U.S. Residential-Mortgage Transfer Systems: A Data-Management Crisis*

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Abstract

This paper reviews the current state of residential-mortgage data structures from origination through the securitization supply chain. We discuss the various uses of these data, their limitations in mortgage-risk management, and the current lack of transparency in important segments of the mortgage market. We conclude that despite the size and importance of the mortgage market in the overall U.S. economy, current data-management practices make it difficult or impossible for borrowers, lenders, investors and government regulators to perform the oversight and analysis functions necessary to maintain an orderly market and to ensure fair pricing of securities backed by those mortgages.

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1 Introduction

The residential mortgage and mortgage-backed-security (RMBS) markets in the United States are very large,[1] and their operational practices have been deeply implicated in the continuing financial crisis.[2] The systems in place to manage, monitor, store, and analyze the huge volumes of data associated with these markets have not kept pace with the rapid financial developments that have occurred in the last few decades, leaving the legal status of the market increasingly unclear, and leading to many data-related problems that have exacerbated the situation for millions of borrowers who have either lost or about to lose their homes. Levitin (2010) discusses several examples, including questions about:

- Numerous failures of financial institutions with a primary focus on residential lending.
- Widespread allegations of mispricing of mortgages and mortgage-backed securities.
- The validity of the mortgage chain of title in the securitization process, which could potentially cause MBS holders to be unable to go after collateral in the event of a default (see also Hunt, Stanton, and Wallace, 2012).
- The effect of the use of the Mortgage Electronic Registration System (MERS) on the legal status of the mortgages underlying MBS (see also Hunt et al., 2012).
- Whether investors will be able to "put-back" to banks securitized mortgages on the basis of breaches of representations and warranties about the quality of the mortgages.

Combined with widespread allegations (both true and fraudulent) of lost documents, these problems strongly suggest that data management in the whole-loan and mortgage securitization industry has reached a crisis.

In this chapter, we outline the central role of data transfer and management in U.S. mortgage and mortgage-backed security markets. We point out numerous inadequacies in the availability of mortgage and mortgage-backed securities data and in the management of existing data, inadequacies that place lenders, borrowers, and MBS investors at risk. We conclude with some recommendations for improvement.

[1] The outstanding stock of U.S. residential mortgage market was $10.290 trillion at the end of the fourth quarter of 2011 (see *Federal Reserve Statistical Release*, Z.1, Flow of Funds Data, Board of Governors of the Federal Reserve System, Washington DC 20551 `http://www.federalreserve.gov/releases/z1/Current`). The outstanding stock of RMBS was $6.437 trillion at the end of the fourth quarter of 2011 (see *Inside MBS & ABS*, March 16, 2012).

[2] See, for example, Acharya and Richardson (2010) and Mian and Sufi (2009).

2 Whole-Loan Mortgage Data Structures

2.1 Contract Design and Asymmetric Information

In the U.S. residential-mortgage market, mortgage lenders set the menu of mortgage-contract features that are offered to borrowers from websites, internal loan officers, and independent mortgage brokers. The mortgage menus, or wholesale-rate sheets, are refreshed frequently, usually daily, and they define the types of loans (e.g. fixed- vs. adjustable-rate) that can be offered to borrowers on a given date as well as identifying the available combinations of mortgage contract rates, discount points payable at origination, amortization and payment structures, maturities, loan-to-value ratios, and permissible FICO scores, among many other contract features. The wholesale-rate sheets reflect the business decisions of the lender concerning the types of borrowers they are seeking to attract and the types of products that they wish to originate. During the run-up to the financial crisis, there is convincing evidence that lenders intentionally designed their mortgage menus to enable lending to borrowers who were willing to pay high mortgage coupons in exchange for greater risk metrics such as having no documentation, having a higher loan-to-value ratio, or having a low FICO score (see Berndt, Hollifield, and Sandas, 2012).

As an illustration of the choices available to borrowers on a typical mortgage menu, Table 1 shows the wholesale rate schedules for four of the largest residential-mortgage lenders in the U.S. on January 25, 2012. The schedules reported in Table 1 are for borrowers seeking conventional, conforming loans (i.e., maximum loan amounts of $417,750 with borrower credit—FICO—scores of at least 620) and who seek to lock in their quoted rate for 30 days. The schedule presents to the borrower the current menu of coupon rate and discount points (both positive and negative, or credits to lower settlement costs). The choices presented in Table 1 are for 30-year maturity, fixed-rate mortgages. Although not reported here, the rate schedules provide similar menus for 15-year maturity, fixed-rate loans and for adjustable-rate mortgages with differing resets and maturities.

As shown in Table 1, if, on January, 25, 2012, a hypothetical borrower sought a 30 year fixed rate mortgage to finance a balance of $417,000 with a guarantee to lock-in the offer for 30 days, and a contract rate of 3.375%, then Lender 1 would require an additional charge of 1.536% for an up-front interest payment (discount points) to be paid by the borrower. The discount points are paid up-front because the lender originates a loan for $417,000, but only distributes $410,594.88 of that principal.[3] Lender 2 would charge discount points of

[3]Given the required discount points, the cash-equivalent owed to the lender on the origination day is $6,405.12 ($.01536 \times \$417,000 = \$6,405.12$). Thus, the lender decreases the principal paid out to the borrower to $410,594.88 ($\$417,000 - \$6,405.12 = \$410,594.88$).

Table 1: Prime Wholesale Rate Sheet Offered on 1/25/2012 by Four of the Largest U.S. Residential Mortgage Lenders for Conventional Conforming Fixed Rate Mortgages with a 30 day Lock-in Period

	Discount Points			
Contract Rates	Lender 1 Points	Lender 2 Points	Lender 3 Points	Lender 4 Points
5.500	(5.500)			
5.375	(5.500)			
5.250	(5.500)			
5.125	(5.237)	(5.788)		
5.000	(4.905)	(5.467)		(5.000)
4.999				(4.875)
4.875	(4.520)	(4.999)	(5.539)	(4.375)
4.750	(4.263)	(4.766)	(5.539)	(4.250)
4.625	(3.953)	(4.467)	(5.539)	(4.000)
4.500	(3.551)	(4.096)	(5.539)	(3.875)
4.375	(2.996)	(3.511)	(3.515)	(3.750)
4.250	(2.429)	(2.894)	(3.063)	(2.625)
4.125	(2.073)	(2.492)	(2.680)	(2.250)
4.000	(1.610)	(2.051)	(2.261)	(1.875)
3.950			(2.050)	(1.250)
3.875	(0.954)	(1.407)	(1.560)	(0.375)
3.750	(0.204)	(0.587)	(0.830)	
3.625	0.25	(0.021)	(0.394)	
3.500	0.818	0.467	0.083	
3.375	1.536	1.143	0.880	
3.250	2.438	2.122	1.730	

.587% ($.01143 \times \$417,000 = \$4,766.31$) for the same contract and coupon, Lender 3 would charge .83% ($.0088 \times \$417,000 = \$3,669.6$), and Lender 4 will not offer a 3.375% contract rate for such a loan on this date. Similarly, if the same borrower agrees to pay a rate of 3.250% to Lender 1, the borrower would have to pay discount points at origination of 2.438% ($.02438 \times \$417,000 = \$10,166.46$) for the lender to price the loan at par. If, on the other hand, the borrower agreed to pay Lender 1 a coupon of 4.00% on January 25, the lender would pay "negative points" of $6,713.7, which is cash paid by the lender to the borrower to defray other origination costs.

In addition to the menu choices over maturity, coupon interest rates, and points, the rate schedules also delineate the borrowers' options on downpayment and mortgage coupon combinations. As shown in Table 2, on the January 25, 2012, the wholesale- rate schedule for this lender required that a borrower with a 680 FICO and a loan-to-value ratio of exactly 75%

Table 2: Prime Wholesale Rate Sheet Offered on 1/25/2012 by a Large U.S. Residential Mortgage Lenders for Conventional Conforming Fixed Rate Mortgages with a 30 day Lock-in Period

	Loan-to-Value Percentages							
	<= 60%	60.01% – 70%	70.01% – 75%	75.01 % – 80%	80.01% – 85%	85.01% – 90%	90.01% – 95%	95.01% – 97%
All Fixed Rate and Adjustable Rate Products with terms greater then 15 Years								
FICO Score								
Greater than 740	(0.250)	0.000	0.000	0.250	0.250	0.250	0.250	*0.250
720 – 739	(0.250)	0.000	0.250	0.500	0.500	0.500	*0.500	*0.500
700 – 719	(0.250)	0.000	0.750	1.000	*1.000	*1.000	*1.000	*1.000
680 – 699	0.000	0.500	1.250	1.750	*1.500	*1.250	*1.250	*1.125
660 – 679	0.000	1.000	2.125	2.625	*2.750	*2.250	*2.250	*2.000
640 – 659	0.500	1.250	2.625	3.000	NA	NA	NA	NA
620 – 639	0.500	1.500	3.000	3.000	NA	NA	NA	NA
Less than 620	NA	NA	NA	NA	NA	NA	NA	NA
(*) Only eligible and applicable to FNMA HOMEPATH Loans								

would have to add an additional 125 basis points to the contract rate.[4] The same borrower would have to add only 50 basis points if he or she was willing to lower the loan-to-value ratio to 65%.

The key intuition behind these menus is that they provide lenders with a way to resolve the well known information asymmetries between what borrowers know about themselves and what they truthfully (and credibly) reveal to lenders. The menus provide the borrowers with incentives to select combinations of mortgage characteristics that best suit their (often hidden) preferences and risk characteristics. Empirical evidence suggests that, for a given coupon rate, mortgages with low points tend to be prepaid more rapidly than mortgages with high points (see Brueckner, 1994; Hayre and Rajan, 1995; Downing, Jaffee, and Wallace, 2009), suggesting that differences among the behavioral characteristics of borrowers may be associated with the interest rate/points trade-off. Dunn and McConnell (1981) and Stanton and Wallace (1998) find that the points versus coupon trade-off sorts borrowers by type. Borrowers who plan to move soon ought to take out loans with a high periodic interest rate and low points, whereas those who plan not to prepay (except possibly for interest-rate-related reasons) should take out loans with higher points and a lower periodic interest rate. Following this logic, a borrower's choice of contract serves as a self-selection device

[4]The add-ons over an 80% loan-to-value fall due to additional charges associated with the mortgage-insurance coverage required for high loan-to-value charges. These charges would be 87.5 additional basis points of coupon interest for an 85% loan-to-value loan and 225 basis points of addition coupon interest if the loan-to-value ratio was greater than 90%.

(see Rothschild and Stiglitz, 1976), allowing the lender to learn private information about potential borrowers' mobility.[5]

Similarly, it seems likely that the menu choices over loan-to-value ratio and mortgage coupon are additional self-selection mechanisms, which reveal borrowers' likely preferences about the exercise of their default options (higher-coupon-paying borrowers with higher loan-to-value ratios would be expected to be more likely to default). These borrowers should thus be either screened out or charged higher discount points at origination, in compensation for this greater risk.

The existence of these self-selection mechanisms in the mortgage origination process also presents potential difficulties in the *ex post* application of statistical risk analytics to evaluate the expected performance, or valuation, of mortgage contracts. Although standard statistical techniques exist (see Heckman, 1979) to correct for sample-selection biases, a significant problem in the mortgage market is that loan-specific information on the magnitude of the discount points paid at origination, a crucial factor in the selection process on the mortgage menu, is not retained for either securitized loans or for loans held in the lender's portfolio. Thus, with currently available mortgage origination and performance data, the analyst does not know for a given mortgage coupon rate whether the borrower paid high or low discount points at origination. Even though the mortgage menu was specifically designed to have borrowers reveal private information about their likely mobility preferences or, possibly, their default-risk preferences through their points, coupon, and loan-to-value ratio choices, the current state of available data for mortgage analytics does not include the level of discount points that were paid by the borrower at origination. As a result, it is likely that fitted forecasts of mortgage performance suffer from uncorrected sample-selection biases arising from the correlations between the residual structure of these forecasts and an important omitted variable, the magnitude of the discount points, related to the endogenous self-selection rule.

The *ex ante* design of the origination menu is also never retained for *ex post* analytics. For this reason, it is not possible to identify the effects of errors in the relative structure of the menu either across lenders or across mortgage products for a given lender. Analysts thus cannot determine whether the menu structure itself was badly designed, e.g., mortgages were priced incorrectly relative to the choices on the menu, or whether specific contract types, e.g. option ARMs, are simply inherently bad products and attract poorly performing borrowers.

[5]Chari and Jagannathan (1989) propose a model in which individuals face an (uninsurable) risk of moving, and their expected income, conditional on moving, is higher than if they do not move. If they take out a loan with points and a below market interest rate, their average payment is high if they move and lower if they do not move. The contract thus provides partial insurance against moving and its associated income shock. However, the resulting correlation is counter to what is observed in practice.

These policy-relevant questions concerning the *ex post* performance of loan contracts are impossible to address given the current lack of information concerning the *ex ante* mortgage menu structure that led to the origination of specific loans and the types of borrowers that chose them. This, again, is another form of sample-selection bias, because the analyst cannot control for the endogenous choices of borrowers over the menus, since the needed information is simply not available. In fact, generally in the U.S. mortgage market, the wholesale-rate schedules are considered to be proprietary information by the banks.

