



APPENDIX 20

EXAMPLE OF CMBS DEAL STRUCTURE AT THE HEIGHT OF THE PRE-FINANCIAL CRISIS BOOM

As noted in the main body of Chapter 20, the CMBS industry suffered a tremendous shock during and in the aftermath of the financial crisis of 2008. The result will forever change the industry, including the regulatory environment in which it operates. Nevertheless, we feel it is educational to examine what a typical real world CMBS deal structure was like before the crisis, at the peak of the boom of the mid-2000s decade. This can be instructive in part because you can see some of the features of the industry that were symptoms of, or even causes of, the weakness that actually underlay the deals being done at the peak in 2006–2007 (although unbeknownst to many in the industry at that time). But a glimpse at a typical deal of that era can also be of interest because some of the features of CMBS in those days were useful and may remain or again become characteristic of the industry. This example can give you an idea about the richness and complexity of actual real world CMBS deals, better than our simpler examples in the main text. In fact, the deal we will show you here was not from the “worst” of the boom. It was from late in 2005, just prior to the most aggressive lending and structuring and rating. See what you think about it.

Exhibit 20A-1 shows the structure, including bond ratings and pricing, of a \$1.5 billion CMBS transaction from 2005, derived from a pool of 210 commercial and multifamily mortgage loans. Perhaps most striking to the new reader is how much more complex is this real world deal than the simple stylized three-tranche numerical example introduced for pedagogical purposes in the main chapter. The illustrative deal here has a much larger number of tranches, with varying levels of subordination (credit support) ranging from AAA down to nonrated (NR), including a variety of intermediate classes rated AA to BBB– that are often called **mezzanine tranches**.¹ Any loan principal repayments start at the top, going to the A tranches (sequentially to classes A-1 through A-J) until they are fully retired, then to the mezzanine tranches (classes B through H) until they are fully retired, and then to the lower-rated tranches. In contrast, all losses of par value due to default start at the bottom, going first to the P tranche until it is retired, then to the O tranche until it is fully retired, and then to the N tranche until it is fully retired, and so forth. In addition, the most senior triple-A tranches are differentiated by maturity (are “time-tranched”), having expected lives ranging from about 3 years to 10 years.² The bulk of the pool par value, \$1.367 billion (or 88 percent), is sold as senior AAA-rated securities, at yields lower than those on the underlying whole loans. Less than 5 percent of the deal, bonds rated BB down to nonrated (NR, the first-loss tranche),

¹CMBS structures had evolved significantly over the decade prior to 2005, and were by then much more complex than they were earlier, or would be again shortly after the financial crisis. However, they became even larger and often slightly more complex in 2006 and 2007 after this example 2005 deal that is described here.

²Maturity tranching was first developed in collateralized mortgage obligations (CMO) securities based on residential MBS. By concentrating and stratifying the maturity (and hence the interest rate risk) of a pool that contains individual loans of varying maturity and prepayment risk, the usefulness of the securities is increased for certain types of investors, such as those trying to implement maturity matching or immunization-oriented strategies. It also enables the bond issuer to price the various securities at different points along the yield curve.

Morgan Stanley Capital I Trust, 2005-IQ10

Class	Amount (\$Mil)	Rating (Moody's)	Rating (S&P)	Subord. (%)	Coupon (%)	Dollar Price	Yield (%)	Avg. Life (Years)	Spread (bp)
A-1	75.150	Aaa	AAA	20.00	4.914	100.249	4.801	2.99	S + 10
A-1A	231.768	Aaa	AAA	20.00				8.68	
A-2	50.000	Aaa	AAA	20.00	5.126	100.549	5.007	4.97	S + 23
A-3-1FL	75.000	Aaa	AAA	20.00	L + 24	100.000		6.47	L + 24
A-3-1	78.000	Aaa	AAA	20.00	5.251	100.547	5.169	6.47	S + 47
A-3-2	50.000	Aaa	AAA	20.00	5.253	100.545	5.175	6.66	S + 35
A-AB	75.000	Aaa	AAA	20.00	5.178	100.549	5.102	6.91	S + 27
A-4A	527.250	Aaa	AAA	30.00	5.230	100.548	5.186	9.57	S + 28
A-4B	75.322	Aaa	AAA	20.00	5.284	100.546	5.243	9.81	S + 33
A-J	129.549	Aaa	AAA	11.63	5.446	100.547	5.305	9.89	S + 39
B	30.938	Aa2	AA	9.63	5.495	100.548	5.357	9.96	S + 44
C	11.601	Aa3	AA-	8.88	5.513	100.384	5.397	9.97	S + 48
D	25.137	A2	AA	7.25	5.513	99.855	5.467	9.97	S + 55
E	13.535	A3	A-	6.38	5.513	99.181	5.557	9.97	S + 64
F	19.335	Baa1	BBB+	5.13	5.513	97.697	5.777	10.31	S + 85
G	11.602	Baa2	BBB	4.38	5.513	96.624	5.943	10.87	S + 100
H	17.402	Baa3	BBB-	3.25	5.513	92.296	6.513	11.62	S + 155
J	3.867	Ba1	BB+	3.00				12.06	
K	7.734	Ba2	BB	2.50				12.57	
L	5.801	Ba3	BB-	2.13				13.12	
M	5.801	B1	B+	1.75				14.12	
N	3.867	B2	B	1.50				14.56	
O	5.801	B3	B-	1.13				14.85	
P	17.403	NR	NR	0.00				17.99	
X-1(IO)	1,546.863*	Aaa	AAA		0.043	0.481	7.653	8.46	T + 325
X-2(IO)	1,502.744*	Aaa	AAA		0.233	0.704	5.040	6.08	T + 70
X-Y(IO)	139.729*	Aaa	AAA					9.10	

