

Asset Services Sigma- Agent Performance Report

November 2018 Data



Executive Summary

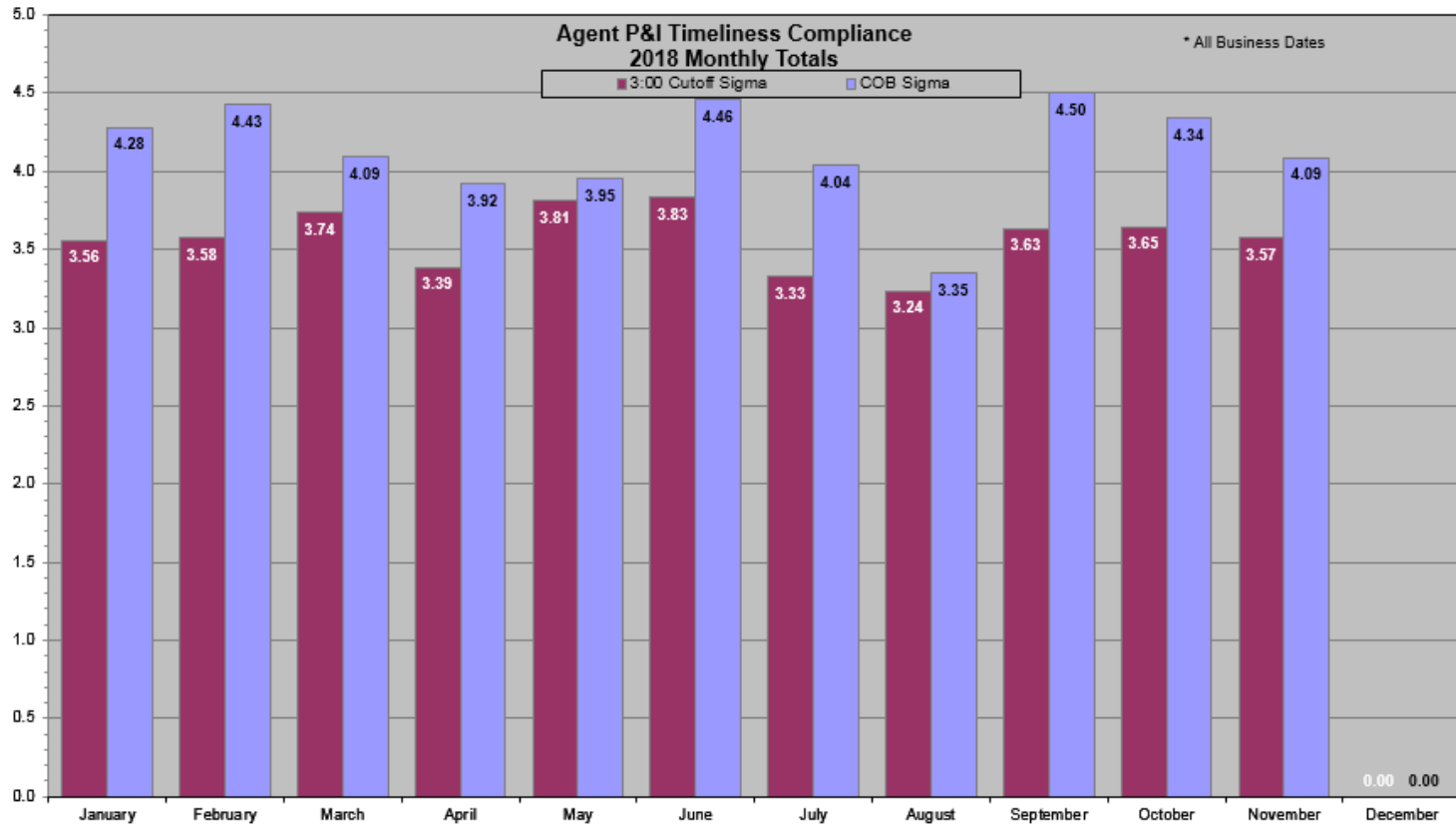
This report highlights the November 2018 performance of the top agents vs. industry targets. This report focuses on the following metrics:

Principal and Interest payment timeliness compliance - percentage of funds received from agents at cut-off (3:00pm ET) and at close of business (6:00pm ET), relative to the total dollars paid for the month. The Agent sigma performance for November 2018 was 3.57σ (98.09)%. This month's performance is below the target of 3.67σ (98.50%).