2.2 Origination Data

Mortgage-origination data comprise the set of static information related to the mortgage at the time of the loan origination. As shown at the top of Table 3, the loan record is identified by an *internal* loan identification number. Currently, in the U.S. there is no permanent, unique, and verifiable loan identifier (like the CUSIP number in the bond market) attached to each loan at origination. Instead, loan identification numbers are re-created by the different owners and managers (such as servicers and pool trustees) of the loan origination and performance data sets. Nearly always, the loan IDs are changed as the loans travel though the mortgage supply chain (which will be described in subsequent sections of this Chapter), making it all but impossible to track a unique loan through the supply chain from its originators, via its servicers, to its securitized pool. Private-sector data providers such as Bloomberg, Corelogic, Lender Processing Services (LPS), CTSLink, and ABSNet, and public data sources such as the Home Mortgage Disclosure Act (HMDA) data also usually assign their own identification system to the loans, which again makes it difficult to compare information that purports to represent the same universe of loans. Without unique and permanent identifiers, the only way to track loans is through complicated, and often erroneous, computer matching schemes that link the information by common loan elements such as zip code, loan amount, and contract features.

The data reported in Table 3 are fully available internally to the analysts of the loan originator, the loan servicer, the GSEs, and their regulator, the Federal Housing Finance Administration (FHFA). However, only subsets of the data are available through the private data vendors who represent the primary data source to investors and analysts in the securitized mortgage bond market and to the regulatory institutions, such as the Federal Reserve. The private data providers and all of the trustees expunge nearly all of the borrower and co-borrower identification information reported in Table 3. Usually, the only remaining borrower-specific information is the original FICO score, the borrower's age, and income at origination. Similarly, the information about the property characteristics at origination is

usually limited to the city, state, and zip code of the property. It is also important to reiterate that these data include no information about the mortgage menu or about the discount points paid at origination.

Because the origination data are static, many of the data fields, such as those representing underwriting characteristics like loan-to-value ratio and the debt-service-coverage ratio, and those representing the lien and servicer status, may become stale over time. Often, risk modelers rely heavily on static information such as the original FICO score, the original loan-to-value ratio, and original debt-service coverage in modeling mortgage prepayment, default, and valuations, because updated information is not available. Another common practice is to simulate the expected path of loan-to-value ratios and property prices using house-price indices such as those of Case Shiller S&P and the FHFA. Often, these indices were constructed using geographic aggregates of transaction data for sales that do not precisely match the available loan address on the property.

There are also significant problems with access to residential house price and characteristic data in the U.S. These data are usually available in the records of the Assessor's Office in the county in which a given property is located. They are archived by Assessors Parcel Number (APN) and are difficult and time consuming to search or aggregate into larger geographic units such as census tracts or cities. Large private data vendors, such as Corelogic and Dataquick, collect the assessors' data (which are public), aggregate them into proprietary data sets, and then sell them to the capital markets. The vendor data include information on the exact property addresses, transaction prices, the names of the owner(s)/borrower(s), and other physical characteristics of each property.

Instead of working with raw house-price data, however, most financial institutions monitor expected house-price levels, or expected loan-to-value ratios, for mortgages or mortgage-backed securities using either automated valuation models (AVMs) or house-price indices. AVMs estimate property values at a specific point in time using proprietary statistical models and data samples that correspond to a subject property at either the state, Metropolitan Statistical Area (MSA), county, city, zip code or zip-code-plus-four level of geographic specificity, depending on the AVM vendor. The two most commonly used repeat-sales price indices, the Federal Housing Finance Administration[6] (FHFA) price index and the S&P-Case-Shiller price index, (see Case and Shiller, 1987, 1989), measure the rate of house price growth at either the state or MSA levels. The available AVMs and price indices are proprietary so there is no transparency concerning the details of the statistical models or the data used to calibrate the models.[7]

[6]The FHFA is the regulator for Fannie Mae and Freddie Mac.

[7]A large academic literature has evaluated the strengths and weaknesses of these indices (see Meese and Wallace, 1991; Hwang and Quigley, 2003; Gatzlaff and Haurin, 1997, 1998; Goetzmann and Peng, 2006;

Table 3: Typical Data Fields for Residential Mortgage Borrower, Property, Underwriting, and Lien Characteristics at Origination

The data fields reported in this table summarize the data fields that are available from a variety of sources including Freddie Mac, *Loan Variable Disclosure*, Bloomberg, CTSLink, and ABSNet Lewtan.

Loan Identifiers	
Internal Loan Identification Number	
Borrower Information	
Borrower/Co-Borrower Name	
Borrower/Co-Borrower Age	
Borrower/Co-Borrower Income	
Address	Street, city, county, zip code, state
Borrower FICO Score	
First-Time Home Buyer Flag	
Number of Borrowers	
Property Characteristics	
Address	Street, city, county, zip code, state
Number of Units	
Occupancy Status	Investment property, primary or secondary home.
Original Appraised Value	
Purchase Price	
Underwriting Characteristics	
Documentation Flag	Extent of Income and asset verification
Documentation Type	Income, Assets, Employment
Original Loan-to-Value Ratio	
Original Combined Loan-to-Value Ration	Sum of all indebtedness positions
Debt-to-Income Ratio	
Credit/risk grade	
Private Mortgage Ins. Flag	
PMI Provider	
Underwriting Exception	Nonstandard underwriting flag.
Third Party Originator Flag	
Originator Name	
Originator Address	
Lien and Servicer Status	
Lien position	
Servicer	
Silent Second Flag	
Senior Lien Amount	
Servicer Contact	
Originator	

Table 4 shows the typical data available on the origination characteristics of the loan. These data are again static, and are primarily designed to provide information on the contractual rules for setting up the amortization and payment schedules for the loans. To generate the actual expected cash-flow structure of a particular mortgage using these data entails: 1) a careful assembly of the contractual rules of the loan; 2) acquisition of information not directly provided in the origination data fields, such as the actual, or forecasted, time series for the designated ARM index type; and 3) a great deal of customized computer code to generate the loan-level principal and interest payments. Additionally, since residential mortgages in the U.S. always contain embedded default options and usually contain embedded prepayment options, the mechanical representation of the cash flows that is possible using only the data from Table 4 would generate very inaccurate representation of the actual expected cash-flow performance of the mortgages. To get an actuarially accurate representation of the expected cash flows of any given mortgage requires additional detailed information about the delinquency, default, and prepayment performance of representative samples of mortgages. These type of data are called performance data.

2.3 Performance Data

As shown in Table 4, the mortgage-performance data include data fields that are updated monthly. These data fields provide information on the time-series performance of the loans with respect to delinquency, default, and prepayment. Since the financial crisis, these loan-performance data fields have been expanded to include information on the loan-modification status of the affected loans. Overall, these data provide a comprehensive picture of the current status of the loans. Within the financial institutions, these data may be updated contemporaneously, though because these data come from servicers or pool trustees they are more commonly updated with one- or two-month lags. The primary use of these data is to develop forecast models for borrowers' exercise of their delinquency, default, and prepayment options. The determinants of the exercise of these options are usually associated with dynamic information about the current value of the property, the current amortization and payment structure of the loan contract, and the current characteristics of the borrower such as his/her current FICO score, income, and employment status. As previously discussed, the origination data can be used to construct the amortization and cash flow structure of each mortgage up to its stated maturity date. Mortgage valuation modeling, however, requires accurate data on the realized default and prepayment performance of similar loans in order to develop forecasts for the probability that any given loan will terminate before

Stanton and Wallace, 2009, among others).

Table 4: Typical Data Fields for Residential Mortgage Contract Characteristics at Origination

The data fields reported in this table summarize the data fields that are available from a variety of sources including Freddie Mac, *Loan Variable Disclosure*, Bloomberg, CTSLink, and ABSNet Lewtan.

Contract Characteristics	
Origination Date	
Original Interest Rate	
Original Loan Amount	
Maturity Date	
First Payment Date	Date first loan payment was due
Product Type	Fixed, ARM
Original Amortization Term	
Prepayment Penalty Flag	
Prepayment Penalty Term	
Periodic Rate Cap %	
Periodic Rate Floor %	
Periodic Payment Cap %	
Periodic Payment Floor %	
Lifetime Payment Cap %	
Max. Life of Loan Cap %	
Min. Life of Loan Cap %	
Rate Adjustment Period	
Rate Adjustment Frequency	
Negative Amortization Flag	
Max Negative Amortization %	
Initial Fixed Rate Period	For Hybrid ARMS
Gross Margin %	Number of percentage points added to the index
Look-Back Period	Number of days from the index publication to reset
Interest only Term	
Balloon Flag	
ARM Converting Flag	
HELOC Flag	
Interest Only Flag	
Pledged Asset Flag	Other assets pledged as security
ARM Index Type	
Balloon Date	
ARM Conversion Date	
Payment Frequency Indicator	
ARM Lockout Period	
Initial Interest Rate Reset Date	
Initial Payment Reset Date	
Draw Period	For Home Equity Lines of Credit
Credit Limit	For Home Equity Lines of Credit
Interest Only End Date	

the contractual maturity date. In addition, accurate mortgage valuation forecasts require time-varying information concerning the loan-to-value ratio of the loan, the value of the index (for adjustable-rate mortgages), and the FICO score of the borrower. This information is only available at origination, and for that reason it must be estimated using information from other sources.

2.4 Financial Statement and Regulatory Uses

Banks and savings and loan institutions (S&Ls) are required to make an *ex ante* choice as to whether specific mortgage loans are to be held in the "Hold-for-Investment" (HFI) portfolio or the "Hold-for Sale" portfolio. The accounting treatment for mortgage loans held in these two portfolios is different. Loans held in the "Hold-for-Sale" portfolio can be held in two forms: "Trading Securities" (TS) for loans that will be actively traded, or "Securities-Available-for-Sale" (AFS) for loans that will not immediately (but will eventually) be traded. The reporting method used for TS loans is fair value with unrealized holding gains and losses included in net income.[8] The reporting method used for the AFS loans is also fair value. However, unrealized holding gains and losses are excluded from net income.

Loans held in the HFI portfolio are usually the largest position on bank and S&L balance sheets.[9] They are reported at amortized cost and the holding gains and losses associated with these loans are unrealized for financial reporting purposes (see Spiceland et al., 2011). Instead, banks and S&Ls are required to hold reserves, called *Allowances for Loan and Lease Losses* (ALLLs), on their balance sheets in anticipation of credit losses for individually evaluated mortgage loans that are determined to be impaired and for groups of loans that are not identified as impaired. Additions to ALLLs are recorded as an accrued expense on the bank's and/or S&L's income statement and are recognized as accounting transactions indicating a likely reduction in the institution's cash flows since expected loan repayments would be anticipated to be less (see Barth and Landsmen, 2010; Laux and Leuz, 2009; Huizinga and Vaeven, 2009).

The most important required financial statement, or regulatory use, of mortgage origination and performance data, is the quarterly (or more frequent, if warranted) calculation and reporting of the ALLLs. According to the *Interagency Policy Statement on the Allowance for Loan and Lease Losses (ALLL)*,

[8]The Financial Accounting Standards Board (FASB) provides a hierarchy that prioritizes the inputs financial institutions should use when determining the fair value for loans. Level 1 is market prices. Level 2 is inputs other than market prices that are observable or are quoted for similar assets. Level 3 is unobservable inputs that reflect the entity's own assumptions about the assumptions the market would use to price the asset (see Spiceland, Sepe, and Nelson, 2011).

[9]See Huizinga and Vaeven (2009); Laux and Leuz (2009); and Barth and Landsmen (2010).

Table 5: Typical Data Fields for Residential Mortgage Monthly Performance

The data fields reported in this table summarize the data fields that are available from a variety of sources including Freddie Mac, *Loan Variable Disclosure,* Bloomberg, CTSLink, and ABSNet Lewtan.

	Field Description
Loan Identifiers	
Internal Loan Id	
Monthly Performance	
Beginning Balance	
Ending Balance	
Delinquency Status	30, 60, 90, 120, 240 days
Bankruptcy Flag	
Foreclosure Flag	
REO Flag	
Prepayment Date	First record date
Liquidation Date	First record date
Repurchase Date	First record date
Bankruptcy Date	First record date
Foreclosure Date	First record date
REO Date	First record date
Post Modification Contract	
Original Loan Balance	
Mod Balance	
Mod Principal and Interest	
Mod Rate	
Mod Capitalized Amount	
Mod Interest Forgiven	
Mod Principal Forgiven	
Mod Deferred Amount	
Mod Balloon Date	
Mod Maturity	
Mod First Payment Date	
Mod Next Due Date	
Mod Margin	

> "The ALLL represents one of the most significant estimates in an institution's financial statements and regulatory reports. Because of its significance, each institution has a responsibility for developing, maintaining, and documenting a comprehensive, systematic, and consistently applied process for determining the amounts of ALLL and the provision for loan and lease losses (PLLL). To fulfill this responsibility, each institution should ensure controls are in place to consistently determine the ALLL in accordance with GAAP, the institutions's stated policies and procedures, management's best judgment and relevant supervisory guidance." (pages 2–3)[10]

The managers and board of directors of banks and S&Ls are responsible for maintaining the ALLLs at appropriate levels and for documenting the analyses used to derive them. As part of these responsibilities, management is required to adopt and adhere to written policies and procedures that are appropriate to the size and risk of the institution and the "nature, scope, and risk of its lending activities."[11] Usually, the ALLLs are obtained using empirical models to estimate the probability of default and the losses given default for loans and/or groups of loans for a specific evaluation date and for a specific holding period, usually thirty-six months. The statistical estimates needed to compute the ALLLs are obtained using the mortgage and performance data for the loans in the HFI portfolio. The data that are typically used to estimate the ALLLs are the underwriting characteristics reported in Table 3, such as as the loan-to-value ratio, the borrower FICO score, and the geographic location of the property, and the contract characteristics reported in Table 4 that classify the loans by type. The loan performance data, reported Table 5, is required to identify the impaired and unimpaired loans using the data on the delinquency and default status of the loans.

