (ST): Incorporated in 1992. It is in fourth place in terms of market share (14.2%), some way behind the first three.

5. Intermoney Titulización, S.G.F.T., S.A. (IM): Founded in 2003, even though it started trading in 2004, it is part of the CIMD, S.A. holding company. It is in fifth place as it manages 10.8% of the securitized assets.

6. Gesticaixa, S.G.F.T., S.A. (GC): Registered in the Barcelona Trade Registry in 1987. It is in last but one place in terms of market share (7.2%).

7. Gestión de Activos Titulizados, S.G.F.T., S.A. (GAT): Incorporated in 1998. With barely 3.3%, it is in last place in the SGFT ranking by market share.

4. **ANALYSIS OF THE *RATINGS* AWARDED TO THE SPANISH SECURITIZATION BONDS**

As stated in H1, the existence of uniform distributions in the market shares associated to the ratings agencies, both in terms of managers (H1a) and of types of collateral (H1b), is an excluding condition to the existence of *rating shopping*. If the managers have a certain preference for using the services of a certain rating agency to assess certain types of

securitization bonds, they could be choosing the rating agencies according to the likelihood of obtaining more favourable ratings. Should no uniform distributions be observed, that pattern would have to be checked to see whether it effectively complies with obtaining a better credit rating.

Table 4

Distribution of the rating agencies for each manager

| | | AGENCY | | | | TOTAL |
		DBRS	FITCH	MOODY'S	SP	
AYT	Observed frequency	4	101	118	94	317
	Expected frequency	6.8	70.2	142.3	97.7	317.0
	% dentro de SGFT	1.3%	31.9%	37.2%	29.7%	100.0%
ET	Observed frequency	2	50	144	83	279
	Expected frequency	6.0	61.8	125.3	85.9	279.0
	% within SGFT	0.7%	17.9%	51.6%	29.7%	100.0%
GAT	Observed frequency	1	11	37	15	64
	Expected frequency	1.4	14.2	28.7	19.7	64.0
	% within SGFT	1.6%	17.2%	57.8%	23.4%	100.0%
GC	Observed frequency	6	16	48	27	97
	Expected frequency	2.1	21.5	43.6	29.9	97.0
	% within SGFT	6.2%	16.5%	49.5%	27.8%	100.0%
IM	Observed frequency	6	24	61	38	129
	Expected frequency	2.8	28.6	57.9	39.7	129.0
	% within SGFT	4.7%	18.6%	47.3%	29.5%	100.0%
ST	Observed frequency	7	27	64	56	154
	Expected frequency	3.3	34.1	69.2	47.4	154.0
	% within SGFT	4.5%	17.5%	41.6%	36.4%	100.0%
TDA	Observed frequency	2	60	114	89	265
	Expected frequency	5.7	58.7	119.0	81.6	265.0
	% within SGFT	0.8%	22.6%	43.0%	33.6%	100.0%
Total	Observed frequency	28	289	586	402	1305
	Expected frequency	28,0	289,0	586,0	402,0	1305.0
	% within SGFT	2,1%	22,1%	44,9%	30,8%	100.0%
Chi Square Test: 56,169; p-value < 0,001.						

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. AyT: Ahorro y Titulización, S.G.F.T.; TdA: Titulización de Activos, S.G.F.T.; ET: Europea de Titulización, S.G.F.T.; ST: Santander de Titulización, S.G.F.T.; IM: Intermoney Titulización, S.G.F.T.; GC: Gesticaixa, S.G.F.T.; GAT: Gestión de Activos Titulizados, S.G.F.T. The Chi Square test associated to the uniformity in the distributions has a level of significance under 1% and therefore the null hypothesis of distribution equality. It is therefore concluded that the choice of the rating agency by the managers is not uniform.