Principal and Interest allocations on payable date - percentage of allocated dollars and CUSIPS, relative to the total expected dollars and CUSIPs allocated. The Agent sigma performance for November 2018 was 4.09σ (99.52%). This month's performance is above the target of 3.83σ (99.00%).

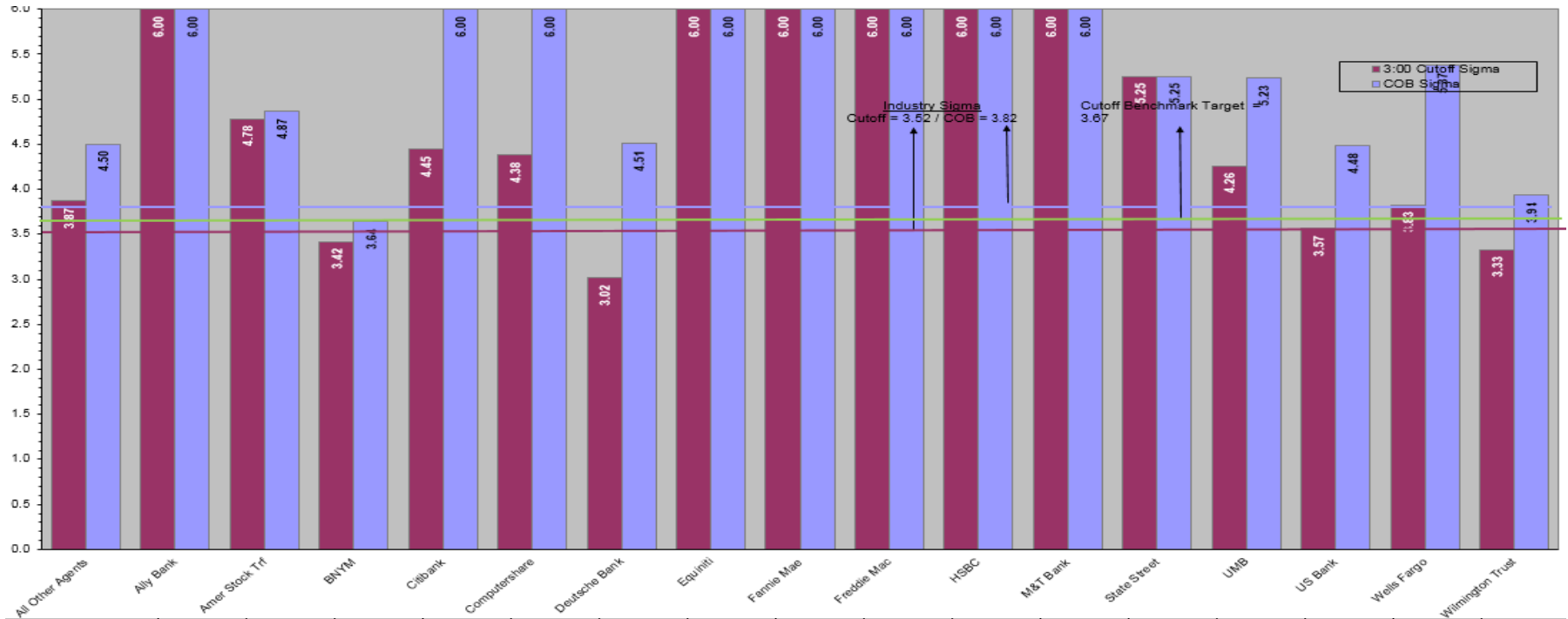
Please visit DTCC's web-site <http://dtcc.com/asset-services/asset-services-performance-metrics.aspx> for more detailed metric definitions and agent trend charts.

