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RESEARCH

Ten Years After The Financial Crisis, Global Securitization Lending Transformed By Regulation And Economic Growth

Primary Contacts:

Darrell Wheeler, New York (1) 212-438-0599; darrell.wheeler@spglobal.com
Amy S Martin, New York (1) 212-438-2538; amy.martin@spglobal.com
Jennie P Lam, New York (1) 212-438-2524; jennie.lam@spglobal.com
Ildiko Szilank, New York (1) 212-438-2614; ildiko.szilank@spglobal.com
John Anglim, New York (1) 212-438-2385; john.anglim@spglobal.com
Joanne K Desimone, San Francisco (1) 212-438-2444; joanne.desimone@spglobal.com
Kate R Scanlin, New York (1) 212-438-2002; kate.scanlin@spglobal.com
Eric J Hudson, New York (1) 212-438-3407; eric.hudson@spglobal.com
James C Digney, New York (1) 212-438-1832; james.digney@spglobal.com
Jeremy Schneider, New York (1) 212-438-5230; jeremy.schneider@spglobal.com
Dev C Vithani, New York (1) 212-438-1714; dev.vithani@spglobal.com
Andrew H South, London (44) 20-7176-3712; andrew.south@spglobal.com
Aaron Lei, Hong Kong (852) 2533-3567; aaron.lei@spglobal.com
Erin Kitson, Melbourne (61) 3-9631-2166; erin.kitson@spglobal.com
Yuji Hashimoto, Tokyo (81) 3-4550-8275; yuji.hashimoto@spglobal.com
Sanjay Narine, CFA, Toronto 1-416-507-2548; sanjay.narine@spglobal.com
Leandro C Albuquerque, New York +1 (212) 438-9729; leandro.albuquerque@spglobal.com

Secondary Contacts:

Tom Schopflocher, New York (1) 212-438-6722; tom.schopflocher@spglobal.com
James M Manzi, CFA, Charlottesville (1) 434-529-2858; james.manzi@spglobal.com
Kirsten R Mccabe, New York 212-438-3196; kirsten.mccabe@spglobal.com

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Ten Years After The Financial Crisis, Global Securitization Lending Transformed By Regulation And Economic Growth

It's hard to believe that 10 years have passed since the worst U.S. economic slump since the Great Depression. Most remember the financial crisis starting with a housing price appreciation slowdown in the spring of 2007 quickly leading to several credit default swap indices moving to levels that suggested significant losses on the related cash bonds were imminent. During the latter half of the year, what was originally a localized mortgage crisis converted into a full blown liquidity crisis and economic recession. Over the next 36 months, the resulting realized bond losses impacted asset managers, insurers, and banks worldwide. But since then, new regulations and other factors have reshaped lending standards around the globe. The structured finance/securitization markets have evolved, and changes have been made to how loans are originated and how related risks are shared with institutional investors. In this report, S&P Global Ratings examines how new regulations have shaped global lending during the 10 years since the financial crisis. We also examine the evolution of the structured finance/securitization markets, and the current sector-specific trends that have come about as a result of the crisis.

The resulting structured finance picture today consists of various asset markets that look at loan financing cautiously--subject to new regulations--and are trying to increase the use of securitization. Markets have been receptive to greater collateral information disclosure, bond oversight or governance, and simpler structures. Risk retention requirements have had mixed success, as many mortgage originators are not natural long-term investors. But as the commercial and residential mortgage sectors evolve, with more originators emerging, risk retention issues will likely be overcome.

Various international regions face different challenges: low rates in Japan and Europe have restricted issuance, while China, Latin America, and now even the U.S. have tried to create rules to allow investors to share term and credit risks from these various products. No market appears to be encouraging outsized risk taking, which may simply be a lingering consequence of the financial crisis. So, while the crisis did create significant financial pain and dislocation, the post-crisis response around the globe, in our opinion, very much looks like regulators working with bankers and investors to help use structured finance to create sustainable economic growth.

Overview: Ten Years Of Adjustment To Create A Regulated Financing Tool

- The global financial crisis affected perception of structured finance products, which created ongoing regulatory changes that have decreased securitization utilization and increased traditional portfolio lending. However, post-crisis psychology, lessons learned about transaction oversight and providing better information, and regulations, such as risk retention compliance, have created better-quality securitization pools. Economic growth has stabilized both pre- and post-recession pools as well, allowing them to perform and attract investors, which is allowing structured finance products to once again provide funding for further economic growth.

Specific sector or region comments:

- Downgrades and performance expectations set during the crisis have heightened risk perceptions for structured finance products. Nevertheless, S&P Global Ratings expects final collateral losses for securitized commercial loans outstanding before 2008 to reach only 6%, on average. In the case of residential mortgage-backed securities (RMBS) collateral, the analogous figure is approximately 18%.
- Pre-crisis U.S. consumer asset-backed securities (ABS) performed fairly well through the recession. At the current point in the economic cycle, we would expect some performance deterioration due to the addition of non-prime accounts, higher interest rates, and looser underwriting terms; but with our criteria adjustment that resulted from the crisis, we remain comfortable with our ratings. On the nontraditional side (e.g. timeshare, container), conservative transaction structures have created stable bond performance attractive to both issuers and investors.
- Interest shortfalls created many U.S. commercial mortgage-backed securities (CMBS) and RMBS bond defaults during the crisis; yet actual performance may create only 6% losses in CMBS, but up to 18% in RMBS. These post-crisis loss numbers has created active demand for CMBS, with investors cautiously looking at RMBS.
- Post-crisis, agency loans financed via the government-sponsored entities (GSEs) supported U.S. residential mortgage originations, as lenders have struggled to develop competitive whole loan portfolio lending products when faced with risk retention requirements. The resulting RMBS market continues to evolve to support consumer access to homeownership.
- U.S. collateralized loan obligations (CLOs) and asset-backed commercial paper (ABCP) had few issues during the crisis and have continued to provide low-cost funding by evolving with the changes in the credit and regulatory environment.
- Other international regions have seen mixed performance. In Europe, fragmented regulatory initiatives have caused uncertainty and made structured finance uneconomical for many investors. Canadian structured finance markets have also been slow to recover, due to their poor experience with ABCP defaults, but global investor demand has started to create some Canada/U.S. cross-border credit card and auto deals. APAC investors had high exposure to subprime mortgages and collateralized debt obligations (CDOs), and were initially slow to return to the structured product market, but China, Australia, and, to a lesser extent, Japan have seen significant issuance growth over the past few years. While Latin America has experienced its own economic shocks, we have seen the emergence of newer, smaller securitization programs that are helping fund consumer spending and economic growth.

U.S. Regulatory Changes Have Decreased Securitization And Pushed Up Traditional Portfolio Lending

Post-crisis, regulatory and political actions have led to several new standards for the sale of credit risk in structured finance/securitization markets. The "skin-in-the game" concept gained universal appeal with regards to preventing future irresponsible lending, as regulators felt that requiring originators to retain risk would instill careful controls on credit-related underwriting. Other regulatory responses included reweighting capital requirements, increasing issuer information disclosure requirements, and imposing formal oversight on rating agency procedures--which continue to evolve globally even today.

For many markets, these new regulations reshaped how consumer and commercial loans and mortgages are originated. In addition, new capital controls have affected where and in which form they are held. To get a better idea of how these developments have affected U.S. securitizations, we looked at outstanding U.S. loan balances for various products, the percentage securitized, and the percentage held by banks and other institutions (see table 1). Table 1 shows a large drop in U.S. securitization utilization for most loan types, even as outstanding loans have recovered and exceeded 2007 levels.

