THE 2019 ALGORITHMIC TRADING SURVEY

LONG-ONLY

Brokers leading next generation of algo trading

The 2019 algorithmic trading survey finds that brokers are stepping up to the plate in the post-MIFID II landscape to provide consistent execution to long-only buy-side firms that are more knowledgeable and discerning than ever before.

Last year's algo trading survey, conducted in the early stages of the new MiFID II regulatory regime, found that algo providers were coping well with the more critical approach of buy-side firms amid a heavy period of regulatory upheaval. As end users become more comfortable and knowledgeable about the algorithms they are using, and indeed in some cases placing at the centre of their trading strategies, brokers and banks must stay ahead of the pace of change and provide consistent results to their clients.

"The performance scores for algo providers in this year's survey shows that brokers and other algo providers have begun stepping up their game."

The performance scores for algo providers in this year's survey shows that brokers and other algo providers have begun stepping up their game, both in response to new obligations under MiFID II and the exact requirements laid out by their buy-side clients.

Overall, the average score from long-only respondents for the survey this year was 5.74 - a noticeable increase on the average score of 5.60 in last year and a return to the levels seen in 2017's survey prior to the introduction of MiFID II. As seen in Figure 1, this trend is evident across almost all of the functional categories under review, with all but one category showing year-on-year improvement, with many areas of performance again reaching, or exceeding, the 2017 results. This could be attributed to a less critical approach from buy-side algo users, however it is far more likely that algo providers have successfully adapted their offering and approach to the new trading landscape.

The highest score achieved in this year's survey was in the customer support category with 5.95, while there were high scores in the improving trader productivity, speed, anonymity, and ease of use categories. The areas of performance that showed the greatest improvement year-on-year were in improving trader performance (up 0.29 from 2018), speed (up 0.31 from 2018), cost (up 0.23 from 2018) and price improvement (up 0.21 from 2018). The two new performance categories introduced in this year's survey showed respectable scores – 5.68 for data on venue/order routing logic or analysis and 5.58 for algo monitoring capabilities.

Dark pool access was also predicted to be an important factor for buy-side firms over the course of the last

Figure 1: Rating of algorithm performance

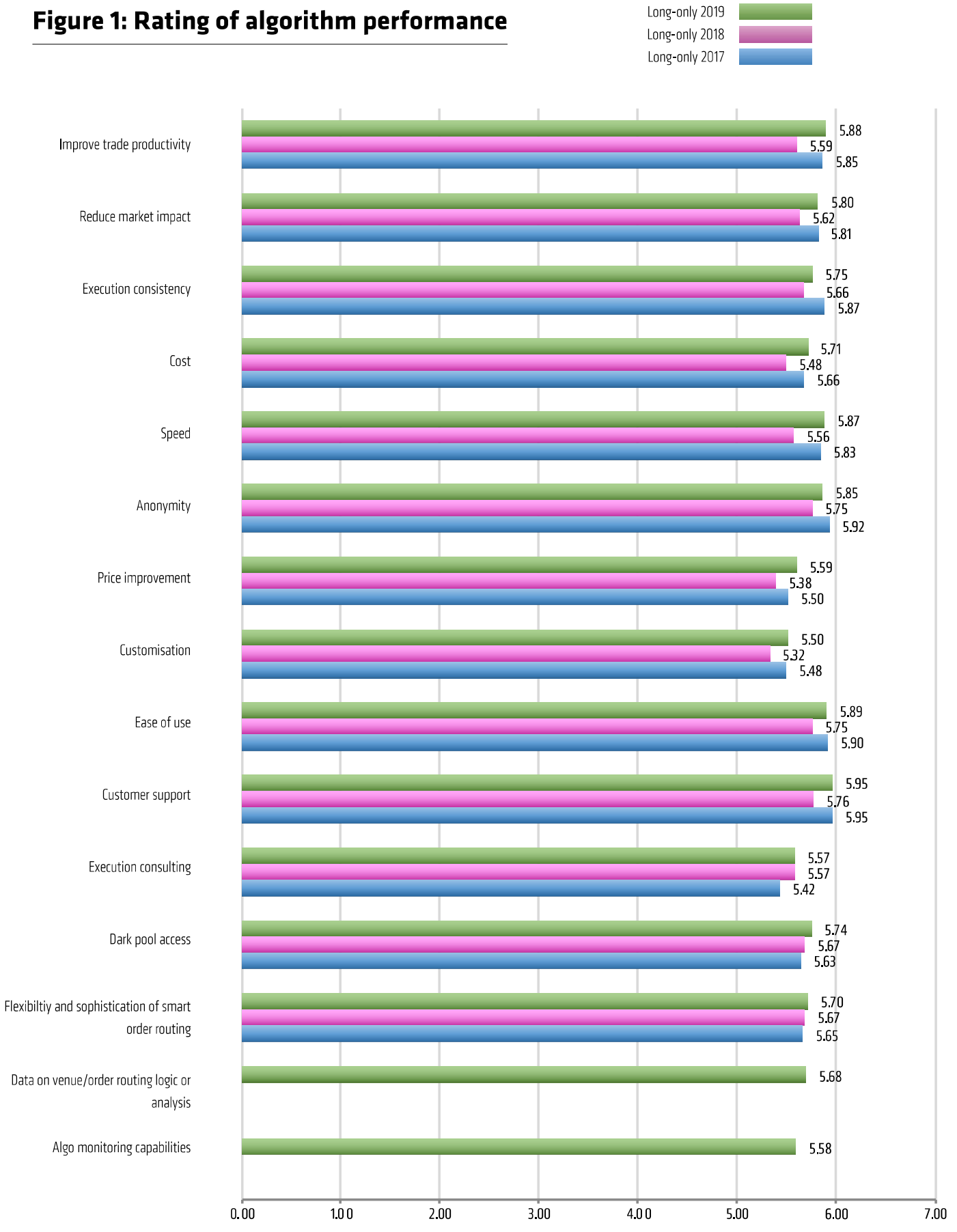


Figure 2: Reasons for using algorithms (% of responses)