P&I Allocations Monthly Trend



	January	February	March	April	May	June	July	August	September	October	November	December	YTD
Percent by 3:00 Cut-off	98.03%	98.12%	98.73%	97.05%	98.96%	99.01%	96.61%	95.88%	98.36%	98.40%	98.09%		97.93%
Cutoff Sigma	3.56	3.58	3.74	3.39	3.81	3.83	3.33	3.24	3.63	3.65	3.57		3.54
Percent by COB	99.73%	99.83%	99.52%	99.23%	99.29%	99.85%	99.44%	96.76%	99.87%	99.78%	99.52%		99.35%
COB Sigma	4.28	4.43	4.09	3.92	3.95	4.46	4.04	3.35	4.50	4.34	4.09		3.98

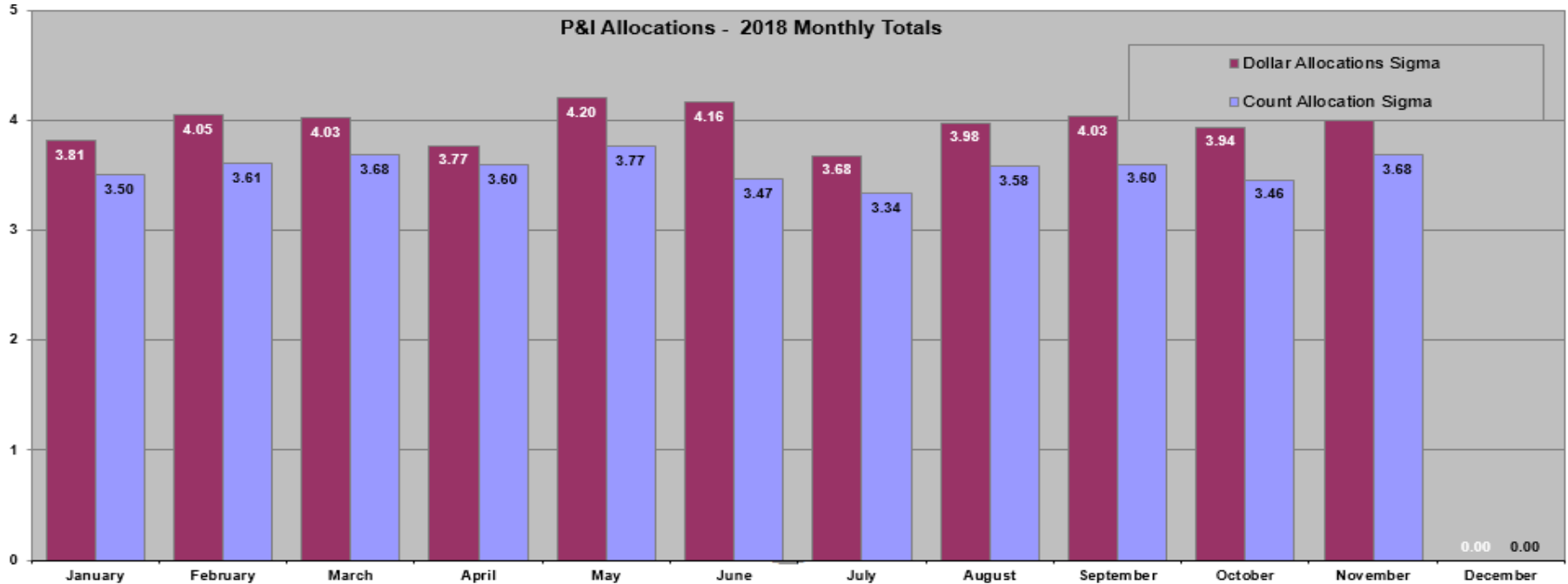
P&I Timeliness Compliance – Agent Performance