Table 1

U.S. Loans Securitized, Held By Banks Or Selected Others(i)

	1998	2001	2004	2007	2010	2013	2016	First-quarter 2017
Auto loans/leases (bil. $)	462	674	798	801	713	879	1,111	1,119
% securitized	19	25	22	23	16	18	18	17
% auto loans held at U.S. commercial and savings banks						40	40	39
Credit card debt (bil. $)	598	735	824	1,002	839	858	999	1,009
% securitized	34	36	36	32	26	15	13	12
% credit card loans held at U.S. commercial and savings banks		29	41	31	69	67	68	63
Student loan (bil. $)				589	856	1,146	1,407	1,438
% securitized				39	28	20	13	13
Commercial mortgages (bil. $)	1,242	1,681	2,259	3,233	3,207	3,188	3,801	3,856
% CRE/MF loans held at depository institutions	48	50	50	48	48	48	51	51
% CRE/MF loans held at insurance companies	16	13	11	10	9	11	11	12
% CRE/MF loans held at GSEs	5	7	8	7	10	12	14	14
% securitized	8	15	17	23	21	20	17	16
Residential mortgages (bil. $)	4,273	5,675	8,292	11,240	10,502	9,946	10,266	10,330
% residential loans Held at depository institutions	31	29	29	27	25	24	24	24
% residential loans Held at GSEs + agency/GSE pools	51	53	46	43	55	60	62	62
% nonagency RMBS securitized			18	24	16	11	8	8
S&P/LSTA Leveraged Loan 100 Index leveraged loans (bil. $)					504	681	887	899
% securitized		49	61	55	56	44	50	51

(i)Note that the column entries do not sum to 100%, which reflects that there are other holders of the remaining outstanding loans in each sector. Source: S&P Global Ratings, SIFMA, Federal Reserve Bank, S&P Global Market Intelligence, Wells Fargo, Trepp. CRE--Commercial real estate. MF--Multifamily. GSEs--Government-sponsored entities. RMBS--Residential mortgage-backed securities. LSTA--Loan Syndications and Trading Association.

The U.S. experience shows that in many cases, balance sheet lenders are retaining larger shares of these loans. For mortgages, which typically feature longer durations/tenors than consumer loans, a good portion of the loan originations are going to other new portfolio lenders. This is because traditional financial institutions, which had been origination gateways, do not have matching funding sources for the related interest rate duration and credit risks. As a result, a new class of portfolio lender has emerged, supported by money from asset managers, pensions, and private equity. A stable post-crisis environment has supported these new lenders as they have experienced gradual asset value appreciation, with the resulting positive asset performance enabling them to accumulate more loan product. Many of these new lenders use bank leverage to enhance their returns, or directly specialize in higher-leverage mezzanine loans. In some ways, this use of leverage roughly duplicates the credit-risk tranching that was previously available in securitized markets. However, this newer format can be customized to the asset investor's risk/return target without some of the restrictions of securitization. Furthermore, this "private portfolio" approach has not been limited to U.S. markets, as Europe and Asia have also seen many private portfolio lending funds develop.

High Interest Shortfall Defaults During The Crisis Progressed To Recent Steady Global Securitization Performance

From 2007-2010, there were a significant number of defaults due to bond interest shortfalls, especially in the CMBS and RMBS sectors, where transaction structures typically included several subordinate bond classes. For the universe of structured finance securities on which we had ratings outstanding as of July 1, 2007, table 2 shows the proportion that had defaulted by end-2016 (by number of ratings/bonds). The table paints a negative picture of credit performance in that almost half of the U.S. RMBS bonds and 30% of the U.S. CMBS bonds have defaulted, which then created defaults in collateralized debt obligations (CDOs).

Table 2

Cumulative Default Rate, Mid-2007 To End-2016, By Rating Count (Based On Universe As Of July 1, 2007)

	Defaults (%)	
	U.S.	**Rest of world**
ABS	2.0	1.6
Structured credit (excluding CDOs of ABS)	6.6	8.6
CDOs of ABS(i)	70.2	18.2
CMBS	29.9	14.1
RMBS	48.7	1.3

(i)CDOs of ABS defaults were related to defaults and downgrades in the underlying RMBS and CMBS collateral. CDO--Collateralized debt obligation. ABS--Asset-backed securities. CMBS--Commercial mortgage-backed securities. RMBS--Residential mortgage-backed securities.

That said, aggregating default rates by bond count generally overstates the proportion of investors' funds that were actually impaired, because larger senior tranches generally have lower default rates than the many smaller subordinate tranches. In addition, our default rates do not capture the scale of eventual net losses, which may have been relatively small in cases where defaults were due to missing interest payments, but not necessarily principal losses (e.g., in some RMBS and CMBS transactions). At the time, interest shortfalls were defaults, and markets expected that collateral would continue to deteriorate. Today, with the benefit of hindsight, we expect final collateral losses for securitized commercial mortgages originated before 2008 to reach only 6%, on average (i.e., projecting based on our current 'B' rating stress). In the case of RMBS collateral, the analogous figure is higher at approximately 18%. Despite these numbers, downgrades and performance expectations set during the crisis have heightened risk perceptions for structured finance products. Several U.S. sectors, such as consumer ABS and collateralized loan obligations (CLOs), generally avoided the downgrade trend during the crisis, which, in our opinion, may be why portfolio lenders were holding more of those loans and only recently started to gradually increase securitized issuance.

In recent years, global securitization has generally seen more upgrades than downgrades, and very few defaults. Table 3 summarizes the 2016 upgrades, downgrades, and defaults by region and by product for outstanding structured finance securities that we rated at the beginning of that year. It shows that upgrades strongly outnumbered downgrades in 2016, while the annual default rate had fallen to about 3%.

Table 3

2016 Summary Structured Finance Upgrades, Downgrades And Defaults

	2016					
	Ratings (no.)	**Stable (%)**	**Upgrades (%)**	**Downgrades (%)**	**Defaults (%)**	**Defaults (no.)**
Overall	27,051	80.1	13.2	6.7	3.2	870
Region						
U.S.	21,575	80.5	12.3	7.2	3.8	811
Europe	3,988	75	19.8	5.2	1.4	57
Australasia	600	91.5	5	3.5	0	0
Japan	613	93.5	6.2	0.3	0	0
Canada	170	70	30	0	0	0
Latin America	62	66.1	0	33.9	3.2	2
Other emerging markets	37	91.9	0	8.1	0	0
Asia (excluding Japan)	6	66.7	0	33.3	0	0
Sector						
RMBS	14,696	80.1	10.6	9.3	4.9	717
Structured credit	5,602	78.5	19.3	2.2	0.7	39
ABS	3,832	84.4	14	1.6	0.2	6
CMBS	2,595	78.3	14.1	7.6	4.2	108
Single-name synthetics	326	74.8	8.3	16.9	0	0
Region and sector						
U.S. RMBS	11,790	79	10.1	10.9	6	712
U.S. structured credit	4,031	82.9	15.9	1.2	0.4	16
U.S. ABS	3,311	84.1	14.6	1.2	0.2	5
U.S. CMBS	2,165	79.6	14.6	5.8	3.6	78
U.S. single-name synthetics	278	73	8.3	18.7	0	0
Europe RMBS	1,759	79.8	16.8	3.4	0.2	4
Europe structured credit	1,505	66.7	29.3	4	1.5	23
Europe ABS	420	85.7	10.7	3.6	0	0
Europe CMBS	281	72.6	1.8	25.6	10.7	30
Australasia	600	91.5	5	3.5	0	0
Japan	613	93.5	6.2	0.3	0	0

Table 3

2016 Summary Structured Finance Upgrades, Downgrades And Defaults (cont.)

	2016					
	Ratings (no.)	**Stable (%)**	**Upgrades (%)**	**Downgrades (%)**	**Defaults (%)**	**Defaults (no.)**
Other	298	73.5	17.8	8.7	0.7	2
Vintage						
Pre-2000	327	77.7	8.9	13.5	1.2	4
2000	115	73.9	13.9	12.2	0	0
2001	260	75	13.8	11.2	3.1	8
2002	721	85.4	5	9.6	3.7	27
2003	2,409	80	6.4	13.7	7.1	170
2004	3,830	80.6	8.4	11	5.9	225
2005	3,403	82.3	10.6	7.2	4.7	161
2006	2,951	78.9	13.2	7.9	4.8	143
2007	2,833	72.3	20.9	6.8	3.1	87
2008	425	79.5	12.5	8	2.8	12
2009	734	77.5	17.7	4.8	2.7	20
2010	1,280	54.6	40.5	4.8	0.9	12
2011	415	84.1	12.8	3.1	0	0
2012	1,112	83.9	14.5	1.6	0	0
2013	2,133	82.1	16.7	1.2	0	1
2014	2,133	87.6	11.3	1.1	0	0
2015	1,970	93.1	6	0.9	0	0
Rating category						
'AAA'	2,961	98.7	0	1.3	0	0
'AA'	4,087	77.9	18.8	3.4	0.2	8
'A'	4,256	77	19.5	3.5	0.1	3
'BBB'	3,542	74.9	20.6	4.5	0.2	8
'BB'	2,638	76.3	17.2	6.5	0.3	8
'B'	2,711	75.6	14	10.4	1.4	37
'CCC'	5,275	86.4	5.1	8.4	7.2	382
'CC'	1,581	65	8.2	26.8	26.8	424
Rating grade						
Investment-grade	14,846	81.1	15.7	3.3	0.1	19
Speculative-grade	12,205	79	10.1	10.8	7	851

RMBS--Residential mortgage-backed securities. ABS--Asset-backed securities. CMBS--Commercial mortgage-backed securities.

