

Rating Performance And Comparability: 2011 Update On The Modified Gini Coefficient Study

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Rating Performance And Comparability: 2011 Update On The Modified Gini Coefficient Study

Standard & Poor's Ratings Services is committed to maintaining the comparability of its ratings across asset classes and geographies. This research provides another measurement of rating comparability by considering the rank ordering of Standard & Poor's credit ratings across all fixed-income sectors. Strong rank ordering means highly rated credits generally display lower default rates than credits with lower ratings. The overall rank ordering of the rating system reflects, in part, whether ratings are comparable across sectors.

Recent rating performance continues to follow our expectations, described in "Another Perspective On Rating Comparability And Performance," published April 9, 2010, on RatingsDirect on the Global Credit Portal. The performance of the 2007 and 2006 vintages of residential mortgage-backed securities (RMBS) and collateralized debt obligations (CDOs) backed by other securitizations, such as RMBS (CDOs of asset-backed securities [ABS]), caused material deterioration in rating comparability and performance. However, these declines in performance were offset by the historically consistent performance of corporate and government ratings and of some asset-backed security (ABS) ratings. If not for the CDOs of ABS and RMBS performance, rating comparability and performance would be within our expectations. Furthermore, the performance projections we made in 2010 based on expected defaults in structured finance were very close to actual performance in 2011. There have been no unexpected changes in performance.

Our findings show that since 2007, rank ordering of Standard & Poor's ratings has declined primarily because of the loss of rank ordering attributable to the CDOs of ABS and RMBS sectors. Before 2007, these sectors displayed better rank ordering than corporate and government ratings. The shift in performance is linked to the precipitous decline in U.S. home prices, which led to weak performance of many highly rated securities in the RMBS and CDO sectors. The result was historically lower rank ordering and performance for ratings after 2007. Of note, Standard & Poor's has updated its criteria in the affected sectors (see "Big Changes In Standard & Poor's Rating Criteria," published Nov. 3, 2009). Corporate and government ratings, which were not as strongly affected, maintained their rank ordering in line with historical trends seen in a recession.

Based on the number of CDO and RMBS securities that we believe are likely to default in 2011 and 2012, we expect the overall measures of rank ordering to remain impaired for the next few years. However, once the current inventory of distressed securities works its way through the pipeline during the next two to three years, Standard & Poor's believes the rank ordering will recover to its historical levels, or surpass them. Our continued focus on rating comparability and the recent updates to our criteria set the stage for stronger rank ordering in the future.

Measuring Rating Performance: Were Defaulters Rated Lower Than Those That Did Not Default?

The Gini coefficient is commonly used to assess rating performance and is especially useful for comparing rating performance in different sectors, regions, or time periods. We believe this measure is well-suited to a system of ratings defined as ordinal indicators of relative default risk. The Gini coefficient measures, on a scale from 0 to 1, whether defaulting issuers or issues were rated lower than entities or obligations that did not default during a specified time period. (See the "Data And Methodology" section below for a detailed explanation of the Gini

coefficient.)

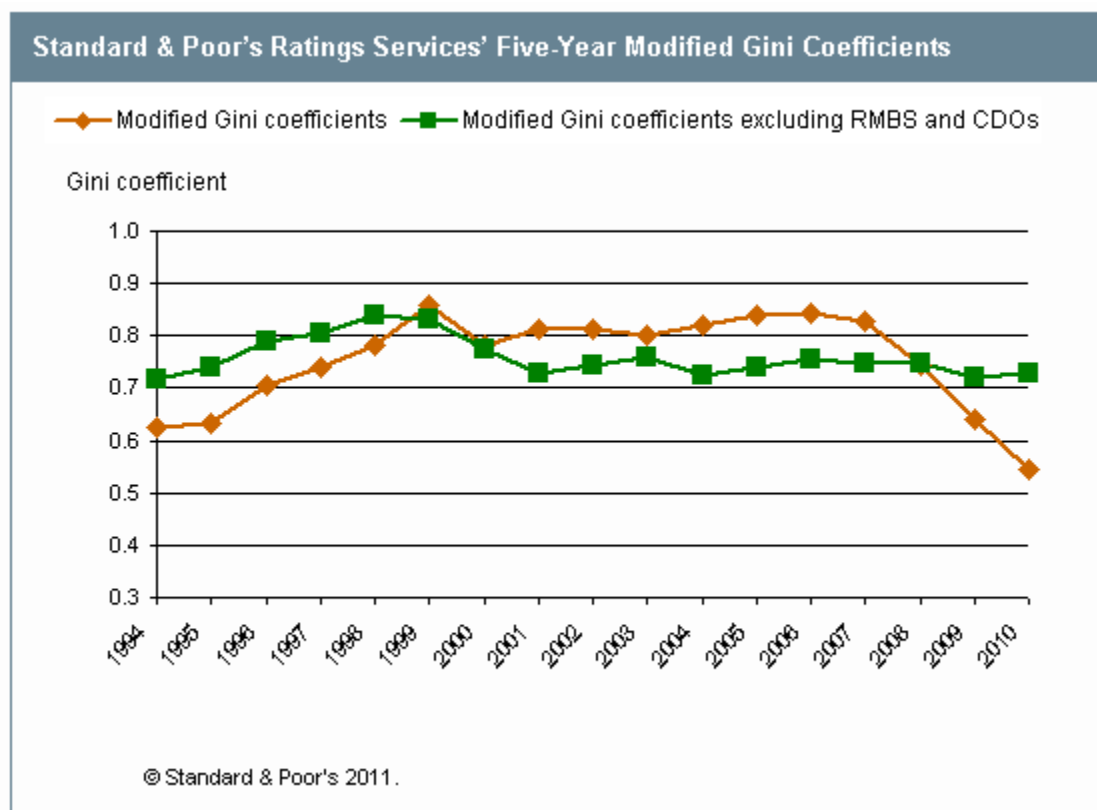
In this study, we combined data for the global corporate, government, and structured finance sectors into a single measure that provides another perspective on the overall performance of Standard & Poor's ratings. To produce the new combined Gini coefficient, called "modified" Gini coefficient in this article, we first calculated the underlying values used to generate a separate Gini coefficient for each of the three major sectors: corporate issuers, public sector issuers, and structured finance issues. The underlying values, not the individual Gini coefficients, were then combined using weights based on estimates of each sector's relative size, which varied over time. Weak performance in one or more sectors depresses the modified Gini coefficient. A low modified Gini could signal a lack of rating comparability among the sectors.