Table 4 shows the contingency table of the "manager" and "rating agency" variables. As can be observed, the overall market share of the different agencies (see last row) is not homogenously in line with the participation of each of those agencies for each of the managers, with certain preferences being noted by the managers for different agencies, thus rejecting H1a. Even though DBRS has a global market share of 2.1%, it attains 6.2% (three times higher) among the funds set up by GestiCaixa (GC). If we focus on the most important agencies, it can be seen that Fitch, with an overall market share of 22%, reaches 32% among the funds set up by Ahorro y Titulización (AyT). This preference of AyT for Fitch has a logical consequence, low contracting by other agencies. In this case, it can be seen that AyT particularly contracts Moody's services to a lower extent (37%) than the other agencies (45%). Similarly, it can be seen that Gestión de Activos Titulizados (GAT) contracts Moody's services in an unusually intense way (13% over the mean), while it "discriminates" against the other "suppliers", particularly in the case of SP (7.5% less share than the average).

After performing a similar analysis to the one above, but crossing the choice of rating agency with the type of collateral of the securitization bonds, we obtain the contingency table represented in Table 5. It can be here noted that the distribution of the choice of the rating agency is not independent of the type of collateral securing the securitization bonds examined, thus rejecting H1b. Given that both H1a and H1b are rejected, H1 must likewise be rejected.

Given that these preferences for one or other official agency is due to whether or not there are rating shopping (a kind of rating arbitrage) business practices, the ratings awarded to the securitization operations need to be analyzed, as set out in hypothesis H2. Therefore, we will now proceed to analyze the ratings awarded for the securitization bonds issued in Spain, taking into consideration factors such as the number of rating agencies, the type of collateral or the contracting manager.

Before discussing the results obtained from analyzing the ratings, it should be noted that in order to streamline the quantitative processing of the data, it has been decided to convert the alphanumerical scale of the *ratings* used by the rating agencies to an ordinal numerical scale (Table 6), downward from a level 22 associated to a maximum score (AAA/Aaa) to a level 1 associated to a minimum credit quality (Level D or "bankrupt"), in line with other studies (Firla-Cuchra 2005; Firla-Cuchra and Jenkinson 2006; Schaber 2008; Vink and Thibeault 2008a, 2008b; Peña-Cerezo *et al*. 2014).

Table 5

Distribution of the rating agencies for each main type of collateral

| | | AGENCY | | | | TOTAL |
		DBRS	FITCH	MOODY'S	SP	
PH	Observed frequency	0	22	99	55	176
	Expected frequency	3.6	38.7	78.9	54.9	176.0
	% within COLLATERAL	0.0%	12.5%	56.3%	31.3%	100.0%
CTH	Observed frequency	7	98	199	138	442
	Expected frequency	9.1	97.1	198.0	137.8	442.0
	% within COLLATERAL	1.6%	22.2%	45.0%	31.2%	100.0%
ENT. LOANS	Observed frequency	11	23	57	31	122
	Expected frequency	2.5	26.8	54.7	38.0	122.0
	% within COLLATERAL	9.0%	18.9%	46.7%	25.4%	100.0%
SME LOANS	Observed frequency	7	47	81	50	185
	Expected frequency	3.8	40.6	82.9	57.7	185.0
	% within COLLATERAL	3.8%	25.4%	43.8%	27.0%	100.0%
P&C LOANS	Observed frequency	1	19	40	31	91
	Expected frequency	1.9	20.0	40.8	28.4	91.0
	% within COLLATERAL	1.1%	20.9%	44.0%	34.1%	100.0%
CH	Observed frequency	0	68	89	88	245
	Expected frequency	5.1	53.8	109.8	76.4	245.0
	% within COLLATERAL	0.0%	27.8%	36.3%	35.9%	100.0%
Total	Observed frequency	26	277	565	393	1261
	Expected frequency	26.0	277.0	565.0	393.0	1261.0
	% within COLLATERAL	2.1%	22.0%	44.8%	31.2%	100.0%
Chi Square Test: 66,041; p-value < 0,001.						

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. Note: PH means "Participaciones Hipotecarias" (prime mortgage loans); CTH means "Certificados de Transmisión Hipotecaria" (Mortgage Transfer Certificates); Ent. loans means "Enterprise loans"; SME loans means "Small and Medium Enterprise loans"; P&C loans means Personal & Consumer loans, and CH means "Cédulas Hipotecarias" or the Mortgage Covered Bonds. The Chi Square test associated to the uniformity in the distributions has a level of significance under 1% and therefore the null hypothesis of distribution equality. It is therefore concluded that the choice of the rating agency is not independent from the underlying type of collateral.