	All Other Agents	Ally Bank	Amer Stock Trf	BNYM	Citibank	Computershare	Deutsche Bank	Equiniti	Fannie Mae	Freddie Mac	HSBC	M&T Bank	State Street	US Bank	Wells Fargo	Wilmington Trust
% of Total Allocations	14.04%	0.27%	1.95%	25.36%	5.10%	9.99%	8.64%	2.37%	0.13%	1.08%	0.84%	0.00%	0.93%	16.86%	9.89%	2.34%
Percent by 3:00 Cutoff	99.12%	100.00%	99.95%	97.26%	99.84%	99.80%	93.56%	100.00%	100.00%	100.00%	100.00%	100.00%	99.99%	98.05%	99.00%	96.62%
Cutoff Sigma	3.87	6.00	4.78	3.42	4.45	4.38	3.02	6.00	6.00	6.00	6.00	6.00	5.25	3.57	3.83	3.33
Variance from Industry Cutoff Sigma	0.30	2.43	1.21	-0.15	0.88	0.81	-0.55	2.43	2.43	2.43	2.43	2.43	1.68	-0.01	0.25	-0.24
Percent by COB	99.87%	100.00%	99.96%	98.38%	100.00%	100.00%	99.87%	100.00%	100.00%	100.00%	100.00%	100.00%	99.99%	99.86%	99.99%	99.26%
COB Sigma	4.50	6.00	4.87	3.64	6.00	6.00	4.51	6.00	6.00	6.00	6.00	6.00	5.25	4.48	5.37	3.94

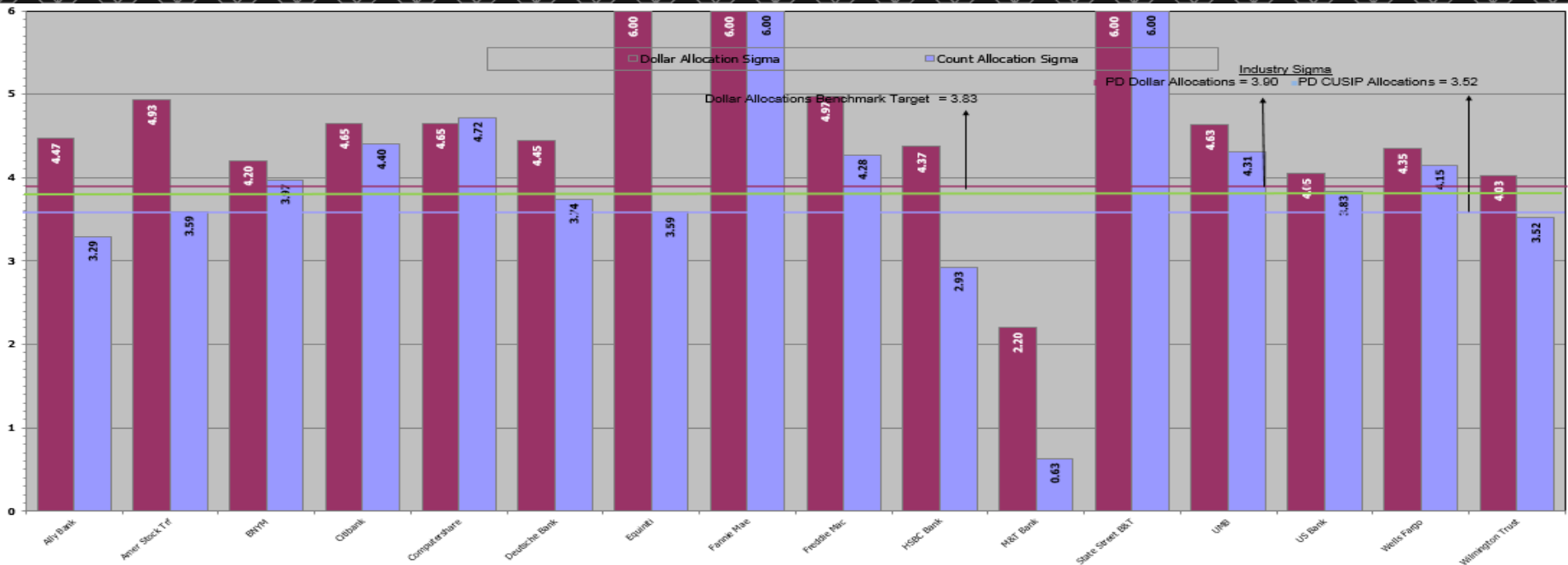
*Please note WF ShHldr Svc is now Equiniti