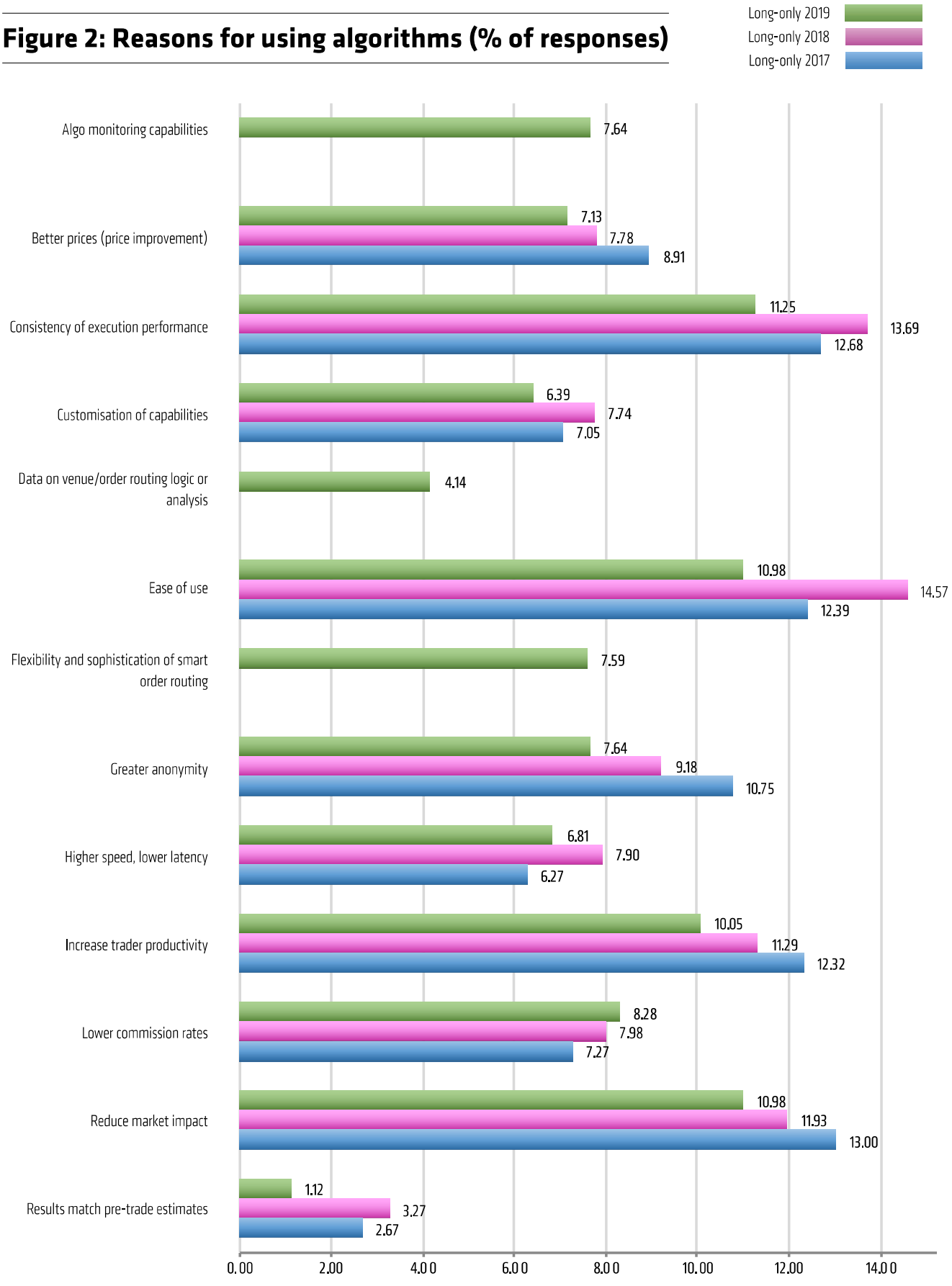
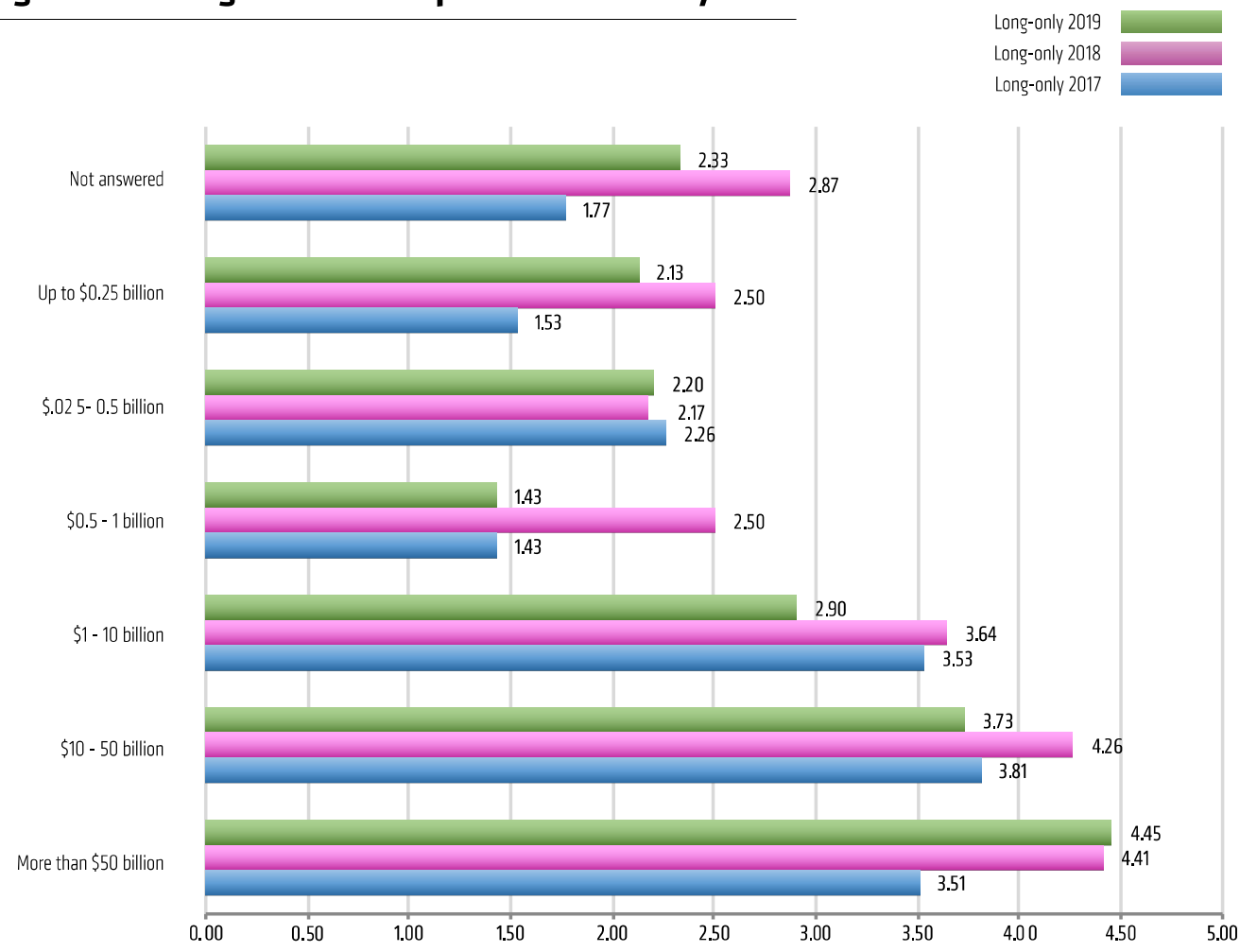