Table 6

Correspondence between ratings and rating scale

Scale	MOODY'S	S&P	FITCH	DBRS	
22	Aaa	AAA	AAA	AAA	Investment Grade
21	Aa1	AA+	AA+	AA high	
20	Aa2	AA	AA	AA	
19	Aa3	AA-	AA-	AA low	
18	A1	A+	A+	A high	
17	A2	A	A	A	
16	A3	A-	A-	A low	
15	Baa1	BBB+	BBB+	BBB high	
14	Baa2	BBB	BBB	BBB	
13	Baa3	BBB-	BBB-	BBB low	
12	Ba1	BB+	BB+	BB high	Speculative Grade
11	Ba2	BB	BB	BB	
10	Ba3	BB-	BB-	BB low	
9	B1	B+	B+	B high	
8	B2	B	B	B	
7	B3	B-	B-	B low	
6	Caa1	CCC+	CCC+	CCC high	
5	Caa2	CCC	CCC	CCC	
4	Caa3	CCC-	CCC-	CCC low	
3	Ca	CC	CC	CC	
2	C	C	C	C	
1	D (bankrupt)	D (bankrupt)	D (bankrupt)	D (bankrupt)	

Table 7 shows the rating of each securitization fund distinguishing the type of rating agency for the funds overall, classified by type of collateral and by number of participant rating agencies. It can be seen that the DBRS agency has never alone rated any securitization fund, but rather it has always done so simultaneously with another agency (Moody's or SP, never with Fitch). Moreover, when there were three participating agencies, DBRS was never one of them.

It should be noted that the numerical data in the cells of Table 7 refer to the weighted mean rating awarded to the funds by all the participant agencies. This is the reason that when there are three agencies (in the four columns on the right), the mean rating coincides for each of those three agencies.

Table 7

Weighted mean rating of the securitization funds when they have had one, two or three ratings, classified by type of collateral

COLLATERAL	Number of Ratings: 1				Number of Ratings: 2					Number of Ratings: 3				Robust equality mean Brown-Forsythe test
	FITCH	MOODY	SP	Mean	DBRS	FITCH	MOODY	SP	Mean	FITCH	MOODY	SP	Mean	
PH	21.87	21.72	21.65	21.71		21.77	21.69	21.68	21.70	21.79	21.79	21.79	21.79	0,746
CTH	20.79	21.52	21.32	21.35		21.46	21.39	21.47	21.37	21.54	21.54	21.54	21.54	1,569
ENT. LOANS	20.66	20.05	20.46	20.25	18.93	20.53	20.23	21.29	20.39	21.26	21.26	21.26	21.26	3,785**
SME LOANS	21.19	20.44	21.19	20.84	19.17	21.37	21.27	20.94	21.05	21.60	21.60	21.60	21.60	6,038***
P&C LOANS	20.80	20.50	21.61	20.77	18.68	20.57	21.34	21.69	21.36	21.73	21.73	21.73	21.73	8,977***
CH	22.00	22.00	22.00	22.00	20.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	a
TOTAL	21.00	21.15	21.35	21.17	19.00	21.39	21.37	21.49	21.32	21.82	21.82	21.82	21.82	47,498***

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. Note: The least important categories have been excluded. The robust equality mean significance test (Brown-Forsythe) shows if the weighted average rating (WAR) assigned to the securitization issues differs when the number of rating agencies varies considering the population as a whole, of considering the different types of collateral separately. The weighted average rating (WAR) of the issue is a single numerical rating assigned per issue, calculated using the credit rating awarded to each of the securitization tranches generated and their relative weight with respect to the total of the issue. The numerical scale used for each rating ranges from 1 (without rating) to 22 (AAA/Aaa). */**/*** denotes significance at 10%, 5% and 1% respectively. a: the rating awarded was the maximum (AAA or 22) for all the ABS backing by CH.