The ALLL estimation process requires that the institution has effective loan review systems, loan classification systems, and/or credit grading systems that can accurately identify, monitor, and address asset quality problems in a timely fashion. Institutions are also required to have adequate data capture and reporting systems to supply the information necessary to support and document the ALLL estimates. The management of regulated financial institutions are required to document their evaluations and conclusions regarding the appropriateness of their estimated credit losses and the appropriateness of ALLL forecasting models. Institutions are also required to validate the ALLL statistical methodology, and this

[10]See *Interagency Policy Statement on the Allowance for Loan and Lease Losses* Office of the Comptroller of the Currency, Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, National Credit Union Administration, Office of Thrift Supervision, `http:\\www.federalreserve.gov/boarddocs/sfletters/e006/SR0617a1.pdf`

[11]See *Interagency Policy Statement on the Allowance for Loan and Lease Losses* `http:\\www.federalreserve.gov/boarddocs/sfletters/e006/SR0617a1.pdf`, p. 5.

validation process must include parties who are independent of the institution's credit approval and ALLL estimation process. Overall, the ALLL estimation process requires highly functional data storage and processing systems. These systems must allow for the verification of the accuracy and completeness of newly originated mortgage data, of mortgage data migrations from real time to historical warehousing facilities, and of mortgage data transformation processes either within different business units or in the aggregate measurement of enterprise-wide risk.

As is clear from Tables 3, 4, and 5, mortgage loan-origination and performance data are voluminous and can present significant data-management and storage challenges for financial institutions and agents in the economy, as well as in regulatory institutions that require actuarially sound mortgage-risk analytics. Currently, the management and storage of origination and performance mortgage data, and the ALLL and risk-modeling analytics that have been customized to them, are highly labor-, time-, and resource-intensive activities. They also present opportunities for inaccuracies in mapping contracting structures to cash-flow generation and then accurately accounting for expected credit losses associated with borrower exercise of their default options. These problems are likely to lead to imprecision in expected credit losses and poor quality ALLLs.[12] The purpose of ALLLs is to allow the institution to cover "expected losses," that is, loan losses that occur on average. The overall effectiveness of regulatory capital as a buffer against "unexpected shocks" is predicated on the appropriateness of the subsidiary buffer of the reserves created through the ALLLs.

3 Mortgage Data Transfer Over the Supply Chain

Prior to the financial crisis, mortgages in the U.S. traveled along two distinct supply chains: one for Freddie Mac and Fannie Mae[13] and a second for the private-label market, which usually (but not always) securitized mortgages that were ineligible for securitization by Fannie Mae and Freddie Mac. Currently, with the collapse of private-label mortgage securitization, Fannie Mae and Freddie Mac securitize nearly all of the newly originated mortgage-backed securities in the U.S.[14]

[12]Ng and Rusticus (2011) find that the quality of loan loss provisions and earnings is increasing in the strength of the mapping between loan loss provisions and current and future net charge-offs.

[13]Until September 2008, Fannie Mae and Freddie Mac were privately owned but publicly chartered financial institutions that provided default-risk insurance for pools of securitized conventional, conforming mortgages. They are known collectively as the government sponsored enterprises (GSEs). During the financial crisis, defaults in the large portfolio holding of the GSEs led to a U.S. government bail out and the GSEs were put into conservatorship in September 2008.

[14]In the first quarter of 2012, Fannie Mae and Freddie Mac accounted for 77.97% of all residential mortgage-backed security production in the United States (see *Inside MBS & ABS, April 6, 2012*).

3.1 Mortgage Data Transfer Through the GSE Supply Chain

Figure 1 presents a diagram of the two-stage process used to create multi-class Real Estate Mortgage Investment Conduit (REMIC) residential mortgage back securities.[15] Single-class mortgage-pass-through securities are created in the first stage of the process. These bonds pay out a pro-rata share of the cash flows from a pool of conventional, conforming residential mortgages.[16] The single-class pass-through bonds are issued by a special-purpose vehicle (SPV),[17] which is organized as a grantor trust[18] and is insured against default losses by either Fannie Mae or Freddie Mac, the government sponsored enterprises (GSEs). As shown in Figure 1, there are two possible channels in the first stage of the process. In one of these channels, shown as a hashed section beneath the financial institution on the left-hand side of Figure 1, the financial institution accumulates a pool of newly originated conventional, conforming mortgages and then "converts" them into an Agency pass-through of equivalent principal balance as either Freddie Mac Participation Certificates (PCs) or Fannie Mae Mortgage-Backed Securities (MBS).[19] This process of converting mortgages into MBS/PCs shifts all of the borrower default risk to either Fannie Mae or Freddie Mac, thereby transforming default risk into the risk of early return of principal to the financial institution, who is now the MBS/PC investor.[20]

Following the MBS/PC conversion process, the financial institution can either retain the MBS/PC's in its portfolio or it can sell them on the TBA (to-be-announced) forward-contract market. The TBA market is a highly organized and liquid market for the forward delivery of newly created MBS/PCs. It is the primary market channel to sell MBS/PCs,

[15]The REMIC designation is defined in the Internal Revenue Code. *See* 26 U.S.C. §§860A–860G.

[16]Conventional, conforming loans are loans with balance of $417,000 or less that meet the underwriting guidelines of Freddie Mac and Fannie Mae.

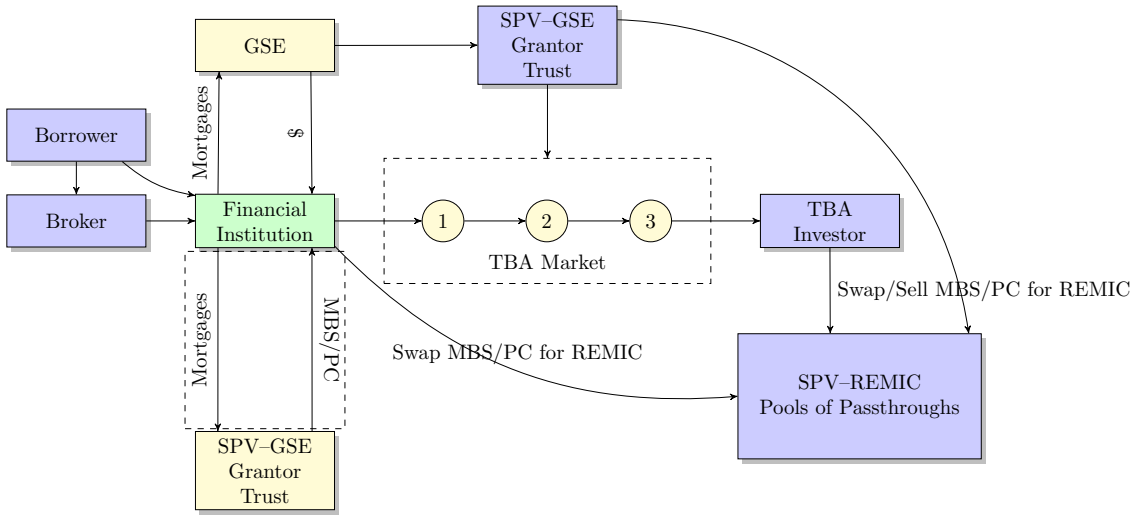
[17]An SPV can be defined as a "finite-lived, standalone financing vehicle" that "de-link[s] the credit risk of the collateral pool from the credit risk of the originator." [Bank for International Settlements, The Role Of Ratings In Structured Finance: Issues And Implications 5 (2005)].

[18]Under the Internal Revenue Code, a non-REMIC mortgage securitization vehicle, including a non-REMIC grantor trust, will be taxed as a corporation and not treated as a pass-through entity if it issues debt obligations with more than one maturity. 26 U.S.C. 7701(i). Moreover, a grantor trust may be recharacterized as a taxable entity if it can purchase new receivables, substitute receivables, or reinvest assets. Treas. Reg. 301.7701-4(c); Rev. Rul. 73-460; Rev. Rul. 78-149.

[19]Although not shown here, there is a similar conversion, or swap, process that is used for the securitization of federally insured Federal Housing Administration loans originated by private sector financial institutions. These loans are then converted into government-insured Government National Mortgage Administration (GNMA) mortgage backed securities. GNMA guarantees the timely payment of interest and principal, and the insurance is backed by the full faith and credit of the U.S. Federal government. The GNMA bonds are then traded on the TBA market.

[20]This conversion occurs because the GSE insurance fully reimburses all losses associated with any defaults on the underlying mortgages. Thus, when defaults occur the Pass-Through investors receive the full principal balance as if the borrower had instead prepaid the mortgage for other reasons. For that reason, default and prepayment are cash-flow equivalent in these pools.

Figure 1: Mortgage Transaction Flow for Securitization of Freddie Mac Participation Certificates (PCs) and Fannie Mae Mortgage Back Securities (MBS)



with an average of $302 billion of agency MBS traded each day as of the second quarter of 2011.[21] The TBA transaction process is shown in the second hashed box in the center of Figure 1. Originators use the TBA market to lock in a price for forthcoming MBS/PCs as they are originating mortgages, thus allowing lenders a mechanism to hedge or forward fund their origination pipeline.[22] Although not shown in Figure 1, there is also another very much smaller STIP (stipulated pool) market for MBS/PC that operates over-the-counter for specific pools, however, the trading volume is very limited.

As shown in the hashed box in the center of Figure 1, there are three key dates in a TBA securities trade: 1) the trade date; 2) the notification date (48-hour day); and 3) the settlement date. On the trade date there is an agreement reached on six criteria for the securities that are to be delivered: issue, maturity, coupon, face value, price and the settlement date. SIFMA has established a monthly schedule for trade date settlements. The notification date occurs two business days before the contractual settlement date and at this point the forward-contract seller, the financial institution, will communicate to the buyer the details for the MBS pools that will be delivered on the contract. Two days later, on the settlement date, the specified securities are delivered and the buyer pays the seller the agreed upon price.

Trading in the TBA market follows standards called "Good-Delivery Guidelines," that detail the rules covering quality and allowable variance between the delivered pools and the

[21] See SIFMA, *TBA Fact Sheet*, 2011.

[22] Another feature of the TBA market, is that originators can also carry out a closing sale transaction, basically a cash settlement of the contract, or they can roll the delivery commitment to a later TBA contract.

trade date criteria. The market functions, however, on the fundamental assumption that the MBS pools are homogeneous. Given the prior discussion in this chapter on the sample selection biases that are likely to be induced by the mortgage menu, mortgages with the same maturity and contract rates could have been chosen by borrowers who paid very different levels of discount points at origination and thus have very different preferences concerning their expected holding period for the loan. Stanton (1996) and Downing et al. (2009) find evidence that mortgage pools exhibit significant heterogeneity in their prepayment speeds, even for pools that appear homogeneous in other contract features such as the contract rate, loan-to-value ration, and origination date. This evidence is, of course, inconsistent with the fundamental homogeneity assumption underlying the TBA market,

The second channel to the creation of the single-class pass-through is a direct sale for cash of the mortgages to a GSE. The GSE then securitizes the mortgages through a grantor trust SPV that funds the mortgage purchase by selling the MBS/PCs forward on the TBA market. The TBA trades made through this channel follow the same trade sequence as discussed above. Here again, the forward-contract trade occurs only on the basis of the six criteria under the presumption of homogeneity in the pool performance.

A second important feature of the TBA market is that it is the only segment of the mortgage market in which there are publicly available pricing data. Daily trading prices are available for a wide range of coupons and maturities for GNMA, Freddie Mac, and Fannie Mae TBA forward contracts. These prices are widely used as a benchmark for other segments of the mortgage market for which no price data are available. Other than the TBA market, all the other mortgage trading occurs within proprietary over-the-counter markets. An important limitation of the TBA prices is that they cannot be matched to the true underlying characteristics of the mortgages in the pools. These characteristics are unobservable due to the rules for trading forward contracts and the fundamental assumption of the TBA trading platform that one MBS pool can be considered interchangeable with another. The cheapest-to-deliver option that is embedded in the forward-contract trading rules and the Downing et al. (2009) empirical results suggest, instead, that the TBA market is a market for lemons. This evidence suggests that the benefits for the liquidity of the TBA market is intrinsically linked to a tacit market acknowledgment that TBA trading prices reflect the likelihood that, on average, only the worst pools will be delivered.

In the final stage of the two-stage REMIC securitization process, market participants deliver MBS pools to the GSE in return for a pro rata share of each REMIC tranche, a swap, or through a direct sale for cash. Because market participants very often exchange equivalent *principal* positions of MBS pools for *principal* positions in the REMIC bonds, the REMIC origination market also embeds a cheapest to deliver option. As in the TBA

market, market participants maximize the value of the REMIC cheapest to deliver option by contributing low value pools, and they expect all other market participants to do the same. The assets of the REMIC SPVs are pools of the pass-through securities from numerous grantor trust pools.

The REMIC trusts, different from the Grantor Trust organizational structures, are allowed to issue multiple classes of securities with, often highly, customized cash flow structures. The primary advantage of the REMIC trusts is the diversification potential of pooling the pass-through pools and the opportunity to customize the payout structure of the REMIC bonds to meet the objectives of a broader investor base. Since the pass-through pools must issue bonds that are essentially a fractional interest in a long-term, 15 or 30 year, mortgage security, their payout structures are not attractive to investors with portfolios of short-term liabilities such as banks. The REMIC bonds can be easily customized to create both shorter-term and longer-term bonds from the cash flows of the underlying pass-through pools and thus they appeal to a broader set of investors.

