

Analyzing the "Corporate Bid"

Goldman Sachs & Co LLC.

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Companies are the Largest Net Buyers of U.S. Equities

U.S. corporates have been the largest net buyers of U.S. equities over the past decade by over 2x more than the next largest source of demand.

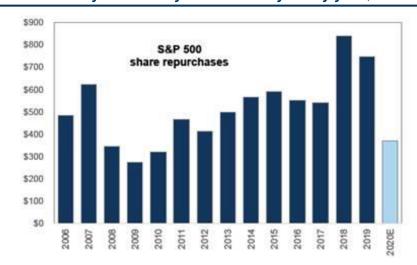
	Net US equity demand (\$ billions)					
Category	2014	2015	2016	2017	2018	2019
Corporations	\$ 426	\$ 511	\$ 677	\$ 285	\$ 602	\$ 477
Foreign Investors	114	(191)	(186)	117	96	(211)
Households	144	(123)	(7)	133	(90)	234
Mutual Funds	95	58	(112)	(133)	(121)	(213)
Pension Funds	(272)	(7)	(213)	(109)	(148)	(213)
Life Insurance	(25)	27	(25)	(6)	(44)	(29)
Other	(2)	(20)	(17)	(24)	(2)	(22)
less						
Foreign equities purchased by US investors	432	197	22	140	194	(135)
Credit ETFs	50	57	96	124	101	157
Included among holders above are:						
Equity ETF purchases	\$ 191	\$ 174	\$ 188	\$ 347	\$ 210	\$ 166



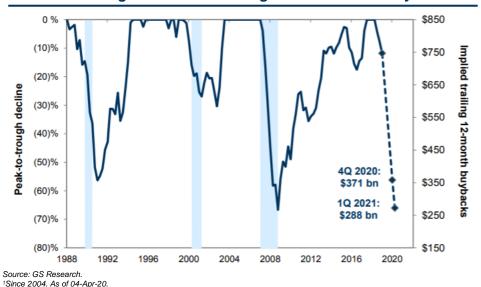
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S&P 500 to Moderate Pace of Share Repurchases in 2020

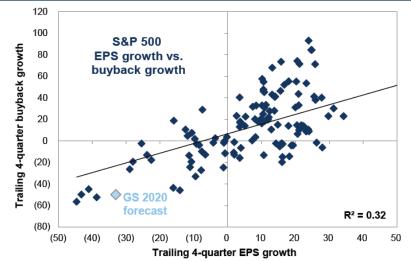
S&P 500 buybacks likely will decline by 50% y/y to \$371bn



Peak-to-trough declines in trailing 12-mth S&P 500 buybacks



S&P 500 EPS growth will likely see a ~30% decline



Buybacks have contributed 260bps to median EPS growth¹



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Corporate Share Repurchase Environment

S&P 500 Monthly Repurchase

Average as % of Total Volumes

S&P 500 Monthly Average as % of Total Volumes

Analyzing monthly repurchase data for the S&P 500 from 2017-2019, companies were on average 3.4% of composite volume and 7.0% of 10b-18 volume (eligible volume companies can participate on).

S&P 500 Monthly Average % of Volume (spend >\$5mm)						
	2017		2018		2019	
	Composite	10b-18	Composite	10b-18	Composite	10b-18
Jan	2.5%	5.1%	2.3%	4.8%	3.1%	6.4%
Feb	3.6%	7.4%	2.9%	5.9%	4.7%	9.6%
Mar	3.1%	6.4%	3.6%	7.4%	3.4%	7.0%
Apr	2.8%	5.8%	3.3%	6.8%	3.3%	6.7%
May	2.8%	5.8%	3.3%	6.7%	4.0%	8.2%
Jun	2.6%	5.4%	3.4%	7.0%	4.3%	8.9%
Jul	2.7%	5.6%	3.9%	8.0%	3.3%	6.8%
Aug	3.9%	8.0%	4.3%	8.8%	4.3%	8.9%
Sep	3.1%	6.5%	3.8%	7.9%	4.1%	8.4%
Oct	2.4%	4.9%	3.1%	6.3%	3.4%	7.0%
Nov	3.5%	7.2%	3.6%	7.4%	4.4%	9.1%
Dec	3.3%	6.8%	3.6%	7.4%	3.7%	7.6%
Yearly Avg.	3.1%	6.3%	3.4%	7.0%	3.8%	7.8%
	Composite				10b-18	
3 Year Avg.	3.4%			7.0%		