Figure 3: Average number of providers used by AUM



year, due to the double volume caps (DVCs) introduced for dark pool trading in March last year; the data suggests that slightly more respondents are using algos for this reason than last year, with a small increase of 0.07 year-on-year.

The above scores suggest that efficiency has become the key watchword for buy-side users that have now moved on from regulatory compliance as their primary focus. Algo cost will always be an important factor for end users, but the improved perception of speed, trader performance and price improvement capabilities indicates that survey respondents recognise that algo providers are going further in these areas to support automated trading optimisation.

Shifting strategies

Long-only firms continue to adopt and utilise algos for the same reasons as they have done historically, despite the change in the regulatory landscape, according to Figure 2. The importance of execution performance consistency, improving the performance of traders and the ease of algo use were again some of the most popular reasons among respondents for the use of algos – the ease of use factor in particular continues to be more important for

users, suggesting that the buy-side is looking for technology that simply works and allows them to concentrate on their daily workloads.

However, it is the consistency of execution performance that continues to be the overriding reason for buy-side firms to use algos as part of their trading operation, accounting for 11.25% of responses this year, perhaps unsurprising given the desire for reliability during a year of regulatory upheaval.

There were new factors included within this section of the algo survey this year, with the removal of internal crossing from the reasons for using algos and the addition of algo monitoring capabilities (accounting for 7.64% of responses), data on venue/order routing logic or analysis (4.14%) and flexibility and sophistication of smart order routing (7.59%).

The expected consolidation of algo providers and brokers from the buy-side following the introduction of MiFID II has yet to materialise, as seen in Figure 3. Last year's survey found that long-only asset managers were actually increasing the number of algo providers they engaged with despite their relative budgets, and although this trend may have been reversed this year, it's hardly the strong cutbacks that were predicted.

On average, long-only firms engage with between two and three algo providers, regardless of AuM, a marginal decrease on last year. Only those long-only respondents managing either $0.25-0.5 billion or more than $50 billion recorded consistent use of the number of algo providers as last year (2.20 and 4.45 respectively); clearly those on the buy-side with the largest pool of resources to work with are not in any hurry to reduce their options when it comes to algorithmic trading.

The largest decrease in algo providers was among buy-side firms managing $0.5-1 billion, which declined from 2.50 to 1.43 year-on-year, while those in the $1-10 billion and $10-50 billion brackets recorded year-on-year decreases of 0.74 and 0.53 respectively. Smaller asset managers are also reducing the number of algo providers they use, hardly surprising given the strain on operating and technology budgets continue for the buy-side.

The evidence for algo provider

Figure 4: Number of providers used (% of responses)