Before moving on to analyze the difference by agencies, it can be seen (see shaded columns) that the greater the number of agencies involved, the higher the mean rating obtained by the fund. The fact that more than one official agency is asked to rate the issues is a signal that a specific agency is not chosen for its potential advantageous assessment. Therefore, it can be seen that for the funds overall, there is a direct relationship between the mean quality of the issues and the number of ratings requested (Peña-Cerezo *et al.*, 2013). In turn, these differences are more bloated the lower the mean quality of the collateral. In other words, the number of ratings requested may be interpreted as a quality index of the ratings awarded, and of the fund as such, and this signal is stronger the lower the quality of the hedged asset. Specifically, the robust equality mean significance test (Brown-Forsythe test[4]) shows that these differences are statistically significant (p-value < 1%) for the set of the securitization funds. Depending on the collateral, these differences are not statistically significant for the case of the PH, CTH and CH, and are statistically significant for the case of the Ent. Loans, SME Loans and P&C Loans. In short, hypothesis H2b must be considered to be verified.

In short, a certain indication of differences existing in the ratings awarded can be observed, depending on the rating agency and the number of participating agencies.

Nonetheless, those differences do not corroborate in themselves the rating shopping hypothesis, given that to do so the relations between abnormally high (low) shares with the awarding of abnormally generous (poor) ratings must be related. We believe that further analysis of this relationship is required by carrying out a comparison, no longer using funds, but rather using tranches, where the differences are noted in ratings awarded by different agencies on the same tranche, thus eliminating other factors that can distort the analysis, along with the year of the issue, fund design by the manager, underlying objective differences, etc. Table 8 is therefore constructed, which calculates the mean rating awarded by each of the agencies for the securitization bond tranches that are simultaneously rated by more than one agency. Note that those mean ratings are ostensibly lower than those in the previous table (Table 7) as in that table, the weighted mean rating per fund (where the ratings of the senior tranches, that have very high ratings, are much more important than those of the mezzanine/equity tranches), while in Table 8, the arithmetic mean of all the tranches assessed by two or more agencies is calculated, without weighting each of those tranches by the volume.

Table 8 continues corroborating, considering the bonds overall and with all the collateral grouped together, that the larger the number of agencies involved, the greater the quality awarded to the tranche in question. In turn, it can be seen that when that same issue is rated by more than one agency, there are frequently rating differences according to the rating agency and the type of collateral. Only in the case of the issues underwritten by PH, the most secured collateral used in Spanish securitization, no significant differences are observed between the rating awarded when there are three rating agencies.

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[4] It was decided to use this non-parametric test given the widespread lack of normality associated to the variables studied.

Table 8

Rating of the series of securitization bonds that with more than one rating, classified by type of collateral

COLAT.	Number of ratings: 3				Number of ratings: 2											
	FITCH	MOODY	SP	Mean	FITCH	MOODY	Mean	FITCH	SP	Mean	MOODY	SP	Mean	MOODY	DBRS	Mean
PH	18.00 (S-F: -0,036)	18.25 (M-F: -1,327)	18.04 (SM: -1,100)	18.10	18.09	17.64	17.86 (-2,28**)	19.25	19.50	19.38 (-1,000)	17.22	17.37	17.29 (-1,261)			
CTH	18.03 (S-F: -3,17***)	18.04 (M-F: -0,045)	17.85 (S-M: -2,67***)	17.97	17.04	16.91	16.98 (-1,619)	17.23	17.12	17.17 (-1,95*)	17.08	17.13	17.10 (-0,080)	13.50	14.30	13.90 (-1,473)
ENT. L.	16.41 (S-F: -0,500)	15.83 (M-F: -2,464**)	16.34 (S-M: -2,76***)	16.20	15.53	15.16	15.34 (-0,563)	18.00	17.54	17.77 (-2,8***)	17.64	17.70	17.67 (-0,238)	15.48	15.36	15.42 (-0,562)
SME L.	19.14 (S-F: -2,41**)	18.70 (M-F: -2,23**)	18.78 (S-M: -0,576)	18.87	18.09	17.89	17.99 (-2,5**)	18.16	17.95	18.05 (-1,069)	17.62	17.91	17.77 (-2,5**)	19.27	19.45	19.36 (-0,447)
P&C L.	18.56 (S-F: -1,89*)	18.13 (M-F: -1,81*)	18.25 (S-M: -0,707)	18.31	17.50	17.25	17.38 (-0,680)	16.45	16.45	16.45 (-0,000)	18.00	18.07	18.03 (-0,504)	12.33	12.67	12.50 (-1,000)
Average	18.04 (S-F: -3,5***)	17.89 (M-F: -2,11**)	17.86 (S-M: -0,274)	17.93	17.25	16.97	17.11 (-3,37***)	17.82	17.71	17.76 (-2,9***)	17.51	17.64	17.57 (-1,74*)	15.15	15.45	15.30 (-1,429)

