



Lehman: Intraday (DOL) Usage Profile

GTS Risk Management
July 02, 2008

Strictly Private and Confidential

Lehman DOL Usage Analysis: Summary



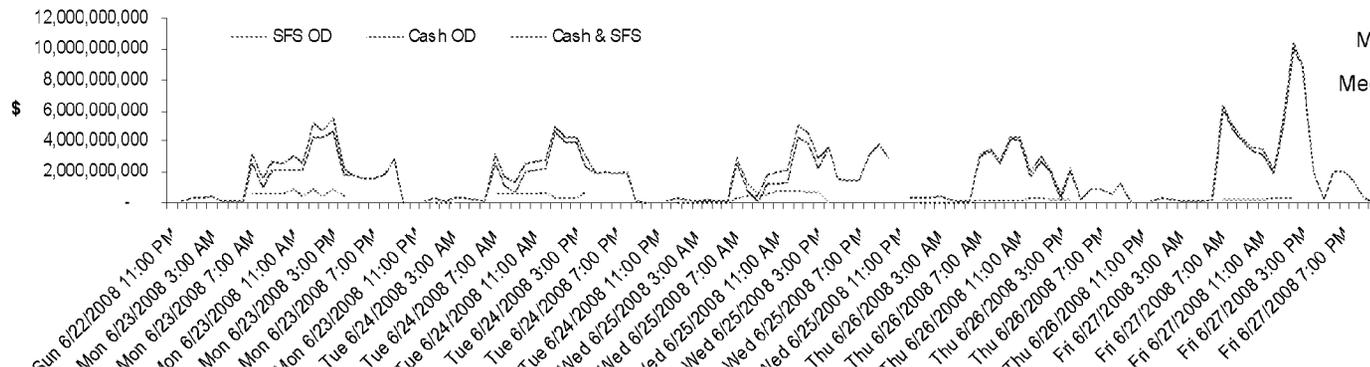
- We were requested to dimension Lehman's DOL line usage globally
- Citi does not have the technology to systemically track intraday exposure, so we created a manual process
 - Local staff physically noted Lehman's Cash & Securities Clearing overdraft positions in a spreadsheet
 - This process was repeated every hour for week of June 23
 - The data was then cleansed and aggregated for a global snapshot
- Analysis limitations
 - Exercise parameters were set per guidelines from Independent Risk, GTS Risk, Regional Product & Operations teams
 - The exercise was conducted in seven major markets/clusters that account for 94% of Lehman's clearing lines
 - The analysis focused on gross Cash & Securities Clearing DOL usage and does not include CLS, TODs, etc.
 - Cash 'Actual' refers to intraday overdrafts; Cash 'Potential' includes pending payments that would create incremental overdrafts, if they weren't held for DOL line constraints
 - Securities Clearing Risk measured as RVP less DVP
 - Though the Cash & Securities risk texture isn't identical, Cash+SFS ('Total') profile aggregates these anyway to obtain a intraday risk proxy
 - This is a highly manual process so is prone to human error
- Analysis Results
 - Intraday volume has two shoulders
 - At 7am GMT when EMEA first opens for trading
 - At 1pm GMT when EMEA & US are open for trading
 - Maximum Actual intraday was \$10.4bn; Maximum Potential intraday was \$17.7Bn
 - Average potential risk was \$3.3Bn, with a high degree of daily volatility
 - +1 σ was \$6.9Bn, +2 σ was \$10.6Bn, +3 σ was \$14.2Bn

	Cash (Actual)	Cash (Potential)	SFS (RVP-DVP)	Total (Actual)	Total (Potential)
Max	10,021	17,321	940	10,354	17,655
Min	8	8	0.2	8	8
μ	1,712	3,132	342	1,899	3,319
+1 σ	1,414	6,679	613	3,806	6,943
+2 σ	5,294	10,227	885	5,712	10,567
+3 σ	7,084	13,774	n/a	7,618	14,191