We believe five years is a meaningful measurement period for rating performance because it is typically long enough to capture the effect of deteriorating credit, if any, of a highly rated issuer or issue. Five years typically encompasses different phases of a business cycle and corresponds to the average life of many structured finance obligations. It is also difficult to assess default risk five years into the future, especially for speculative-grade corporate issuers. A shorter measurement period, say one year, would be less challenging.

Historical trends

Chart 1 shows the five-year modified Gini coefficient for all sectors, as well as the modified Gini coefficient without the RMBS and CDO sectors. The dates are as of year-end, so the 2010 Gini coefficient represents the five years beginning Jan. 1, 2006, and ending Dec. 31, 2010. The continued decline in the five-year Gini coefficient was expected as the poor performance of the 2005 structured finance vintage became apparent in the statistics. We projected last year that the five-year Gini coefficient for 2010 would be .547, which was very close to the actual coefficient of .543. The removal of RMBS and CDOs from the statistics shows that poor rating performance was confined to those two sectors, and the rest of Standard & Poor's ratings performed in line with historical results.

Chart 1



After several overlapping five-year periods of steady improvement, rating performance, as measured by the modified Gini coefficient, fluctuated within a relatively narrow range of approximately 0.75 to 0.85 for the 10 five-year periods that ended in 2007. The ups and downs in specific sectors had a muted effect on the modified Gini coefficient.

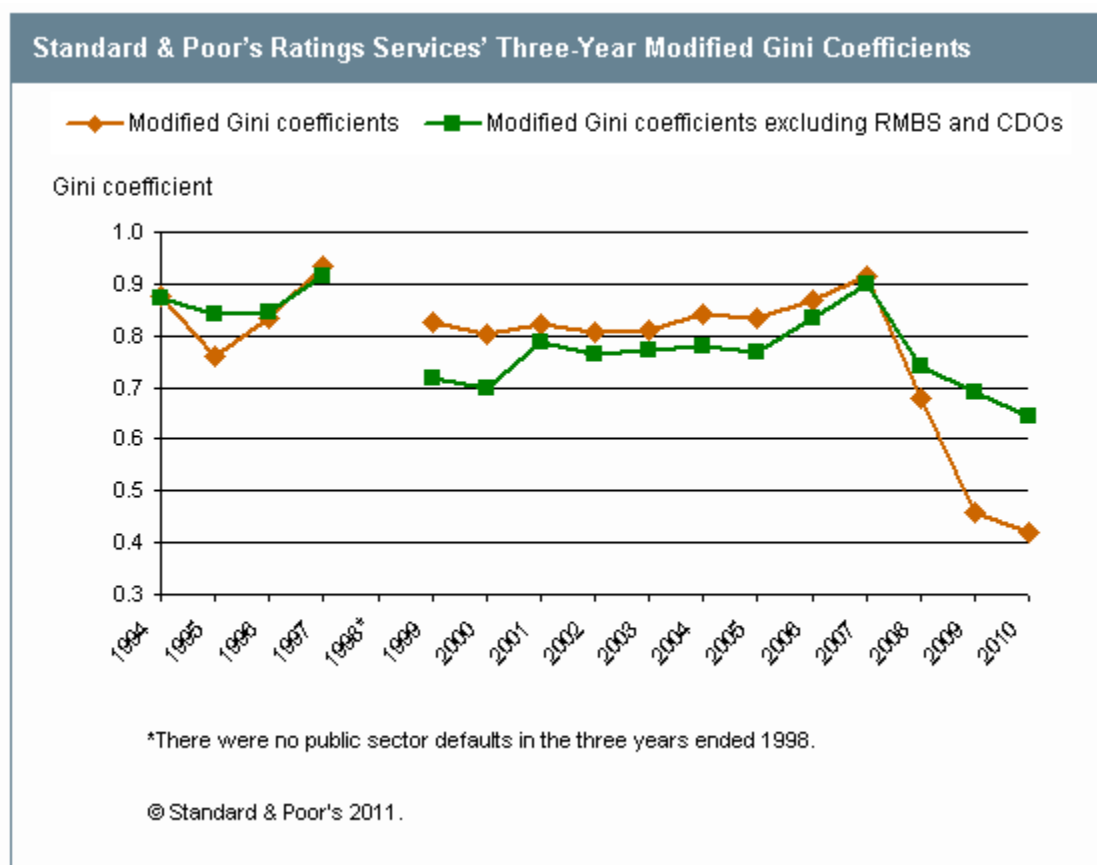
In general, the longer the time horizon, the more difficult it is to assess projected creditworthiness. Over a longer period, there is a greater risk of unexpected developments, such as the emergence of new technology or a company being acquired by another firm. Thus, one-year Gini coefficients are typically higher than three-year Ginis, and three-year Ginis are typically higher than five-year Ginis. We believe a one-year modified Gini coefficient is a less meaningful measure for evaluating the performance of our ratings on highly rated credits. A good one-year modified Gini coefficient could be attributable to downgrades in previous periods of credits that defaulted during the one-year measurement period.