P&I Allocations Monthly Trend



	January	February	March	April	May	June	July	August	September	October	November	December	YTD
Total Expected Allocations (Billions)	\$299.863	\$252.145	\$316.245	\$319.295	\$317.673	\$345.821	\$339.043	\$283.316	\$281.820	\$284.067	\$269.099		\$3308.386
Allocation \$ Percent	98.96%	99.47%	99.42%	98.84%	99.66%	99.61%	98.53%	99.34%	99.43%	99.26%	99.62%		99.28%
Allocation \$ Sigma	3.81	4.05	4.03	3.77	4.20	4.16	3.68	3.98	4.03	3.94	4.17		3.94
Unallocated Impact (Billions \$)	\$3.109	\$1.344	\$1.826	\$3.701	\$1.094	\$1.334	\$4.973	\$1.879	\$1.596	\$2.097	\$1.009		\$23.962
Total CUSIP Expected	282,008	370,197	305,287	267,999	270,969	360,173	285,998	368,653	302,406	272,019	266,262		3,351,971
CUSIP Allocations %	97.75%	98.27%	98.55%	98.22%	98.84%	97.55%	96.70%	98.12%	98.23%	97.50%	98.55%		98.02%
CUSIP Allocations Sigma	3.50	3.61	3.68	3.60	3.77	3.47	3.34	3.58	3.60	3.46	3.68		3.56
Unallocated Impact (Count)	6,344	6,422	4,416	4,781	3,156	8,817	9,450	6,929	5,362	6,814	3,857		66,348

P&I Allocations – Agent Performance



AGENT	All Other Agents	Ally Bank	Amer Stock Trf	BNYM	Citibank	Computer share	Deutsche Bank	Equiniti	Fannie Mae	Freddie Mac	HSBC Bank	M&T Bank	State Street B&T	US Bank	Wells Fargo	Wilmington Trust
Total Expected % of Industry	\$41.619	\$0.756	\$5.362	\$67.163	\$13.475	\$27.444	\$23.100	\$6.524	\$0.370	\$2.957	\$1.109	\$0.002	\$2.235	\$43.955	\$26.446	\$6.247
Allocation %	15.47%	0.28%	1.99%	24.96%	5.01%	10.20%	8.58%	2.42%	0.14%	1.10%	0.41%	0.00%	0.83%	16.33%	9.83%	2.32%
Allocation %	99.11%	99.85%	99.97%	99.65%	99.92%	99.92%	99.84%	100.00%	100.00%	99.97%	99.80%	75.89%	100.00%	99.46%	99.78%	99.42%
Allocation \$ Sigma	3.87	4.47	4.93	4.20	4.65	4.65	4.45	6.00	6.00	4.97	4.37	2.20	6.00	4.05	4.35	4.03
Variance from Industry \$ Sigma	1.36	1.97	2.42	1.69	2.15	2.14	1.94	3.49	3.49	2.47	1.86	-0.30	3.49	1.54	1.85	1.52
CUSIP Allocations %	96.85%	96.34%	98.18%	99.33%	99.81%	99.94%	98.74%	98.15%	100.00%	99.72%	92.36%	19.23%	100.00%	99.02%	99.60%	97.81%
CUSIP Allocations Sigma	3.36	3.29	3.59	3.97	4.40	4.72	3.74	3.59	6.00	4.28	2.93	0.63	6.00	3.83	4.15	3.52
Variance from Industry CUSIP Sigma	1.30	1.23	1.53	1.91	2.34	2.65	1.68	1.52	3.94	2.21	0.87	-1.43	3.94	1.77	2.09	1.45

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