3.1.1 Pass-Through and REMIC Mortgage Data Availability

Fannie Mae and Freddie Mac provide access to the underlying mortgage data for their pass-through and REMIC bonds and these data are organized by pool CUSIP. Through their website, `http://www.freddiemac.com/`, Freddie Mac provides the loan-level origination and performance data for each pool. The REMIC prospectuses also provide the CUSIPs that make up the REMIC pools, so that the disaggregate loan-level information associated with each CUSIP can be assembled. Through their website, `http://www.fanniemae.com`, Fannie Mae also provides loan-level origination and performance data for the whole loans that underlie their REMIC pools. These data are organized in a manner similar to that described in Table 3 and Table 4. The agency loan-level data again has no unique loan ID but instead uses an ID system unique to each agency. The agency data also does not include the actual loan origination date, and instead only has the "note signed date" which is the date the mortgage note was transferred into the pool. Finally, there is no information about the discount points that the borrower paid at origination.

The GSE websites also provide access to the prospectuses for each REMIC. These documents provide the legally binding rules for the payouts to the REMIC bonds, identify the pass-through CUSIPs that makeup the collateral of the REMIC, and provide summary statistics for the underlying loan collateral, among other information concerning the management of the trust and the pooling and servicing agreements with the trustee. For analysts to evaluate the performance of a specific REMIC bond, they would have to: 1) assemble the loan-level origination and performance data for each pass-through CUSIP that is included in

Table 6: Typical Data Fields for Agency Pool-level Origination and Performance

The data fields reported in this table summarize the data fields that are available from the Freddie Mac and Fannie Mae websites.

	Field Description
Cusip Number	
Pool Number	
Pool Type	
Original Pool Balance	
Current Date	
Current Balance	
Maturity Date	Last payout date on the pool
Original Weighted Average Maturity (WAC)	
Current Weighted Average Maturity (WAC)	
Original Weighted Average Coupon (WAM)	
Current Weighted Average Coupon (WAM)	
Weighted Average Loan Age (WALA)	
Current Factor	A measure of early principal terminations
Pass Through Rate	The WAC minus the servicing fee
Issue Date	Cusip issuance date
Seller Name	Seller of the mortgages
Servicer Address	
State Concentrations	
Loan Types	Fixed or Adjustable

the REMIC; 2) write and run customized computer code to generate the contractual loan-by-loan principal and interest payments for all of the loans in the deal; 3) use the prospectus to determine the cash flow allocation rules for the various classes of bond that make up the REMIC capital structure; and 4) write and run customized computer code to generate the contractual bond-level principal and interest allocations. All of these data preparation steps, precede the actual analytical procedures required to determine the "expected," or risk adjusted, cash flow structure of the bonds conditional on the performance of the embedded prepayment and default options that are exercised by borrowers.

An additional type of data that is available on the GSE websites is pool-level origination and performance data by CUSIP for both the pass-through and REMIC bonds. The pool-level data are reported as bond-level summary statistics. They are often used to model the performance of forward contracts since the underlying mortgage data are limited to the six TBA market criteria. The pool-level data are also frequently used to determine the mortgage "option adjusted spreads" which are correction factors for the spread between observed and modeled TBA forward yields. The OAS is often used as a proxy measure for the degree of MBS market illiquidity, perhaps due to supply and demand disequilibria.

Prior to the financial crisis the pool-level data were the only information available on agency pools. As shown in Table 6, the pool performance data are quite limited, providing information only about the mortgage balance weighted averages of the coupon and maturities of the underlying loans, some information about the loan originators and the state locations of the loans, and information about termination speeds, which are the performance "factors."

Overall, data availability has improved significantly in the agency pass-through and REMIC bond markets. Nevertheless, the data are not at all easy to assemble and they must be downloaded CUSIP by CUSIP from the agency websites. There is also no publicly available standardized clearing source for the data. Instead, the data must be downloaded from the two agency websites where it is available in text files without comma delimiters.

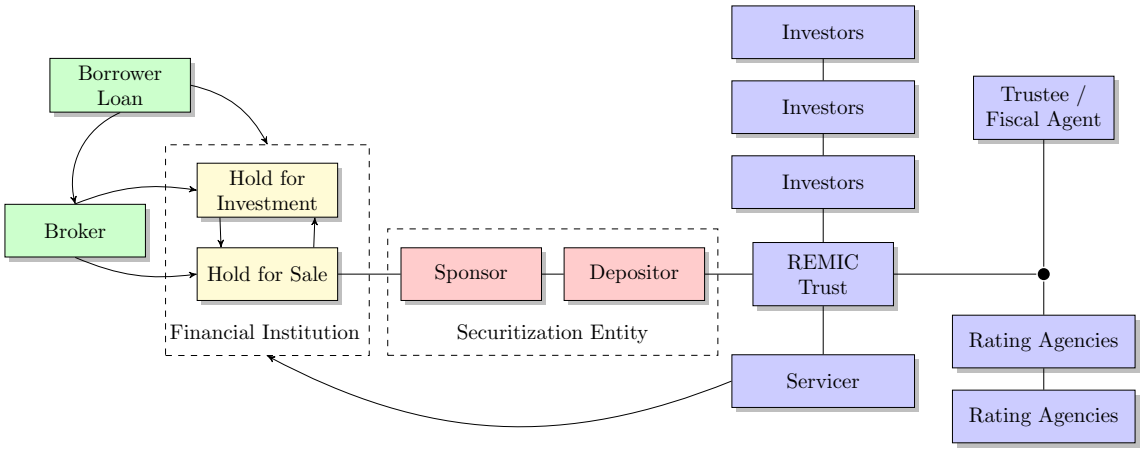
3.2 Mortgage Data Transfer through the Private-Label Supply Chain

As shown in Figure 2, the private-label mortgage securitization supply chain begins with a borrower who takes out a mortgage loan on a residential property working with an agent of the financial institution, such as a loan officer, or with a mortgage broker who receives a fee from the financial institution for their underwriting services. Both the loan officer and the independent broker make their loan offers to borrowers based upon the originator's wholesale-rate sheets, or mortgage menu, as discussed above. As discussed above, if the financial institution, shown in Figure 2, is a bank, a credit union, or a Savings and Loan institution, the institution has a choice of holding the mortgage on their balance sheet in their "Hold-for-Investment" portfolio or, alternatively, if they intend to actively trade or eventually sell the loan, they can hold the loan in their "Hold-for-Sale" portfolio. If the originator is a mortgage bank or a finance company the loans will be sold to an aggregator, who is either an investment bank or a large commercial bank, and the aggregator will initiate the rest of the securitization process with a securitization entity as shown in the second hashed box in Figure 2.

In the next stage in the securitization supply chain, the originators sell the loans to a sponsor, as shown in Figure 2.[23] The sponsor is a special-purpose stand-alone entity, often affiliated with a large financial institution or investment bank. For this reason, the sponsor is shown in Figure 2 as part of the securitization entity. The sponsor purchases the mortgages and receives the loan-by-loan origination and performance data. The sponsor structures the securitization by devising the bond payout rules and the capital structure of the bonds under

[23]The originator and the sponsor could also be the the same entity. In this case, the first transfer would be from sponsor to depositor.

Figure 2: Mortgage Transaction Flow for Private-Label Securitization



the advice of two rating agencies and the underwriter who will sell the bonds.[24] The sponsor often retains the "first-loss" bond or "Over-collateralization (OC)" bond.[25]

In the third stage in the supply chain, the sponsor initiates the securitization by selling the loans to a depositor along with warranties and representations concerning the quality of the loans. The depositor is an entity designed to be independent from the sponsor and to have no liabilities or risk of bankruptcy. The depositor then issues the certificates under Section 15 of the Securities Act, USC §77b(a)(4).

Prior to January 1, 2002, the sponsor would have sold the loans directly into the SPV. However, due to the accounting requirement that the assets (the mortgages) of the REMIC-SPV must achieve legal isolation from the seller of the loans, this one-step sale from the sponsor to the REMIC became problematic when the sponsor retained positions such as a retained interest in the "reserve fund" or credit enhancements of the SPV.[26] For this reason, starting January 1, 2002, the accounting authorities affirmed that using a two-step process,

[24]In the typical private-label structuring there would be eighteen to twenty bond classes rated from AAA to below-investment grade. There would also be one or more residual classes making up the equity position in the trust and bearing all of the tax liability. The residual class is held by the depositor.

[25]These bonds are structured to pay high yields if the pool performs well. The "first-loss" bond is the first bond to bear exposure to default risk if the pool experiences principal losses due to mortgage defaults. The OC bond receives a proportion of the cumulated excess interest (a sum aggregated from the spread differential between the coupon interest paid by the mortgages and the coupon interest earned on the senior bonds). The OC bond functions as an alternative form of subordination support to protect the senior bonds from losses.

[26]Deloitte & Touche, *Learning the Norwalk Two Step*, Heads Up, April 25, 2001, at 4. Our survey of securitization agreements suggests that it is quite common for the sponsor to retain interests in the mortgages through its ownership of certain classes of certificates. Jim Johnson & Jim Mountain, *Securitization Accounting: The Ins and Outs (And Some Do's and Don'ts) of FASB 140, FIN 46R, IAS 39 and More* (2005).

with an additional sale from sponsor to depositor, presumptively created "legal isolation."[27]

In the final stage of the chain, the depositor sells the mortgages to a REMIC trust. The depositor has ongoing responsibilities in conjunction with the trustee to appoint a successor servicer and/or to appoint a successor trustee. Usually, the depositor is a corporate affiliate of the sponsor, so it is shown in Figure 2 inside the securitization entity, along with the sponsor. The certificates of the REMIC-SPV are sold to investors, who receive payments of principal and interest following the allocation rules defined in the REMIC prospectus.

3.2.1 The Prospectus and the Prospectus Supplement: Defining the Certificate Payment Rules

The Federal National Mortgage Association Charter Act provides that securities issued or guaranteed by Fannie Mae will be considered exempt securities. The Federal Home Loan Mortgage Corporation Act contains a similar provision for securities issued by Freddie Mac.[28] These exemptions allow Fannie Mae and Freddie Mac pass-through and REMIC securities to be offered and sold without registration under the Securities Act. Although the GSEs do not file any MBS-offering materials with the SEC, they do prepare offering documents that are similar in form to the core prospectuses filed by private-label issuers in registered offerings. They then make the deal-specific information available through either a final prospectus supplement or website disclosures.

In contrast, the REMIC securities of private-label MBS are subject to the registration requirements of the federal securities laws. To offer and sell these securities, the sponsor must file a registration statement with the SEC and this statement must meet the disclosure, content, and procedural requirements of the Securities Act. When private-label issuers file a registration statement to register an issuance of a REMIC security, they typically use a "shelf registration."[29] The sponsor first files a disclosure document, known as the "core" or "base" prospectus, that outlines the parameters of the various types of REMIC securities offerings that will be conducted in the future through the sponsor's shelf registration. The registration statement will also contain the form of a prospectus supplement outlining the format of deal-specific information that will be disclosed when a shelf offering actually occurs.[30] REMIC-

[27]See Financial Accounting Standards Board, Statement of Financial Accounting Standards No. 140 §9 (2000) and FASB, Technical Bulletin No. 01-1 (2008).

[28]See 12 U.S.C. §1723c.; 12 U.S.C. §1455g.

[29]At the time of enactment of the Secondary Mortgage Market Enhancement Act (SMMEA), the SEC amended Rule 415 of the Securities Act, known as the shelf rule, to allow SMMEA-eligible mortgage-related securities to use the shelf-offering process (see Simplification of Registration Procedures for Primary Securities Offerings, Release No. 33-6964, Oct. 22, 1992, and SEC Staff Report: Enhancing Disclosure in the Mortgage-Backed Securities Markets, January, 2003, `http://www.sec.gov/news/studies/mortgagebacked.htm#secii`).

[30]Prospectus supplements are filed under Rule 424(b) of Regulation C. Under Rule 430b and Rule 430C.

SPVs could also choose not to register the securities offering and thus limit the eligible set of investors in the certificates to 144A investors.[31]

Fannie Mae and Freddie Mac post their base prospectuses and the prospectus supplements for GSE REMICs and pass-through securities on their websites. The prospectus supplements for private-label securitization can be obtained from the Security and Exchange (SEC) website (`www.sec.gov`),[32] or by subscription access to Bloomberg, CTSlink.com, or ABSnet.com. As shown in Table 7, the disclosures found in the prospectus supplements of private-label securitizations are very detailed and they are not in standardized formats. The purpose of the document is to reveal all the material characteristics of the securities offering, including the cash-flow structure of the bonds, possible risk factors, prepayment and yield considerations, as well as detailed information on the duties of the various agents involved in maintaining the smooth operation of the trust for the benefit of the certificate holders.

Table 7 presents the primary disclosure categories found in most prospectus supplements. Overall, the prospectuses are very difficult to read and are usually lengthy (often more than 300 pages of text and tables). The first page of every prospectus identifies the corporate names of the depositor, issuing entity, sponsor, servicer, and shelf name. It also provides the total pool offering amount and information on the offered bonds such as the initial principal of each class, the pass-through rates, the bond types, and the bond ratings. There is also information on the assets of the SPV, the credit enhancement for the senior bonds, and the interest-rate risk support, usually in the form of an interest-rate swap, and the identity of the swap counterparty.