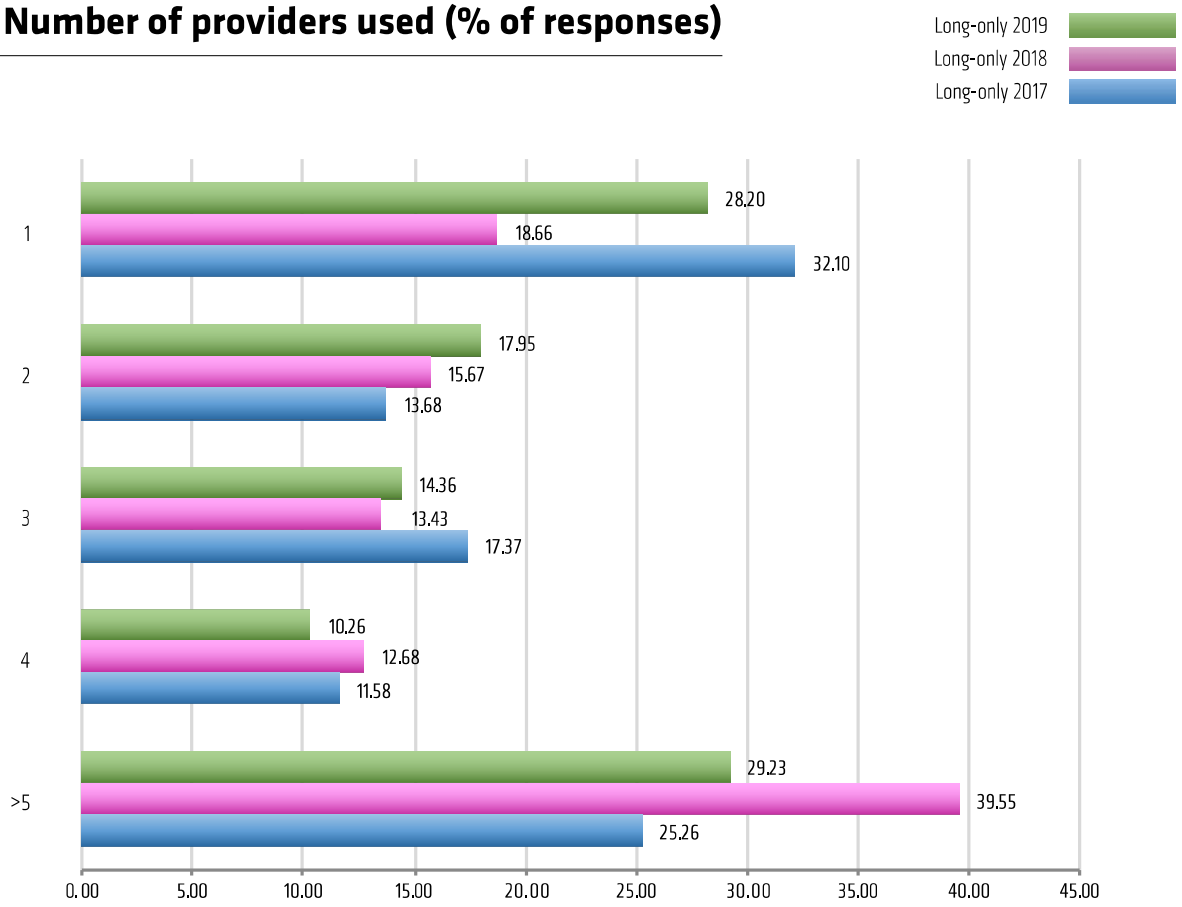
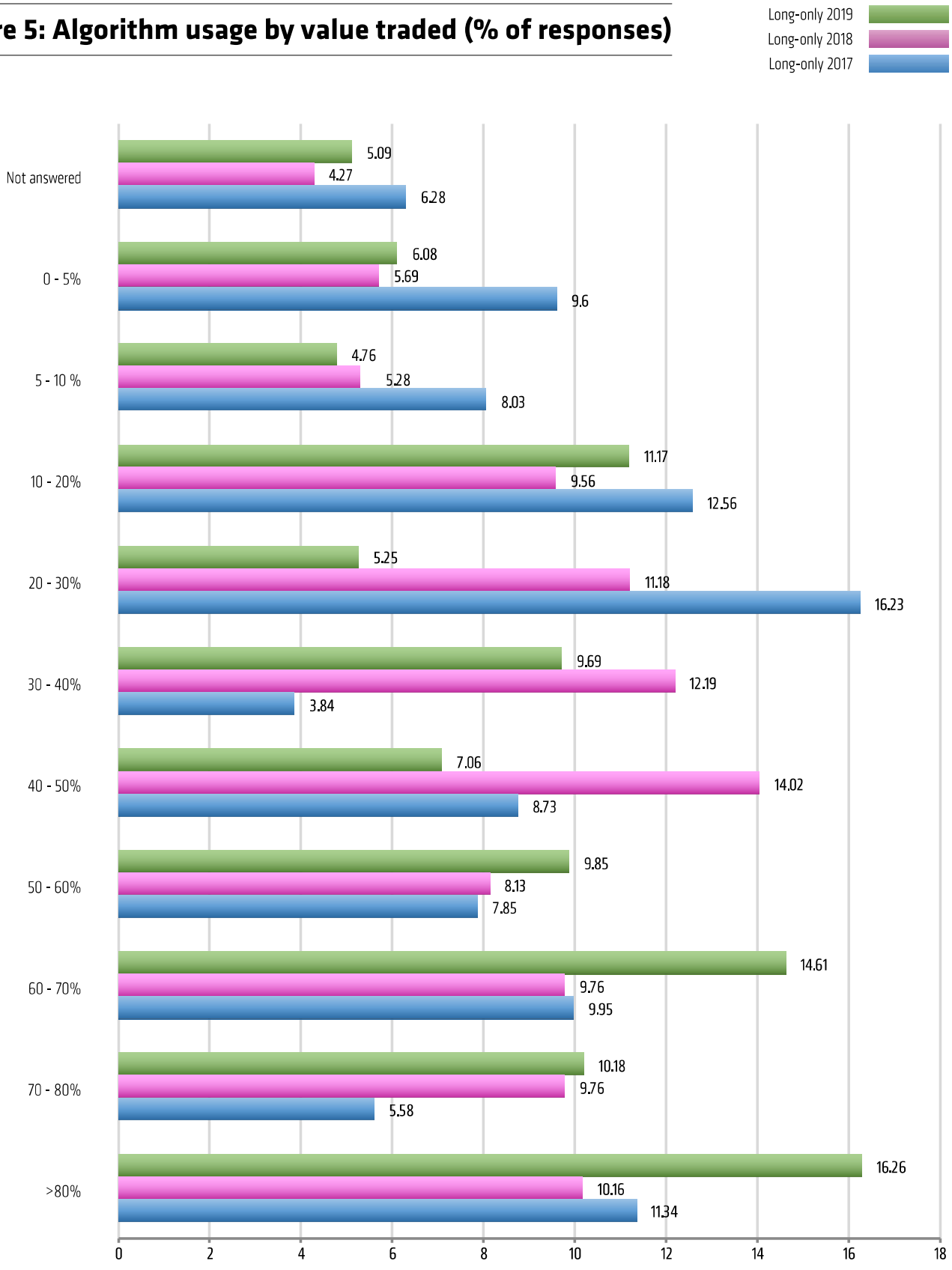
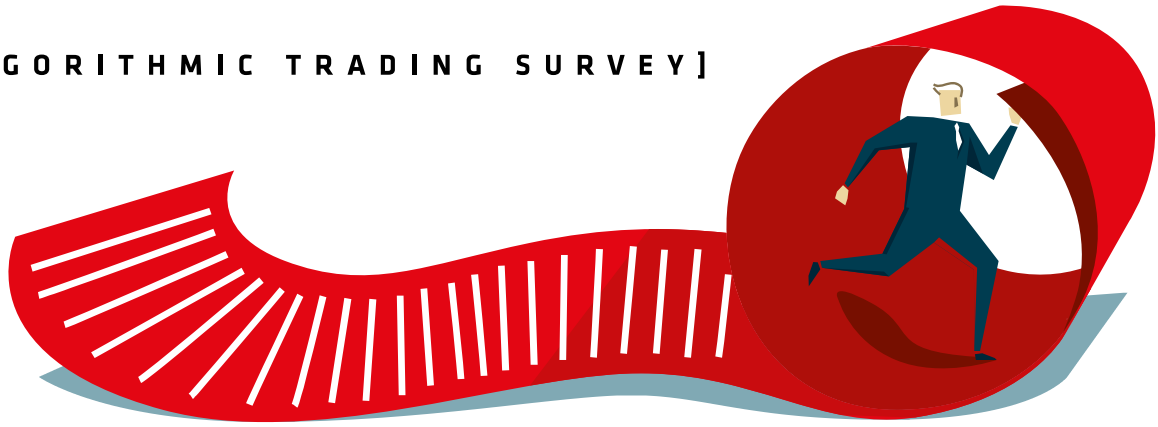