Issuance Coming Back As Global Perceptions Improve

Global structured finance issuance for the first-half 2017 is up 47% over first-half 2016 in the U.S. and 38% globally (see table 4). Given the duration of the current global economic recovery and the recent uptick in structured finance issuance, we discuss the evolution and trends across different structured finance sectors and regions.

Table 4

Structured Finance Issuance Summary

	2015	2016	2016 H1	2017 H1	2016 H1-2017 H1 change (%)	2017 forecast
U.S. (bil. $)						
U.S. ABS	183	191	95	122	28.0	215-225
Auto loan/lease/rental cars	89	85	46	46	0.0	85-90
Cards	25	35	14	29	107.0	50
Student loan	14	13	5	7	40.0	15
Equipment/fleet/floorplan	25	24	14	16	14.0	25
Other ABS (nontraditional, personal loans)	31	35	16	24	50.0	40-45
U.S. CMBS	101	76	30	37	23.0	75-80
SASB/LL	32	21	7	12	71.0	25-30
U.S. CLO	98	72	26	52	96.0	90
U.S. RMBS-related	54	34	14	33	136.0	60
Total U.S.	436	372	167	245	47.0	440-455
Canada (bil. C$)	15	18	8	13	63.0	20-22
Europe (bil. €)	75	80	39	43	9.0	80-85
Asia						
China	97	116	40	68	70.0	140
Japan	38	53	27	23	(15.0)	40-45
Australia	38	34	18	24	40.0	30-35
Latin America						
Brazil	4	4	2	4	74.0	8
Argentina	3	2	1	1	25.0	3
Colombia	0.3	0.3	0.1	0.3	360.0	1
Mexico	2	2	0.3	1	187.0	2
Crossborder	2	3	2	1	(35.0)	2
LatAM total	11	11	6	8	39.0	16
Approximate global total (bil. $)	717	680	308	424	38.0	770-800

(i)Through June 2017. H1--First half. ABS--Asset-backed securities. CMBS--Commercial mortgage-backed securities. SASB/LL--Single asset single borrower/large loan. CLO--Collateralized loan obligation. RMBS--Residential mortgage-backed securities.

Trends Across Structured Finance

U.S. Consumer ABS: Greater Issuance Bring Late-Cycle Concerns

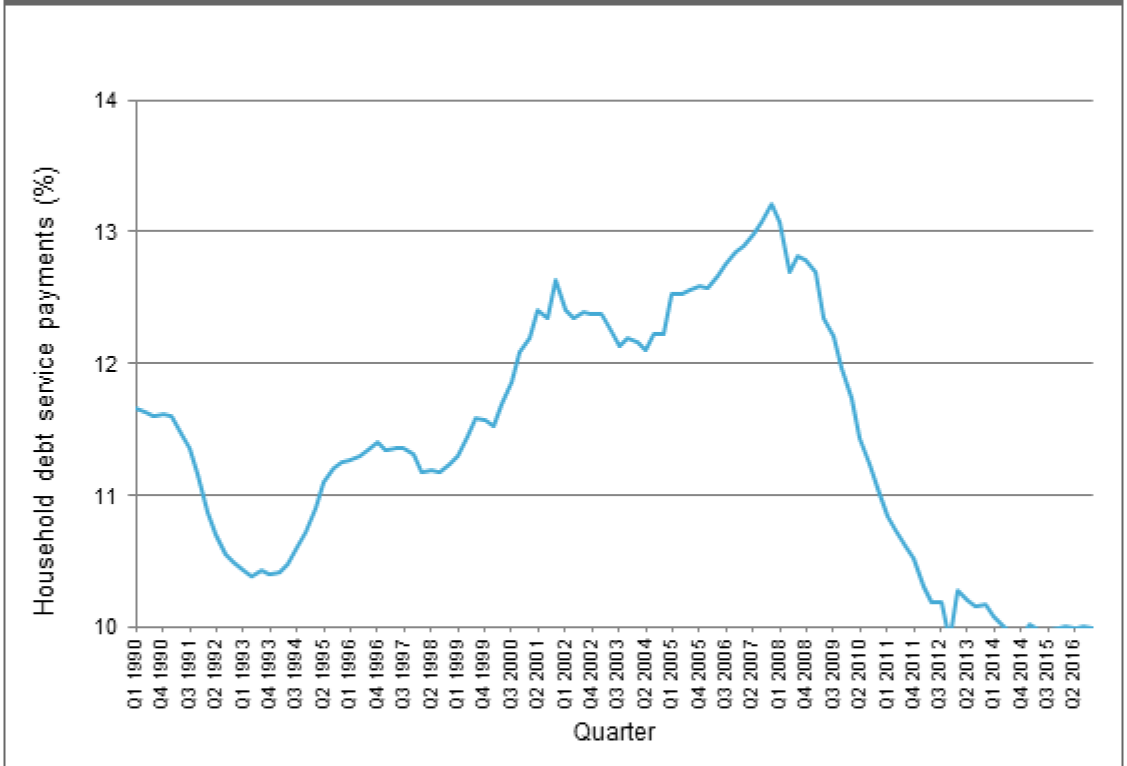
Credit analysts:

- Autos loans: Amy S. Martin, New York, (1) 212-438-2538; amy.martin@spglobal.com
- Auto leases: Jennie Lam, New York, (1) 212-438-2524; jennie.lam@spglobal.com
- Credit cards: Ildiko Szilank, New York, (1) 212-438-2614; ildiko.szilank@spglobal.com
- Student loans: John Anglim, New York (1) 212-438-2385; john.anglim@spglobal.com

Most of the recent uptick in U.S. loan originations (see table 1) has come from stable consumer loan growth, which has been driven by low unemployment and low interest rates. Additionally, stable liquidity and access to credit markets have allowed finance companies and banks to grow their lending portfolios. This has caused the amount of outstanding auto loans, credit card debt, and student loans to reach record (autos and student loans), or near-record (credit cards) levels, exceeding $1 trillion. With the rapid loan growth have come concerns about credit quality, causing the Federal Reserve Bank and other central banks to investigate the growing unsecuritized consumer asset exposures. Over the past year, this portfolio scrutiny, along with interest rate management, total loss-absorbing capacity (TLAC)-related issues, and more maturing product, has caused several consumer loan originators to increasingly turn to securitization in order to demonstrate the viability of capital market funding for their exposures. With employment and consumer spending growth leading to increased lending, we expect more issuers to tap into the securitized markets, which could cause new ABS issuance volume to exceed our current $215-$225 billion 2017 forecast. Table 4 shows that so far in 2017, ABS issuance is up 28% year over year, at $122 billion. As securitization issuance increases, some market participants will likely be concerned about the potential for late-cycle underwriting deterioration due to competitive forces, and asset depreciation from late-cycle overconsumption, which also materialized in 2006–2007. Also, the recent increases in consumer leverage have mainly been facilitated by low interest rates, creating relatively lower debt service obligations (see chart 1 for the U.S. household debt service ratio, which has recently been in the 10%–11% range, down significantly from 2007 levels). Therefore, the current consumer loan universe is likely sensitive to short-term interest rates, and increases may affect consumers' ability to service their debt obligations.

Chart 1

U.S. Household Debt Service Ratio (1990-2016)



While credit performance and ratings stability for the consumer sector were relatively strong throughout the 2007-2009 recession (when household debt service ratios peaked), we did adjust our criteria for in credit cards. We established a floor of 33% annualized peak loss rate in a 'AAA' scenario for our benchmark pool (our U.S. credit card quality index). We also calibrated our 'BBB' stresses based on the most recent recession, such that our average 13% 'BBB' level loss rate is above the 10.5% peak that our credit card quality index (CCQI) experienced in the downturn.

We undertook a similar exercise for auto lease ABS, as reflected in our auto lease criteria published in 2011, which takes into account the residual loss experience during the financial crisis in calibrating our stress residual loss levels by rating category and added excess concentration penalties. In private student loans the performance data collected through the financial crisis was also used to establish a "benchmark" base case and 'AAA' stressed default assumption that is discussed in "Methodology And Assumptions For U.S. Private Student Loan ABS Credit Analysis," published Feb. 13, 2013. Overall, the 2007-2009 recession was used to reset the data and criteria for these three consumer products, as well as CMBS and RMBS as we discuss later in the paper. With these criteria adjustments that resulted from the crisis, we remain comfortable with our ratings.

