# Moody's Update on Structured Investment Vehicles

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### INTRODUCTION

Transparency and improved disclosure have frequently been cited as prerequisites for alleviating the pricing and liquidity pressures afflicting Structured Finance. These pressures have been felt most acutely by the SIV sector. Indeed, the entire SIV business model is now widely acknowledged as unsustainable without restructuring.

Moody's monthly Performance Overviews<sup>1</sup> for SIVs, published since January 2004, provide key performance parameters for each consenting vehicle<sup>2</sup> alongside aggregate data for the sector. The overviews highlight several factors that Moody's considers in its monitoring of SIV ratings.

This report provides further details of SIV holdings and other performance parameters, presenting several statistics on variations of these parameters across the sector. We focus on traditional SIVs, although occasional mention will be made of SIV-lites.

The report covers various restructuring and other alternative funding initiatives that have been, or are currently being, implemented by SIVs. We then present statistics on SIV net asset values, the maturity profile of senior liabilities, and portfolio sector, rating and country compositions. We also present statistics on available backstop liquidity and cash deposits, the average life of asset portfolios, aggregate mark-to-market prices and realised values, and the amount of leverage applied by vehicles in the sector.



Special Report: Introduction to SIV Performance Overviews, January 2004.

The following vehicles permit publication of Moody's monthly Performance Overviews: Axon Financial Funding, Cheyne Finance, Carrera Capital, Cortland Capital, Cullinan Finance, Harrier Finance, Kestrel Funding, Links Finance (permission provided for reports up to March 2007), Orion Finance, Parkland Finance (permission provided for reports up to March 2007), Premier Asset Collateralized Entity, Rhinebridge, Victoria Finance, and Whistlejacket Capital. To obtain copies, please search by issuer name on Moodys.com or contact Moody's Client Service Desk.

Table 1 lists Moody's-rated SIVs (excluding the sole bank-loan SIV) and Table 2 contains SIV-lites. The tables show, amongst other headings, sponsors, programme sizes and recent rating actions. Chart 1 illustrates the decline in assets under management for the sector from a maximum of almost US\$ 400 billion in July 2007 to approximately US\$ 300 billion as of November 16, 2007.

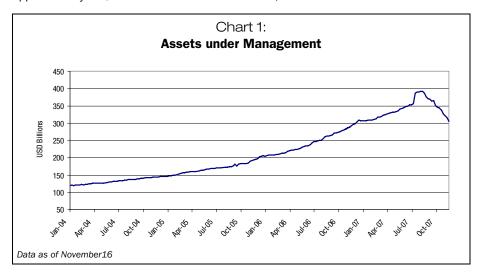


Table 1:

				Original		Capital	Original	Current	
		Launch		Senior	Current	Notes	-	Capital	Liquidity
SIV	Sponsor/Manager	Date	Notes (\$m)	Rating	Senior Rating	(\$ m)	Rating	Rating	(\$ m)
Asscher Finance Ltd.	HSBC Bank plc	2007	6,523	P-1/Aaa	P-1/Aaa	534	A2	Caa2	750
Axon Financial Funding	Axon Asset				Not Prime/Ba3				
Ltd.	Management Inc	2007	7,746	P-1/Aaa	(On Review)	1,100	A1	Ca	125
	Citibank International				P-1/Aaa (On				
Beta Finance Corp.	Plc	1989	14,634	P-1/Aaa	review)	1,080	Baa1	Caa3	1,320
Carrera Capital Finance	HSH Nordbank								
Ltd. [3]	Securities S.A	2006	4,336	P-1/Aaa	P-1/Aaa	398	Baa2	Baa2	4,870
	Citibank International				P-1/Aaa (On				
Centauri Corp.	Plc	1996	15,227	P-1/Aaa	review)	1,208	Baa1	Caa3	1,417
	Cheyne Capital								
Cheyne Finance Plc.	Management Limited	2005	6,614	P-1/Aaa					
Cullinan Finance	HSBC Bank plc	2005	25,460	P-1/Aaa	P-1/Aaa	2,194	Baa2	Са	1,711
	Citibank International				P-1/Aaa (On				
Dorada Corp.	Plc	1998	7,695	P-1/Aaa	review)	628	Baa1	Caa3	1,171
	Citibank International				P-1/Aaa (On				
Five Finance Corp.	Plc	1999	9,752	P-1/Aaa	review)	736	_	_	1,080
Harrier Finance Funding									
Ltd.	WestLB, New York	2002	10,092	P-1/Aaa	P-1/Aa1	988	Baa2	Caa2	1,090
Hudson-Thames Capital	MBIA Asset				P-1/Aaa (On				
Ltd.	Management	2005	460	P-1/Aaa	review)	35	Baa3	С	140
K2 Corp.	Dresdner Kleinwort	1999	18,271	P-1/Aaa	P-1/Aaa	2,125			1,705
Kestrel Funding	WestLB, New York	2006	3,152	P-1/Aaa	P-1/Aa3	315	Baa2	Caa3	300
					P-1/Aaa (On				
Links Finance Corp.	Bank of Montreal	1999	17,456	P-1/Aaa	review)	1,866	Aa2 / A3	A1 / Caa2	800
	AIG-FP Capital								
Nightingale Finance Ltd	Management Limited	May-07	2,375	P-1/Aaa	P-1/Aaa	301	Baa2	В3	482
		1995		,					
		(rated in							
Orion Finance Corp.	Eiger Capital Ltd.	2000)		P-1/Aaa	Not Prime/Baa3	178	_	_	165
Parkland Finance Corp.	Bank of Montreal	2001	3,172	P-1/Aaa	P-1/Aaa	357		_	293