Intraday DOL Usage: Cash + SFS

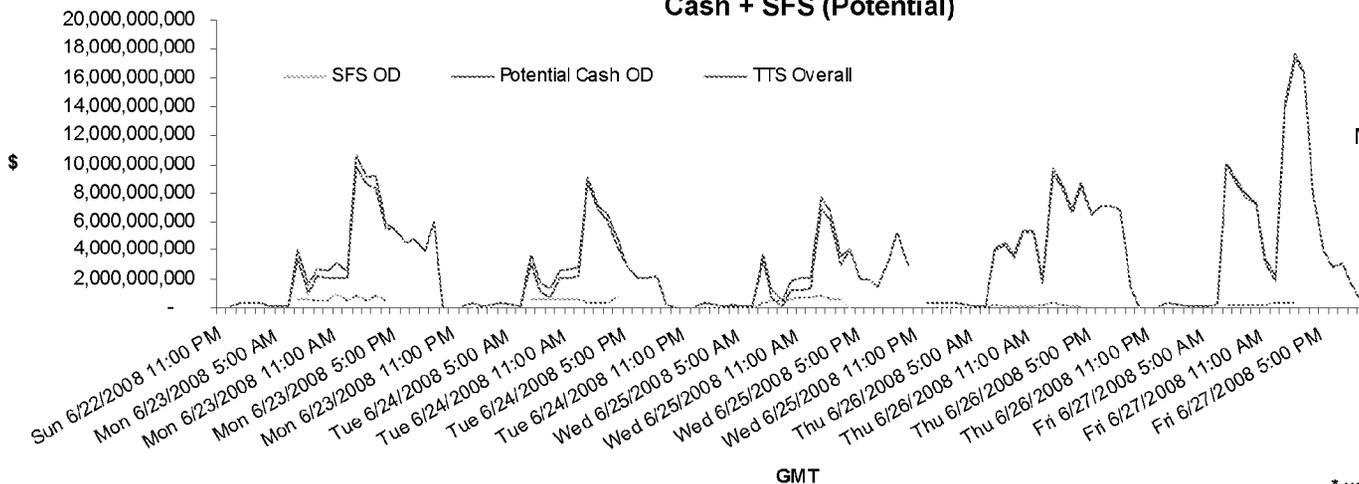


Cash + SFS (Actual)



Actual	
Max:	\$10,354,873,869
Min:	\$7,741,347
Mean:	\$1,899,354,354
Median:	\$1,551,616,352

Cash + SFS (Potential)



Potential	
Max:	\$17,654,873,869
Min:	\$7,741,347
Mean:	\$3,319,369,472
Median:	\$2,116,661,455