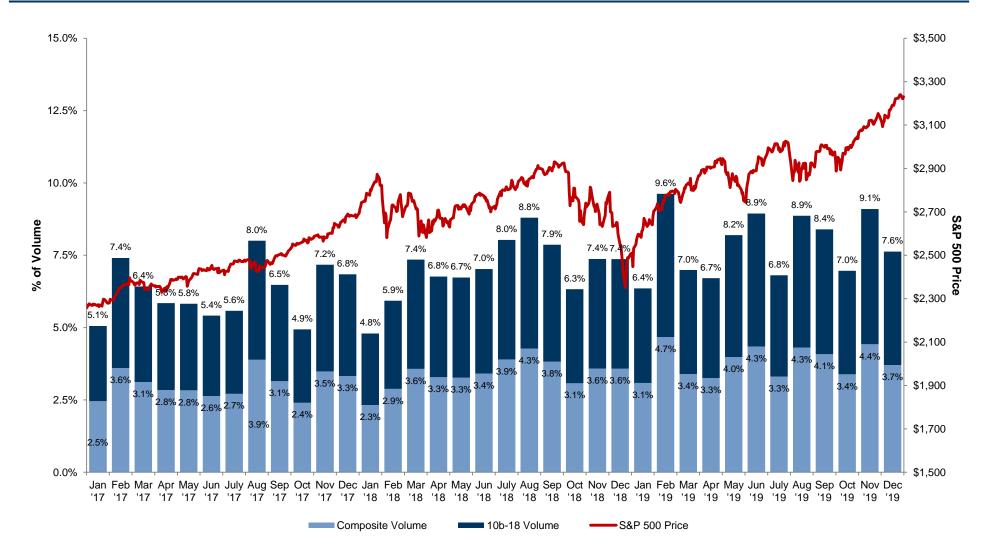


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S&P 500 Monthly Repurchase

Average as % of Total Volumes

S&P 500 Monthly Average % of Volume vs. S&P 500 Price



Source: GS Securities Division, Bloomberg, Birinyi Associates. Calculated for monthly notional spend >\$5mm. 10b-18 volume estimated as 48.6% of Composite Volume.

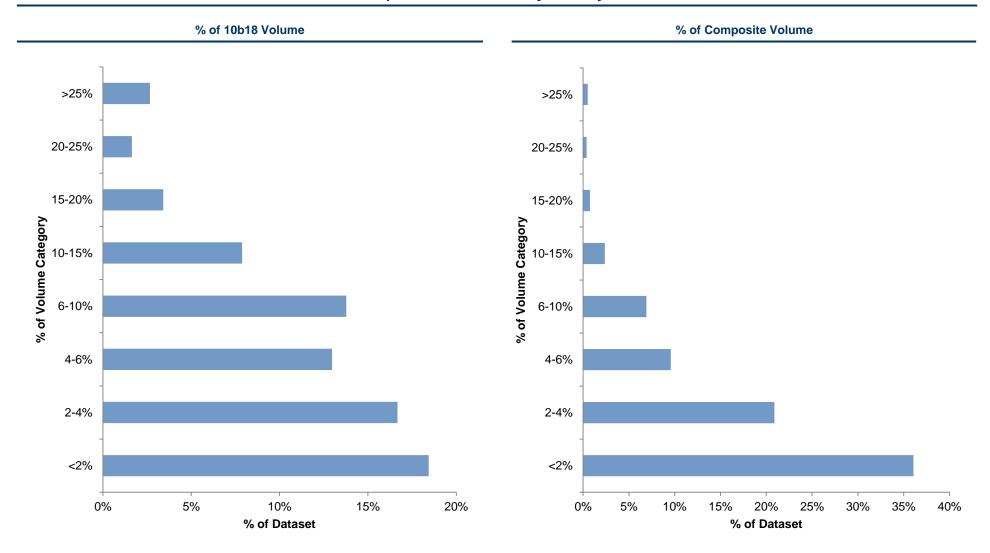


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S&P 500 Monthly Repurchase

Dispersion of S&P 500 Monthly Repurchase Activity by Monthly % of Volume

Dataset Composition of S&P 500 by Monthly % of Volume



Source: GS Securities Division, Bloomberg, Birinyi Associates. Calculated for monthly notional spend >\$5mm. 10b-18 volume estimated as 48.6% of Composite Volume.