	Asset

Collateralized Entity Ltd.	Société Générale, Nev	v						
(PACE)	York	2002	4,009	P-1/Aaa	P-1/Aaa	315 Baa2	Caa3	410
	IKB Credit Asset					Aaa / A3 /	Caa3 / Ca /	
Rhinebridge Plc	Management GmbH	2007	866	P-1/Aaa	Not Prime/WR	390 Baa2	Withdrawn	250
	Citibank International				P-1/Aaa (On			
Sedna Finance Corp.	Plc	2004	9,728	P-1/Aaa	review)	973 —	_	1,317
Sigma Finance Corp.[1]	Gordian Knot Ltd.	1994	36,307	P-1/Aaa	P-1/Aaa	3,703 —	_	4,387
Victoria Finance Ltd.	Ceres Capital	2002	6,329	P-1/Aaa	NotPrime/Baa3	777 Baa2	Ca	525
					P-1/Aaa (On			
Tango Finance Corp.	Rabobank Internationa	al2002	6,900	P-1/Aaa	review)	567 Baa1	Caa3	1,050
	Citibank International							
Vetra Finance Corp.	Plc	2006	824	P-1/Aaa	P-1/Aaa	155		383
	Standard Chartered				P-1/Aaa (On			
Whistlejacket Capital Ltd	d.Bank	2002	8,717	P-1/Aaa	review)	929 Baa2 <sup>2</sup>	Ca2	1,508
	Citibank International				P-1/Aaa (On			
Zela Finance Corp.	Plc	2006	2,463	P-1/Aaa	review)	220 —	_	383
TOTAL			230,272			22,993		29,141

Data as of November 30. Ratings as of December 20 2007

# Table 2:

			Senior	Original		Capital			
		Launch	Notes	Senior	Current	Notes	Original		Liquidity
SIV LITE	Sponsor/Manager	Date	(\$ m)	Rating	Senior Rating	(\$ m)	Capital Rating	<b>Current Capital Rating</b>	(\$ m)
Cairn High Grade	Cairn Financial								
Funding I	Products Limited	2006	75	P-1/NR	Withdrawn	16	62 —	_	117
Duke Funding High	Ellington Global								
Grade II-S/EGAM I,	Asset Management	.,							
Ltd.	LLC.	2006	0		N/A	47	'O Aaa/Aa1/Aa3/A2/Baa2	Caa2/Ca/CC/C	0
	Avendis Financial								
Golden Key Ltd.	Services Limited	2005	1,245		Not Prime/NR		0 —	_	
	Solent Capital								
Mainsail II Ltd.	(Jersey) Limited	2006	1,688		Not Prime/NR		0 —	_	
Sachsen Funding	Sachsen LB Europe	:							
Ltd.	Plc.	2007	2,837		Not Prime/NR	23	34 —	_	854
Triaxx Funding High	ICP Asset							Ba1/Ba2/Caa1/Caa2	
Grade I Ltd.	Management LLC.	2007	1,380		N/A	37	'O Aaa/Aaa/A1/Baa2	(On Review)	
TOTAL			7,224			1,23	16		971

Data as of November 30. Ratings as of December 20, 2007

<sup>[1]</sup> Although included here for reference, Sigma Finance is often considered a Limited Purpose Finance Company or a Specialist Finance Company rather than a SIV.

