

Asset Services Sigma- Agent Performance Report

January 2019 Data



Executive Summary

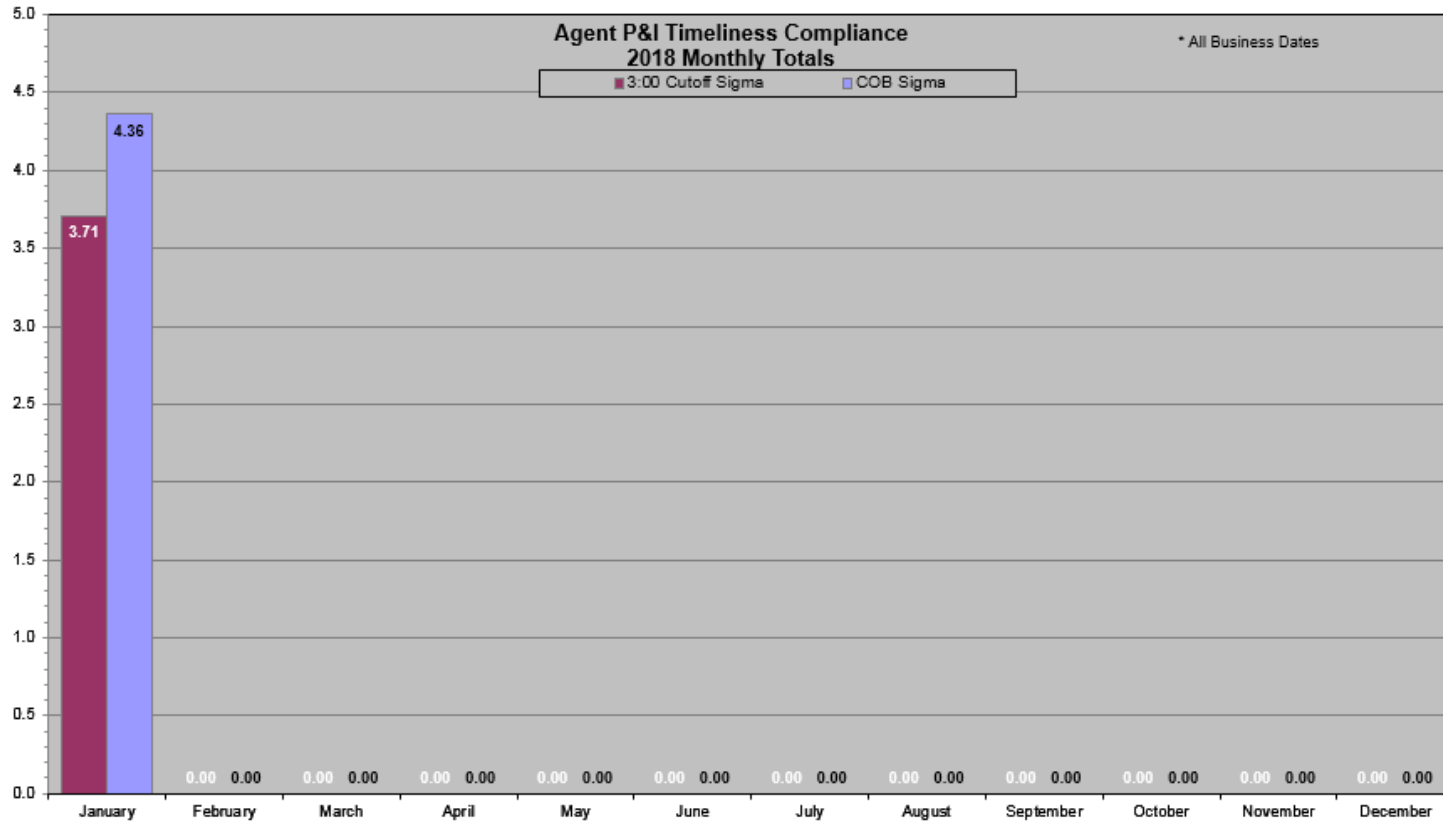
This report highlights the January 2019 performance of the top agents vs. industry targets. This report focuses on the following metrics:

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 January 2019 was 3.71σ (98.65)%. This month's performance is above 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 January 2019 was 4.10σ (99.54%) This month's performance is above the target of 3.83σ (99.00%).