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GS Buyback Desk Monthly Repurchase – S&P 500 Constituents Only

Average as % of Total Volumes

GS Buyback Desk Monthly Average as % of Total Volumes

Analyzing <u>daily</u> repurchase data for companies executing through GS share repurchase desk that are listed as members of the S&P 500 (2020 list) from 2017 to 2019, we see on average, companies were 4.1% of composite volume and 7.8% of 10b-18 volume (eligible volume companies can participate on).

GS Buyback Desk Monthly Avg. % of Volume						
	2017		2018		2019	
	Composite	10b-18	Composite	10b-18	Composite	10b-18
Jan	3.0%	5.2%	5.1%	9.5%	5.3%	9.6%
Feb	3.7%	6.5%	4.0%	7.2%	3.7%	7.4%
Mar	3.4%	5.8%	2.9%	5.8%	5.2%	9.5%
Apr	3.7%	6.3%	5.6%	9.6%	3.4%	7.0%
May	4.0%	6.8%	4.3%	8.1%	4.2%	8.7%
Jun	2.4%	4.4%	3.3%	6.5%	3.3%	6.8%
Jul	3.6%	6.0%	4.5%	9.5%	5.2%	9.0%
Aug	2.8%	5.0%	4.5%	8.6%	5.0%	9.0%
Sep	3.4%	6.3%	4.4%	8.2%	4.4%	8.9%
Oct	2.9%	5.1%	4.8%	8.8%	3.9%	8.2%
Nov	4.1%	7.6%	4.2%	7.9%	4.5%	10.6%
Dec	4.3%	8.6%	4.7%	8.8%	3.2%	6.8%
Yearly Avg.	3.4%	6.2%	4.4%	8.2%	4.4%	8.6%
Composite					10b-18	
3-Year Avg.	Year Avg. 4.1%				7.8%	

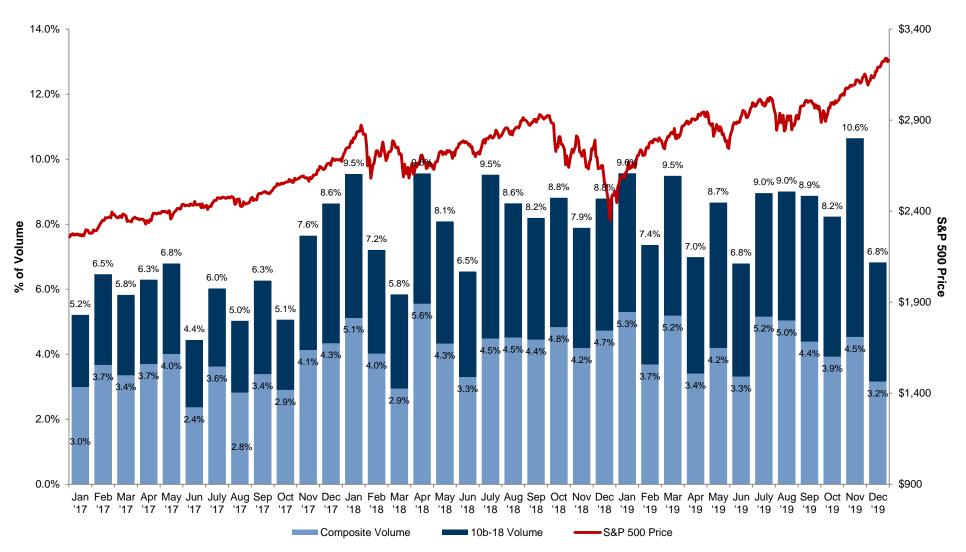


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GS Buyback Desk Monthly Repurchase – S&P 500 Constituents Only

Average as % of Total Volumes

GS Clients Average Monthly % of Volume



Source: GS Securities Division, Bloomberg, Birinyi Associates. Calculated for monthly notional spend >\$5mm. Data includes only companies that are listed as members of the S&P 500 (2020 list).