<sup>&</sup>lt;sup>[2]</sup> Rating refers to Capital Notes originally issued by White Pine Corporation Limited.

 $<sup>^{\</sup>rm [3]}\!\text{As}$  of November 2007, Carrera is 100% backed by committed liquidity.

# RESTRUCTURING AND ALTERNATIVE FUNDING INITIATIVES

Managers and sponsors of SIVs now acknowledge that the senior debt investor base is unlikely to return to the sector in the absence of fundamental changes to the business model. Several vehicles have therefore implemented, or are in the process of implementing, various alternatives to funding. These can be classified as initiatives that bring either full or partial funding relief to the vehicle.

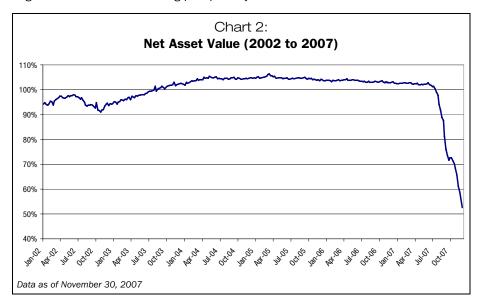
Moody's has analysed two types of initiatives that bring full funding relief to a vehicle. The first type of restructuring involves the provision of a liquidity facility covering the principal amount of all outstanding senior debt. This approach has been taken by HSH Nordbank AG in support of its vehicle, Carrera Capital. The second approach is the provision of a wrap or guarantee by the sponsor to repay all senior debt as it falls due. This approach has been implemented by WestLB AG to support Harrier Finance and Kestrel Funding. This may also be the approach pursued by banks that have announced their intention to bring vehicles on balance sheet. These include HSBC in support of Cullinan Finance and Asscher Finance, Rabobank in support of Tango Finance, and Citibank International in support of Beta Finance, Centauri Corporation, Dorada Corporation, Five Finance, Sedna Finance, Vetra Finance, and Zela Finance.

Partial or temporary funding relief can be obtained through the purchase of a vehicle's senior debt by a sponsor, the use of repurchase agreements, and the exchange of capital notes and cash for a vertical slice of the SIV's asset portfolio. Vertical slicing also enables investors in a SIV's capital notes to retain any upside potential in the assets purchased whereas liquidation in the current depressed markets would crystallise losses for these investors. The majority of vehicles have to date carried out these asset-for-capital switches, and several vehicles have used some combination of these three strategies alongside one of the two restructuring initiatives.

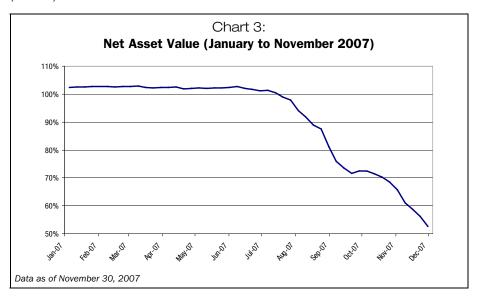
The remainder of the report will focus on the state of the SIV sector as captured by the monitoring data that Moody's regularly receives from the vehicles.

# NET ASSET VALUE OF CAPITAL

A vehicle's net asset value of capital (NAV) is computed as the difference between the market value of its asset portfolio and the notional outstanding of its senior liabilities, expressed as a percentage of paid-in capital. NAV evolution since 2002 is shown in Chart 2. Sector NAV was above par for most of this period, falling below par in early August 2007 and then declining precipitously to 53% on November 30.



Sector NAV reached its 19-year maximum of 106.3% in March 2006, reverting to a band of 102%-104% where it remained until July 2007. Sector NAV then declined sharply in early August 2007 below the historical minimum of 90% (observed during the Enron/Worldcom crisis in 2002) and has since continued the decline to new lows (Chart 3).