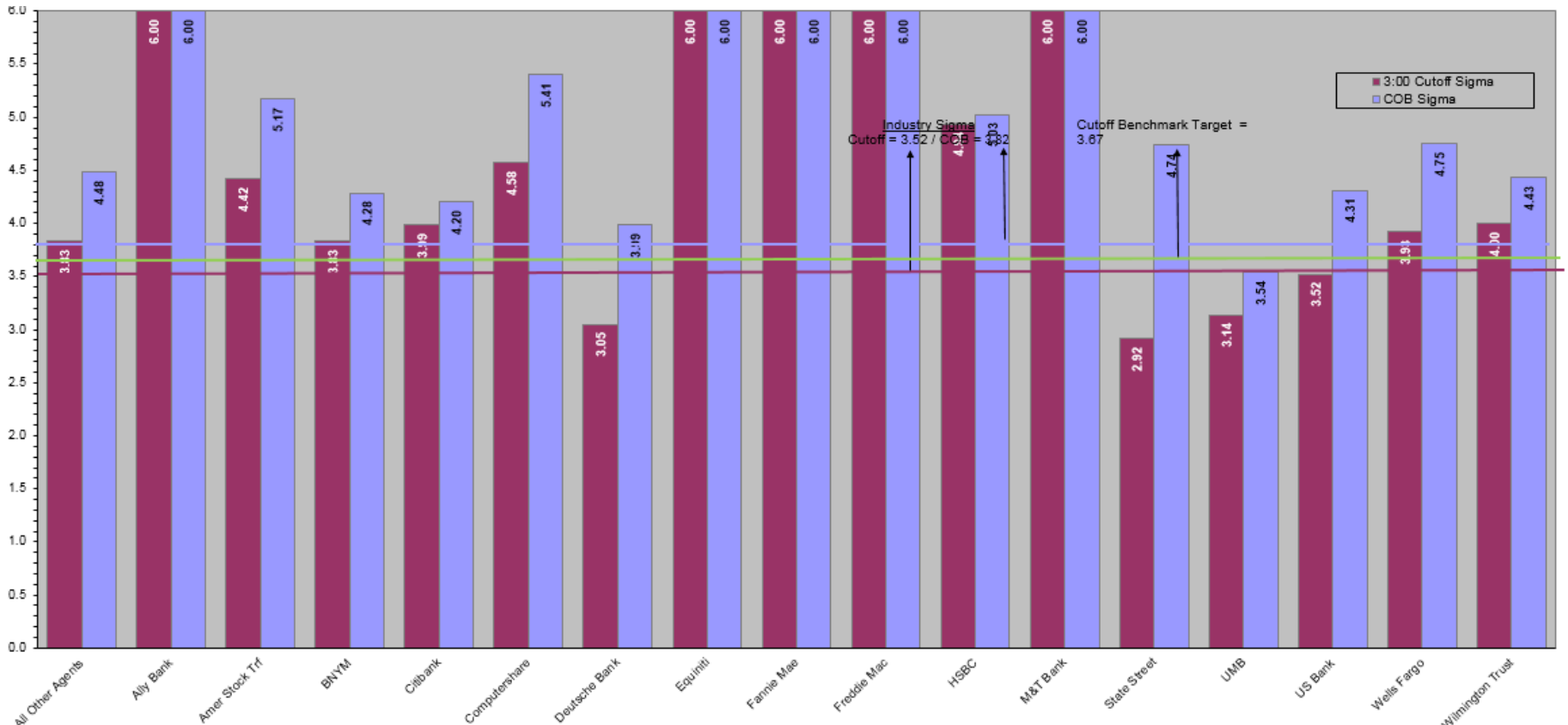
Please visit DTCC's web-site <http://dtcc.com/asset-services/asset-services-performance-metrics.aspx> for more detailed metric definitions and agent trend charts.