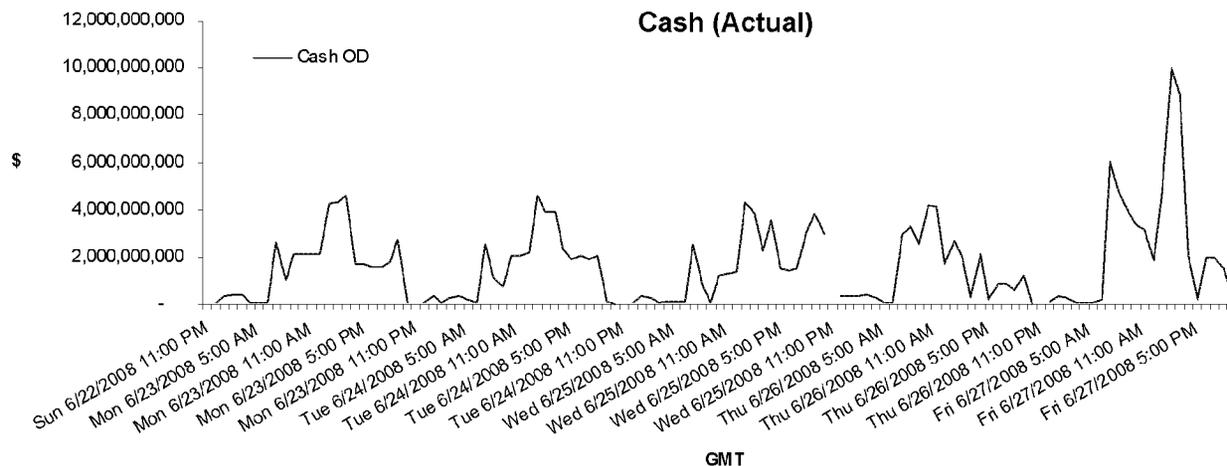
GMT

* w/o 23 June 2008

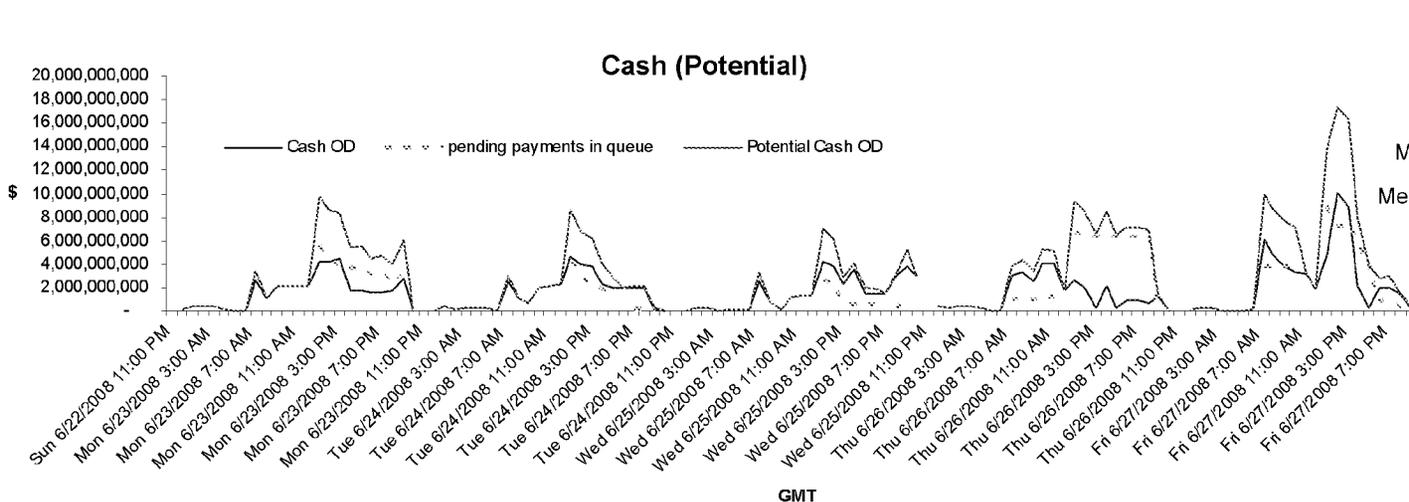
** SFS Risk calculated as RVP-DVP 3

L. Arif, A. Naveed, T. Yaqub, S. Lehman, ECL Analysis v070208 2/26/08

Intraday DOL Usage: Cash



Actual	
Max:	\$10,020,940,208
Min:	\$7,741,347
Mean:	\$1,711,643,434
Median:	\$1,414,244,272