*Notional amount.

EXHIBIT 20A-1 A 2005 CMBS Deal

Source: Commercial Mortgage Alert, October 14, 2005.

is acquired by the B-piece buyer. Pricing information is not shown for the lower rated tranches, and also the AAA class A-1A, because in this issue these bonds happen to be placed privately (i.e., sold in a private negotiated transaction or bid process) between the CMBS dealer and bond investor, whereas the other tranches are issued publicly. The investment-grade coupon rates are set close to investor required yields so that the bonds are priced to sell at or near par value.

Typical of most CMBS deals by 2005, the depicted deal is a **fusion** transaction, which means it combines a traditional conduit pool comprised of a large number of small- and

LARGE LOANS IN CMBS POST 9/11: FUSION, A/B NOTES & PARI PASSU

We have used the term “conduit” loan rather loosely to describe a commercial mortgage loan that is originated with the intent of being securitized. In fact a traditional conduit CMBS deal was actually narrowly defined as one with a large number of small- to mid-sized loans (usually in the \$1 million to \$20 million range with B to BB credit quality). Prior to the terrorist attacks on September 11, 2001, it was common to see both traditional conduit CMBS deals as well as CMBS bonds backed by single, large institutional-quality mortgage(s). After 9/11, single-borrower, large loan securitizations began to disappear due to investor concerns about lack of diversity and the resulting CMBS transaction structures. Issuers began to break large loans into “A/B note” structures, with the A-note or senior participation, included in a CMBS pool, with the B-note or junior participation typically held outside of the trust. Issuers also began to split large loans into multiple equal payment priority “*pari passu* notes”

that were then placed in a number of different CMBS deals (*pari passu* is Latin for “on equal footing” or “without partiality”), reducing the event risk of any one loan on the rest of the pool. *Pari passu* notes, while not necessarily all the same size, have an equal payment priority for the allocation of principal, interest, and losses. While the practice of spreading notes from a single large mortgage loan across multiple securitizations has advantages, it also adds complexity to the CMBS structure and creates uncertainty (or adds a layer of risk), especially for B-piece buyers and special servicers, with respect to the rights of investors, and resolution time in the event of default in the case of a loan workout. By 2005, the time of our example deal here, this had become less of a concern as the average size of CMBS transactions had increased significantly, so that dealers were able to put more large loans into CMBS pools without first splitting them up.

CMBS Issuance by Deal Type (%)	2005*	2004	2003	2002
Conduit	3.1	6.8	18.3	33.1
Fusion	77.7	72.7	49.6	32.9
Single Borrower/Large Loan	7.7	5.5	8.8	6.6
Seasoned Collateral	1.2	0.3	3.4	5.7
Short-Term/ Floating Rate	10.3	14.1	18.7	20.2
Other	0.0	0.6	1.2	1.6

Average CMBS Deal Size (\$Millions)	2005	2004	2003	2002
	1,674	1,095	794	713

*As of the end of September.
 Source: Commercial Mortgage Alert, Morgan Stanley.

By 2005, most CMBS deals were structured as fusion deals, which combined a traditional conduit loan structure with one or more large institutional-grade loans, or pieces of them (“A” or “*pari passu*” notes).¹ From bond investor and rating agency perspectives, the fusion structure represented the combination of two separate components that had to be analyzed individually and then together as a package to quantify the net effect of the tradeoff between conduit diversity and large loan credit

quality, in determining ratings and subordination levels. The inclusion of the large loan(s) reduced the diversity of the loan pool, but improved the average credit quality of the overall fusion transaction since large loans tended to be of investment-grade quality.

¹An industry rule of thumb used to define a fusion deal was that the top 10 sized loans accounted for at least 40 percent of the pool.

medium-sized loans, each of which might be rated BB or BB– as a stand-alone security, and a small number of large loans that are typically investment-grade and often from high credit-worthy, experienced borrowers. The 10 largest loans in the pool range in size from \$50 million to \$196 million and have an aggregate par value of \$721 million, accounting for almost 50 percent of the pool balance. The remaining 200 loans are relatively small, averaging about \$4 million each. The CMBS market began to move towards this model of mixing

large loans with a big pool of small loans following the terrorist attacks of September 2001 as a means of reducing concentration risk related to large loans (see the boxed feature, “Large Loans in CMBS Post 9/11: Fusion, A/B Notes & *Pari Passu*”).