Figure 5: Algorithm usage by value traded (% of responses)





Methodology

Long-only buy-side survey respondents were asked to give a rating for each algorithm provider on a numerical scale from 1.0 (very weak) to 7.0 (excellent), covering 15 functional criteria.

In general, 5.0 is the 'default' score of respondents. In total, just under 30 providers received responses and the leading providers obtained dozens of evaluations, yielding thousands of data points for analysis. Only the evaluations from clients who indicated they that they were engaged in managing long-only firms have been used to compile the provider profiles and overall market review information.

Each evaluation was weighted according to three characteristics of each respondent: the value of assets under management; the proportion of business done using algorithms; and the number of different providers being used. In this way the evaluations of the largest and broadest users of algorithms were weighted at up to three times the weight of the smallest and least experienced respondent.

Finally, it should be noted that responses provided by affiliated entities are ignored. A few other responses where the respondent could not be properly verified were also excluded. We hope that readers find this approach both informative and useful as they assess different capabilities in the future.

"Long-only firms continue to adopt and utilise algos for the same reasons as they have done historically, despite the change in the regulatory landscape."

consolidation is starker in Figure 4, which shows the average number of algo providers used by long-only respondents regardless of AuM. There was a significant drop of just over 10% for firms choosing to use five or more providers in this year's results, while there was a similar percentage increase of firms using just a single provider. The two extremes of the scale accounted for 57.43% of responses, indicating that buy-side firms are moving towards the polar opposites of the scale now that focus has shifted away from regulatory matters; buy-side firms are either looking for a wider range of options when it comes to algo trading or have refined their choices to a provider they know can deliver.

