Article Title: ARCHIVE | Criteria | Insurance | Specialty: New U.S. Mortgage Insurance Model Addresses Industry's Increased Acceptance Of Lower-Quality Mortgages Data: (EDITOR'S NOTE: — This article has been superseded by "Credit Rating Model: Mortgage Insurance Capital Model," published March 2, 2015.) Standard & Poor's has developed a new risk-based capital adequacy model for U.S. domestic residential mortgage insurers (MIs). The new model replaces one that has been in use since 1996 and represents an evolution of the old one rather than a radical change from it. It addresses the need to more accurately assess the MI industry's acceptance of mortgages of lower quality than the traditional good, 'A' quality loans that had almost been its sole currency. At the same time, the model takes advantage of more sophisticated analysis that has been applied to lender credit decisions in recent years. The major difference between the old and new models—the incorporation of credit scoring in the new model—embodies these two ideas. This article will: Describe the basic characteristics of the new model, comparing it with the old one. Explain the reasons for the changes. Summarize the ratings criteria and relevant facets of the structure of the industry that give rise to it. New Model Description And Comparison With Old Model Both models are iterations (a composite of the new model is available upon request) of the sources and uses of funds developed by an MI over 10 years under a scenario (the stress scenario) incorporating the runoff of the MI's risk in force at the outset of the period under extremely high borrower default rates. Major sources of funds are initial capital, premium income, and investment income. Major uses are losses less reinsurance benefits and general and administrative expenses. An MI rated 'AAA' must develop sources of funds over the period that at least equal uses. An MI rated 'AA' must develop sources that equal at least seven-eighths of uses. For conservatism, the models are based on insolvency (deficit capital), not bankruptcy (inability to meet current obligations). Therefore, loss reserves and the investments associated with them are not considered part of capital. The stress scenarios. Both scenarios use claim rates on MIs observed in a large section of the country over 10 years that are extrapolated nationally. The new model incorporates the MI experience in Southern California for risk booked in 1993 and prior years, while the old used the experience in Texas, Arkansas, Oklahoma, and Louisiana stemming from risk booked in the late 1970s and early 1980s. The old model default experience is known as the South Central loss scenario. The years of origination for current risk portfolios correspond to the years of origination in the stress periods; for example, an MI's latest annual book (risk assumed in 2001) would be assigned the claim rates observed in Southern California resulting from the MIs' 1993 origination year there and in the South Central area resulting from business originated in 1976. Claim frequency over the stress period. Claim frequencies, also called claim incidences, are fractions, the numerator of which is aggregate dollar value of claims over the 10 years; the denominator is the aggregate insurance in force or unpaid balance of the loans insured at the beginning of the stress period. Both models assign individual frequencies to a number of origination years, their magnitudes increasing as the years become more recent. The least recent years, which reflect normal economic conditions and therefore have much lower frequencies, are aggregated. In each model, each dollar of risk is assigned the same weight without regard to the year in which it was taken on. The frequency of the Southern California model, given the current relative size of origination year portfolios, is about 16.5%. That of the South Central model is about 15.6%. Prepayment speeds. For both scenarios, these are set at 2/25 of beginning-of-year risk in force in the first year and 2/24 in the second—all the way to 2/16 in the 10th. Loss adjustment expenses (LAE). MIs insure a portion of a mortgage, not the entire loan. Their coverage is stated as a percentage of the sum of the unpaid balance of the loan and specified costs, such as interest expense, security, taxes, and other items for which they are responsible when there is a claim and which Standard & Poor's considers LAE. The South Central model adds 25% to the stated percentage of the aggregate unpaid balance of the MI's total primary book of business for which it is contractually liable (its risk in force); the Southern California model adds 17% to risk in force. Loss frequency. Loss frequency is the total of losses incurred by an MI over 10 years as a percentage of the aggregate unpaid balance of loans that it insured at the outset of the stress period. It is the result obtained after multiplying the claims frequency by the percentage of the sum of risk in force and LAE. It is the fundamental gauge of the severity of the model. The following is a comparison of loss frequencies of the South Central and Southern California models, given the current distribution of industry business: Comparison Of Loss Frequencies For Old And New Models MODEL

APPROXIMATE WEIGHTED AVERAGE CLAIM FREQUENCY (%) (1) ASSUMED RIF AS % OF UNPAID BALANCE (%) (2) LOSS ADJUSTMENT EXPENSE FACTOR (%) (3) LOSS FREQUENCY (%) (1) X (2) X (3) South Central 15.6 25 125 4.875 Southern California 16.5 25 117 4.826 Credit scoring. The South Central model assumes that claims are correlated with the age and loan-to-value ratio (LTV) of the subject loans. The Southern California model assumes that claims are correlated with age, LTV, and credit scores calculated according to a system developed by Fair, Isaac & Co. (FICO scores). Compression of claim rates. The South Central model uses actual claim rates observed by age and LTV in a period with heavy defaults. The Southern California model bases its frequencies on actual claim development recorded in Southern California each year by the industry during the stress period. However, because FICO scores weren't in wide use at that time, Standard & Poor's has used claim development by FICO and LTV largely for years subsequent to the high-default years of the stress period. These claim rates have been loosely fitted to the fundamental claim rates recorded annually by the industry to produce an array of claim-development tails based on the ratios of development by FICO and LTV to these core industry