NAVs vary from SIV to SIV primarily as a function of portfolio composition. While SIVs and SIV-lites with relatively large concentrations of Non-Prime US RMBS and ABS CDOs show NAVs below 50%, vehicles with no subprime or ABS CDO exposures have NAVs that are closer to 77% as shown in Table 3. The ongoing liquidity crisis has however demonstrated that NAVs can be affected by spread widening in sectors that are not directly related to US subprime mortgages; thus, vehicles with currently high NAVs may also see sharp declines as contagion spreads across different segments of the credit markets.

While NAV of capital provides a measure of the extent of capital erosion and is helpful for the purpose of illustration, it does not, in and of itself, explain the extent of portfolio market value declines. In Moody's quantitative analysis of SIVs, we therefore employ directly, the market value of assets in a portfolio rather than rely on NAVs.

Table 3: Net Asset Value

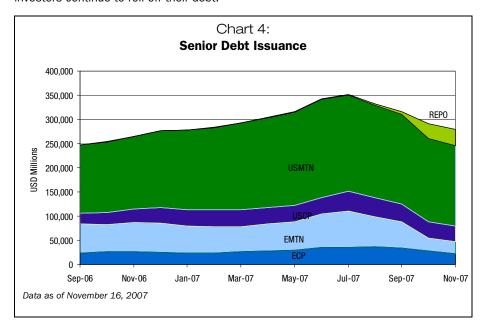
	NAV %	
Average*	52.6	
Minimum*	27.6	
Maximum	80.3	
Highest 5	76.7	
Median 5	56.4	
Lowest 5*	38.7	

<sup>\*</sup>Average figures include NAVs of vehicles in enforcement (which, for the purpose of computing these averages, are floored at zero but ignored in the search for the lowest NAV).

Data as of November 30, 2007

# SENIOR DEBT OUTSTANDINGS, AVERAGE LIFE AND MATURITY PROFILE

Senior debt programmes attained a maximum total outstanding of US\$ 352 billion in July 2007, with Medium Term Notes comprising 68.1%, Commercial Paper 31.5% and Repurchase Agreements 0.4%. By mid-November, senior debt had fallen by US\$ 73 billion (Chart 4), with MTNs, CPs, and repos representing 71%, 17% and 12%, respectively. The use of repos as an alternative senior funding tool also began to gain prominence during this period, a trend that looks set to continue as CP and MTN investors continue to roll off their debt.



The evolution of the weighted average life of senior debt is shown in Chart 5. On average, liability WAL is 5.5 months, with a range of 3.5 to 11.6 months (Table 4).

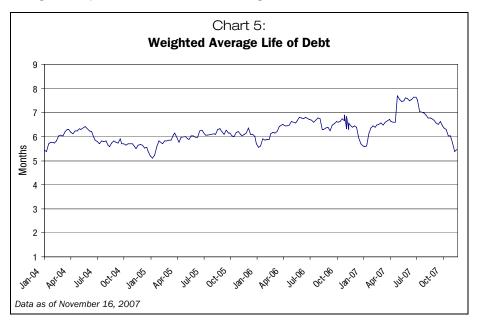


Table 4: Senior Debt WAL

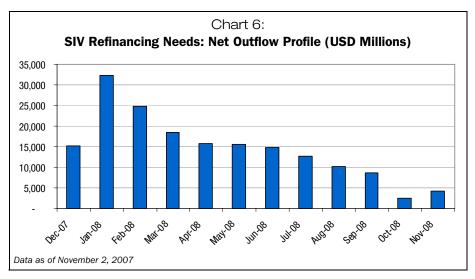
	Months
Average*	5.5
Shortest*	3.5
Longest	11.6
Shortest 5*	3.7
Median 5	4.6
Longest 5	10.3

<sup>\*</sup> Average figures include vehicles in enforcement (which, for the purpose of computing these averages, are floored set to zero, but ignored in the search for the shortest WAL).

Data as of November 16, 2007

While some vehicles operate with relatively short average lives, treasury management for other vehicles emphasises the extension of the maturity profile of senior liabilities. This characteristic, the availability of more backstop liquidity, and operating state triggers based more on cashflow or crystallised losses than NAVs, leads such vehicles to be viewed by some market participants as Limited Purpose or Specialist Finance Companies rather than as SIVs.