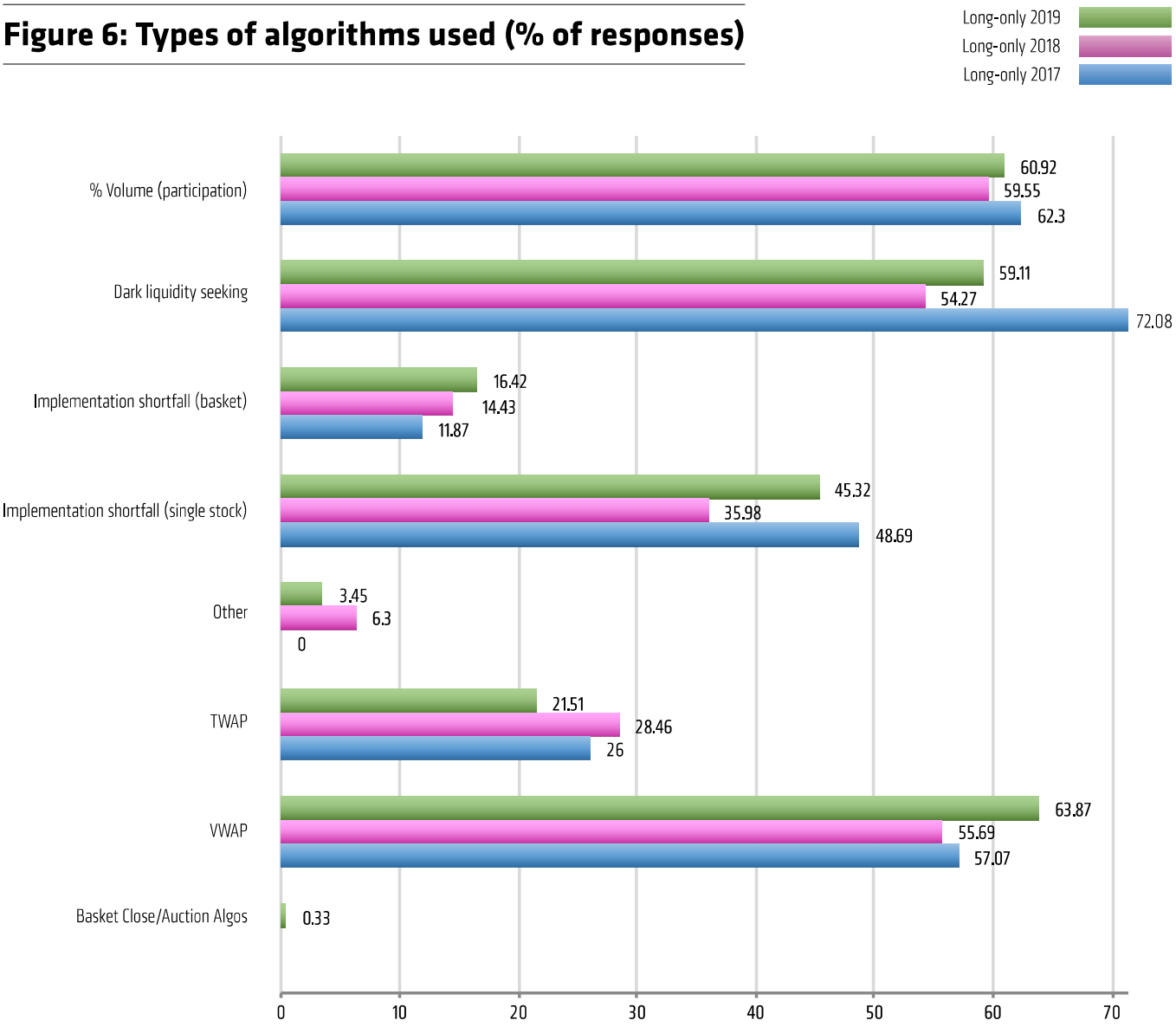
Rising popularity

The virtues of adopting algorithmic trading strategies, blended with the human expertise element traders will always bring to the desk, have long been extolled by providers and asset managers using this approach alike. Both the run-up to and first year of MiFID II has somewhat forced the buy-side to learn more about the algos they use, particularly where automated trading intersects with compliance obligations, but also how to get the most of it algo strategies.

The shifting popularity of algo trading can be seen in Figure 5, which tracks the volume of values traded by algorithm for long-only respondents. While there were minor fluctuations for firms that are using algos for less than 20% of the value traded, there was a noticeable decline of 10% of firms in the 20-50% of value traded bracket. There was a large upturn in firms using algos for more than half of value traded, a total increase of over 13% year-on-year and accounting for over 50% of long-only responses. Clearly those buy-side firms that have placed algo trading at the centre of their strategies are ramping up their use coming out of the regulatory upheaval period and it will be interesting to see how far this trend could continue in next year's survey.

In terms of the types of algos that long-only firms are choosing to use, Figure 6 shows a reversal of the results seen in last year's survey. The use of implementation shortfall (single stock) and VWAP algos

Figure 6: Types of algorithms used (% of responses)



both saw significant increases (9% and 8% respectively), while there was also a 5% increase in the use of dark liquidity seeking algos, up to 59.11% of responses. While the use of dark liquidity seeking algos would take some time to reach the heights it did in 2016, the introduction of the double volume caps for dark pool trading doesn't appear to have dented appetite too much in this area. VWAP algos were the most popular choice among long-only firms this year, with 63.87% of firms using this type, followed by % volume (participation) with 60.92% of responses.

As can be seen in the results for the 13 profiled algo providers this year, brokers have performed significantly better than their banking counterparts in the long-only survey, with only one bank earning an average score of over 5.50. Clearly the year after MiFID II implementation has been well spent by brokers that have taken the opportunity to step up their product offering to meet client requirements, while banking institutions have struggled to do the same, with some recording significantly worse scores than last year.

There is clearly much work for some algo providers then to catch their peers, while for others that have scored well this year the focus will be on bringing new innovations to the algo trading table that will push technology boundaries and improve results for end users. The question going forward is who will be among those providers pushing the envelope and who will be patching up the leaks as the industry continues to move further away from its recent regulatory concentration.

Bank of America Merrill Lynch

Bank of America Merrill Lynch (BAML) recorded a slight decrease in the percentage of responses it received within this year's survey from long-only firms, ranking only 12th in terms of response levels. Almost three-quarters of respondents manage at least $10 billion of assets, with just under half managing more than $50 billion.

Last year BAML recorded declining scores across all areas of performance under review, however this year's results show areas of improvement, with eight of the 15 categories scoring higher than in 2018. While there were some marginal year-on-year increases in the execution consistency (up 0.09), cost (up 0.06) and flexibility and sophistication of smart order routing (up 0.1) categories, there were more significant increases for speed (up 0.59), customer support (0.65) and anonymity (up 0.4). The latter category was BAML's standout area of performance, with a score of 5.99, the third-highest of profiled providers. Of concern to BAML will be long-only respondent's rating of its algo customisation capabilities, which scored 4.73 (down from 5.67 in 2018). BAML received an average score of 5.53 from long-only respondents in this year's survey, a year-on-year increase of 0.11, but below the long-only survey average score of 5.74.

BANK OF AMERICA MERRILL LYNCH RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.75	5.23	5.51	5.48	5.87	5.99	5.55	4.73

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.39	5.93	5.37	5.53	5.68	5.31	5.60	5.53

KEY STATS

5.99
Highest score
(anonymity)

4.73
Lowest score
(customisation)

55%
Most popular non-equity asset traded via algo by respondents: Listed derivatives

+0.65
Best year-on-year score
(customer support)

-0.94
Worst year-on-year score
(customisation)

55%
Most used algo performance measurement method: Implementation shortfall TCA

Bernstein

Bernstein attracted a significantly higher percentage of responses from long-only firms in this year's survey, ranking joint second-highest for responses behind only Kepler Cheuvreux and tied with JP Morgan. Over one-third of long-only respondents for Bernstein are in the $10-50 billion AuM bracket, while around 20% in the $1-10 billion and more than $50 billion AuM brackets.