On the other hand, the five-year measures do not fully capture the effects of the harsh 2008-2009 recession, particularly the severe problems in the U.S. housing finance sector and turmoil in the capital markets. Performance of our ratings on RMBS and securities derived from them, including CDOs of ABS, declined markedly beginning in 2007. In retrospect, our underlying assumptions up to that time did not fully capture the unprecedented sensitivity of mortgage loan defaults to dramatically declining home values or the high correlation of default risk among RMBS transactions.

Chart 2 displays the three-year modified Gini coefficients. Breaks in the graphs occur because there were no public

sector defaults in some periods ("public sector" includes sovereigns, international local and regional governments, and U.S. municipalities). Therefore, the modified Gini coefficient could not be computed for those periods. The three-year modified Gini coefficient for the period ended 2010 included the poorly performing 2006 and 2007 vintages of RMBS and CDOs that were not encompassed in the five-year modified Gini coefficient for the period ended 2010. The most recent five-year modified Gini coefficient covers only ratings that existed before Jan. 1, 2006. The chart shows that the three-year modified Gini coefficients for the periods ended 2008 to 2010 are significantly stronger without RMBS and CDO performance. Also, one significant difference between the three- and five-year coefficients is that the effect of the 1990-1991 U.S. recession is included in the coefficient for the five years ended 1994 but not in the number for the three years ended 1994.