P&I Allocations Monthly Trend



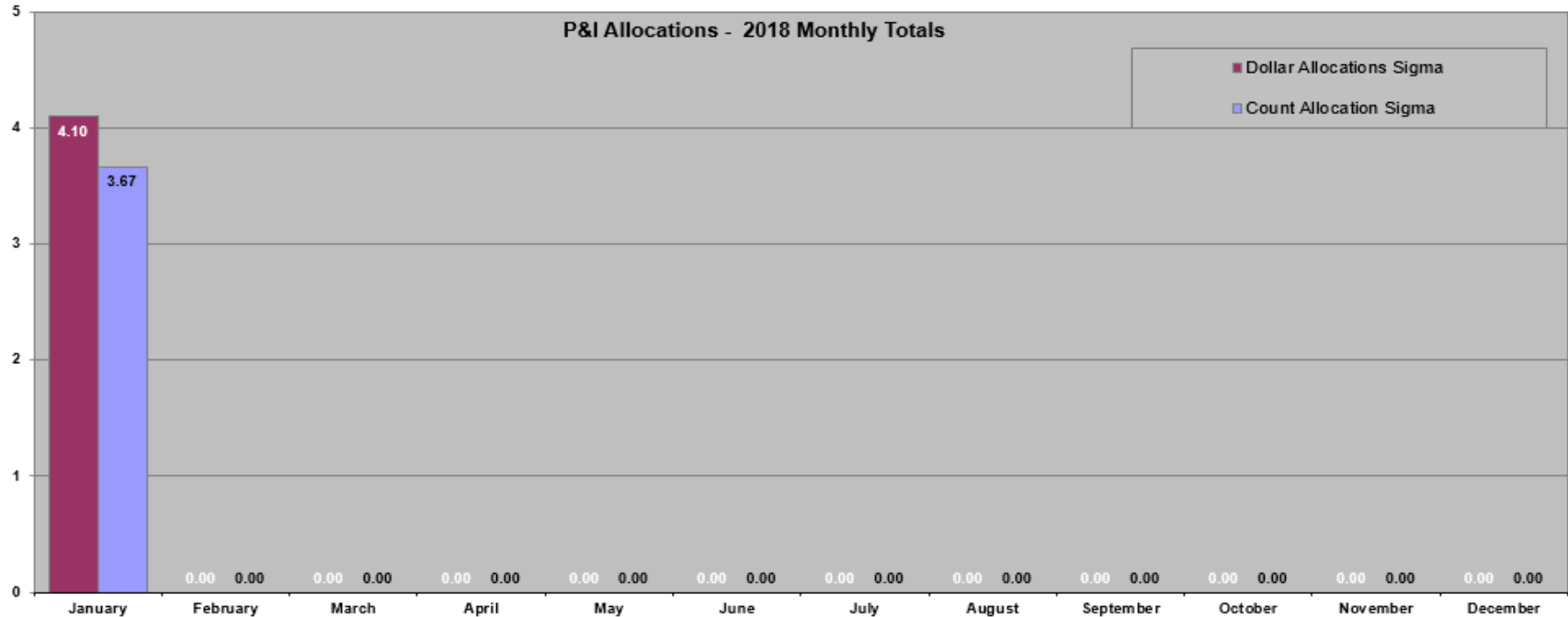
	January	February	March	April	May	June	July	August	September	October	November	December	YTD
Percent by 3:00 Cut-off	98.65%												98.65%
Cutoff Sigma	3.71												3.71
Percent by COB	99.79%												99.79%
COB Sigma	4.36												4.36

P&I Timeliness Compliance – Agent Performance



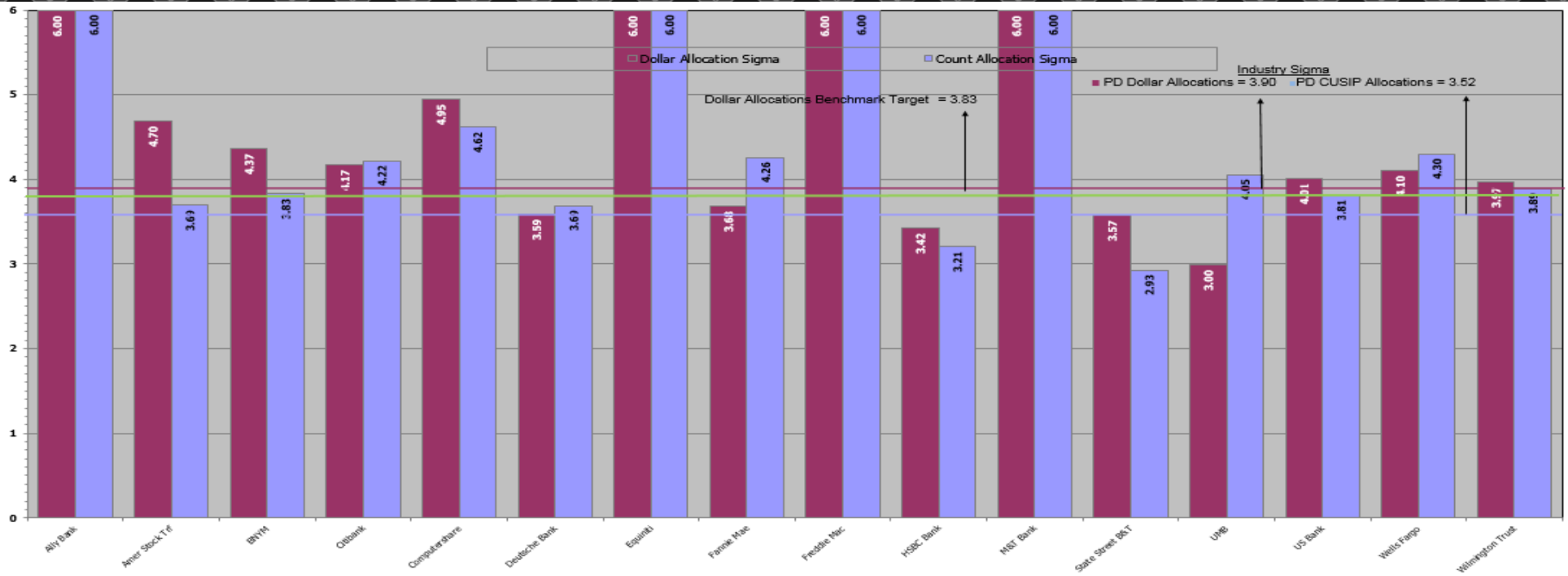
	All Other Agents	Allly Bank	Amer Stock Trf	BNYM	Citibank	Computershare	Deutsche Bank	Equiniti	Fannie Mae	Freddie Mac	HSBC	M&T Bank	State Street	UMB	US Bank	Wells Fargo	Wilmington Trust
% of Total Allocations	14.00%	0.26%	2.13%	30.72%	5.39%	8.98%	6.82%	3.33%	0.13%	1.32%	0.95%	0.00%	0.91%	0.19%	13.00%	9.78%	2.09%
Percent by 3:00 Cutoff	99.02%	100.00%	99.83%	99.01%	99.36%	99.90%	93.94%	100.00%	100.00%	100.00%	99.97%	100.00%	92.19%	94.93%	97.84%	99.24%	99.38%
Cutoff Sigma	3.83	6.00	4.42	3.83	3.99	4.58	3.05	6.00	6.00	6.00	4.94	6.00	2.92	3.14	3.52	3.93	4.00
Variance from Industry Cutoff	0.12	2.29	0.71	0.12	0.28	0.86	-0.66	2.29	2.29	2.29	1.22	2.29	-0.79	-0.57	-0.19	0.21	0.29
Percent by COB	99.86%	100.00%	99.99%	99.73%	99.66%	100.00%	99.35%	100.00%	100.00%	100.00%	99.98%	100.00%	99.94%	97.92%	99.75%	99.94%	99.83%
COB Sigma	4.48	6.00	5.17	4.28	4.20	5.41	3.99	6.00	6.00	6.00	5.03	6.00	4.74	3.54	4.31	4.75	4.43