Bernstein will have every reason to be pleased with its showing in this year's survey, with long-only respondents rating the broker highest of the profiled providers in five of the 15 categories reviewed – increasing trader productivity (6.30), cost (6.12), anonymity (6.40), customer support (6.52) and dark pool access (6.29). The firm also recorded the joint-highest total average score of profiled providers with 6.10, tied with Exane BNP Paribas, representing a 0.47 year-on-year increase. Bernstein also recorded year-on-year increases in all but one category under review, discounting the two new categories introduced this year, the exception being a marginal fall of 0.09 for dark pool access. The areas where it showed most improvement were in the increasing trader productivity (up 0.62), customisation (up 0.69), ease of use (up 0.51) and customer support (0.53) categories.

BERNSTEIN RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
6.30	6.11	6.05	6.12	6.03	6.40	5.84	5.90

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
6.13	6.52	6.05	6.29	6.07	5.83	5.89	6.10

KEY STATS

6.52
Highest score
(customer support)

5.83
Lowest score
(algo monitoring capabilities)

43%
Most popular non-equity asset traded via algo by respondents: Foreign exchange

+0.69
Most improved year-on-year score
(customisation)

-0.09
Least improved year-on-year score
(dark pool access)

53%
Most used algo performance measurement method: Implementation shortfall TCA

Exane BNP Paribas

Exane BNP Paribas attracted a significantly higher percentage of long-only respondents compared to last year's survey. Just below one-half of long-only respondents for the broker manage more than $50 billion of assets, while around one-quarter were in the $1-10 billion AuM range.

Exane BNP Paribas was one of the stand-out performers in this year's long-only survey, recording the joint-highest total average score of profiled providers with 6.10 (level with Bernstein), representing a 0.49 year-on-year increase. The broker received scores of over 6.0 in 10 of the 15 categories under review, while scoring highest of all profiled providers in the reducing market impact (6.32), execution consistency (6.06), customisation (6.22), flexibility and sophistication of smart order routing (6.22), and data on venue/smart order routing logic or analysis (6.23), one of the two new categories included in this year's survey. Exane BNP Paribas saw significantly higher scores across almost all algo performance categories year-on-year, with noticeable improvements in the reducing market impact (up 0.69), execution consistency (up 0.50), anonymity (up 0.48), price improvement (up 0.45), customisation (up 0.67), ease of use (0.50), dark pool access (up 0.72), and flexibility and sophistication of smart order routing (up 0.55) categories.

EXANE BNP PARIBAS RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
6.00	6.32	6.06	5.96	6.18	6.39	5.83	6.22

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
6.22	6.43	5.58	5.97	6.22	5.91	6.23	6.10

KEY STATS

6.43

Highest score
(customer support)

5.58

Lowest score
(execution consulting)

41%

Most popular non-equity asset traded via algo by respondents: Listed derivatives

+0.72

Most improved year-on-year score:
(dark pool access)

+0.14

Least improved year-on-year score:
(customer support)

50%

Most used algo performance measurement method: Implementation shortfall TCA

Goldman Sachs

Goldman Sachs recorded a marked increase in responses from long-only firms in this year's survey, almost doubling its total from last year's survey, placing it fifth-highest among the providers profiled for responses. The majority of of long-only respondents for Goldman Sachs were from the larger AuM brackets, with around one-third from the $10-50 billion AuM bracket and another one-third manage over $50 billion.

Goldman Sachs' scores in this year's survey show an overall decline compared to last year, achieving an overall score of 5.35, a decrease of 0.21 year-on-year, ranking higher than only JP Morgan of the providers profiled this year. The bank recorded the lowest score among profiled providers in three categories this year: execution consistency (5.05), customisation (4.70) and algo monitoring capabilities (4.86). Long-only respondents handed out lower scores in 11 of the 15 categories reviewed for Goldman Sachs on a year-on-year basis, with only marginal improvements in the cost and dark pool access sections both up (0.07). The most significant decreases were in the execution consistency (down 0.80), execution consulting (down 0.82) and customisation (down 0.54) categories. Goldman Sachs' highest score came in a new category for this year's survey, data on venue/order routing logic or analysis, with 5.78.

GOLDMAN SACHS RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.43	5.40	5.05	5.61	5.49	5.33	5.25	4.70

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.81	5.66	5.20	5.47	5.27	4.86	5.78	5.35

KEY STATS

5.81
Highest score
(ease of use)

4.70
Lowest score
(customisation)

39%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.80
Most improved year-on-year score
(execution consistency)

-0.82
Least improved year-on-year score
(execution consulting)

45%
Most used algo performance measurement method: Implementation shortfall TCA

Instinet

Instinet recorded a small increase in the percentage of long-only respondents in this year's survey, although only JP Morgan was below the broker in this ranking among the profiled providers. Over half of long-only respondents for Instinet manage more than $10 billion of assets.

The story of this year's algo trading survey for Instinet was one of consistency, marked with a few areas of significant improvements, according to long-only respondents. The firm recorded an overall score of 5.77, just above the long-only survey average of 5.74 and a small improvement year-on-year (5.64 in 2017). Instinet recorded consistent year-on-year scores in the increasing trader productivity, execution consistency, anonymity, execution consulting, and flexibility and sophistication of smart order routing categories. There were significant improvements in cost (up 0.66), customer support (up 0.59) and ease of use (up 0.52). However, there were some areas where Instinet's performance declined, according to respondents, including the customisation category (down 0.19 to 5.36) and dark pool access (down 0.32 to 5.68). Instinet recorded respectable scores within this year's new categories, with 5.46 for algo monitoring capabilities and 5.90 for data on venue/order routing logic or analysis.

INSTINET RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.85	5.85	5.69	5.91	5.89	5.69	5.67	5.36

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
6.02	6.10	5.68	5.68	5.87	5.46	5.90	5.77

KEY STATS

6.10
Highest score
(customer support)

5.36
Lowest score
(customisation)

55%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.66
Most improved year-on-year score
(cost)

-0.32
Least improved year-on-year score
(dark pool access)

38%
Most used algo performance measurement method: VWAP TCA

ITG

ITG attracted a marginally decreased percentage of responses from long-only buy-side firms compared to last year's survey, ranking lowest among profiled providers. The vast majority of responses for ITG in this year's survey came from those with at least $10 billion in assets under management, with just 15% managing less than that figure.