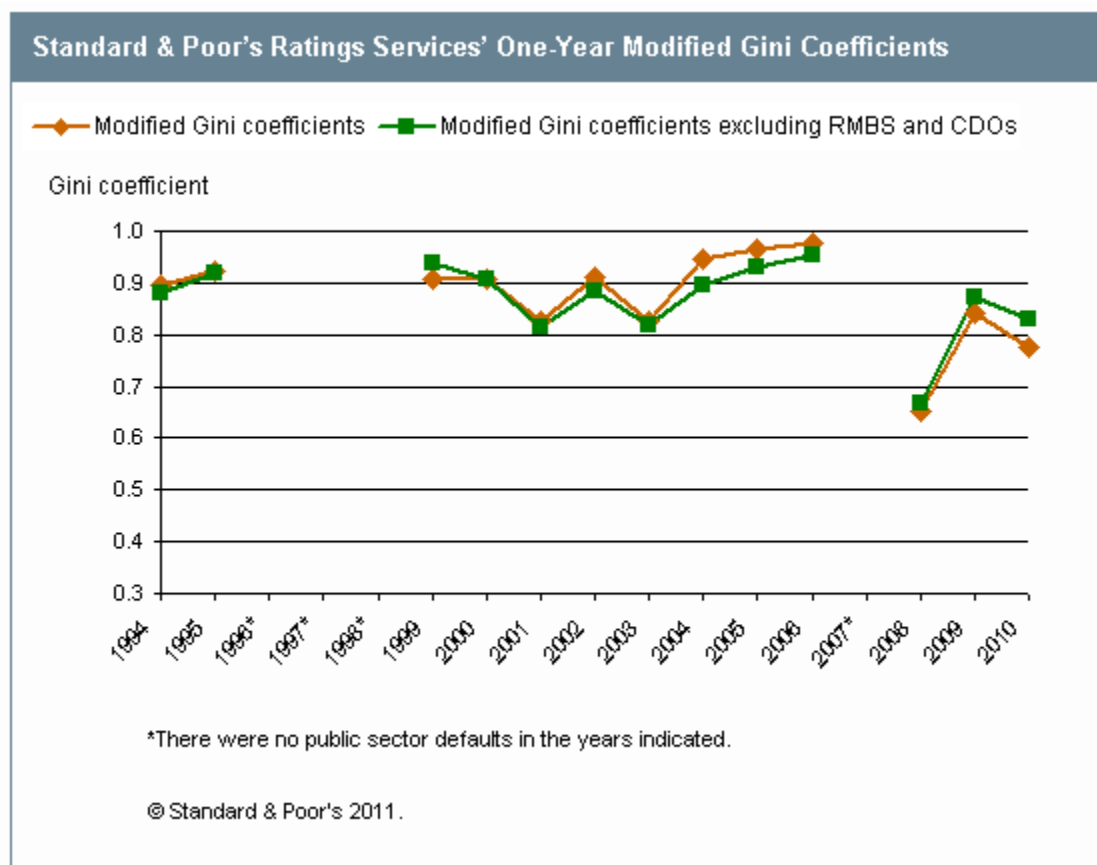
Chart 2



Recent performance

The rating performance in each of the three major sectors declined substantially in 2008, and the one-year modified Gini coefficient fell to 0.653 (see chart 3). Rating comparability also diminished at the upper end of the rating scale, as the 2008 'AA' category one-year default rate jumped to 0.38% for corporates and to 0.18% for structured finance, both well above rates in previous years and the 2008 public sector rate of 0.03%.

Chart 3



In 2008, 17 rated financial institutions, which includes banks and finance companies, defaulted (out of more than 1,200), significantly more than in any previous year, and another 26 defaulted in 2009. Banking system stress in the U.S. and much of Western Europe reached levels not seen in several decades. Unlike an industrial firm such as General Motors Co., which can experience a gradual erosion in credit quality over many years, financial institutions can face a "credit cliff" when creditors suddenly lose confidence in them. During the recent recession, a small number of financial institutions defaulted despite being rated in the 'A' and 'BBB' categories shortly before they failed. Losses on risky mortgages, CDOs of ABS, real estate, and other assets; market uncertainty about the magnitude of these losses (possibly exacerbated by mark-to-market accounting); and high leverage likely made them vulnerable. Access to funds evaporated quickly. As government strategies and tactics shifted rapidly, it was especially difficult to determine which institutions would be rescued by the government and which of their obligations would be supported.

Public sector issuer rating performance generally was strong for the 22 years through 2007, as it was in 2009 and 2010. The government sector's generally strong Gini coefficients are indicators of this performance. Defaulters' initial ratings were mainly in the lower end of the sector's rating distribution, and defaulters were concentrated in the following relatively riskier areas: U.S. not-for-profit health care providers; regional and local governments in Russia, Ukraine, and Argentina; and emerging market sovereign governments. Rating performance in 2008 suffered as a result of deemed defaults on Jefferson County, Alabama, sewer revenue refunding warrants and general obligation warrants, which were originally rated 'A+' and 'AA-', respectively. Standard & Poor's considered the

issues to have defaulted when the issuers failed to make principal payments when due, in accordance with the terms of the standby warrant purchase agreements, despite having a forbearance agreement.

Weak results for CDOs of ABS accounted for much of the overall performance decline for structured finance ratings in 2007 through 2010. The CDO structure magnified the risk of the underlying securities, commonly mezzanine RMBS. Exceptionally poor performance of CDOs of ABS since 2007 also reflects the unanticipated performance and correlation among the underlying assets. Structures that depended on the liquidation of assets or referenced market prices, including market-value CDOs, structured investment vehicles (SIVs and "SIV lites"), derivative product companies, and constant-proportion debt obligations, also performed poorly. We believe the erosion in the fundamental credit quality of the underlying assets was compounded by an abrupt re-pricing of credit risk, unusual asset price movements, and a severe liquidity crunch. However, these issues did not carry over to cash flow CDOs and collateralized loan obligations (CLOs) that were backed by corporate securities.

The ABS sector, which includes securities backed by credit card receivables, auto and student loans, equipment leases, and other consumer and commercial obligations, has exhibited strong performance. Despite the tough economic environment of the past three years, these transactions have benefited from a combination of higher credit enhancement and fast pay-down of liabilities, which have contributed to the stability of ABS ratings relative to ratings on some other structured finance asset classes.

RMBS defaults began to swell in 2008, and in that year, defaults were concentrated in securities backed by second mortgages (closed-end second liens and home equity loans). Rating performance for RMBS issues continued to decline in 2010 as many securities backed by a wider spectrum of mortgages, not just subprime mortgages, defaulted. A substantial number of defaulting RMBS securities had been rated in the 'AAA' and 'AA' categories at the beginning of 2008, which depressed the three-year modified Gini coefficient for the periods ended 2009 and 2010. Rating performance will continue to deteriorate, as 12,237 issues rated 'CCC' or 'CC' as of Dec. 31, 2010, had been rated higher years before. Although these credits have not defaulted yet, many are likely to.

The unprecedented performance of certain structured finance sectors has also affected some monoline bond insurers. Several insurance companies with large exposures to RMBS or CDOs of ABS securities have been downgraded. Seven of these firms had been rated 'AAA' or 'AA' at the beginning of 2008. We subsequently lowered our ratings on three to 'R'. Two now have ratings of 'CC', indicating near-term vulnerability to default, and we withdrew our ratings on three after they had been lowered to 'CC'. Bond insurer rating performance has had, and may continue to have, a measurable effect on the modified Gini coefficient.