Given ongoing concerns regarding consumer leverage, we have written a variety of research papers on the macroeconomic factors that could affect consumer ABS: "U.S. Credit Card Charge-Offs Will Likely Face An Uphill

Climb," published Sept. 6, 2016; "How Will Auto ABS Pools Perform Through A Credit Cycle," published March 4, 2017; and "Extension Risk In Rated FFELP Student Loan ABS Transactions: FFELP Maturity Tracker July 2017," published July 20, 2017. These papers provide a good outline of how economic conditions would have to change in order for credit charge-offs to increase, or for extension risk in student loans ABS to increase. They also focus on downside risks. For example, we examine how charge-offs would increase under conditions similar to the 2007–2009 recession with an additional extreme stress of 15% unemployment. Given recent market conditions, however, these scenarios seem unlikely.

Current trends in specific consumer ABS sectors include:

- Credit card ABS: Pools have been left with highly seasoned accounts generating trust receivables with strong credit quality. Loss rates have declined to historical lows of 2%–3%; payment rates from transactor type behavior are at historical high levels in the mid-20s; and receivables from subprime accounts with FICOs below 620 make up just 12% of the pools--much lower than the 30%–40% figure that we observed pre-recession.
- Prime auto loans: Similar to credit card ABS, the current credit quality of the loan pools appears generally better than in 2007, with stronger weighted average FICOs and lower weighted average loan-to-value (LTV) ratios. Further, domestic auto makers depend less on selling vehicles via loose underwriting today than they did in 2007 through early 2009, since vehicle manufacturing levels and supply appear to be more closely aligned with demand than they were before the recession. Performance is likely to be affected by lower recovery rates due to declining used vehicle prices, which are caused by the high supply of off-lease vehicles expected in the coming years.
- Subprime auto loan: While credit performance has weakened in aggregate, this has been largely due to composition, with one large finance company moving into deep subprime auto lending (borrowers with FICOs of less than 550 or no FICOs at all), and a few relatively new issuers also coming to market with higher-loss pools than what we saw during the last growth phase. Of those auto finance companies that issued both in 2007 and over the last couple of years, most are reporting lower losses on their current vintages than those that weathered the recession. Still, future performance is likely to be affected by lower recovery rates due to longer loan terms and lower used vehicle values as a result of record-high off lease vehicle volumes, which are expected over the next three years. While the 2015 and 2016 subprime indexes are experiencing higher cumulative net losses year over year, it is worth noting the 2007-2009 experience. Despite unemployment reaching approximately 10%, very few auto loan ABS were downgraded, none defaulted, and none of the subprime auto loan ABS transactions that we rated from 2007–2009 experienced losses exceeding our 'BBB' expected loss levels. Unlike subprime mortgages, subprime auto loans have fixed payments, level-pay amounts, do not reset up to a higher amount, and are underwritten assuming the assets will depreciate. Further, auto loans are relatively short and lenders can assess whether performance is within expectations quite quickly and adjust accordingly. For example, for the first half of 2017, we've seen improvement in the LTV ratios across various subprime auto securitizers (see "U.S. Auto Loan ABS Tracker: April 2017," published May 11, 2017), which we believe is due to the companies taking corrective action to address higher-than-expected losses on their 2015 and 2016 pools.
- Auto lease ABS: This segment is the most exposed to higher used vehicle returns over the 2017–2019 period because most of the loss exposure on auto lease ABS is related to residual performance. Auto lease originations have approached peak levels of 30% of auto sales, and off-lease vehicle volumes are expected to reach record levels in 2017, 2018, and 2019. Due to the expected increase in off-lease volumes this year and through 2019, we anticipate that used vehicle values will decline by about 6% in 2017 and continue to decline in 2018. We expect current low gas prices to remain low and continue to depress used car values on small and mid-size cars, which currently make up a significant portion of vehicles returned to dealers. Used vehicle value declines could feed a vicious circle that increases the rate of return of off-lease vehicles and allows for significant residual value declines

in our analysis. From 2010–2015, ABS transactions generally experienced residual gains. Beginning in 2014, those gains began to decline, with mixed performance from transactions--some experienced residual losses and some experienced small gains. The current weighted average monthly residual loss/gain performance on auto lease ABS is trending close to 0%, and we expect residual losses to increase from 2017–2019, with passenger cars making up most of the losses.

- Student loans: A high percentage of ABS issuance continues to be backed by FFELP loans guaranteed by the U.S. federal government. As private student loans reemerge, issuers are using more loan data to selectively originate loans to collateralize their issuances. As a result, securitized private student loan collateral has been of fairly high quality.

Overall, we expect our consumer ratings to remain stable. We expect some deterioration in U.S. consumer loan performance from new loan seasoning, non-prime accounts, higher interest rates, and looser terms. We believe credit in securitized pools will gradually weaken, as loss rates will likely arise from new accounts with lower FICO scores. At this stage, conditions do not seem to have deteriorated at the same pace as we saw for consumer lending in 2006–2007, so it is possible that the previous experience is curbing credit-based loan competition. Regardless, we expect that our credit support levels for transactions should be able to weather an economic slowdown. If interest rates rise, we will have to carefully monitor the consumers' debt capacity to ensure any collateral performance deterioration is limited before the loan matures.

U.S. Commercial ABS: Issuance Remains Steady Amid Increased Competition

Credit analyst: Joanne Desimone, New York, (1) 212-438-2444; joanne.desimone@spglobal.com

U.S. commercial ABS encountered some common issues in 2007 that impacted other types of ABS: limited liquidity and a severe drop-off in issuance until the advent of the Term Asset-Backed Securities Loan Facility (TALF) program. However, certain segments (such as noncaptive finance originators) benefitted from diversification, which resulted in generally stable net loss performance and no downgrades in the post-crisis years. So, while the construction industry experienced a downturn (creating increased losses in pools concentrated in financing this type of equipment), there were other industries that were less affected during the recession. For example, agriculture continued to have low net losses and strong performance. Generally, commercial ABS of captive finance companies has less industry diversification, which means that pools backing these transactions experienced rising losses when industry-specific stress occurred. They were, however, supported by additional collateral contributions from their captive parent companies, and no downgrades occurred for the deals we rate. Noncaptive pools, benefiting from more industry diversification, generally had less volatile swings in net loss levels. Smaller or newer commercial finance companies experienced a sudden or severe cutoff in warehouse line availability and commitments, along with the stress of severely curtailing origination volumes in the face of more stringent underwriting criteria. These factors resulted in some bankruptcies and mergers, but no downgrades.

Commercial ABS issuance picked up again under the TALF program and has continued to show modest issuance growth over the past 10 years. The post-crisis segment has been characterized by a wave of new or first-time ABS issuers, as management teams from commercial finance companies that experienced difficulties during the crisis have started companies with newly available capital. Before the crisis, newer or smaller issuers commonly relied upon bond insurance as they reached a critical size. Now, these issuers will often initially enter the ABS market by issuing notes with ratings that are below our highest rating category. Going forward, we expect continued steady issuance; however, we do recognize the growing challenge of competition, as many new commercial finance companies have been formed. In our view, those that maintain pricing and solid underwriting standards, rather than chasing market share in an increasingly competitive environment, will likely fare better in the longer term and through the credit cycle.

U.S. Non-Traditional ABS: Tight Structures Have Kept Performance Stable

Credit analysts:

- Kate Scanlin, New York, (1) 212-438- 2002; kate.scanlin@spglobal.com
- Deborah Newman, New York, (1) 212-438-4451; Deborah.newman@spglobal.com

U.S. non-traditional ABS funds a variety of products, including aircraft leases, container leases, and timeshare loans, among others. These transactions are generally structured with tighter rating parameters, which to some extent likely limited the impact from the financial crisis. In this section we briefly discuss the experience in the aircraft, shipping container, and timeshare segments.