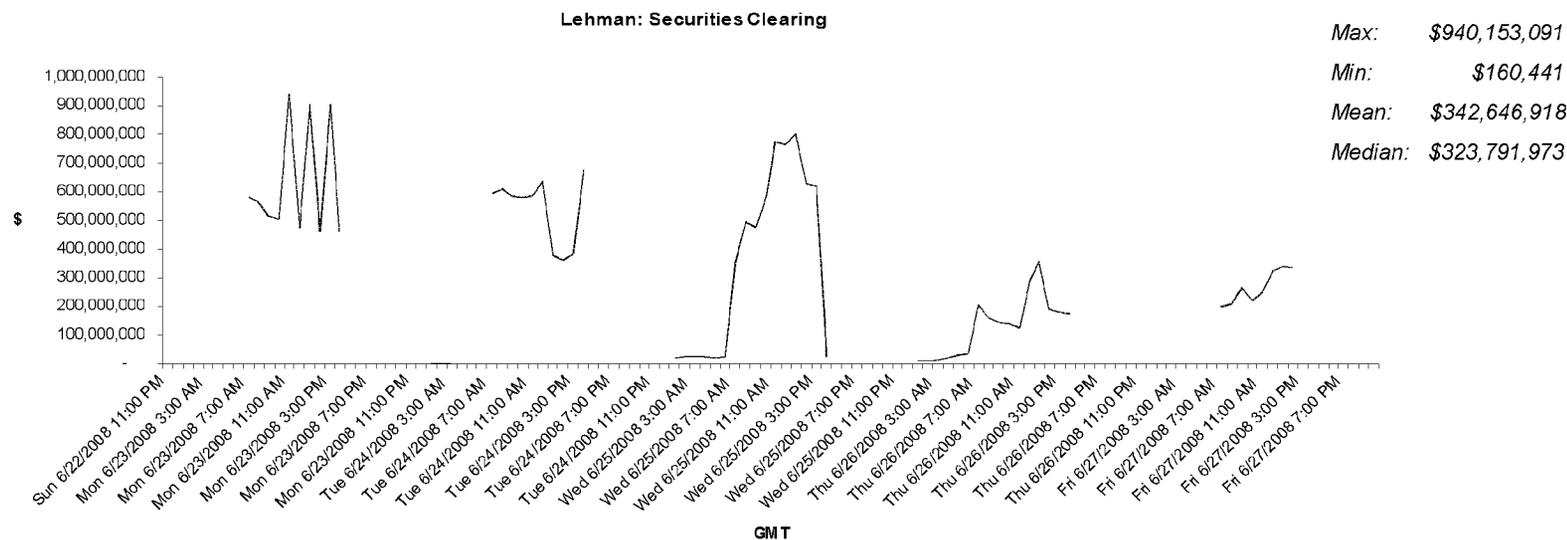


Potential	
Max:	\$17,320,940,208
Min:	\$7,741,347
Mean:	\$3,131,658,552
Median:	\$2,031,440,380

* w/o 23 June 2008

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Intraday Risk: Securities Clearing (RVP-DVP)



* w/o 23 June 2008

** SFS Risk calculated as RVP-DVP

1. Intraday Risk: Securities Clearing (RVP-DVP) Analysis v070208 2.0/01

Lehman: Intraday Risk Positions



Product	Basis	Attribute	June 23, 08	June 24, 08	June 25, 08	June 26, 08	June 27, 08
Cash	Actual	Mean	1,649,129,315	1,516,260,136	1,588,099,341	1,366,925,296	2,437,803,081
		Max	4,564,838,636	4,601,930,064	4,288,620,179	4,171,167,664	10,020,940,208
		Min	51,056,832	26,823,141	64,923,020	7,741,347	17,822,697
	Potential	Mean	3,115,616,267	2,079,271,582	1,998,558,177	3,822,140,156	4,642,706,578
		Max	9,801,999,113	8,650,965,571	6,990,231,054	9,377,642,179	17,320,940,208
		Min	51,056,832	26,823,141	64,923,020	7,741,347	65,457,266
SFS	RVP less DVP	Mean	630,883,072	414,930,126	353,980,707	130,214,832	267,088,107
		Max	940,153,091	675,371,634	800,064,795	356,647,146	337,911,463
		Min	458,643,036	160,441	20,360,978	8,018,763	201,371,702
Cash + SFS	Actual	Mean	1,923,426,303	1,750,785,859	1,834,346,789	1,457,509,527	2,530,703,293
		Max	5,469,241,691	4,981,246,251	5,088,684,974	4,309,543,198	10,354,873,869
		Min	51,056,832	26,823,141	91,532,201	7,741,347	17,822,697
	Potential	Mean	3,389,913,255	2,313,797,306	2,244,805,625	3,912,724,387	4,735,606,789
		Max	10,706,723,097	9,030,281,758	7,790,295,849	9,734,289,325	17,654,873,869
		Min	51,056,832	26,823,141	64,923,020	7,741,347	65,457,266