Source: Compilation based on information supplied by the prospectuses registered by CNMV associated to each of the securitization funds set up in Spain between 1993 and 2011. Note: Note: PH means "Participaciones Hipotecarias" (prime mortgage loans); CTH means "Certificados de Transmisión Hipotecaria" (Mortgage Transfer

Certificates); Ent. loans means "Enterprise loans"; SME loans means "Small and Medium Enterprise loans"; P&C loans means Personal & Consumer loans; Admin. means credits to Public Administrations; Others includes the CDO securitizations (treasury bonds, simple bonds, etc.), wind power collection rights, subordinated debt, etc.; ICO means "Instituto Oficial de Crédito" or Official Credit Institute loans; Tariff. Def. means the rights deriving from the Electric Tariff Deficit; Nucl. Mor. means Nuclear Moratorium; CH means "Cédulas Hipotecarias" or the Mortgage Covered Bonds, and CT means "Cédulas Territoriales" or Regional Covered Bonds. The least relevant categories (as the number of issues simultaneously rated by the two agencies is non-existent or very small) and the CH have been excluded (as they always have a 22 rating). Neither the bonds simultaneously rated by Fitch and DBRS (as they do not exist) nor those by SP and DBRS (as they are very scarce: 11 tranches) are included. The number given in parenthesis indicates the value of the non-parametric Wilcoxon signed ranked test to compare two related samples. When three agencies are simultaneously rating a single issue (left block), the Wilcoxon test value is given for the three possible comparatives: SP vs. Fitch (notation: S-F, in the Fitch column), Moody's vs. Fitch (notation: M-F, in the Moody's column) y SP vs. Moody's (notation: S-M, in the SP column). */**/*** denotes significance at 10%, 5% and 1% respectively.

In the SME segment (the category with more risk and lower average ratings), Fitch offers ratings significantly higher than Moody's (0.44) and SP (0.36). And effectively, both the aggregate level (+3.4%) and specifically in the case of TdA (+12.8%) or AyT (+13.1%), a certain tendency to use the Fitch services can be observed, particularly to the detriment to SP, which could be considered a practice compatible with rating shopping. In this same segment and in the same line, similar results can be observed for SP: a coincidence between significantly reduced market shares and mean ratings awarded until the market average. In short, for SME loan segments, the distributions of the market shares and of the ratings awarded by the CRAs in Spain would be compatible with the existence of rating shopping practices (verifying H3).

However, this evidence is not observed for the CTH, Enterprise loans and Personal & Consumer loans, which means that H3 has to be rejected. Thus, SP is the agency that offers rather lower ratings (0.18/0.19 points) for the mortgage transfer certificates with respect to Fitch and Moody's. From the point of view of the market shares of the agencies, no relationship can be extracted, given that even though Fitch is the agency particularly contracted by the AyT manager and it effectively provides rather higher ratings, it is also true that it does so particularly to the detriment of Moody's which is, precisely, the other agency that provides relatively favourable ratings. In other words, there are no sound indications of agency selection, in the CTH tranche, based on achieving more favourable ratings.