The Effect Of Potential Structured Finance Defaults And Projected Rating Performance

To illustrate the effect of weak rating performance in the structured finance sector, we projected five-, three-, and one-year modified Gini coefficients applying the following assumptions:

- For structured finance ratings, we began with actual ratings as of Dec. 31, 2010, and actual defaults through that date. Ratings on CreditWatch with negative implications on that date were assumed to be four notches lower than the actual ratings for the purpose of applying default assumptions. Then, we made assumptions about the percentage of speculative-grade ratings that would default (100% of 'CCC' to 'C', 55% of 'B', and 40% of 'BB') and when the defaults would occur.

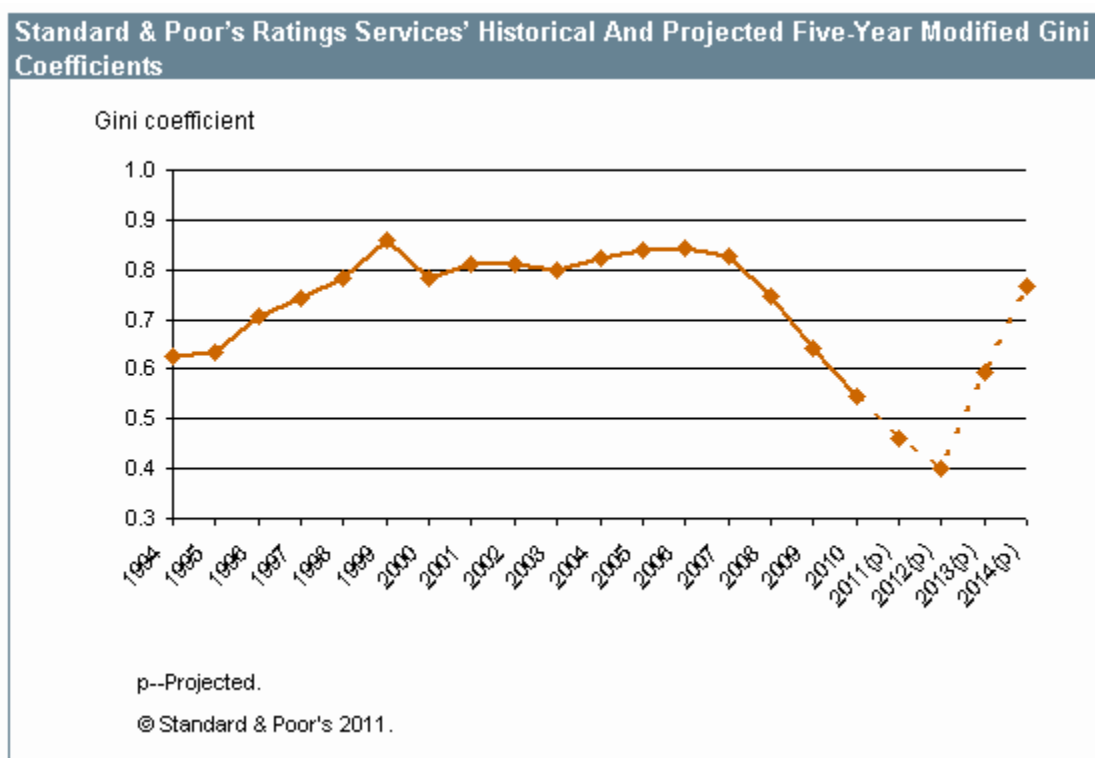
- We assumed that corporate and government rating performance would mirror 2010 performance.

The assumptions used for 2010 were largely on target. The 2010 Gini coefficient predictions for the one-, three-, and five-year horizons were 0.818, 0.432, and 0.547, respectively, compared with the actual Gini coefficients of 0.776, 0.418, and 0.545. We changed the assumptions for corporate and government ratings from using 2008 performance to using 2010 performance, as we expected a low number of defaults in those sectors.

We include projections in this paper to show the linkage between the rating adjustments already made and defaults we expect but that have not yet happened. For instance, we know roughly how the 2006 and 2007 structured finance vintages will affect five-year rating performance, but because we have only three years of actual history (2008 to 2010), we need to project future performance to show the affect of those vintages.

Based on these assumptions, the five-year modified Gini coefficient will continue to fall for the next two five-year periods, ending Dec. 31, 2011, and 2012, and then will rise substantially for the five years ending Dec. 31, 2013, through 2017 (see chart 4). The trough modified Gini coefficient of 0.401 reflects defaults on structured finance issues outstanding at the beginning of 2007 and 2008, respectively, including the relatively risky 2006-2007 RMBS, CMBS, and CDO vintages.