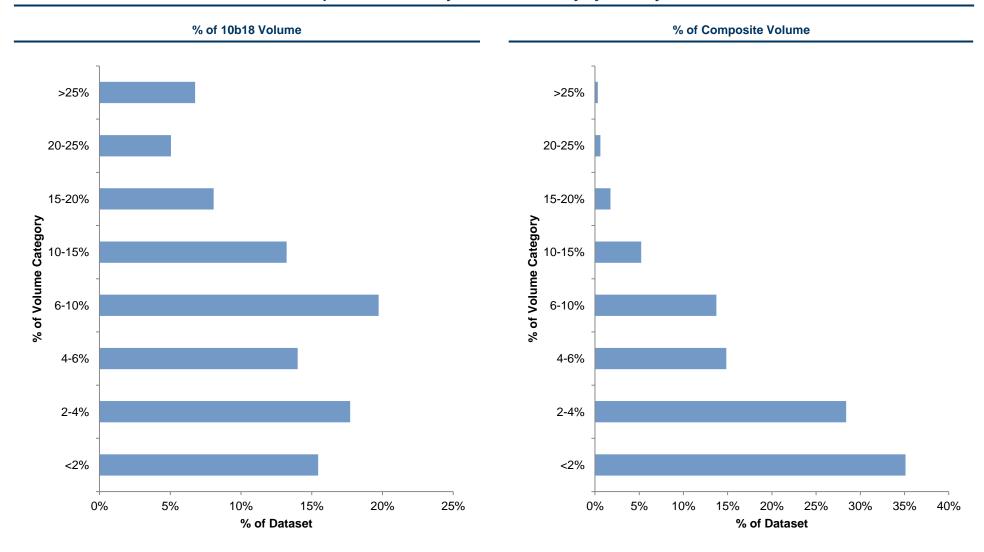


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GS Buyback Desk Monthly Repurchase – S&P 500 Constituents Only

Dispersion of GS Buyback Desk Activity by Monthly % of Volume

Dataset Composition of GS Buyback Desk activity by Monthly % of Volume



Source: GS Securities Division, Bloomberg. Data includes only companies that are listed as members of the S&P 500 (2020 list).



Corporate Share Repurchase Environment GS Buyback Desk Monthly Repurchase – S&P 500 Constituents Only

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Stock Price Performance by % of Volume

Stock Price Performance by % of Volume

- We enriched our daily repurchase data with each stock's return on a given date, SPY return, and SPY Adjusted stock return (price performance net of S&P 500). We then used a dollar volume weighting of avg. daily performance to calculate in aggregate from 2017-2019 the total Stock Return & SPY Adjusted Stock Returns by percent of volume category.
- In general the results suggest that companies that repurchase a larger percentage of trading volumes, tend to outperform, both on an absolute and relative basis compared to those which buy smaller amounts of stock.

% of 10b18 Volume	Stock Return	SPY Adj Stock Return	% of Composite Volume	Stock Return	SPY Adj Stock Return
1). <2% of 10b18	0.12%	0.08%	1). <2% of Composite	-0.10%	-0.14%
2). 2-4% of 10b18	-0.24%	-0.29%	2). 2-4% of Composite	-0.06%	-0.04%
3). 4-6% of 10b18	-0.08%	-0.05%	3). 4-6% of Composite	0.13%	0.08%
4). 6-10% of 10b18	0.08%	0.07%	4). 6-10% of Composite	0.13%	0.07%
5). 10-15% of 10b18	0.14%	0.07%	5). 10-15% of Composite	0.15%	0.09%
6). 15-20% of 10b18	0.08%	0.02%	6). 15-20% of Composite	0.58%	0.35%
7). 20-25% of 10b18	0.09%	0.07%	7). 20-25% of Composite	0.45%	0.16%
8). >25% of 10b18	0.24%	0.12%	8). >25% of Composite	0.25%	0.19%

Source: GS Securities Division, Bloomberg. Data includes only companies that are listed as members of the S&P 500 (2020 list).