As shown in Table 7, numerous risk factors are outlined for the investor. The effect of these factors on bond performance is summarized generally. The supplement also provides general information on the effects of the prepayment assumptions used to structure the deal, State and Federal tax issues, and aspects of state real-property law that may affect the performance of the bond if foreclosure or default occurs. The prospectus supplement also identifies the functions of the agents involved in the operation of the SPV on behalf of the

(See *Frequently Asked Questions about Shelf Offerings*, By Lloyd S. Harmetz and Nilene R. Evans, Capital Markets Group, Morrison & Foerster LLP, 2011. `http://www.mofo.com/files/uploads/documents/faqshelfofferings.pdf`

[31]The Rule 144A is a non-exclusive safe harbor from the registration requirements of the Securities Act and it permits resales to institutional investors that meet the criteria for "qualified institutional buyer" (QIB) of certain privately placed securities (see 17 C.F.R. §230.144A, and SEC Staff Report: Enhancing Disclosure in the Mortgage-Backed Securities Markets, January, 2003, `http://www.sec.gov/news/studies/mortgagebacked.htm#secii`).

[32]For the full search, click on "Search for Company Filings", under "Filing & Forms(EDGAR)." Under "General-Purpose Searches," click on "Companies & other filers." and then, in the "Enter your search information" dialogue box, give the issuing entity name next to "Company name" and click on "Find Companies".

certificate holders. These entities include the servicers, trustee, sponsor, depositor, securities administrator, custodian, and any swap counterparties. The information provided about the underlying mortgage collateral is in the form of aggregate summary statistics and in some cases summary statistics are also provided for subsets of the loan-data such as Adjustable Rate and Fixed Rate Mortgage products. The summary statistics focus on characteristics of the loans at origination such as the distribution of origination coupons in the pools, the maturity distributions, the geographic coverage of the pool, or pools, the loan-to-value ratio distributions, the debt-to-income ratio distributions, and the FICO score distributions. The summary statistics for the adjustable rate mortgages include information on the reset periods, the indices, average interest rate caps and floors, life-of-loan caps, margin distributions, and negative amortization distributions.

The prospectus supplement also provides very precise principal and interest distribution rules for all of the offered bond classes.[33] The bond distribution rules are often highly customized. The expected cash flows for the bonds are contingent on the subordination structure of the pool and on the performance of the underlying collateral, including the degree to which the loans in the pool are well diversified over key characteristics such as coupon, product type, house-price dynamics, and regional business cycles. However, because the underlying mortgage origination data are not available to analysts at the time of the offering, it is very difficult to estimate values for the offered bonds. The only other data available in the prospectus supplement is an analysis of the expected yields on the bonds if they are evaluated using the the deal-structuring prepayment assumptions. The prepayment sensitivity analyses provided in the supplement are usually very stylized, and thus unlikely to be sufficient to make actuarially sound investment decisions.

The pooling and servicing agreements (PSA) govern the rights and responsibilities of the parties responsible for administering the REMIC-SPV. Most of the focus of the PSA is on the responsibilities of the servicer, who is required by the agreement to use the same care as it customarily employs in servicing and administering similar mortgage loans for its own account, in accordance with customary and standard mortgage-servicing practices of mortgage lenders and loan servicers. The servicers of REMIC-SPVs are also required to cover temporary short falls in the receipt of principal and interest payments from the mortgage borrowers if the servicer determines that such advances would be recoverable. The PSAs usually stipulate that the servicer is required to deliver to the securities administrator and the depositor a servicer remittance report every month to enable the securities administrator to make the distributions to the certificate holders. The agreements also define the servicing

[33]Because the first-loss-bond, the OC bond, and the residual bonds are often not offered for sale, their class-flow distribution rules are not provided in the prospectus supplement.

Table 7: Disclosures in the Prospectus Supplement to a Private-Label REMIC Prospectus

The data fields reported in this table summarize the usual table of contents for private-label prospectus supplements.

	Field Description
Front page	Identification of total deal principal offered, offered bond classes: Initial principal by class; Calculation rules for the offered bond pass-through rates; Offered bond types; Offered bond ratings, Assets of the issuing entity, Credit enhancement, and Interest rate support.
Risk Factors	Prepayment, default, swap counterparty risk, risky loans House price risks, insufficient bond overcollateralization.
Mortgage Loan Pool	Aggregate loan summary statistics, loan underwriting guidelines
Sponsor	Described above.
Depositor	Described above.
Servicer	Services and administers the mortgage loans on behalf of the issuing entity for the benefit of the certificates.
Master Servicer	Aggregates monthly servicer reports and service oversight.
Static Pool Information	Sponsor's past securitization performance history.
Issuing Entity	Legal name of the REMIC-SPV
Securities Administrator	Preparation and distribution of the monthly service reports.
Trustee	Role defined by the pooling and serving agreement.
Custodian	Responsible for administering the loans on behalf of the REMIC and safeguarding the mortgage notes and mortgage files on behalf of the certificate holders.
Interest Rate Cap and Swap Counterparty	
Description of the Certificates	Principal and Interest distribution rules by bond class.
Pooling and Servicing Agreement	Defines Responsibilities and rights of the servicers, trustee, among others over principal and interest collections and foreclosure processes.
Prepayment and Yield Considerations	"Prepayment assumption" used to compute quoted bond yields.
Legal Aspects of the Mortgage Loans	General information about state real property law.
Federal Income Taxes, State and Local Taxes	Information on REMIC tax treatment among other tax considerations.
ERISA Considerations	General information on fiduciary responsibilities under the Employee Retirement Income Security Act (ERISA).
Legal Investment	Bond eligibility as "mortgage related securities" under Secondary Mortgage Market Enhancement Act (SMMEA).
Methods of Distribution	Allowed methods for selling the certificates.
Ratings	Information on on-going rating requirements.
Reports to Certificate Holders	Requirements for monthly pool performance reports.
Glossary of Terms	

oversight duties of the master servicer, the securities administrator, and the custodian, whose responsibilities include safeguarding the mortgage and note files.

In the wake of the financial crisis, the PSAs have generated significant criticism because of their default and loan-modification provisions. Although there is considerable variety in the wording of the PSAs across REMICs, in general the agreements require the servicer to make reasonable efforts to collect all payments called for under the contractual requirements of the individual mortgages. Under the PSAs, the servicers are often allowed to: 1) waive any late payment charge or, if applicable, any penalty interest; or 2) extend the due dates for the monthly payments for a period of not more than 180 days. The PSAs often allow considerable latitude in the servicer's choices concerning the resolution of default, or the expectation of default. These choices often include: 1) foreclosing on the mortgage loan; 2) accepting the deed to the related mortgaged property in lieu of foreclosure; 3) granting the borrower under the mortgage loan a modification or forbearance, which may consist of waiving, modifying or varying any term of such mortgage loan (including modifications that would change the mortgage interest rate, forgive the payment of principal or interest, or extend the final maturity date of the mortgage; and 4) accepting payment from the borrower of an amount less than the principal balance of the mortgage loan in final satisfaction of the mortgage loan. In all instances, the final maturity date of any mortgage loan is not extendible beyond the final scheduled Distribution Date for the Certificates.

3.2.2 REMIC Data Reporting

As previously discussed, both prior to the crisis and currently, there is no loan-level information available for the mortgage collateral held as assets in the REMIC-SPVs at the date of the issuance of the prospectus supplement or the date of the initial offering of the certificates. Instead, the supplement provides information on the aggregate principal balance at origination, the number of underlying loans, and often the average geographic composition of the pool(s). In addition, the mortgage-origination data are summarized using principal-weighted averages for: scheduled loan principal balance; gross interest rate; interest rate net of servicing fee; original FICO score; original loan-to-value ratio; combined original loan-to-value ratio; combined original loan-to-value with silent seconds; stated remaining term (months); seasoning (months); months to roll from fixed to floating; gross margin; initial rate cap; periodic rate cap; gross maximum lifetime rate; percentage of mortgage loans with silent seconds; debt to income ratio at origination; and percentage of mortgage loans with mortgage insurance. Because many of the REMIC-SPVs were composed of more than one distinct pool of mortgages, often the summary statistics would be provided for each of the sub-pools rather than for the collateral aggregates. Of course, mortgage analytics based

solely on this information would be challenging, because the full distributional effects of the loan characteristics on the payments of principal and interest could not be specified.

The prospectus supplement also contains very limited information concerning the expected effects of the embedded prepayment and default options on the bonds' cash flows and yields. As previously discussed, the supplement only provides information on the "assumed prepayment levels" that were used to determine the initial subordination structure of the bonds and to determine expected yields on each of the bond classes *without providing any information on the expected sales prices of the bond classes.*[34] The prospectus supplements are usually much less analytical concerning default. Instead the prospectuses tend to include only a general discussion of the expected risks of default among the other listed risk factors for the bond offerings.

Actually modeling the effects of the embedded default and prepayment options, of course, would require performance data. However, at the date of the offering there would only be about three to four months of the pool performance data available. With only information on the weighted averages of the loan collateral, applying risk analysis metrics would be akin to modeling the performance of one mortgage, or a defined number of identical mortgages, rather than a diversified pool of loans. These significant analysis limitations existed even though it was, and is, well known that actuarially accurate pricing of these instruments requires information concerning the covariance of contractual elements of the underlying mortgages, interest rates, and house prices and about higher moments of the relevant distributions, such as the variance of the contract elements, interest rates, and house prices.

Table 7 presents the monthly remittance data that would be available from a REMIC trustee. Most of the fields are self-evident. As shown in Table 7, the reports focus on the cash flow performance of the certificates, the performance of the principal subordination available for the outstanding bonds, the aggregate and loan-level delinquency, default, foreclosure, and prepayment status at the end of the accrual month. The remittance reports also provide information on the possible contingent payout structures for the OC bonds, which as previously discussed are primarily held by the sponsors. OC flag fields are indicators as to whether or not the various triggers that could to lead to payouts to the OC bond class are true or false. The logic of these triggers is specified in the prospectus supplement and must be accounted for to understand the cash supports that exist for the more senior offered bonds. Finally, the remittance report provides updated information concerning the level of advances paid by the servicer to bondholders for shortfalls in the receipt of interest payments

[34]One significantly missing piece of information on the the front page of the prospectus is the offered price for each of the bond classes. As previously discussed, due to the over-the-counter nature of this market pricing information is considered proprietary.

Table 8: Trustee Monthly Remittance Report Disclosures by REMIC-SPV for Pool-level and Certificate-level Performance

The data fields reported in this table summarize the usual data fields provided in the monthly REMIC Trustee Remittance Report.

	Field Description
Certificate Distribution Summary	
Bond Class & CUSIP	
Record Date	
Certificate Pass-through rate	
Beginning Certificate Balance	
Interest Distribution	
Principal Distribution	
Current Realized Losses	
Ending Certificate Balance	
Total Distribution	
Cumulative Realized Losses	
Principal Distribution Statement	
Scheduled Principal Distribution	
Unscheduled Principal Distribution	
Accretion	For Accretion bonds
Realized Loss	
Total Principal Reduction	
Ending Certificate Balance	
Ending Certificate Percentage	
Total Principal Distribution	
Interest Distribution Statement	
Interest Distribution Statement	
Accrual dates	
Accrual days	
Current Certificate Rate	
Beginning Certificate Balance	
Current Accrued Interest	
Payment of Unpaid Interest Shortfall	
Current Interest Shortfall	
Non-supported Interest Shortfall	Unfunded by Servicer
Total Interest Distribution	
Remaining Unpaid Interest Shortfall	
Ending Certificate Notional Balance	
Certificate Account Statement	
Prepayment & Curtailment Interest Shortfall	
Administrative Fees, Guaranty & Hedge Funds	
Additional Reporting	
Overcollateralization Floor, Amount, Deficiency	
Bond Split Cumulative Loss Trigger Flag	Flag to allow payouts to OC investor
Delinquency Trigger Event Flag	Flag to allow payouts to OC investor
Cumulative Loss Trigger Event Flag	Flag to allow payouts to OC investor
Aggregate & Loan-level Delinquency, Default, Foreclosure Status	

Table 9: Sources for the Trustee and Servicer Loan-level and Bond-level Remittance Data

The data sources for loan-level and bond-level performance data obtained from loan servicers and the Trustees for RMBS REMIC Trusts.

	Firm Name	Data Types
Data Vendors for Securitized Market		
	ABSNet Lewtan	Securitized Loan/bond performance
	Bloomberg	Securitized Loan/bond performance
	Corelogic (Acquired LoanPerformance)	Securitized Loan/bond performance
	Intex	Securitized Loan/bond performance
Data Vendors for Loan Servicers		
	Lender Processing Services (LPS)	Un/Securitized loan performance data
Trustee Data Sources		
	BNY Mellon	Securitized Loan/bond performance
	Citibank (See sf.citidirect.com)	Securitized Loan/bond performance
	Deutsche Bank (See tss.sfs.db.com/investpublic)	Securitized Loan/bond performance
	HSBC	Securitized Loan/bond performance
	LaSalle Bank National Association (See now, usbtrustgateway.usbank.com)	Securitized Loan/bond performance
	U.S. Bank National Association (See usbtrustgateway.usbank.com)	Securitized Loan/bond performance
	Wells Fargo Bank (See CTSlink.com)	Securitized Loan/bond performance

(or information concerning the servicer's decisions not to make such advances) as well as the periodic fees that have been paid out to the interest rate swap provider, the interest cap provider, the guaranty provider, and the administrative fees.