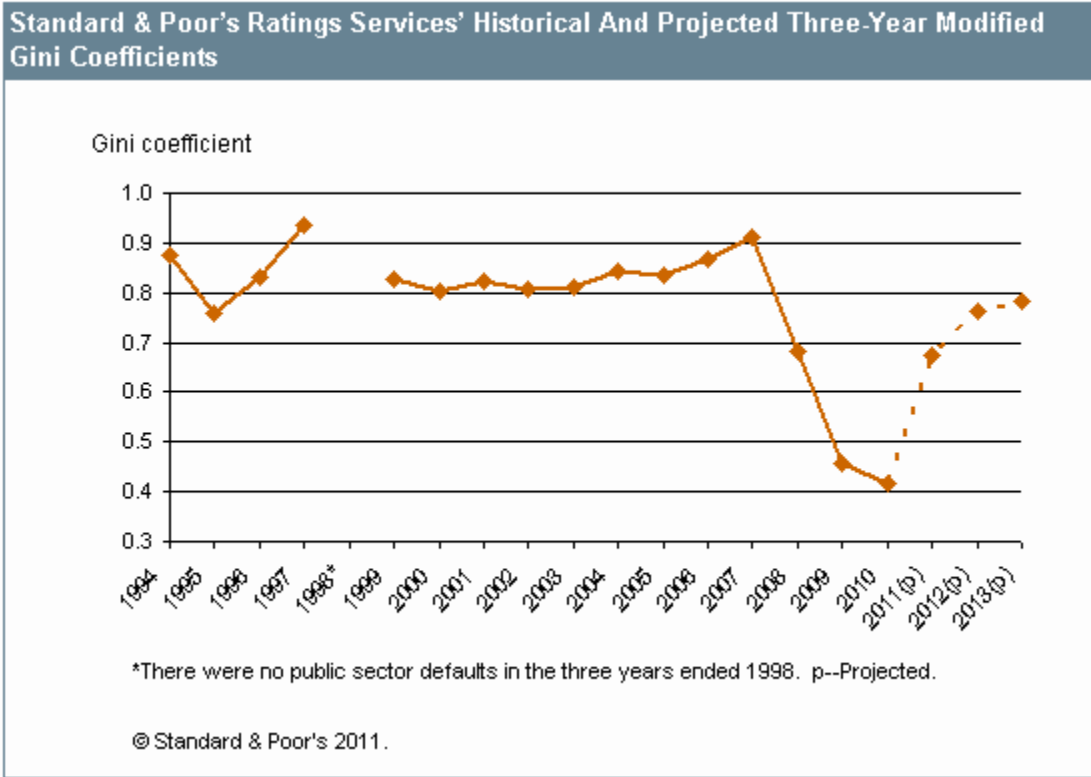
Chart 4



Continuing with these assumptions, the three-year modified Gini coefficient will rise from its lows in the three-year periods ending in 2009 and 2010. The expected increase in rating performance is due to the downgrading of the 2006 and 2007 vintages that began in 2008. This will mean that future defaults will be at lower rating levels, improving rank ordering. The 2006 and 2007 vintages will have some lingering effects on the coefficients in the three-year period ending 2011. Baseline performance should return in the three-year period ending in 2013 (see

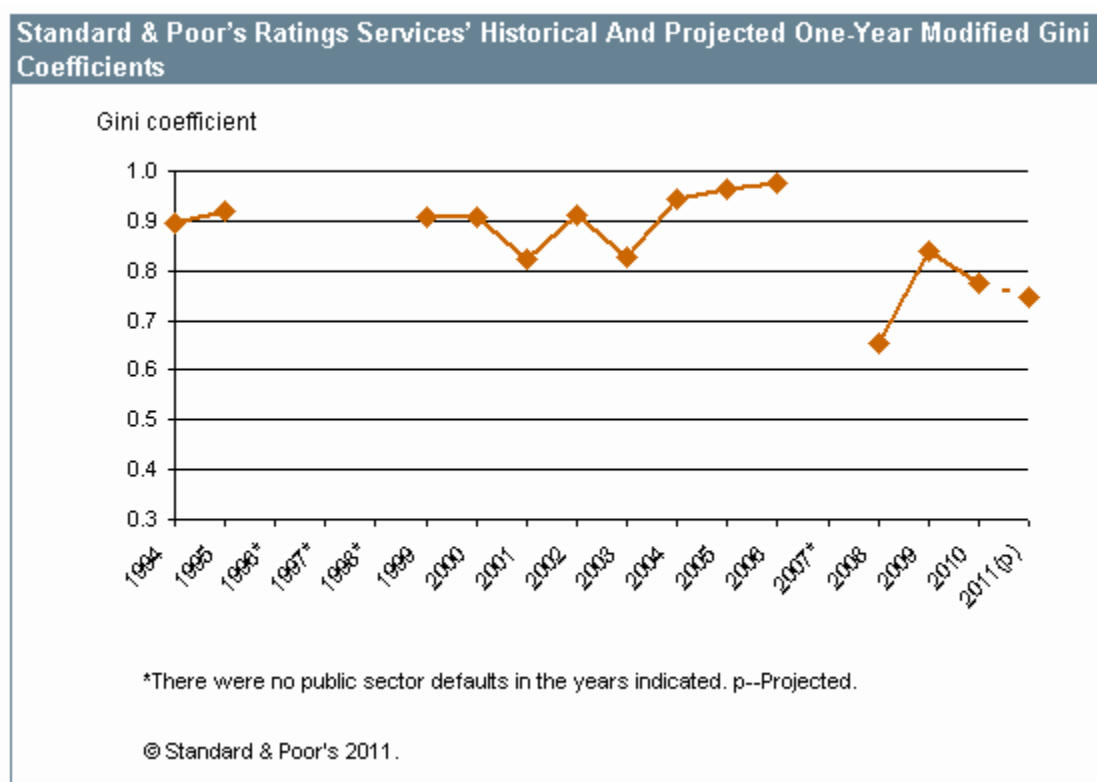
chart 5).