- Aircraft: Post-crisis transactions have performed well. Despite multiple global/regional recessions since 1970, global air traffic growth has generally outpaced global GDP growth. Even during the 2008 financial crisis, when global air traffic growth slowed, aircraft traffic growth still grew at a rate of 5%. Nonetheless, the financial crisis nearly shut down aircraft ABS, and the new issue market did not truly begin to revive until 2013. Post-crisis structures have evolved, and the investor base has broadened globally.
- Containers: There have been few downgrades. Since 2007, the container leasing sector has experienced two downturns: one in 2009 related to the credit crisis, and the other in 2015–2016. The 2009 downturn reflected the aftermath of the global credit crisis, with a more than 10% decline in global containerized trade. It was unprecedented in terms of the magnitude of decline in container lease rates and prices (although utilization decline was moderate), but the 2015–2016 downturn, triggered by a combination of a sharp drop in steel prices and sluggish trade growth, lasted even longer. Both container lease rates and prices dropped significantly. Although the vast majority of rated container transactions were able to weather the downturn, the container ABS new issuance market nearly came to a complete stop. By early 2017, the market was showing signs of life as steel prices recovered and there was a shortage of container boxes.
- Timeshares: The worst was expected for vacation homes, but securitizations were generally unaffected. Timeshare operators suffered --like many other asset originators during the crisis--from limited liquidity, and therefore, were unable to finance new receivables. From 2004–2007, the aggregate issuance amount of S&P Global Ratings-rated U.S. timeshare deals exceeded $1 billion dollars, but by 2008, it had declined to only $561 million. Volume quickly bounced back to $1.2 billion in 2009. Not only did the credit crisis affect timeshare operators' ability to issue new loans, but existing timeshare loans suffered from increased delinquencies and defaults. Yet, despite worse loan performance, outstanding securitizations were generally unscathed. We attribute the positive securitization performance to strong transaction structures, which generally benefit from overcollateralization, a reserve account, and high excess spread, among other things.

The big lesson learned in nontraditional collateral was that even those certain sectors were expected to be highly sensitive to the macroeconomic environment, the conservative transaction credit structures in many cases created unexpectedly stable bond performance.

U.S. CLOs: Performance Shows CLOs Can Change With The Times

Credit analysts:

- Eric Hudson, New York, (1) 212-438-3407, eric.hudson@spglobal.com
- Jimmy Kobylinski, New York, (1) 212-438-6314, jimmy.kobylinski@spglobal.com

In the years leading up to the credit crisis, U.S. corporate debt issuers benefitted from a prolonged period of positive/stable performance, and U.S. CLO 1.0 structures (CLOs issued before the credit crisis) evolved accordingly to allow for higher leverage and looser terms. During the credit crisis, speculative-grade corporate downgrades significantly outpaced upgrades, loan prices reached new lows, and the number of defaults reached new highs. During this time, CLO 'CCC' buckets reached 11% on average, and CLO default buckets reached 7%, resulting in significant haircuts to coverage ratios, causing about half of U.S. CLOs to fail one or more of their coverage tests. But by the end of 2009, negative U.S. speculative-grade corporate rating actions and defaults had started to subside as loan prices improved. In the midst of the "amend-to-extend" wave, loan issuers began to experience upgrades, causing the CLO 'CCC' buckets to shrink. CLO coverage tests came back into compliance, though the weighted average life of several CLO portfolios increased. As the dust settled, CLO 1.0 structures surprised many by proving to be resilient, weathering one of the worst economic scenarios in recent memory. In fact, out of the thousands of CLO 1.0 notes rated, only 35 tranches have had their ratings lowered to 'D (sf)' as of today.

Nonetheless, in September 2009, we updated our CLO criteria, which calibrated each rating category to a predefined economic stress using corporate debt default history. During the credit crisis, CLO issuance was mostly nonexistent. By 2010, issuers started to issue CLOs again, this time rated under our newly revised CLO criteria. These new CLO 2.0s (CLOs issued after the credit crisis) had taken a new form, with less leverage and less flexibility when compared to CLO 1.0s issued right before the crisis. Since 2010, CLO 2.0s have experienced a period of stable performance, which has permitted the CLO 2.0 structure to evolve from the first 2010 vintage CLO 2.0s, mainly through increasing leverage and flexibility. Changes in regulation have also shaped CLOs, as several issuers had amendments to "Volkerize" their CLOs around mid-2014 for risk retention. Also in 2014, we saw the refinance and reset phenomenon begin to take shape and really gain popularity by 2016. Then risk retention took effect by the end of 2016, initially shutting out several smaller managers from the CLO market.

Within the past 10 years, the CLO market has proven to be nimble as it evolves with the changes in the credit and regulatory environment. Despite the recent challenges in declining spread and systemic changes within the energy and retail sectors, the CLO market continues to thrive today. New issuance continues to be robust, while the refinance and reset activity has continued. CLO resets are an interesting development, as they can potentially make ramp-up risk and the amortization period a thing of the past, and they are expected to be active in the second half of 2017. So despite several broad economic and sector-specific downturns over the past 20-plus years, CLOs have proven the value of active credit pool management and will continue to help economic growth well into 2018. Given the strong 2017 issuance levels already, and indications that risk retention has actually driven very successful fundraising efforts, we've increased our 2017 issuance forecast to $90 billion.

U.S. CMBS: Market Share Has Gone To Private And Portfolio Lenders

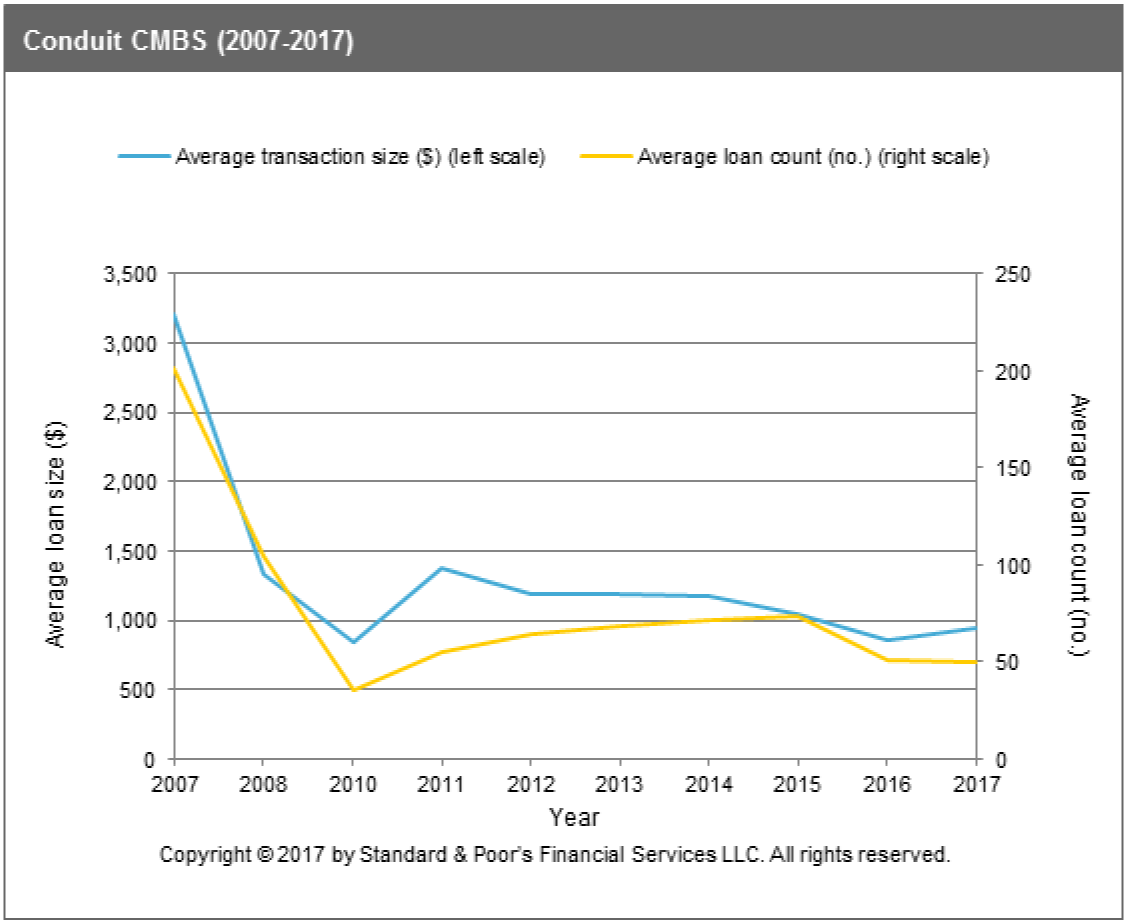
Credit analysts:

- James Digney, New York, (1) 212-438- 1832; james.digney@spglobal.com
- Deegant Pandya, New York, (1) 212- 438-1289 ;Deegant.pandya@spglobal.com

U.S. CMBS have always been unique in that originators not only took time to create pools for issuance, but also made secondary markets that made them even more sensitive to the price movements of the financial crisis. That price volatility created significant loan and bond losses for many CMBS originators, causing several to exit the sector and ensuring that the CMBS market that re-emerged in 2010 would have shorter origination warehouse periods. The result was smaller CMBS pools with greater property type concentrations. The industry also adjusted some of its governance mechanisms by creating an operating advisor for each trust to oversee certain servicing decisions. Finally, in late 2016, the Dodd-Frank regulations added 5% risk retention to this origination process, which resulted in an additional level of scrutiny to the pools beyond the traditional first-loss buyers' review. Through these changes, CMBS origination and demand has proven resilient, but it has lost market share to private portfolio lenders that can offer greater servicing flexibility, and sometimes, greater proceeds. So while total outstanding U.S. commercial real estate debt has grown to $3.9 trillion as of first-quarter 2017 from $3.2 trillion as of 2007 (see table 1), total outstanding CMBS issuance has declined to $628 billion from $738 billion during the same time period. This translates into a decline in CMBS utilization as a share of total commercial real estate debt of 16%, down from 23%.