Since the WAL of liabilities indicates the extent of near-term funding pressures a vehicle may face, those vehicles with the shortest WALs may be required to take urgent action (such as asset sales at potentially "fire sale" prices) to ensure repayment of senior debt as it falls due. Chart 6 illustrates aggregate sector refinancing needs up to November 2008. This is computed by netting daily asset inflows with liability outflows across the sector for each month. The result of this computation represents amounts that the sector would need to refinance through alternative funding arrangements or asset liquidations. Thus, US\$ 15 billion matured in December 2007, US\$ 32 billion matures in January 2008, and US\$ 89 billion will mature from February to June 2008.



# COMMITTED LIQUIDITY AND BREAKABLE DEPOSITS

SIVs are required under their operating guidelines to maintain minimum amounts of same-day liquidity to address temporary and unexpected disruptions in the CP and MTN markets. Longer disruptions must be addressed through asset sales or other means. This short-term liquidity requirement, which can take the form of committed backstop lines and breakable deposit agreements, is sized to cover the maximum one-week net cumulative outflow over the next 12 months. On average, available liquidity is 13% of total senior debt outstanding (Table 5). Some vehicles operate close to their limits while others often hold more than the requirement.

Table 5:

Committed Liquidity and Breakable Deposits as a percentage of outstanding senior debt

	Committed Liquidity (%)	
Average	13	
Lowest	5	
Highest	40	
Lowest 5	7	
Median 5	11	
Highest 5	27	

Vehicles in enforcement are excluded.

Data as of November 16, 2007

# ASSET PORTFOLIO SECTOR AND COUNTRY COMPOSITIONS

While significant variations in asset holdings exist across the sector, Commercial Banks make up the largest asset class at 29.4%, and Structured Finance the bulk of the remainder (Chart 7). Direct exposure to Non-prime US RMBS is restricted to Home Equity Loans at 3.2% and Alt A & Residential B/C at 1.5%. Indirect exposure to US RMBS is taken through CDOs of ABS, representing 1.1% of total assets under management. Several vehicles have no direct or indirect exposure to US RMBS, while others have more exposures to these assets as shown in Table 6.

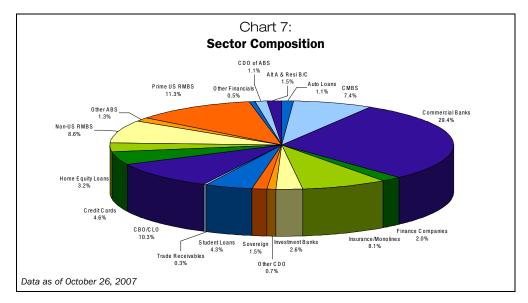
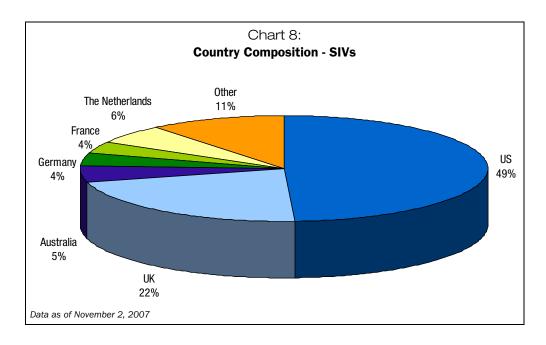


Table 6: Variations in Direct or Indirect Holdings of Non-Prime US RMBS

	CDO of ABS (%)	Non-prime (%)
Average	1.1	4.7
Minimum	0	0
Maximum	33	38.4
Lowest 5	0	0
Median 5	0.66	7.34
Largest 5	13.38	26.61

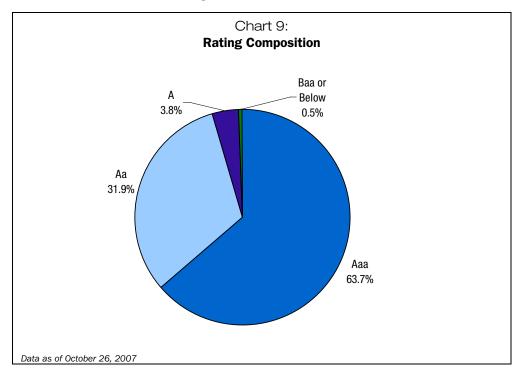
Data as of October 26, 2007

SIV assets are predominantly originated in the United States (49%), United Kingdom (22%), The Netherlands (6%), Australia, (5%), Germany (4%) and France (4%) as shown in Chart 8. This is reflective of the geographical span of highly rated Structured Finance and Financial Institutions assets that meet SIV eligibility criteria.