During the run-up to the crisis, the only data that were available to analyze the loan origination and loan performance data for securitized mortgages were the data generated as the result of the PSA data management and reporting requirements stipulated in the prospectus supplement. These activities were carried out by the servicers and trustees of the REMIC SPVs. Interestingly, the prospectus supplements never require that the monthly remittance statistics for the principal and interest payouts on the loans, the loan balances, and current loan delinquency or prepayment status be subject to external verification by accountants. Access to the remittance data are available through subscriptions to private vendors such as ABSNet Lewtan and Bloomberg, the servicers, such as LPS and LoanPerformance (now Corelogic), and the trustees, such as CTSlink. Since the vendors source their data differently, the data that they maintain and sell is in part unique from, and in part overlaps, data available from other sources. Because there was, and is, no unique loan identifier, and because only some of the sources include data on the securitization status of the loans, it was and remains nearly impossible to obtain a consistent aggregate of securitized-loan characteristics and performance in the U.S.

3.3 Legal Foundations of Transfer: Notes and Mortgage/Deeds of Trust

"Mortgages" in the U.S. are actually two contracts. The first is the promissory note, which establishes the borrower's legal obligation to repay the loan principal and interest, stipulates the periodic payment structure, defines the contractual rules for exercising the prepayment option, and identifies the conditions that would trigger default and foreclosure. States do not require that the promissory note be recorded for it to be enforceable. Although there is considerable variability in state real property law, all state statutes we have examined use recording rules to determine priority of the mortgage relative to other possible claims to the property.[35]

The second contract, the mortgage, or deed of trust, grants a lien or other security interest in the borrower's real property to the lender (or the trustee, for the lender's benefit) to secure the contractual obligations of the promissory note. State law governs the relationship between the mortgage and note.[36]

For any of the mortgage originator, the sponsor, the depositor, or the REMIC-SPV trust to have clear first priority among competing claims to own the mortgage, it must have been the first to record the mortgage. Even if an unrecorded mortgage is enforceable against the borrower, it is exposed to the risk that it would lose priority to a junior lien that was created later but recorded promptly. And even if the mortgage itself is recorded, failure to record an assignment along the chain exposes the non-recording assignee to the risk of losing priority to a subsequent assignee who does record. For these reasons, the recipients of mortgage transfers anywhere in the mortgage transfer supply chain should have a strong incentive to record their mortgages as quickly as possible.

Generally speaking, mortgage recording is carried out at the county recorder's office or equivalent in the county where the collateral is located. The recorder's offices maintain records on who owns each tax parcel in the county and records the existence of liens on these properties in the form of mortgages and trust deeds, among others. County recorders typically are elected officials and recorder's offices usually charge a fee for each document that is recorded. For the two-step private-label mortgage securitization process, as discussed above, the mortgage and the promissory note must be sold at least twice to achieve legal isolation. Under the mortgage recording system, each subsequent owner of the mortgage in the mortgage transfer supply chain would need to re-record its ownership of the mortgage at the appropriate recording office for the property. Since the two-step process shown in Figure 2

[35] *See* discussion in Appendix A.

[36] Hunt et al. (2012) discuss how recording protects mortgage owners from subsequently arising claims of ownership, and how failure to record exposes mortgage owners to such risks.

usually was completed within four months after the loans were originated, the rapid growth of private-label securitization apparently put significant pressure on the processing capacity of recorder's offices (see Peterson, 2010a; Levitin, 2010).

3.3.1 Mortgage Electronic Registration System (MERS)

In 1995, in what apparently was at least in part a response to the recording backlogs in recorder's offices, twenty-eight mortgage industry companies and organizations including: the Mortgage Bankers Association; Fannie Mae; Freddie Mac; First American Title Insurance Corporation, and large commercial lenders such as Wells Fargo Bank, Bank of America, Citimortgage, Chase, and Washington Mutual became shareholders of a closely held private corporation, called MERSCORP, Inc.[37] In 1998, a subsidiary of MERSCORP, Inc., called Mortgage Electronic Registration Systems, Inc. ("MERS, Inc.") was incorporated in Delaware.[38]

4 MERS and Mortgage Recording

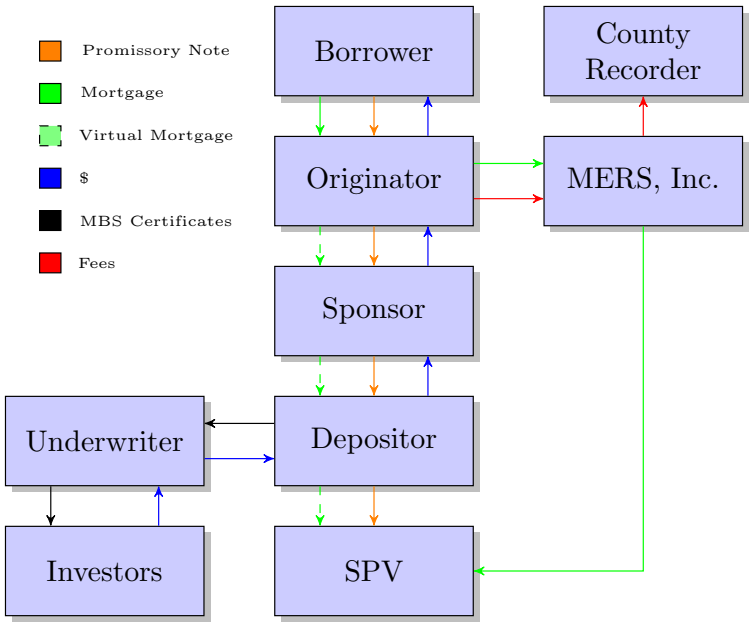
The purpose of the MERS was to serve as the "mortgagee" in the county land records for mortgages registered on the MERS system. The corporate members of MERS have entered into a membership agreement with MERS in which the member agrees that MERS, Inc. shall serve as their nominee as the mortgagee in the land records in exchange for the Member registering the mortgage on the MERS system.[39] As shown in Figure 3, MERS was designed on the assumption that as long as all the mortgage transfers within the two-step process occurred within the MERS membership list, no further recording was required because MERS remained the owner of record at all times. Thus, the county recording system prior to MERS, where at least three assignments of the mortgage would have been occurred in the typical two-step securitization process shown in Figure 2, has now collapsed into a system with only one recording of the mortgage at the recorder's office as shown in red in Figure 3. In addition, under the MERS system there is only one fee payment to the recorder, whereas internally MERS charges a two-part tariff that includes an annual membership fee for its 5,643 members and a payment for each mortgage "e-registry" ($6.95) and each mortgage transfer ($2.00). Under the new one-time MERS recording structure, the Borrower pays the

[37] `http://www.mersinc.org`

[38] *See* Certificate of Incorporation of Mortgage Electronic Registration Systems, Inc. State of Delaware Secretary of State, Division of Corporations, Filed 03:01 pm 12/30/1998, 981509524-2990193. For brevity, we refer to this entity as "MERS, Inc." throughout the paper.

[39] *See* MERS Terms and Conditions §2. `http://www.mersinc.org`.

Figure 3: Mortgage Recording with MERS



recording fee at origination.[40]

As shown in Figure 3, the mortgage remains recorded in the name of MERS, Inc. as nominee for originator and its successors in interest through all the transactions within the mortgage securitization supply chain. If the mortgagor defaults, MERS, Inc. may assign the mortgage to the securitization trustee or its servicer for foreclosure and record that assignment, but up until that time the mortgage remains recorded in the name of MERS, Inc. as nominee.[41]

Transfers of different types of property rights are subject to different formalities. Other property rights, including most property interests in real estate, as well as most security interests in personal property, are subject to recording rules. Failure to record one's ownership of such an interest can result in loss of the interest to another claimant. A "security interest" can be understood as a right to sell property to satisfy a debt if the debtor defaults.

[40] `http://www.mersinc.org`.

[41] Although MERS, Inc. is described as a "nominee" in many documents, other documents from MERS, Inc. and MERS' members suggest that MERS, Inc. is not just a nominee (see Hunt et al., 2012).

4.1 Most States Require Owners to Record Mortgage Assignments to Protect Their Interests

As shown in Appendix A, all fifty states have real property recording statutes. Conventionally, recording statutes are divided into three categories: "pure race," "race-notice," and "pure notice" (see Powell and Rohan, 2011). In a "pure race" state, an unrecorded purchase is vulnerable to any subsequent purchase where the second purchaser records first—perhaps even if the second purchaser knows of the first purchaser's interest. In a "race-notice" state, an unrecorded purchase is vulnerable to a second purchaser where the second purchaser records first and lacks notice of the first purchase. In a "pure notice" state, an unrecorded purchase is vulnerable to the second purchaser if the second purchaser has no notice of the first purchase, regardless of whether the second purchaser records. The real estate recording statutes generally cover not just transfers of possessory interests, but also the origination and assignment of mortgages. A mortgage is conventionally described as a conveyance of an interest in real estate.

In a typical MERS transaction, at least up until foreclosure the only public record of the mortgage states that MERS, Inc. is the legal owner of the mortgage on behalf of the originator and its successors up until foreclosure. There is no explicit public record of the several subsequent mortgage assignments that take place in a securitization. For example, there is no record of any assignment to the securitization trustee, at least for mortgages that are not in foreclosure. Thus, it seems that the securitization trustee's interest in the mortgage is potentially vulnerable to other entities that actually take subsequent assignments of the mortgage from the originator or MERS, Inc.

The state recording statutes for each of the top ten private-label securitization states are discussed in detail in Appendix A. Our review suggests that the real property recording statute covers mortgage assignments in nine of the ten states (all but Georgia),[42] and that mortgages are considered real property interests in nine of the ten states (all but Florida). As is clear from our survey of the top ten private-label securitization states, there is also considerable heterogeneity in the recording laws even for states that are similarly classified as "pure race," "race-notice," and "pure notice." Although uniform acts have been quite successful in some areas,[43] real property is a special case. It is linked to the territorial

[42] Although the recording provisions of Florida and Maryland appear to cover mortgage assignments in the first instance, other provisions of those states' laws that affirm the primacy of U.C.C. Article 9 may change this conclusion.

[43] See Rosinia (2012), p. 701 nn. 158–64 (identifying successful uniform-law efforts such as the Model Penal Code, Model State Administrative Procedure Act, Model Unfair Trade Practices Act, Uniform Anatomical Gift Act, and Uniform Commercial Code).

aspect of state sovereignty,[44] and states' unique interest in regulation of land continues to be recognized by the Supreme Court.[45] Coordinating a common set of mortgage-assignment rules, even across these ten states, to say nothing about the other forty states, would present political as well as technical hurdles given inherent differences in the legal foundations of each state's real-property statutes.

4.2 Data Risks to the Property Registration System

The creation of MERS apparently responded to a perception that county real-property records systems were dated, expensive, and sometimes cumbersome. The county recorders' (or equivalent county offices') systems for real property recording are designed to: 1) verify the "recordability" of the documents that are submitted either in paper form or as scanned electronic copies from trusted document preparers such as title insurance companies and financial institutions;[46] 2) scan, organize, and store the recorded documents;[47] and 3) apply Optical Character Recognition (OCR) technology to capture some fields of the scanned recorded documents to allow for electronic search, permit aggregation and evaluation of key fields; and allow for on-line display at least internally in the recorder's office.[48] The putative benefit of the MERS registration system is that their members could sell mortgage loans to others within their system without having to record each transfer. The MERS system thus eliminated the delays and costs associated with frequently recording assignments of the mortgages and the deeds of trust through the county recorders' offices.

A significant potential cost of the MERS system identified by legal scholars (see Peterson, 2010a; Levitin, 2010) concerns the significant reductions in the transparency of country records concerning the actual ownership of the real property liens and inaccuracies related to the true identities of the grantees of beneficial interests under the Deeds of Trust in the event of a Deed upon Sale.[49] Nationwide about 66 million loans have been registered and tracked on the MERS system, and about 31 million of these loans are still active.[50]

[44]See Florey (2009), pp. 1058–60 (explaining territorial nature of states' sovereign powers).

[45]See Idaho v. Coeur d'Alene Tribe of Idaho, 521 U.S. 251, 282 (1997) (to "diminish" Idaho's control over lands and waters in its territory would cause "offense to Idaho's sovereign authority and its standing in the Union").

[46]The process of verifying that the documents are properly signed and notarized. Verification of the accuracy of the recorded documents is left to law enforcement and the courts.

[47]For real property, these include: deed of trust; mortgage; notice of default; notice of trustee sale; trustee's deed; and deed in lieu of foreclosure

[48]Peterson (2010b) claims that over "...480 jurisdictions that are now offering fully electronic recording of mortgages and mortgage assignments," page 9.

[49]This document provides evidence that a foreclosure sale will be conducted by a trustee in exercise of power of sale.

[50]See Testimony of R.K. Arnold, President and CEO of MERSCORP, Inc. Before the Subcommittee on Housing and Community Opportunity, House Financial Services Committee, Nov. 18, 2010, at 11.

Coincident with the massive growth in MERS lien registrations, the loss of fee revenues from lien assignments at the local county recorder's offices, concerns, especially in California, about the lack of oversight in the expedited non-judicial foreclosure process and the large number of foreclosures that are currently taking place under this process, it appears that the informational quality of county lien registration records has degraded considerably.[51] Although MERS claims that the transfers between MERS members have been internally documented these transfers are often unknown, and in some cases unknowable to those outside the MERS system. A second set of problems is that MERS apparently lacks internal verification mechanisms such as an audit trail, has not enforced any requirement that its members update assignments on its database, and does not keep digital or hard copies of assignments (see Peterson, 2010b).