CMBS is still frequently used when large trophy single-borrower loans need to be syndicated among multiple investors with different risk tolerances, but now mid-sized and smaller loans frequently go to portfolio lenders, which has resulted in limited lending opportunities in remote or secondary commercial real estate markets. The CMBS multiloan pools are smaller and have greater loan concentrations. Before the crisis, a typical multi-loan conduit CMBS transaction amounted to several billion dollars and was collateralized by up to a few hundred loans. In contrast, the average conduit transaction in the first half of 2017 totaled only $939 million and consisted of only 51 loans (see chart 2).

Chart 2



In terms of property type composition, retail was the dominant property type when the CMBS sector re-emerged from the post-crisis issuance suspension, making up 55% of collateral pools in 2010 and 45% in 2011. As bankruptcies and store closures in the retail sector continue to mount, retail properties have attracted much more scrutiny from investors and have largely fallen out of favor. Retail concentration dropped to only 23% in the first half of 2017, with issuers largely filling that void with office collateral. Office properties made up only 21% of 2010 pools, but grew to constitute an average of 29% in 2016 before jumping to 42% as of first-half 2017. Meanwhile, hotel collateral made up only 3% of 2010 collateral pools, but has grown steadily each year--most recently averaging 15% in first-half 2017. Multifamily exposure in nonagency conduit CMBS has remained relatively low since the financial crisis, mainly driven by the decrease in multifamily issuance has been the continued growth of Freddie Mac's K-Series multifamily securitization program, which began in 2008 and now constitutes the lion's share of securitized multifamily mortgages.

As 2017 progresses, we expect the 2007 loan maturity wave to continue to dissipate, but we anticipate that new CMBS issuance volume will remain fairly stable, based largely on the current pipeline, and signs of growth on the single-borrower side. First-half 2017 issuance was up 23% over the same period in 2016, at $37 billion. The private lending market share continues to grow for smaller and mid-sized commercial loans, providing a potential headwind. This may change since regulators here and in Europe have started to notice the commercial real estate build-up at depository institutions and may take actions to discourage significant commercial real estate loan growth. All in all, an active third quarter, and then some slowdown into year-end as the maturity wave subsides, make our full-year forecast of $75–$80 billion roughly flat on a year-over-year basis from $76 billion in 2016, in contrast to many other areas that we forecast to show significant growth in 2017.

U.S. RMBS: Struggle To Restart Nonagency-Supported Funding Continues, With Some Hopeful Signs

Credit analyst: Jeremy Schneider, New York, (1) 212-438-6301; jeremy.schneider@spglobal.com

The well-documented deterioration in home prices and significant rise in mortgage defaults was a major contributor to the financial crisis. It was fed by aggressive underwriting, high home price appreciation, and virtually unlimited financing. The resulting 2008 insolvency of originators and issuers, along with deterioration in macroeconomic conditions, contributed to nonagency RMBS making up 8% of total outstandings in the U.S. market today, a shift from the closer balance of nonagency to agency RMBS in the past (see table 1). (Note that agency RMBS are those created by the government-sponsored agencies (GSEs): Ginnie Mae, Fannie Mae, and Freddie Mac.)

Shortly after the crisis, some private portfolio lenders may have seen some potential opportunities in the nonagency mortgage market, as evidenced by attempts to originate nonagency product to meet the needs of certain consumers, but the resulting volumes compared to the broader agency market left the space quiet. Resecuritizations of nonagency MBS created some post-2008 volume, but 10 years later, those have diminished, while other types of nonagency securitization have begun to pick up. In terms of the traditional nonagency prime jumbos, in the low-yield environment, many originators have preferred to keep originations rather than securitize and potentially retain a portion of the pool. Although the movement towards prime jumbo securitization picked up after 2012, we still find ourselves in a mortgage market that is primarily dominated and supported by GSE securitization.

Regulations implemented after 2007 created a much more conservative 2017 mortgage market. Lending metrics, including risk control and quality control with due diligence, have been strengthened considerably, and the Consumer Financial Protection Bureau's (CFPB's) introduction of the qualified mortgage (QM)/ability-to-repay has bolstered the move to traditional high-quality underwriting. Given their exposure to credit risks, the agencies created bonds that transferred credit risk from their growing portfolios through credit risk transfer (CRT) bonds, to which the market proved to be receptive to the new product. This CRT product demonstrated investors' demand for mortgage credit risk bonds and has spurred other innovations: as of 2016, the agency to nonagency securitization ratio was 95 to 5, but 2017 has seen more non-QM securitization and reperforming transactions as some of the portfolio lenders and funds turn to securitization funding.

With first-half 2017 nonagency issuance reaching $33 billion, some participants may be solving the risk retention puzzle, which has us thinking securitization may be able to reach pre-2005 share levels of roughly 20% nonagency. Market conditions today still create many high-quality nonagency loans, as whole-loan trades or parked-on bank balance sheets, which has focused credit for many on only the best/better borrowers. Again, private funds are trying to fill the securitization lending gap by specializing in higher-leverage lending to lower credit score borrowers, but financing availability reportedly is fairly limited for many potential homeowners, who are forced to resort to very tight rental markets. As lenders try a variety of innovations, this may change in the medium term. At this stage, the big unknown factor that may influence housing finance availability and securitization is the ultimate fate of housing and mortgage finance reform. While still a widely discussed topic currently, any actual changes remain uncertain.

U.S. ABCP: Conduits Continue To Navigate New Regulations

Credit analyst: Dev Vithani, New York (1) 212-438-1714; dev.vithani@spglobal.com. Secondary contact: Raj Thakar, New York (1) 212-438-0441; raj.thakar@spglobal.com

During the years leading up to the financial crisis, U.S. asset-backed commercial paper (ABCP) steadily gained traction as an alternative funding source. Considered a relatively safe investment, ABCP soon attracted investors such as prime money market and retirement funds. By the time the ABCP market grew to its peak in July 2007, it amounted to $1.3 trillion, backed largely by residential mortgages. Significant portions of the residential mortgage product, along with newer esoteric assets, were held in single-seller conduits and structured investment vehicles (SIVs). New and growing asset types helped fuel the development of these increasingly complex ABCP conduit structures, as banks no longer issued ABCP merely for capital requirement efficiencies, but to profit off of yield spreads between long-term assets and short-term ABCP liabilities as well. The traditional multi-seller conduits that had made up the majority of ABCP issuing structures took a backseat leading up to the crisis, representing less than 40% of outstanding ABCP versus over 70% today. As collateral quality deteriorated and investor confidence waned, many of the newer complex structures, which relied upon the market-value liquidation of the underlying assets, did not perform as expected. Subsequently, many of these structures became insolvent and shuttered operations, and the popularity of ABCP fell steadily over the next decade, to $241 billion as of mid-2017.

In the wake of the crisis, regulatory reforms helped stabilize liquidity and credit support, and created a demand for more disclosure of asset-level data. While the increased cost and capital considerations tied to the new regulations initially reduced ABCP outstanding, conduits have since adjusted their platforms to succeed within the new regulatory parameters, and investors now benefit from a more stable and transparent market. For example, approximately 50% of ABCP conduits issue callable/puttable notes to navigate mandates to hold highly liquid assets against short-term liabilities (due within 30 days). Additionally, to comply with the risk retention rule, rather than retain required risk through a costly subordinated note holding, most conduits retain their own ABCP to meet regulatory standards. Also, though SEC money market reforms have led to a shrinking investor base of prime money market funds, sponsors have continued to target non 2a-7 private liquidity funds and government funds, along with the recent influx of corporate treasury investors, such as large technology and pharmaceutical companies, to offset the outflow.