# ASSET PORTFOLIO CREDIT QUALITY

Chart 9 shows that Aaa assets represent 63.7% of SIV portfolios on average, Aa 31.9%, A 3.8%, and Baa or below representing the remainder.



Portfolio credit quality can also be expressed as Moody's weighted average rating factor (WARF). This is measured with reference to Moody's idealised expected losses, where the expected loss of a 10-year Aaa asset is used as the benchmark (with a rating factor of 1), and the factor corresponding to another rating is derived by dividing the 10-year idealised expected loss for that rating by the 10-year Aaa expected loss; thus, the rating factor for Aa1 is 10, for Aa2 20, and for Aa3 40. Chart 10 shows the evolution of the weighted average rating factor for the sector since January 2004, revealing general credit quality in the **Aa** category during this period. Table 7 shows further WARF statistics and variations across the sector.

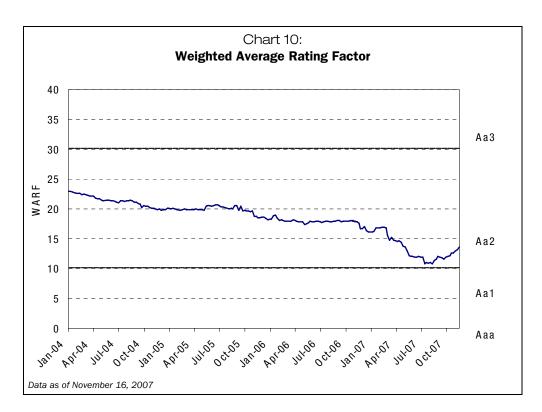


Table 7: Portfolio WARF

	Years	
Average	13.6	
Lowest	1.7	
Highest	37	
Lowest 5	4.6	
Median 5	12.5	
Highest 5	26.1	

Data as of November 16, 2007

# WEIGHTED AVERAGE LIFE OF ASSETS

The weighted average life of SIV asset portfolios provides a measure of asset price volatility. In addition, the difference between the WAL of assets and the WAL of liabilities indicates the extent of the refinancing risk faced by a vehicle. Chart 11 tracks the evolution of WAL across the sector, while Table 8 provides further statistics on the variation of this measure.

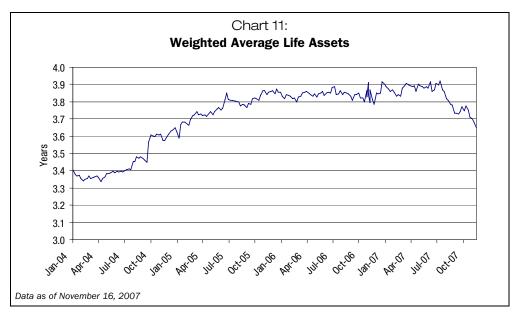


Table 8:

### **Asset WAL**

	Years	
Average	3.65	
Shortest	2.78	
Longest	4.48	
Shortest 5	3.08	
Median 5	3.69	
Longest 5	4.20	

Data as of November 16, 2007

The more mature vehicles have asset WALs closer to 3 years and are also typically the vehicles with longer liability WALs. In a functioning market, seasoning provides the prudent manager with sufficient allowance to minimise refinancing risk by issuing Commercial Paper and Medium Term Notes with longer maturities. This can be achieved without hampering the vehicle's ability to generate sufficient returns for capital note investors. Thus, the oldest vehicles are likely to be under less funding and liquidation pressures than their youngest competitors.