claim tails. The range of the ratios of development has been compressed to meet two objectives: To account for the narrowing of the range of frequencies of default among all loans in bad times. To account for the loss of predictability of FICO scores as loans age. Reasons For Changes The most important reasons to develop the new model are the greater range of loan qualities accepted by MIs and the consequent greater need for discriminating evaluation as well as the superiority of FICO scores to LTVs as predictors of loan defaults. Standard & Poor's believes combining FICO scores and LTVs adds yet more predictability. Almost as important is Standard & Poor's view that the Southern California experience is a more realistic benchmark for a stress test than the earlier South Central experience. This view results from loans that were made in Southern California being more similar to current books than the earlier body of loans, even though they produced defaults fully as severe as those made in the South Central area. For example, the South Central mortgages were made in a period of rapidly rising interest rates and, in some areas, home prices. This environment produced types of loans that have been discontinued today, such as graduated payment mortgages and scheduled negatively amortizing loans. Also, at this time, sophisticated credit scoring techniques—such as those of FICO, the MIs themselves, and Fannie Mae and Freddie Mac (the government-sponsored enterprises or GSEs, which have always been the prime beneficiaries of mortgage insurance)—had yet to be developed. Their advent resulted in a significant percentage of the loans that qualified for MI acceptance in the South Central experience not being made in Southern California because they were determined to lack the requisite credit quality. The reduction of the LAE charge reflects a more realistic view of the maximum LAE severity that an MI can incur. The biggest individual LAE component is interest. MIs are responsible for paying interest on a defaulted mortgage until the foreclosure or loss mitigation process is completed. At the current weighted average coupon (WAC) of a typical MI risk portfolio and a realistic appraisal of the maximum length of time from demand for payment of a defaulting borrower to final resolution of the claim, Standard & Poor's believes that interest expense on all defaulted loans will not average more than 8% of the value of the loan under virtually any circumstances. As WACs rise and fall, Standard & Poor's may adjust the interest component of the LAE charge up and down. Other components of LAE include: Taxes, which are capped by the same realistic time frame for resolution that caps interest (Standard & Poor's assumes taxes are 2.5% of the amount of the loan). Hazard insurance, which is assumed to be 1% of the amount of the loan. Legal fees, which are about 1%; MI policies typically cap them at modest levels. Security, which is about 1%. MIs are responsible for their coverage share of the cost of protecting a house that is unoccupied through such measures as boarding up windows, re-keying, and turning off utilities. The sum of realistic average worst-case charges does not add up to 17%, but Standard & Poor's maintains the LAE factor at this level because of the possibility that certain components could represent more severe costs than its analysis would indicate and, possibly, to absorb potential increases in interest expense. Structural Factors And Ratings Criteria Governmental support of the residential mortgage market is stronger in the U.S. than in any other country. The GSEs are as important an element of that support as any other. The GSEs are shareholder-owned, but most observers—including Standard & Poor's—believe that the federal government stands behind their credit obligations, at least as they affect the mortgage market. Full backing by the federal government

automatically confers a 'AAA' rating on the entity so backed, so the GSEs enjoy such a rating. Standard & Poor's believes the MIs are understood by the relevant parts of the executive and legislative branches of the government to be important private sector bulwarks of support for the GSEs. Because of this, and because the GSEs carry such high ratings, the GSEs require the MIs also to have high ratings. Normally, the GSEs stipulate that an insurer must have a financial strength rating of at least 'AA-' or the equivalent from two "nationally recognized statistical rating organizations," such as Standard & Poor's, to be accepted as credit enhancement. Capital adequacy is important in rating any financial institution. In Standard & Poor's methodology, it is unusually important in rating MIs because of the major risk they face: catastrophic economic conditions. Depressions can cause claims to rise for protracted periods to levels up to five times those occurring under normal circumstances. Standard & Poor's believes that during these periods of stress, lenders don't lend, insurers don't insure, and MIs are thus relegated to running off their existing business. During runoff, management's freedom of action is limited mainly to managing claims as efficiently as possible. Without a merger or acquisition, management can't do much to improve the chances that it can pay all claims by changing the fortunes of the company. There is only one major factor to rely on: capital. For this reason, the rating level of capital must at least equal the overall rating of the MI. This requirement for MIs is almost unique among insurance companies in Standard & Poor's rating methodology. Evaluating the risk management strategy. The breadth of the claim rates assigned to LTV/FICO combinations, though compressed, is still considerable. In some cases, insurers could be tempted by the outcome in the model score to add or eliminate blocks of risk that they would not otherwise act on based on a complete and unbiased analysis of the economic considerations. For example, a company could add a large, geographically concentrated book of very high-scoring paper yielding a very low aggregate premium, or it could reinsure most of its lower-scoring risk, greatly reducing premium and placing the company at risk for high loss development of the remaining, less-diversified book. For this reason, Standard & Poor's applies factors of qualitative judgment (in this case, an evaluation of the effectiveness of management's strategy) along with the quantitative analysis embodied in the model in determining an insurer's capital adequacy and overall rating.