P&I Allocations Monthly Trend



	January	February	March	April	May	June	July	August	September	October	November	December	YTD
Total Expected Allocations (Billions)	\$273.662												\$273.662
Allocation \$ Percent	99.54%												99.54%
Allocation \$ Sigma	4.10												4.10
Unallocated Impact (Billions \$)	\$1.272												\$1.272
Total CUSIP Expected	273,962												273,962
CUSIP Allocations %	98.49%												98.49%
CUSIP Allocations Sigma	3.67												3.67
Unallocated Impact (Count)	4,131												4,131

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	UMB	US Bank	Wells Fargo
Total Expected / % of Industry	\$42.193 15.42%	\$0.734 0.27%	\$5.917 2.16%	\$83.634 30.56%	\$14.697 5.37%	\$24.879 9.09%	\$18.119 6.62%	\$9.248 3.38%	\$0.347 0.13%	\$3.638 1.33%	\$0.449 0.16%	\$0.028 0.01%	\$2.435 0.89%	\$0.371 0.14%	\$34.833 12.73%	\$26.605 9.72%
Allocation %	99.42%	100.00%	99.93%	99.79%	99.62%	99.97%	98.18%	100.00%	98.55%	100.00%	97.29%	100.00%	98.09%	93.26%	99.39%	99.54%
Allocation \$ Sigma	4.03	6.00	4.70	4.37	4.17	4.95	3.59	6.00	3.68	6.00	3.42	6.00	3.57	3.00	4.01	4.10
Variance from Industry \$ Sigma	-0.08	1.90	0.59	0.27	0.07	0.85	-0.51	1.90	-0.42	1.90	-0.68	1.90	-0.53	-1.11	-0.09	0.00
CUSIP Allocations %	96.37%	100.00%	98.59%	99.01%	99.67%	99.91%	98.58%	100.00%	99.71%	100.00%	95.60%	100.00%	92.32%	99.46%	98.95%	99.74%
CUSIP Allocations Sigma	3.30	6.00	3.69	3.83	4.22	4.62	3.69	6.00	4.26	6.00	3.21	6.00	2.93	4.05	3.81	4.30
Variance from Industry CUSIP Sigma	-0.37	2.33	0.03	0.16	0.55	0.95	0.02	2.33	0.59	2.33	-0.46	2.33	-0.74	0.38	0.14	0.63

*Please note WF ShHldr Svc is now Equiniti