Conduits strive to achieve capital requirement efficiencies and a positive yield spread while offering investors flexibility and yield potential in a stable regulatory environment. A wide range of ABCP vehicles, represented mostly by traditional multiseller conduits, help reduce an investor's exposure to issuer and asset concentration risk, as well as individual issuer credit risk, as they continue to compete with unsecured "corporate" commercial paper (CP) yields.

As of March 2017, the U.S. ABCP market is backed by $270 billion in total liquidity commitments. S&P Global Ratings rates approximately 80% of the U.S. ABCP market--a total of $192.2 billion outstanding. Auto assets dominate the rated portfolio, representing 28.6%; commercial (13.0%) and trade receivables (9.4%) follow. Credit quality has remained stable, as 'A-1' rated ABCP is projected to continue accounting for over 80% of total U.S. ABCP outstanding; the S&P Global Ratings-rated portfolio consists of 83% 'A-1' ratings, with the remainder rated 'A-1 +'. In 2016, we withdrew ratings on ABCP issued by three conduits and assigned ratings to four programs. In 2017, we have rated four new issuances of ABCP.

Conduits must continue to navigate regulation to reduce cost and capital burden. With the new legal landscape of increased data quality and disclosure, investors can analyze the ABCP market in much more detail, from asset-level credit and liquidity risk to conduit and sponsor-level operational risk. Nevertheless, with the combination of an increasing interest rate environment encouraging short-term investment, and decreased regulatory uncertainty, the ABCP market should experience moderate growth to $250 billion–$260 billion through the remainder of 2017, as savvy ABCP sponsors focus on expanding their existing portfolios.

European Securitization: Uncertain Regulations Lead To More Private Portfolio Lenders

Credit analyst: Andrew South, London (44) 20-7176-37121; andrew.south@spglobal.com

European authorities have dealt with their securitized markets similarly to the U.S. post-crisis, introducing additional regulations, such as a 5% risk retention standard. However, these regulatory initiatives have been rather fragmented and slow-moving, causing continued uncertainty and making structured finance products uneconomical for some investors, notably insurance companies. At the same time, the European financial system has received extraordinary central bank support. The European Central Bank (ECB), for example, has bought structured finance securities as part of its quantitative easing (QE) program, while also providing abundant subsidized funding for commercial banks, largely removing their incentive to issue securitizations. Issuance has therefore shifted strongly towards nonbank sponsors, and, similar to the U.S. experience, Europe has seen the emergence of private portfolio lenders with pools of money that aim to provide the financing previously provided by securitized products.

Central bank policies have contributed to very tight securitization spreads, which may have hindered the development of a more active investor base and, similar to Japan, have seen larger potential securitization investors looking abroad for yield. Existing investors still give traditional RMBS, auto ABS, and CLOs a positive reception, even when issued at tight spreads, but issuance of longer-term structured products, such as CMBS, has been rare.

In our view, broader-based issuance growth will likely depend on the adoption of more streamlined and consistent regulation, which recently took a step forward when European authorities agreed on the new "simple, transparent, and standardized" securitization legislation. This could have a tangible impact if it leads to a review of insurers' securitization capital charges under Solvency II, potentially allowing these investors to once again purchase longer-duration structured finance bonds.

The relatively small market size (currently €75 billion-€100 billion) is also a challenge, as investors prefer to focus on the larger corporate market. Ironically, the build-up of nonperforming loans (NPLs) to critical levels in parts of Europe may help increase the structured finance market size, as these pools pass from banks to opportunity funds. We expect many of these funds will eventually use securitization to fund their purchases. Potentially, this market could have accounted for €10 billion –€40 billion of issuance in 2017, but so far we have seen only a few transactions. As more NPL portfolios transact, we expect that securitization could play a role in creating bonds with relatively attractive yields, helping to further build the European structured finance market.

In our view, European issuance volumes could remain hampered until there is more certainty on the still-being finalized securitization regulations and further normalization of monetary policy. Some types of originators are unlikely to return to securitization in volume until the availability of alternative central bank funding reduces or the cost increases. The start date for the new securitization regulatory framework was recently pushed out to 2019 to allow regulators sufficient time to draft the required technical implementation details. While these concerns are unsettled, both originators and investors are likely to remain cautious.

APAC Securitization: Markets Remain Cautious, But Some Areas See Growth

Ten years ago, Asia (excluding Japan and China) had a robust securitization market, with CLOs, synthetic CDOs, trade receivables ABCP, RMBS, consumer ABS, and CMBS all actively issued. Markets such as South Korea, Taiwan, Hong Kong, and Singapore used the instruments to address a variety of needs in funding, balance sheet and capital management, and pure arbitrage. This exposure meant that the region experienced the financial crisis similarly to other global markets; only this region also had high exposures to synthetic CDOs. That being said, transactions backed by local assets have performed well, and the major losses came from the exposure to global corporate and subprime mortgages. After the crisis, there was a very negative perception of securitized products, and only a handful of consumer ABS and balance sheet CLOs have been issued for refinancing purposes.

However, the region has been quick to embrace primary securitized issuance. For example, China now actively uses securitized products to fund economic growth and diversify funding sources. From that perspective, Asian markets have been cautious, regulating securitized bond utilization. But they have also been receptive to using securitization to manage credit risk. As a result, the Chinese securitized market has grown into the second-largest global market, reaching 850 billion renminbi (RMB) in 2016 (US$116 billion). South Korea also maintained an active securitization market after the crisis, as demonstrated by high volumes of RMBS and credit card ABS funding.

China's results have not gone unnoticed in other Asian markets. However, those countries' respective market environments, including different regulations in both securitization and the industries generating the loans, influence and remain the main challenges in their varying securitization development stages. The shorter history and different economies of these countries also make for fewer repeated issuances and more esoteric assets. So while we expect China's success in utilizing structured finance products will encourage other nations to use securitization, we also see challenges in many of the Asian markets that could easily provide hurdles for further revival of securitization.

China uses securitization to grow

Credit analyst: Aaron Lei, Beijing (852) 2533 3567; aaron.lei@spglobal.com

Post-2008, China has been looking into its trust, contract, and bankruptcy laws, along with a variety of potential security structures, which could isolate asset cash flows and create asset-backed bonds. To this end, the Asian securitization market started to revive in 2012 when China, the second-largest economy in the world, re-tapped the market to address policy initiatives of issuer's needs for funding and balance sheet management. The resulting CLO, RMBS, auto loan ABS, unsecured consumer loans and lease ABS issuances have supported China's consumers and economy, and created what is now the second-largest securitization market in the world. In the first half of 2017, China issued RMB460.53 billion in new securitizations, repeating the over 50% year-over-year increase from 2014.

Australia's strong performance is attracting international investors

Credit analyst: Erin Kitson, Melbourne (61) 3 9631 2166; erin.kitson@spglobal.com

Australian structured finance has declined in-line with other international markets as the retreat of offshore investors, such as SIVs, and a tougher regulatory landscape for securitization more broadly has restricted new issuance. Australian structured finance issuance has declined to $A24 billion in 2016 (mostly RMBS, covered bonds, and some auto ABS) from a peak of $A66 billion (85% RMBS and 10% ABS, with the remainder CDOs and CMBS). However, the stronger collateral quality is clear across both prime and nonconforming RMBS portfolios, as the proportion of low-documentation loans has decreased and weighted average LTV ratios have reflected tighter mortgage lending standards since 2007. Relatively stable employment conditions and a period of low interest rates have contributed to low levels of arrears and losses, as well as general ratings stability over the past 10 years.

The strong collateral performance of Australian RMBS has recently combined with an investor search for yield, particularly from Japan. This international demand appears to have tightened issuance spreads to levels that are reviving securitization--with new issuance volumes up 40% at $US 24.4billion as of June 2017 and RMBS issuance more than double its June 2016 levels. As a result, we now see Australia as another market that could see surprising issuance increases in the next 12–24 months.