### MARK-TO-MARKET AND REALISED VALUES

SIVs liquidated a total of \$55.6 billion of assets between June 1 and November 16, 2007, representing a drop of 16% of the sector's aggregate assets under management on May 31, 2007. The proportion of assets liquidated by a particular vehicle depends on the maturity profile of its liabilities, its ability to transact in repurchase agreements or employ other funding mechanisms. The proportion of liquidated assets, for vehicles that have not entered the enforcement state, ranges from 0% to 62% (Table 9). Vehicles that have not liquidated assets are typically those whose maturing senior debt is being purchased by sponsors or friendly investors. Realised values in these liquidations depend on ratings and asset class and follow a similar pattern to mark-to-market values (Chart 12). In extreme cases where bids have been sought for block of assets, dramatically low prices have been quoted. One vehicle received bids averaging 7% for its Aaa CDO of ABS, causing the vehicle to enter enforcement and the trustee to appoint a receiver.

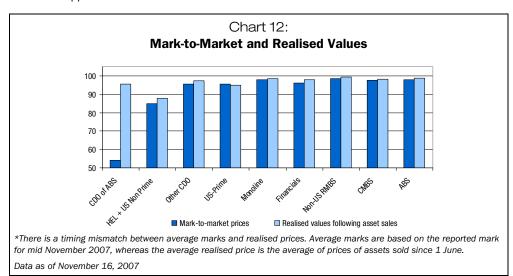
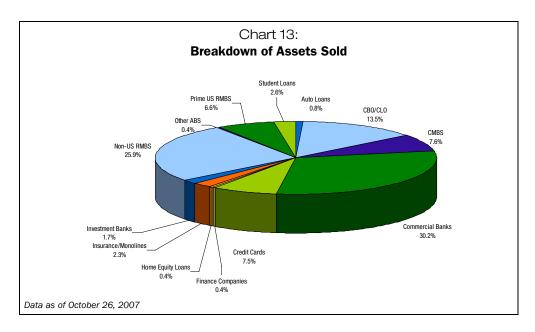


Chart 13 shows the sector composition of the portfolio of assets so far liquidated the sector. While there is a broad representation of asset classes, and some managers have been selling vertical portfolio slices, it is more likely that asset sold have been the least affected by price volatility. Thus, the potential for further price movements and NAV declines may be greater with the remaining assets than with pre-crisis portfolios.



While it is realistic to assume that senior funding in the form of CP and MTN is unlikely to return, potentially forcing all vehicles to liquidate assets, it is worth noting that some vehicles have sold no assets at all since 1 June 2007 as shown in Table 9. Also, the 5 vehicles with the lowest amount of sales have sold on average of 1.3% of their portfolios since 1 June 2007.

Table 9:
Asset Liquidations\*

	Proportion of Assets Sold (%)
Average	23
Minimum	0
Maximum	62
Top 5 sellers	48.9
Middle 5 sellers	22.7
5 least sellers	1.3

<sup>\*</sup>Excludes vehicles in enforcement Data as of November 26, 2007

# BOOK AND MARKET VALUE LEVERAGE

Book value leverage is measured as the ratio of the book value of assets and paid-in capital. Market value leverage uses the net asset value of capital for this ratio. The evolution of both types of leverage is shown in Chart 14. While book value leverage has declined across the sector since July 2007 as expected, market value leverage, a better measure of the market value risk faced by the vehicles, rose from 15 in July 2007 to 18 in October 2007. Chart 14 also highlights the dislocation between the two measures since the onset of the crisis. Table 10 provides further statistics on the application of leverage in the sector.

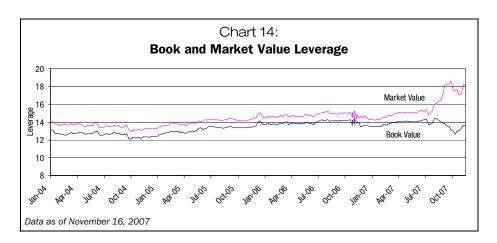


Table 10: **Book and Market Value Leverage** 

	Market Value	<b>Book Value</b>
Average	18.3	13.6
Minimum	4.1	2.5
Maximum	29.4	28.8
Highest 5	27.1	21.8
Median 5	19.5	13.4
Lowest 5	7.3	6.9

Data as of November 16, 2007

# CONCLUSION

In this report, we have discussed the restructuring initiatives that have been, and are being implemented by SIVs, and provided details of SIV holdings and various performance parameters that Moody's considers in its monitoring of SIV ratings. We will continue our close monitoring of the factors presented in this report, analyse the various restructuring proposals from managers, and continue to take rating actions as warranted.

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