In light of these concerns, the San Francisco County Recorder's office commissioned an analysis of a sample of records, such as assignments and or Notice of Trustee's Sales, associated with foreclosures (see Pizante, Rappaport, Patterson, and Sheffield, 2012). In this study, the authors compared the foreclosing beneficial interest under the Deed of Trust that was named in the Trustee's Deed Upon Sale to the investor information found on the internal MERS system. The study results indicated that 112 of 192 subject loans had incorrect investor information on the MERS system. In addition, they found that the MERS information error rates were significantly higher than for Non-MERS recorded Trust Deeds in all categories evaluated.

This new evidence on the relative quality of the information supposedly maintained by MERS in its registration system and its current role as the supposed custodian of accurate lien and assignment information is very sobering. These results suggest that significant damage may already have occurred in publicly available real property records at the local level in the U.S. The cost of recovering from this damage and of designing modern electronic and verifiable lien assignment and transfer systems that are consistent with the real property laws of states presents a significant challenge in terms of time and cost. Ben Bernanke recently called for a federal title recording system that would accept electronic filings.[52] However, he did not indicate how this new system would be achieved or paid for. Solving this data management problem is a significant hurdle with broad public-policy implications for both the U.S. housing and mortgage markets.

[51] There is some dispute about how useful county records systems were in identifying mortgage owners before the advent of MERS (see Hunt et al., 2012).

[52] See Board of Governors of the Federal Reserve System, The U.S. Housing Market: Current Conditions and Policy Considerations, 24-25 (Jan. 4, 2012).

5 Conclusions

Despite the size and importance of the mortgage market in the overall U.S. economy, current data-management practices make it difficult or impossible for borrowers, lenders, investors and government regulators to perform the oversight and analysis functions necessary to maintain an orderly market and ensure fair pricing of securities backed by those mortgages. In this chapter, we have outlined the data available to the various participants, pointed out where these data are significantly lacking, and where it is most important that improvements be made.

A State Recording Statutes

The Appendix reviews the state recording statutes for each of the ten states with the largest numbers of mortgages securitized in private-label transactions.

A.1 California

The California Civil Code provides:

> Every conveyance of real property or an estate for years therein, other than a lease for a term not exceeding one year, is void as against any subsequent purchaser or mortgagee of the same property, or any part thereof, in good faith and for a valuable consideration, whose conveyance is first recorded, and as against any judgment affecting the title, unless the conveyance shall have been duly recorded prior to the record of notice of action.[53]

This is a "race-notice" statute, which means that a later-created lien can take precedence over an earlier-created one when:

- The earlier lien was not recorded;
- The later lienholder was without notice of the earlier lien;
- The later lienholder gave value for the lien; and
- The later lien was recorded first.[54]

[53] Cal. Civil Code §1214; see also Cal. Civil Code §1107 (grant of an estate in real property is conclusive against the grantor and against those claiming under grantor, "except a purchaser or incumbrancer who in good faith and for a valuable consideration acquires a title or lien by an instrument that is first duly recorded").

[54] 2 Roger Bernhardt, California Mortgages, Deeds of Trust, and Foreclosure Litigation §9.44, at 755.

The statute covers "every conveyance of real property or an estate for years therein"[55] It is not crystal clear from the Code that the grant or transfer of a mortgage—as opposed to, say, a fee simple interest in the land itself—is a "conveyance of real property."[56] But the courts that have addressed the issue have found that the statute covers both the grant[57] and the sale[58] of a mortgage or deed of trust.

Thus, California's recording statute seems to cover mortgage assignments, and California's courts have found—at least implicitly—that mortgages and deeds of trust are real property interests.

A.2 Florida

Florida's general recording statute, a "notice" statute,[59] covers any "conveyance, transfer, or mortgage of real property":

> No conveyance, transfer, or mortgage of real property, or of any interest therein, nor any lease for a term of 1 year or longer, shall be good and effectual in law or equity against creditors or subsequent purchasers for a valuable consideration and without notice, unless the same be recorded according to law;

[55] Cal. Civil Code §1214; *see also id.* §1107 (grant of an estate in real property is conclusive against the grantor and against those claiming under grantor, "except a purchaser or incumbrancer who in good faith and for a valuable consideration acquires a title or lien by an instrument that is first duly recorded").

[56] *See* Cal. Civil Code §658 ("Real or immovable property consists of: (1) Land; (2) That which is affixed to land; (3) That which is incidental or appurtenant to land; (4) That which is immovable by law."). It is not clear that a mortgage falls into any of these categories, although it might be "incidental to" land. *But see* Cal. Civil Code §1215 ("The term 'conveyance,' as used in Sections 1213 and 1214, embraces every instrument in writing by which any estate or interest in real property is created, aliened, mortgaged, or incumbered, or by which the title to any real property may be affected, except wills."). Assuming that a mortgage is an "interest" in real property, this language seems to sweep in the creation and transfer (alienation) of a mortgage. Even if a mortgage is not an "interest" in real property, it seems likely that a mortgage can "affect" the title to real property.

[57] *See In re* Cortez, 191 B.R. 174 (B.A.P. 9th Cir. 1995) ("In California, the deed of trust is an instrument providing security or collateral which must be perfected by recordation to bind subsequent purchasers. The deed of trust is not perfected until it is recorded in the office of the County Recorder."); *In re* Planned Protective Servs., Inc., 130 B.R. 914 (Bankr. C.D. Cal. 1991) (stating, with reference to a deed of trust, "[p]rior to recordation, an interest in real property is not effective against intervening creditors"); Frey v. Clifford, 44 Cal. 335, 342 (1872) ("[A] mortgagee, in a mortgage given for the security of a preexisting debt, is to be regarded in this state as a purchaser for valuable consideration" under the recording statute).

[58] *See* Taylor v. Weston, 77 Cal. 534, 537-38 (1888) ("Under [the recording laws'] operation the purchase of an apparent legal title may in some cases be protected by the rule as to bona fide purchasers . . . and the purchaser of a mortgage . . . is within its operation"); Schelling v. Thomas, 274 P. 755, 757 (Cal. Ct. App. 1929) ("conveyance" in Civil Code §1214 includes mortgages; where assignor mortgagee had priority over prior mortgagee because assignor was first to record, assignee who purchased mortgage from assignor also had priority over prior mortgagee).

[59] *See* Argent Mortg. Co. v. Wachovia Bank, N.A., 52 So.3d 796, 798-99 (Fla. Dist. Ct. App. 2010) ("[c]ommentators appear uniformly to categorize section 691.01 as a 'notice' type of recording statute.") (citing 2 Ralph E. Boyer, Florida Real Estate Transactions §26.02 (2010) and Florida caselaw).

nor shall any such instrument made or executed by virtue of any power of attorney be good or effectual in law or in equity against creditors or subsequent purchasers for a valuable consideration and without notice unless the power of attorney be recorded before the accruing of the right of such creditor or subsequent purchaser.[60]

Florida also has a special statute applicable specifically to mortgage assignments:

(1) An assignment of a mortgage upon real property or of any interest therein, is not good or effectual in law or equity, against creditors or subsequent purchasers, for a valuable consideration, and without notice, unless the assignment is contained in a document that, in its title, indicates an assignment of mortgage and is recorded according to law.

(2) This section also applies to assignments of mortgages resulting from transfers of all or any part or parts of the debt, note or notes secured by mortgage, and none of same is effectual in law or in equity against creditors or subsequent purchasers for a valuable consideration without notice, unless a duly executed assignment be recorded according to law.

(3) Any assignment of a mortgage, duly executed and recorded according to law, purporting to assign the principal of the mortgage debt or the unpaid balance of such principal, shall, as against subsequent purchasers and creditors for value and without notice, be held and deemed to assign any and all accrued and unpaid interest secured by such mortgage, unless such interest is specifically and affirmatively reserved in such an assignment by the assignor, and a reservation of such interest or any part thereof may not be implied.

(4) Notwithstanding subsections (1), (2), and (3) governing the assignment of mortgages, chapters 670-680 of the Uniform Commercial Code of this state govern the attachment and perfection of a security interest in a mortgage upon real property and in a promissory note or other right to payment or performance secured by that mortgage. The assignment of such a mortgage need not be recorded under this section for purposes of attachment or perfection of a security interest in the mortgage under the Uniform Commercial Code.

(5) Notwithstanding subsection (4), a creditor or subsequent purchaser of real property or any interest therein, for valuable consideration and without notice, is entitled to rely on a full or partial release, discharge, consent, joinder, subordination, satisfaction, or assignment of a mortgage upon such property made by

[60] Fla. Stat. Ann. §695.01.

> the mortgagee of record, without regard to the filing of any Uniform Commercial Code financing statement that purports to perfect a security interest in the mortgage or in a promissory note or other right to payment or performance secured by the mortgage, and the filing of any such financing statement does not constitute notice for the purposes of this section. For the purposes of this subsection, the term "mortgagee of record" means the person named as the mortgagee in the recorded mortgage or, if an assignment of the mortgage has been recorded in accordance with this section, the term "mortgagee of record" means the assignee named in the recorded assignment.[61]

The basic provision, in subsection (1), is a "notice" statute for mortgage assignments. But paragraphs (4) and (5) alter this notice rule in important ways. Paragraph (4) expressly defers to the U.C.C.'s rules on attachment and perfection of security interests in mortgages, and does so "[n]otwithstanding" subsection (1). This may mean that mortgage recording is not required to protect priority when the note is transferred according to the U.C.C. Florida's recording statute appears to be rare in having a provision that expressly defers to the U.C.C.'s rules.[62]

Paragraph (5) authorizes any purchaser of any interest in real property to rely on an assignment of mortgage by the mortgagee of record. MERS, Inc. is the mortgagee of record in MERS transactions. Thus, if Florida followed the general rule that a mortgage is an interest in real property, then a purported purchaser of the mortgage from MERS, Inc. would be entitled to rely on the assignment from MERS, Inc. Thus, this provision could actually increase the risk to bankruptcy remoteness arising from the use of MERS.

However, at least some Florida caselaw indicates that Florida departs from the general rule and does not treat a mortgage as an interest in real property.[63] Paragraph (5) thus may not be relevant to conflicts over mortgage ownership.

In sum, Florida's basic recording provision covering mortgage assignments may be superseded by the 2000 amendments to the U.C.C., and Florida may not treat mortgages as real property interests.

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[61] Fla. Stat. Ann. §701.02.

[62] A Westlaw search on July 27, 2011 in the ST-ANN-ALL database on the phrase "security interest in a mortgage" revealed that only Florida and Maryland use the term in their real property statutes.

[63] Barclay v. Robert C. Malt & Co., 985 So. 2d 53, 55 (Fla. Dist. Ct. App. 2008) (citing Martyn v. First Fed. Sav. & Loan Ass'n of W. Palm Beach, 257 So. 2d 576, 477-78 (Fla. Dist. Ct. App. 1971)).

A.3 Texas

Texas has a "notice" recording statute that applies by to any "conveyance of real property or an interest in real property or a mortgage or deed of trust":

- A conveyance of real property or an interest in real property or a mortgage or deed of trust is void as to a creditor or to a subsequent purchaser for a valuable consideration without notice unless the instrument has been acknowledged, sworn to, or proved and filed for record as required by law.
- The unrecorded instrument is binding on a party to the instrument, on the party's heirs, and on a subsequent purchaser who does not pay a valuable consideration or who has notice of the instrument.
- This section does not apply to a financing statement, a security agreement filed as a financing statement, or a continuation statement filed for record under the Business & Commerce Code.[64]

The text seems to distinguish between a mortgage and an "interest in real property," suggesting that a mortgage may not be a real property interest. Nevertheless, Texas courts have recognized that "lienholders have an equitable interest in the secured property."[65]

The Texas recording statute appears to apply to mortgage assignments, and Texas recognizes that a mortgage is a real property interest.

A.4 Illinois

Illinois has a "notice" recording statute that by its terms applies to "mortgages":

> All deeds, mortgages and other instruments of writing which are authorized to be recorded, shall take effect and be in force from and after the time of filing the same for record, and not before, as to all creditors and subsequent purchasers, without notice; and all such deeds and title papers shall be adjudged void as to all such creditors and subsequent purchasers, without notice, until the same shall be filed for record.[66]

Illinois also goes farther than some other states in that it apparently *requires* that mortgages be recorded, rather than simply making unrecorded mortgages potentially vulnerable:

[64] Tex Prop. Code §13.001.

[65] Matagorda Cty. v. Russell Law, 19 F.3d 215, 221 (5th Cir. 1994) (citing Flag-Redfern Oil. Co. v. Humble Exploration Co., 744 S.W.2d 6, 8 (Tex. 1988)).

[66] Ill. Code Ch. 765 §30.

> Deeds, mortgages, powers of attorney, and other instruments relating to or affecting the title to real estate in this state, shall be recorded in the county in which such real estate is situated; but if such county is not organized, then in the county to which such unorganized county is attached for judicial purposes. No deed, mortgage, assignment of mortgage, or other instrument relating to or affecting the title to real estate in this State may include a provision prohibiting the recording of that instrument, and any such provision in an instrument signed after the effective date of this amendatory Act shall be void and of no force and effect.[67]

Illinois courts have described a mortgage as a "real property interest."[68]

The Illinois recording statute appears to apply to mortgage assignments, and a mortgage is a real property interest under Illinois law.

A.5 New York

New York has a "race-notice" statute that covers any "conveyance of real property."