Low domestic interest rates cause Japanese investors to target securitization outside Japan

Credit analyst: Yuji Hashimoto, Tokyo 81 (0)30 4550 8275; yuji.hashimoto@spglobal.com

Similar to many markets, Japan saw issuance of securitized products peak in 2006, but then decline ever since. Issuance was down 20% in 2007 and another 40% in 2008. Since then, issuance has fluctuated, but never increased materially. In 2016, the Bank of Japan introduced its negative interest rate policy, which boosted demand for fixed-rate residential loans for new purchases as well as for refinancing, causing an uptick in issuance. However, the issue amount of RMBS backed by these loans started to decline from around the beginning of 2017, during a wave of refinancing by those borrowers sensitive to mortgage interest rates.

RMBS and ABS have been the major structured finance products issued over the past few years, and their performance has generally been strong. However, there are limited economic incentives for originators to use securitizations, even though investor demand for these products is currently strong. In fact, low yields have driven an increase in indirect financing from banks, which have been aggressively promoting loan products, enabling originators to take on funding at low rates without using securitization. Thus, as long as the low interest rates persist, issuance of securitization products in Japan seems unlikely to recover materially, in our view. Given this shortage of securitization products in Japan, Japanese investors have actively targeted securitization products overseas, such as U.S. CLOs and Australian RMBS.

Canada: A Slow Recovery From ABCP Failure

Credit analysts:

- Sanjay Narine, Toronto, (1) 416-507-2548; Sanjay.narine@spglobal.com
- Dev Vithani, New York, (1) 212-438-1714; dev.vithani@spglobal.com
- John Detweiler, (1) 212-438-7319 ; john.detweiler@spglobal.com

For Canada, the story of structured finance is intertwined with the ABCP story. Almost 10 years ago this month, Canada's financial system was rocked by a series of high-profile nonbank conduit defaults on ABCP. These defaults totaled C$32 billion, representing nearly 30% of Canadian ABCP outstanding at the time. On the surface, this sudden wave of defaults was linked to investor concerns about the presence of U.S. subprime mortgages collateralizing some of the securities. However, a more in-depth review of the situation revealed a much deeper root cause: a flawed form of backstop liquidity arrangements. All ABCP generally benefits from some form of liquidity backstop, but the Canadian ABCP was unique in that some conduits utilized liquidity lines that were available only if there was a general market disruption. This unique provision was vague to the point that some market participants, including S&P Global Ratings, were unable to assess its credit risk (and did not rate the programs). In August 2007, under the severe stress from liquidity drawn because new ABCP couldn't be issued (no bid), liquidity providers claimed they did not have a contractual obligation to fund, citing "general market disruption" language. Most bank-sponsored ABCP programs were able to fund, and, in that sense, the ABCP and CP markets did not completely shut down. However, this led to a massive long-term restructuring of the ABCP securities, with frozen maturities and workouts over many years. Regulators and policymakers subsequently enacted reforms that, together with shifting investor preferences, would make a repeat of this situation highly unlikely. These included a push for multiple ratings on structured products, enhanced disclosure, and the removal of a withholding tax that opened up Canadian markets to outside investors.

Since this severe incident, Canadian structured finance products have been slow to recover, and recent issuance volumes are well-below pre-crisis levels. Yet, in 2017, issuance shot up to reach C$12.7 billion year-to-date, versus only C$7.8 billion in the same period last year. A good portion of this issuance is related to credit cards (C$7.5 billion) and autos (C$2.9 billion), but for the first time since 2014, a non-Canada Mortgage And Housing Corp. (CMHC) RMBS transaction totaling C$1.9 billion was issued. We expect this RMBS market could develop into another major market in Canada as the government encourages participants to lend away from their government-guarantee CMHC programs. Cross-border issuance also made up 34% of this year's issuance, now that bonds are no longer subject to withholding tax. This cross-border trend may encourage further securitization, as comparable structured finance issuance spreads appear to be cheaper in international markets.

Latin America: The Crisis Was One Of Many

Credit analysts:

- Leandro Albuquerque, New York (212) 438- 9729; leandro.albuquerque@spglobal.com
- Cathy de la Torre, New York (212) 438- 0502; cathy.de.la.torre@spglobal.com
- Facundo Chiarello, Buenos Aires (54) 11 4891 2134; facundo.chiarello@spglobal.com
- Antonio Zellek, CFA, Mexico City +5255 5081 4484; antonio.zellek@spglobal.com

The effects of the U.S. financial crisis on the Latin America structured finance markets were mixed, as various other global and domestic/idiosyncratic factors affected each country. For example, while the performance of RMBS backed by assets originated by nonbank financial institutions (NBFIs) in Mexico were affected by the consequences of the crisis, other asset classes weren't. In Brazil, the deterioration of auto loan performance was caused by its own domestic competitive environment, and was therefore country- specific. In fact, the unstable economic performance of several Latin American countries was a major factor in the incentives and demand for their securitized products. One important consequence of the U.S. financial crisis was amended regulations for Latin American securitization instruments, particularly in Brazil, which again affected economic incentives to securitize.

In Mexico, during 2009–2012, several of the NBFIs originators filed for bankruptcy, were reorganized, or liquidated, mainly due to their exposure to NPLs, creating the need for servicer replacements on these deals. In many cases, this put additional pressure on these deals, especially in cases where the substitutions were not conducted in an orderly manner. Since then, NBFI RMBS have shown either a significant recovery thanks to the efforts of the substitute servicer, or underperformed and continues to deteriorate. In terms of ratings performance in Mexico, the number of downgrades peaked in 2010 with 41, followed by 19 in 2011 and 25 in 2012. During that period, 11 classes defaulted on their monthly interest payments and were downgraded to 'D'. Since then, the number of downgrades has stabilized to an average of eight classes lowered per year over the past three years. On the other hand, transactions originated by retail banks and government agencies (Infonavit and Fovissste) went through this period with no significant issues, and have maintained solid performance mainly due to the better obligor credit quality and a payroll deduction collection scheme for government agency transactions. This experience is similar to the U.S.'s success, but it did not lead to significant private issuance as all loan originators currently have excess liquidity and prefer to hold loan portfolios.

In Brazil, the securitization market's transformation was influenced by regulatory change, sluggish GDP growth since 2014, and banking concentration. Banking concentration reduced the number of originators that potentially could securitize, while slow economic growth reduced both the demand and supply of credit. In the beginning of 2013, Comissão de Valores Mobiliários (CVM, Brazil's Securities and Exchange Commission) enhanced its regulations on Fundo de Investimento em Direitos Creditórios (FIDCs), the main instrument used for securitizations in Brazil. However, the country's bad economic performance offset the potential benefits of the new regulation. Looking forward, we expect that if the interest remains low and political instability is controlled, RMBS and covered bond market will be able to develop. In addition, new originators who are technologically savvy may use their systems to partake in the securitization market.

Argentina is another market that has mainly been affected by domestic factors, particularly high levels of inflation and interest rates. With some exceptions, collateral performance was generally good, with limited impact on ratings. Today, the outlook for Argentina is positive as real GDP grew 1.1% quarter over quarter in first-quarter 2017, from 0.7% in fourth-quarter 2016, confirming the end to the recession. Also, new participants are coming to the market, as interest rates and inflation decrease. Market participants are expecting a change in the Capital Market law, which could simplify issuers' access to the market. Additionally, we expect to see an increase in RMBS securitization driven by the rapid growth of mortgage loan origination. However, any further development in the securitization market is depends on legal changes and the expectation of lower interest rates and inflation.

Performances of both merchant voucher and diversified payment rights (DPRs) securitizations have remained stable over the past 10 years. While collateral performance has been strong, the bonds have been affected by downgrades of sovereigns and financial institutions across the region. The majority of DPR transactions we rate in Latin America originate from Brazil, Peru, and the Caribbean. Before 2007, the balance was bigger, at $US 2.5 billion outstanding balance for rated deals compared to $US 1.6 billion as of June 2017. In our opinion, DPR usage depends on the long-term foreign exchange financing demand from the domestic bank's clients abroad, which is typically lower than short-term needs, and the bank's own financing needs for internal operations. After not much activity in the past four or so years, along with downgrades on several regional financial institutions, we saw a slight return to issuances backed by DPRs in 2016, specifically for Brazilian and Central American originators.

For Latin America region, we generally expect newer and smaller originators, including Fintechs, to evaluate the benefits of accessing the market. However, they will typically bring a higher level of operational risk that will have to be considered. We are also seeing an increase of securitizations related to the agribusiness sector, mostly in Brazil and Argentina. Finally, the development of a deeper derivative market for currency mismatches could be the bridge to international investors accessing the domestic markets exposed to domestic currencies.