For the case of Enterprise loans, Moody's stands out for relatively low ratings compared to Fitch (0.58 points) and SP (0.51 points). Nonetheless, Moody's is not seen to have a low market share in this segment, with the presence of rating shopping being again ruled out.

In the case of personal loans, the greater difference (0.43) between the rating provided by Fitch (18.56) with respect to that awarded by Moody's (18.13). However, when crossing this information with the distribution of the market shares of these agencies in this collateral segment, no indication of rating arbitrage can be seen.

Finally, if all the bonds are considered aggregately, irrespective of the type of collateral, it can be seen that when the series of securitization bonds has been rated by the three agencies, Fitch gives more generous ratings than Moody's (0.15) and SP (0.18). This favourable bias in the ratings by Fitch when there are three agencies involved is upheld when there are only two rating agencies. Thus, when there are two (and not three) agencies involved simultaneously in the assessment of the same bonds, Fitch offers more favourable ratings than Moody's and SP. On an aggregate basis (not broken down by type of collateral), the differences existing between the rating awarded by Fitch compared to Moody's (0.28) and compared to SP (0,11) turn out to be significant.

In short, despite biases existing between the ratings awarded by the different agencies, there is no evidence of a rating shopping strategy on the Spanish securitization market, or at least of it being widespread to all the types of securitization bonds and managers, bearing in mind that no clear correspondence is observed between "generosity" in the assessment by an agency and its abnormally high market share, for all the collaterals analyzed. For the SME segment (the most risky) compatible patterns with rating shopping are observed; on the other hand, in the other segments the abnormally high (reduced) shares associated to the CRAs do not match with abnormally generous (reduced) awarding of ratings. In summary, unlike previous papers focused on other markets (Kiff, 2010; Benmelech and Dlugosz, 2010), our results do not clearly support the existence of rating shopping in the case of the Spanish market.

5. CONCLUSIONS

Three official credit rating agencies (four since 2010) have traditionally operated on the Spanish securitization market (1993-2011) and it is therefore considered a sector with an oligopolistic market structure.

In addition, the relationship between the number of agencies contracted to rate a single issue and the quality of the rating awarded is noteworthy. There is a direct relationship between the mean quality of the issues and the number of ratings requested. In turn, these differences are more bloated the lower the average quality of the collateral. In other words, the number of ratings requested may be interpreted as a quality index of the ratings awarded, and of the fund as such, and this signal is stronger the lower the quality of the hedged asset.

On the other hand, the global market share of the different agencies is not distributed uniformly, either in terms of the contracting securitization fund manager or in terms of the type of collateral on which the fund is established. Certain preferences by the managers are noted when choosing the rating agency which could be taken to be an indicator of the existence of the rating shopping phenomenon in the case of securitization in Spain. Once all the results have been analyzed, we can conclude that there is no widespread evidence that the preference when picking the rating agency is related to rating shopping. Despite the existence of significant differences between the ratings awarded by the different official agencies, a correspondence between the "generosity" in the rating by an agency and its abnormally high market share is not noted for all the collateral categories

The results suggest that inflation in the ratings of the securitizations in Spain during the years prior to the financial crisis could have been due to a great extent to the problems associated to the market structure of the rating agencies, to the high degree of complexity of those structured products and to the excellent historical default rates on which the credit risk was assessed during the long period of economic and credit growth, rather than a specific problem of rating shopping. Thus, only in one category analyzed (SME loans, the category with the worst average rating) has behaviour compatible with rating shopping been observed, and this phenomenon cannot be generalized to the whole securitization market in Spain. The relative simplicity of the design of the securitizations in Spain may have discouraged rating shopping.

We believe that future extensions of this analysis should include the impact that the subprime and sovereign debt crises in Spain may have had on the rating market. In turn, controlling the choice of the rating and its quality by means of models that simultaneously integrate the type of collateral and the rating agency as explanatory factors, may be a way to improve knowledge of the rating shopping phenomenon. Furthermore, including rating reviews (downgrades or upgrades) to the initial ratings in the analysis would provide a more comprehensive view of the studied phenomenon.

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