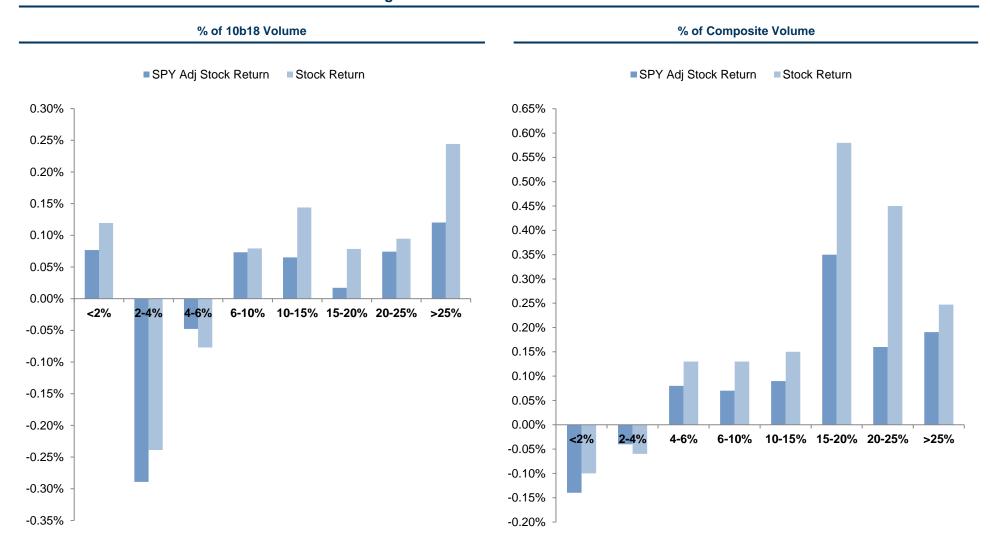


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GS Buyback Desk Monthly Repurchase – S&P 500 Constituents Only

Stock Price Performance by % of Volume

Average % of Volume vs. Stock Price Return



Source: GS Securities Division, Bloomberg. Data includes only companies that are listed as members of the S&P 500 (2020 list).



GS Buyback Desk Monthly Repurchase – All Companies

Average as % of Total Volumes

GS Buyback Desk Monthly Average as % of Total Volumes

Analyzing <u>daily</u> repurchase data for all companies executing through GS share repurchase desk from 2017 to 2019, we see on average, companies were 4.5% of composite volume and 8.3% of 10b-18 volume (eligible volume companies can participate on).

GS Desk Monthly Average % of Volume (spend >\$5mm)							
	2017		2018		2019		
	Composite	10b-18	Composite	10b-18	Composite	10b-18	
Jan	3.1%	5.2%	4.9%	9.0%	5.2%	9.2%	
Feb	4.5%	7.6%	4.3%	7.5%	5.0%	10.0%	
Mar	4.4%	7.5%	3.6%	6.7%	5.1%	9.2%	
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Yearly Avg.	3.9%	6.9%	4.7%	8.7%	4.7%	9.2%	
Composite				10b-18			
3 Year Avg.	Avg. 4.5%			8.3%			

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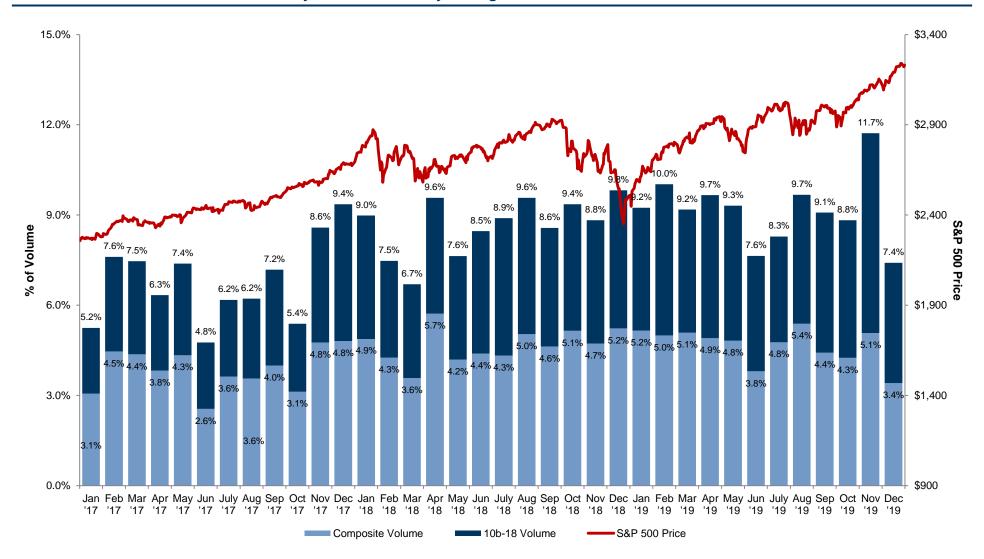