Chart 5



The assumptions outlined above would result in a small decline in the one-year modified Gini for 2011 mostly as a result of having a large proportion of structured finance ratings at 'CCC' and 'CC' that will not default for another year or two, causing a short-term loss of rank ordering of non-defaulters (see chart 6).

Chart 6



APPENDIX

Data And Methodology

Study scope

This study includes long-term public and confidential rating data for three distinct sectors and several subsectors within them, as follows:

- Global local currency corporate issuer credit ratings or financial strength ratings on industrials and utilities, financial institutions, and insurers;
- Global public sector issuer credit ratings on sovereign and non-U.S. regional and local governments and U.S. public finance debt issuers (each security type, e.g., general obligation, of a given U.S. public finance issuer was counted as a separate rating), the same units of measure that we use in our other public sector default studies; foreign currency ratings on sovereigns; and local currency ratings on all other government entities;
- Global structured finance class/tranche ratings (see below for an explanation of how we treated tranches from the same transaction, which differs from the treatment in our previously published studies) on RMBS (including securities backed by home equity loans and covered bonds backed by mortgages), ABS (including securities backed by manufactured housing loans), CMBS, CDOs (including "SIV lites" and constant-proportion debt obligations), and single-name synthetic securities; and within the CDO category, we looked at CDOs of ABS (CDOs backed by any type of structured finance securities) and CDOs backed by cash flow from corporate debt

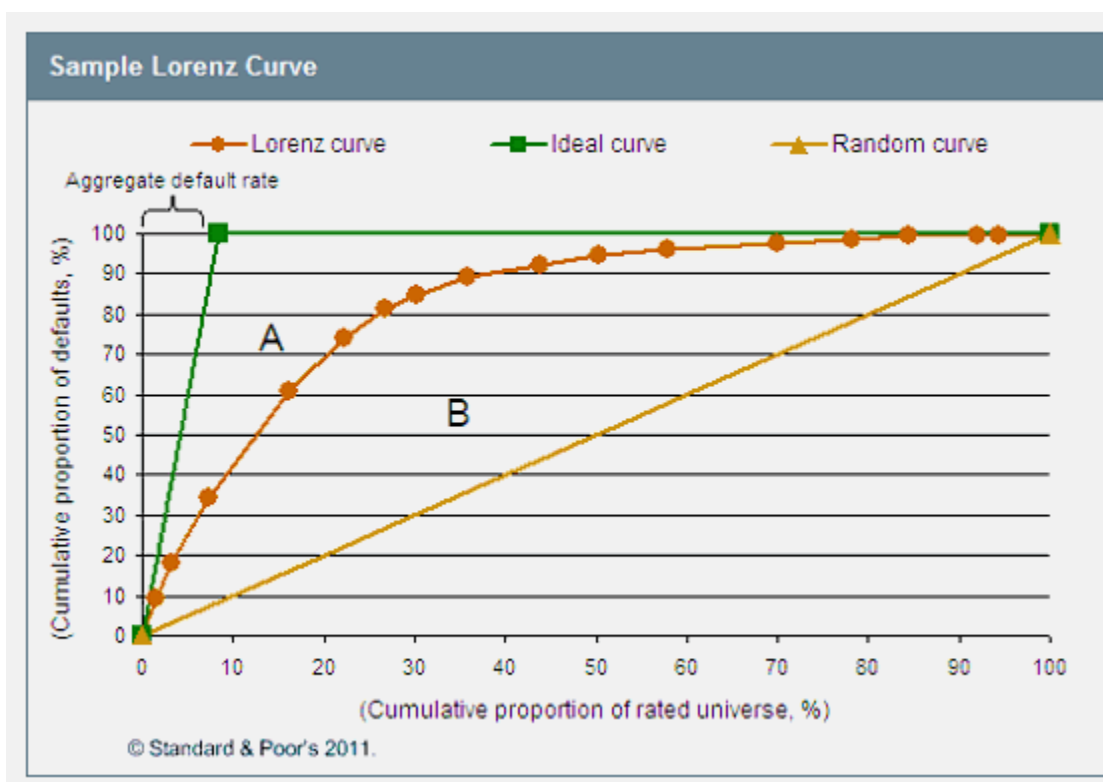
and trust-preferred instruments.

Gini coefficient calculation

The Gini coefficient, developed by Corrado Gini, is a summary statistic of the Lorenz curve, which shows visually the accuracy of ratings' rank ordering. The Lorenz curve was developed by Max O. Lorenz as a graphical representation of the proportionality of a distribution. The Lorenz curve is built by plotting the cumulative proportion of issuers by rating category (from lowest to highest) with the cumulative proportion of defaulters by rating category. For example, if 'CCC' issues represented 1% of the total issues ("X" axis) and 20% of the defaulters ("Y" axis), that would be the first point on the curve.