> A conveyance of real property, within the state, on being duly acknowledged by the person executing the same, or proved as required by this chapter, and such acknowledgment or proof duly certified when required by this chapter, may be recorded in the office of the clerk of the county where such real property is situated,and such county clerk shall, upon the request of any party, on tender of the lawful fees therefor, record the same in his said office. Every such conveyance not so recorded is void as against any person who subsequently purchases or acquires by exchange or contracts to purchase or acquire by exchange, the same real property or any portion thereof, or acquires by assignment the rent to accrue therefrom as provided in section two hundred ninety-four-a of the real property law, in good faith and for a valuable consideration, from the same vendor or assignor, his distributees or devisees, and whose conveyance, contract or assignment is first duly recorded, and is void as against the lien upon the same real property or any portion thereof arising from payments made upon the execution of or pursuant to the terms of a contract with the same vendor, his distributees or devisees, if such contract is made in good faith and is first duly recorded.

[67] See Ill. Code Ch. 765 §5/28.

[68] Fuller Family Holdings, Inc. v. Northern Trust Co., 863 N.E.2d 743, 751 (Ill. App. 2007) (describing mortgagee's security interest as "real property interest").

> Notwithstanding the foregoing, any increase in the principal balance of a mortgage lien by virtue of the addition thereto of unpaid interest in accordance with the terms of the mortgage shall retain the priority of the original mortgage lien as so increased provided that any such mortgage instrument sets forth its terms of repayment.[69]

Although New York's statute does not mention mortgages expressly, New York's courts have held that both the grant and the assignment of a mortgage falls within the statute's scope.[70] New York case law treats mortgages as real property interests.[71] As one recent opinion explained: "Distilled to its essence, a mortgage is a conveyance of an estate in land that is expressly intended to constitute security for some obligation., most commonly an indebtedness. It follows logically then that in order for a mortgage to be valid and subsisting, there must be an underlying obligation that is to be secured by an interest in real property, ..."[72]

New York's recording statute covers mortgage assignments, and a mortgage is a real property interest under New York law.

A.6 Arizona

Arizona has a notice statute covering "instrument[s] affecting real property":

A No instrument affecting real property gives notice of its contents to subsequent purchasers or encumbrance holders for valuable consideration without notice, unless recorded as provided by law in the office of the county recorder of the county in which the property is located.

B An instrument shall not be deemed lawfully recorded unless it has been previously acknowledged in the manner prescribed in this chapter except in the case of master mortgages as provided in §33-415.

C For purposes of this section, an instrument affecting real property containing any defect, omission or informality in the certificate of acknowledgment and which has been recorded for longer than one year in the office of the county recorder of the county in which the property is located shall be deemed to have been lawfully recorded on and after the date of its recording.

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[69] N.Y. Real Prop. Law §291.

[70] Fox v. Sizeland, 9 N.Y.S.2d 350 (N.Y. Sup. 1938).

[71] *See, e.g.*, Halstead v, Dolphy, 892 N.Y.S.2d 897, 897 (N.Y. App. Div. 2010) (treating mortgage as interest in real property); Gerow v. Sinay, 905 N.Y.S.2d 827, 831 (N.Y. Sup. 2010) (treating mortgagee as party that had "acquire[d] an interest" in real property);

[72] Beneficial Homeowner Serv. Corp. v. Steele, 2011 WL 6172, at *2 (N.Y. Sup. Ct. Jan. 7, 2011).

D An instrument affecting real property in this state executed, acknowledged and certified in any other state in accordance with the laws of that state, shall be valid and entitled to record as if executed in accordance with the laws of this state.

E Letters patent from the United States or any grant from the government, executed and authenticated pursuant to law, may be recorded without further acknowledgment.[73]

Another provision expressly requires recording of "[a]ny document evidencing... transfer of real estate or any legal or equitable interest therein, excluding leases":

> Any document evidencing the sale, or other transfer of real estate or any legal or equitable interest therein, excluding leases, shall be recorded by the transferor in the county in which the property is located and within sixty days of the transfer. In lieu thereof, the transferor shall indemnify the transferee in any action in which the transferee's interest in such property is at issue, including costs, attorney's fees and punitive damages.[74]

The grant of a mortgage is the sale of an interest in real property under Arizona law.[75] Arizona's recording statute appears to cover mortgage assignments and to affirmatively require recording, and a mortgage is a real property interest under Arizona law.

A.7 Georgia

Georgia has a race-notice statute that covers "[e]very deed conveying lands."[76]

> Every deed conveying lands shall be recorded in the office of the clerk of the superior court of the county where the land is located. A deed may be recorded at any time; but a prior unrecorded deed loses its priority over a subsequent recorded deed from the same vendor when the purchaser takes such deed without notice of the existence of the prior deed.[77]

There is some doubt about whether the statute covers mortgage assignments.[78] It appears that a mortgage is considered a real property interest under Georgia law.[79]

[73] Ariz. Rev. Stat. Ann. §33-411.

[74] Ariz. Rev. Stat. Ann. §33-411.01

[75] Owens v. M.E. Schepp Ltd. Partnership, 165 P.3d 674, 681 (Ariz. App. Div. 2007) (citing Fremming Constr. Co. v. Sec. Sav. & Loan Ass'n, 566 P.2d 315, 317 (Ariz. App. 1977), *vacated on other grounds* 182 P.3d 775 (Ariz. 2008).

[76] Ga. Code. Ann. §44-2-1.

[77] Ga. Code Ann. §44-2-1.

[78] *See* Thomas v. Hudson, 192 Ga. 622, 627 (Ga. 1940).

[79] *See In re* Jackson, 446 B.R. 608, 609 n.1 ("Under Georgia law, a creditor may acquire an interest in real estate to secure a debt either through a mortgage, which creates only a lien on the real property, or a deed to secure debt ... which transfers legal title"). *See also* Equity Inv. Partners, L.P. v. Lenz, 594 F.2d 1338, 1340 (11th Cir. 2010); Tompkins v. United States, 946 F.3d 817, 819 n.2 (11th Cir. 1991).

Georgia's recording statute, which affirmatively requires recording, may not cover mortgage assignment. A mortgage appears to be a real property interest under Georgia law.

A.8 Virginia

Virginia has a "notice" statute that covers any "deed of gift, or deed of trust, or mortgage conveying real estate":

> A. 1. Every (i) such contract in writing, (ii) deed conveying any such estate or term, (iii) deed of gift, or deed of trust, or mortgage conveying real estate or goods and chattels and (iv) such bill of sale, or contract for the sale of goods and chattels, when the possession is allowed to remain with the grantor, shall be void as to all purchasers for valuable consideration without notice not parties thereto and lien creditors, until and except from the time it is duly admitted to record in the county or city wherein the property embraced in such contract, deed or bill of sale may be. The fact that any such instrument is in the form of or contains the terms of a quit-claim or release shall not prevent the grantee therein from being a purchaser for valuable consideration without notice, nor be of itself notice to such grantee of any unrecorded conveyance of or encumbrance upon such real estate goods and chattels. The mere possession of real estate shall not, of itself, be notice to purchasers thereof for value of any interest or estate therein of the person in possession. As to goods whose possession is retained by a merchant-seller the provisions of subsection (2) of §8.2-402 of the Uniform Commercial Code shall be controlling. This section shall not apply to any security interest in goods under the Uniform Commercial
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> Code except as provided in subsection (5) of §8.9-302. [FN1] Any bill of sale or contract for the sale of goods or chattels when possession is allowed to remain with the grantor shall be deemed to be duly recorded when it is filed in the same manner as Uniform Commercial Code financing statements are filed under the criteria and in the places established by §8.9A-501 as if the grantor were a debtor and the grantee a secured party. A recordation under the provisions of this section shall, when any real estate subject to the lien of any such contract has been annexed to or merged with an adjoining city subsequent to such docketing, be deemed to have been recorded in the proper clerk's office of such city.
>
> 2. The clerk of each court in which any such instrument is by law required to be recorded shall keep a daily index of all such instruments admitted to record in his office, and, immediately upon admission of any such instrument to record,

the clerk shall index the same either in the daily index or the appropriate general index of his office. All instruments indexed in the daily index shall be indexed by the clerk in the appropriate general index within 90 days after admission to record. During the period permitted for transfer from the daily index to the general index, indexing in the daily index shall be a sufficient compliance with the requirements of this section as to indexing.

3. a. In any circuit court in which any such instrument required to be recorded is not recorded on the same day as delivered, the clerk shall install a time stamp machine. The time stamp machine shall affix the current date and time of each delivery of any instrument delivered to the clerk for recording that is not immediately recorded and entered into the general or daily index.

b. In the event there is no time stamp machine, or it is not functioning, the clerk shall designate an employee to affix the current date and time of each delivery of any instrument delivered to the clerk for recording.

c. In any circuit court in which instruments required to be recorded are not recorded on the same day as delivered, for purposes of subdivision 1 of this subsection, the term "from the time it is duly admitted to record" shall be presumed to be the date and time affixed upon the instrument by the time stamp machine or affixed by the clerk in accordance with subdivision 3 b of this subsection unless the clerk determines that the applicable requirements for recordation of the instrument have not been satisfied.

d. The provisions of subdivision 3 shall not apply to certificates of satisfaction or partial satisfaction or assignments of deeds of trust delivered to the clerk's office other than by hand.

B. A credit line deed of trust, recorded pursuant to §55-58.2, shall have validity and priority over any (i) contract in writing, deed, conveyance or other instrument conveying any such estate or term subsequently recorded or (ii) judgment subsequently docketed as to all advances made under such credit line deed of trust from the date of recordation of such credit line deed of trust, regardless of whether or not the particular advance or extension of credit has been made or unconditionally committed at the time of delivery or recordation of such contract in writing, deed or other instrument or the docketing of such judgment. Any judgment creditor shall have the right to give the notice contemplated by §55-58.2 and from the day following receipt of such notice, the judgment as docketed shall have priority over all subsequent advances made pursuant to the credit line deed of trust except those which have been unconditionally and irrevocably committed

> prior to such date. Mechanics' liens created under Title 43 shall continue to enjoy the same priority as created by that title. Purchase money security interests in goods and fixtures shall have the same priority as provided in §8.9A-317 et seq.[80]

The statute appears to cover assignments of mortgages, and the text suggests that a mortgage is a real estate interest under Virginia law.

A.9 Michigan

Michigan has a race-notice statute that covers any "conveyance of real estate":

> Every conveyance of real estate within the state hereafter made, which shall not be recorded as provided in this chapter, shall be void as against any subsequent purchaser in good faith and for a valuable consideration, of the same real estate or any portion thereof, whose conveyance shall be first duly recorded. The fact that such first recorded conveyance is in the form or contains the terms of a deed of quit-claim and release shall not affect the question of good faith of such subsequent purchaser, or be of itself notice to him of any unrecorded conveyance of the same real estate or any part thereof.[81]

Under Michigan law, "a mortgage represents an interest in real property contingent on the failure of the borrower to repay the lender."[82] The grant of a mortgage is a "conveyance" covered by the recording laws[83] as is a mortgage assignment.[84]

Thus, Michigan's recording statute covers mortgage assignments, and a mortgage is a real property interest under Michigan law.

A.10 Maryland

Maryland has a "race-notice" statute that covers "[e]very recorded deed or other instrument.":

> Every recorded deed or other instrument takes effect from its effective date as against the grantee of any deed executed and delivered subsequent to the effective date, unless the grantee of the subsequent deed has:

[80] Va. Code Ann. §55-96.

[81] Mich. Comp. Laws §565.29.

[82] Residential Funding Co. v. Saurman, 2011 WL 1516819 (Mich. Ct. App. April 21, 2011) (unnumbered page); *see also id.* ("The indebtedness, i.e., the note, and the mortgage are two different things.").

[83] Stover v. Bryant & Detwiler Imp. Corp., 45 N.W.2d 364, 365 (Mich. 1951); *see also* Mich. Comp. Laws §565.35.

[84] Qual-Prop LLC v. Chase Manhattan Mortgage Corp., 2005 WL 3501586, at *1-*2 (Mich. Ct. App. Dec. 22, 2005).

(1) Accepted delivery of the deed or other instrument:

(i) In good faith;

(ii) Without constructive notice under §3-202; and

(iii) For a good and valuable consideration; and

(2) Recorded the deed first.[85]

Some judicial authority indicates that the recording statute covers mortgages.[86]

Maryland has a statutory provision that may affirm the primacy of Article 9, but this is unclear:

(a) Every deed which by any other writing appears to have been intended only as security for payment of an indebtedness or performance of an obligation, though expressed as an absolute grant is considered a mortgage. The person for whose benefit the deed is made may not have any benefit or advantage from the recording of the deed, unless every other writing operating as a defeasance of it, or explanatory of its being intended to have the effect only of a mortgage, also is recorded in the same records at the same time.

(b) Subsection (a) of this section is not applicable to the grant of a security interest in a mortgage by a mortgagee, or one of several mortgagees, or any assignee of his interest in a mortgage as security for payment of an indebtedness or performance of an obligation. Such a transaction is governed by Title 9 of the Maryland Uniform Commercial Code.[87]

Section 7-101(b) apparently covers only "the grant of a security interest in a mortgage. . . as security for payment of an indebtedness of performance of an obligation." On its face, this seems to refer only to grants of true security interests in mortgages, not to sales.[88]

It appears that Maryland's recording statute probably covers mortgage assignments, and that a mortgage is a real property interest under Maryland law.[89]

[85] Md. Real Prop. Code §3-203.

[86] See Bourke v. Crick, 304 F.2d 501, 503, 505 n.12 (4th Cir. 1962).

[87] Md. Real Prop. Code §7-101.

[88] Certainly, the distinction between the grant of a security interest and a sale has been challenged by commentators, and current Article 9 treats the sale of a promissory note as a type of grant of a security interest. Nevertheless, the "as security for payment" language suggests that a distinction is intended here.

[89] General Ins. Co. v. United States Ins. Co., 10 Md. 517 (1857).

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