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GS Buyback Desk Monthly Repurchase – All Companies

Average as % of Total Volumes

GS Buyback Desk Monthly Average % of Volume vs. S&P 500 Price



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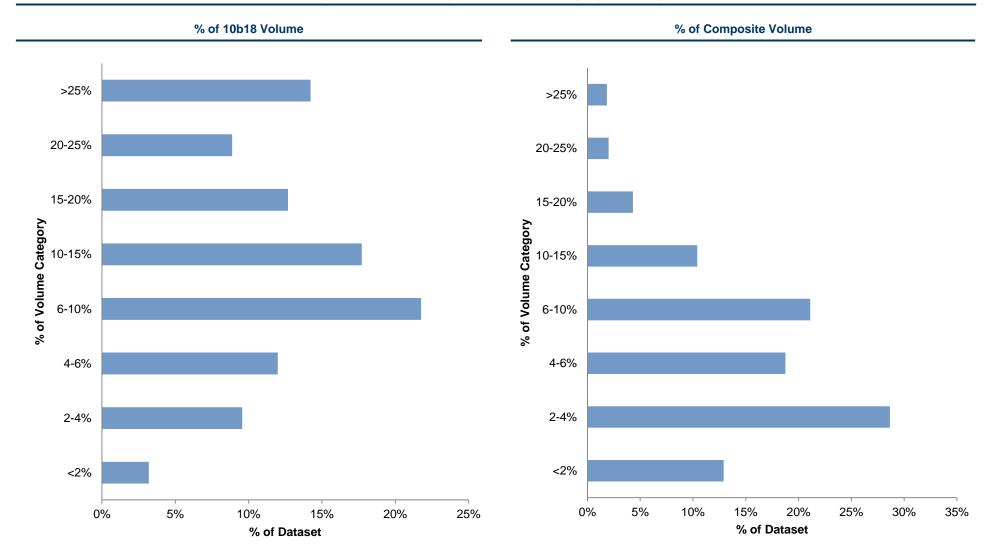


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GS Buyback Desk Monthly Repurchase – All Companies

Dispersion of GS Buyback Desk Activity by Monthly % of Volume

Dataset Composition of GS Buyback Desk activity by Monthly % of Volume



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Corporate Share Repurchase Environment GS Buyback Desk Monthly Repurchase – All Companies

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Source: GS Securities Division, Bloomberg.

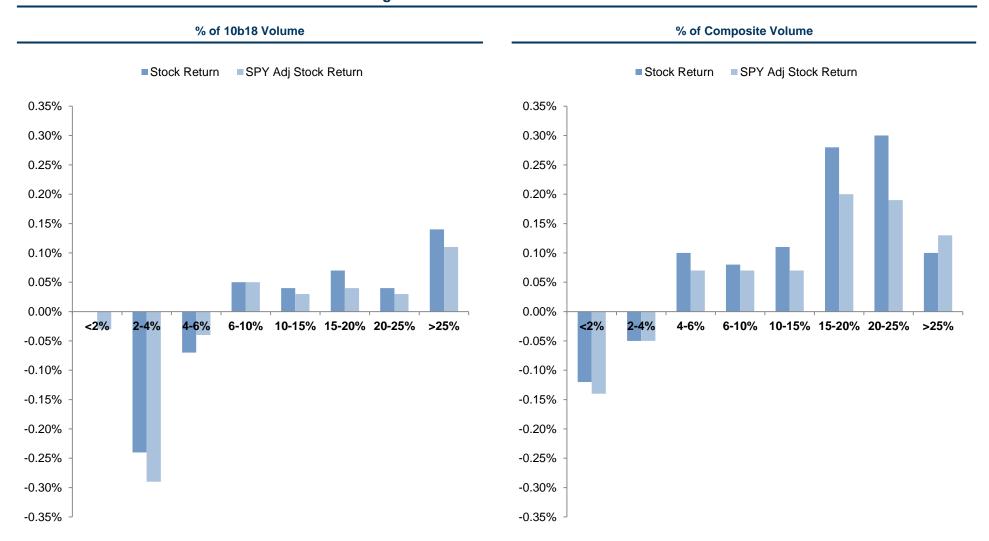


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GS Buyback Desk Monthly Repurchase – All Companies

Stock Price Performance by % of Volume

Average % of Volume vs. Stock Price Return



Source: GS Securities Division, Bloomberg.



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