The structure in Exhibit 20A-1 contains a number of features that were relatively new to CMBS deals in 2005. These relate primarily to the creation of new types of AAA tranches that appealed to different investor clienteles and illustrate how the CMBS market continued to evolve rapidly during the mid-2000s and develop new products to satisfy the demands of a heterogeneous investor base. We will not dive deeply into all of these here, but will focus on the **super-senior** deal structure, the trend that had the biggest impact on the marketplace, and which was perhaps most symptomatic of the thinness of the limb out onto which the CMBS industry was crawling in the mid-2000s!³ (A few other features of interest will be discussed briefly in a footnote for interested readers.⁴) As AAA subordination levels fell rather dramatically from about 25 percent in 2000 to the mid-teens in 2004, many investors began to express concern over the level of credit protection and potential “frothiness” of the CMBS market. In response, dealers began redistributing risk within the triple A-rated class, breaking it up into super-senior, senior, and “junior” or mezzanine pieces that, despite all having a AAA rating, offered varying levels of credit support (i.e., after tranching the mortgage pool into a typical CMBS structure at the time that might have two AAA-rated classes that differ only in maturity, they further tranching these additional securities, thereby expanding the menu for bond investors). In Exhibit 20A-1, the super-senior class (A-4A) has 30 percent subordination, while the senior classes (A-1, A-2, A-3-1, A-3-2, A-AB, and A-4B) each have 20 percent subordination, and the mezzanine tranche (A-J) has 11.63 percent credit protection. Investors worried that subordination levels were too low could purchase higher-rated tranches, while those that felt the lower subordination levels were warranted could buy the A-J bonds and be rewarded with a slightly higher expected yield. Even with credit enhancement of 11.63 percent, the A-J tranche attains a AAA credit rating.⁵

Not surprisingly, the market yields that reflect the prices at which the securities sell are quite sensitive to the credit rating. Keep in mind, however, that bond ratings are related only to default, whereas market yields reflect both default and maturity considerations, the latter including both the yield curve as well as in some cases some amount of prepayment timing risk. For example, the higher yield (and spread) on class A-2 bonds relative to A-1 bonds results solely from the longer maturity. Fixed-payment bonds are typically quoted in terms of spreads over a similar-maturity benchmark, such as a Treasury bond, or the fixed rate part of an interest rate swap especially for investment-grade bonds, as is the case in Exhibit 20A-1 where the “S” indicates a swap yield off of which the bonds are priced. Swap spreads emerged as the pricing benchmark following the liquidity shock to fixed income markets in the fall of 1998. Lower-rated and IO tranches tend to be priced relative to a Treasury benchmark, as can be seen with the “T” in the spreads on the IO bonds. In this 2005 IPO senior tranches are selling at swap yield spreads around 30 basis points, depending on average life, while intermediate tranches (so-called mezzanine debt) are at swap spreads ranging to over 100 basis points.⁶ Subordinate tranches are selling at very large spreads to Treasuries, often 700 to 1000 basis points, typical of high yield bonds. The most risky CMBS tranches, such as

³See section 20.4 in the main text, including the discussion of Exhibit 20-7 there.

⁴Class A-1A is based on the multifamily loans in the pool and is privately placed with (sold to) Freddie Mac, the only buyer of this tranche in 2005. This tranche is credit protected by lower rated non-multifamily tranches; hence, it is not based solely on multifamily loans. In early 2006, Fannie Mae announced its intention to start investing in the multifamily tranche of CMBS. A-3-1FL is a floating rate tranche with a variable rate coupon set at 24 basis points above LIBOR. The A-AB class bonds are “wide-window” amortization bonds that are structured to capture all the amortization (principal) cash flow from the mortgage payments in between the mortgage balloon payments (typically at 5 and 10 years). With this class, the issuer can shorten the expected life on other AAA-rated classes, and therefore tranche by duration to a finer degree than is possible without it.

⁵In the subsequent actual performance through the financial crisis and “Great Recession,” in fact very few if any super-senior CMBS bonds suffered any credit losses at all, even in deals issued at the peak.

⁶Just a few years later, after the 2008 financial crisis, this level of pricing would seem like a distant dream for CMBS.

first-loss pieces, are clearly more risky than the underlying property equity, even more risky than some levered equity positions.⁷ This makes sense, for even if only a small fraction of the mortgages in the pool default, the first-loss tranche will be worthless. In contrast, senior debt and unlevered equity positions will virtually never be completely worthless, for the underlying asset will always have some value.⁸

KEY TERMS

mezzanine tranches
fusion
super-senior

⁷Keep in mind, however, that the expected return on a bond investment that contains default risk is less than the yield-to-maturity of that bond, due to the effect of “yield degradation” (as discussed in Chapter 18).

⁸See our discussion of “levered debt” in section 20.2.1 of the main chapter.