To determine relative performance represented by the Lorenz curve, we compare it with the random curve and the ideal curve. If Standard & Poor's rating rank orderings only randomly approximated default risk, the Lorenz curve would fall along the diagonal, and its Gini coefficient would be zero. If ratings were perfectly rank-ordered so that all defaults occurred only among the lowest-rated entities or issues, and all entities or issues with the lowest rating defaulted, the curve would be the ideal curve, and the Gini coefficient would be one. The Gini coefficient is a ratio of two areas illustrated below and is derived by dividing area B by the total area A+B (see chart 7). In other words, the Gini coefficient captures the extent to which actual rating accuracy diverges from the random scenario and approaches the ideal.

Chart 7



The Gini coefficient can be calculated for different lengths of time, for example one year or three years, and for a single period, such as the year ended 2009, or by aggregating a series of one-year periods. For example, to calculate the one-year Gini for 2010, we identify the issuer or issue ratings at the beginning of 2010 and determine which did

and did not default during the year. Then, we calculate the proportion of issuers/issues at each rating level and the proportion of defaulters at each rating, based on their ratings at the beginning of the period.

Combining data from major sectors

To produce the modified Gini coefficient, we first calculated the "X" and "Y" axis values (for the Lorenz curve) for each of the three major sectors: global corporate issuers, global public sector issuers, and global structured finance issues. Then, for each rating designation ('CCC', 'B-', 'B', 'B+', etc.), the three "X" values and the three "Y" values were averaged separately. The resulting points were plotted to create one Lorenz curve, and the Gini coefficient was calculated as explained above.

For the averaging, we used weights (see table) based on rough estimates of each sector's relative size, which varied over time. The weights take account of the number of ratings, the amount of rated obligations, and other factors. To test how reasonable our weights were, we also tried equal weights. The resulting Gini coefficients of the two approaches were close (five-year Gini for the five years ended 2008 of 0.745 size-weighted, compared with 0.718 with equal weights).

Weights Used To Average Data For Modified Gini Coefficient (%)			
	Corporates	Structured Finance	Public Sector
1986-1990	80	5	15
1991-1995	65	15	20
1996-2000	40	35	25
2001-2003	35	40	25
2004-2008	25	60	15
2009-2014	35	45	20

For the historical Gini coefficients that exclude RMBS and CDOs, the weight for structured finance was half the percentage shown in the table. The reduction of the structured finance weight was added to the other two sectors in proportion to their relative sizes.

Tranche ratings affect Gini coefficient

Standard & Poor's assigns ratings on each tranche or class of a structured finance transaction. Within a given transaction, more senior and higher-rated tranches typically have more credit enhancement and are often repaid earlier than junior tranches. Rank ordering is embedded in our structured finance rating criteria. Thus, even when a security that had been rated 'AAA' defaults, lower tranches of that transaction also default, and they often occur earlier than the defaults on the higher tranches. This phenomenon contributes to a high unadjusted Gini coefficient for structured finance ratings.

To reduce the effect of this "benefit," we adjusted the data in several ways for this study. First, for the large number of transactions that have/had more than one tranche rated 'AAA', we included only the 'AAA' tranche with the longest tenor, which is typically the most junior 'AAA' tranche. Similarly, if a defaulting transaction included multiple tranches at other rating levels, which is relatively uncommon, we included only the tranche at that rating with the longest tenor. Finally, for transactions that experienced a default, we included only the most senior defaulting tranche and those senior to it; junior tranches in defaulting transactions were completely excluded. If different tranches of the same transaction defaulted in different years, both defaults were counted as follows: We assumed the tranche that had been rated 'B' at the beginning of the measurement period defaulted in 2007, and the

tranche rated 'A' at the beginning of the measurement period defaulted in 2008. For 2007, we included only the tranches originally rated 'B' and higher at the beginning of the measurement period; and for 2008, we included only the tranches rated 'A' and higher at the beginning of the measurement period.

In essence, the adjustments disregarded thousands of 'AAA' rated tranches that did not default and dozens of tranches with low ratings that did default. Our approach is more conservative than the unadjusted calculation and resulted in a three-year Gini of 0.661 for the three years ended 2008, compared with 0.795 counting all rated tranches, and an adjusted five-year Gini of 0.722 for the five years ended 2008, compared with 0.866 counting all tranches.

Related Criteria And Research

- 2010 Annual Global Corporate Default Study And Rating Transitions, March 30, 2011
- Global Structured Finance Default Study—1978-2010: Credit Trends Started To Improve In 2010, But U.S. RMBS Faces Challenges, March 28, 2011
- International Local And Regional Governments Default And Transition Study, 2010 Update, March 28, 2011
- U.S. Public Finance Defaults And Rating Transition Data: 2010 Update, March 2, 2011
- Sovereign Defaults And Rating Transition Data, 2010 Update, Feb. 23, 2011
- The Time Dimension Of Standard & Poor's Credit Ratings, Sept. 22, 2010
- Another Perspective On Rating Comparability And Performance, April 9, 2010
- Big Changes In Standard & Poor's Rating Criteria, Nov. 3, 2009
- Understanding Standard & Poor's Rating Definition, June 3, 2009

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