ITG's scores from long-only respondents this year were largely in line with those from last year's survey, with some fluctuations minor enough to be considered insignificant. The firm's overall score across categories increased slightly to 5.50 (up 0.08), below the long-only survey average of 5.74. ITG saw increased scores in the increasing trader performance (up 0.48), reducing market impact (up 0.34) and execution consistency (up 0.32) categories. Algo customisation remains a low-scoring area for ITG, which was rated at 5.10 this year by long-only respondents, a similar score to that it received last year. In the increasing trader productivity category ITG recorded the third-highest score of providers profiled with 6.01 and recorded a respectable score of 5.67 for algo monitoring capabilities, one of the two new performance categories added to this year's survey.

ITG RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
6.01	5.86	5.69	5.64	5.92	5.54	5.41	5.10

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.55	5.61	5.26	5.81	5.37	5.67	5.32	5.58

KEY STATS

6.01

Highest score
(increase trader productivity)

5.10

Lowest score
(customisation)

50%

Most popular non-equity asset traded via algo by respondents
Exchange-traded funds

+0.48

Most improved year-on-year score
(increase trader productivity)

-0.24

Least improved year-on-year score
(flexibility and sophistication of smart order routing)

50%

Most used algo performance measurement method:
Implementation shortfall TCA

Jefferies

Jefferies saw the percentage of responses it received from long-only buy-side firms more than double year-on-year. Long-only respondents for Jefferies were split relatively evenly across AuM size brackets in this year's survey, with the largest group in the $1-10 billion assets under management range.

Jefferies recorded a marginally higher average score from long-only respondents this year with 6.07, up 0.1 year-on-year. However, this was also the second-highest average score for profiled providers in this year's survey, with only Bernstein and Exane BNP Paribas achieving a higher average, and above the long-only survey average of 5.76. Jefferies scored highest out of all profiled providers in four categories under review in this year's survey, for speed (6.31), price improvement (5.89), ease of use (6.28) and one of the two new categories introduced in this year's survey, algo monitoring capabilities (6.04). Many of Jefferies' scores from long-only respondents stayed consistent with last year's survey results, although there were noticeable improvements in the cost (up 0.63), speed (up 0.76) and reducing market impact (up 0.27) categories and declines in the execution consistency (down 0.21), customisation (down 0.44) and execution consulting (down 0.61) categories.

JEFFERIES RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
6.24	6.14	5.96	5.93	6.31	5.88	5.89	5.97

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
6.28	6.45	5.82	6.04	6.11	6.04	5.95	6.07

KEY STATS

6.45
Highest score
(customer support)

5.82
Lowest score
(execution consulting)

43%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.76
Most improved year-on-year score
(speed)

-0.61
Least improved year-on-year score
(execution consulting)

40%
Most used algo performance measurement method: Implementation shortfall TCA

JP Morgan

JP Morgan recorded over double the percentage of responses from long-only buy-side firms compared to last year's survey. Over one-third of long-only respondents for JP Morgan manage more than $50 billion of assets, while just under that figure were in the $10-50 billion AuM bracket.

JP Morgan will have every reason to be disappointed with its scores from long-only respondents in this year's survey. The bank recorded the lowest average score for the long-only survey with 5.28 among profiled providers, far below the average of 5.76 and a year-on-year decrease of 0.24. JP Morgan also scored the lowest of any profiled provider in six of the 15 categories under review – increasing trader productivity (5.41), cost (5.16), anonymity (5.25), price improvement (5.09), customer support (5.14), and flexibility and sophistication of smart order routing (5.09). JP Morgan's highest score in this year's survey came in the ease of use category (5.71), followed by the dark pool access category (5.52), the latter one of only two areas where the bank recorded year-on-year increased in scores; the other being the customisation category which scored 5.40, up from 5.08 the year prior.

JP MORGAN RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.41	5.29	5.18	5.16	5.50	5.25	5.09	5.40

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.71	5.14	5.09	5.52	5.09	5.06	5.30	5.28

KEY STATS

5.71

Highest score
(ease of use)

5.06

Lowest score:
(algo monitoring capabilities)

53%

Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.32

Most improved year-on-year score
(customisation)

-0.74

Least improved year-on-year score:
(anonymity)

55%

Most used algo performance measurement method: Implementation shortfall TCA

Kepler Cheuvreux

Kepler Chevreux saw its percentage of responses from long-only buy-side firms dip compared to last year's survey, but the broker still attracted the highest percentage of responses than any other provider this year. Around half of respondents for Kepler Cheuvreux manage more than $10 billion in assets.

Kepler Cheuvreux was unable to maintain its impressive scores from last year's survey, with 10 of the 15 categories under review showing decreased year-on-year scores and an average score of 5.69, just below the long-only survey average this year and a drop of 0.15 year-on-year. Although there were minor decreases in some categories, there were more noticeable drops in the reducing market impact (down 0.41), execution consistency (down 0.34), speed (down 0.37), anonymity (down 0.30) and customer support (down 0.41). It's score of 5.40 in the dark pool access category was the lowest of any provider profiled. While the broker did not receive a score of at least 6.0 in any of the performance categories this year, it did record year-on-year increases in the cost (up 0.23), customisation (up 0.04) and execution consulting (up 0.11) categories.

KEPLER CHEUVREUX RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.80	5.73	5.77	5.78	5.67	5.68	5.48	5.55

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.85	5.91	5.94	5.40	5.53	5.54	5.75	5.69

KEY STATS

5.94
Highest score
(execution consulting)

5.40
Lowest score
(dark pool access)

41%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.23
Most improved year-on-year score
(cost)

-0.41
Least improved year-on-year score
(reduce market impact, customer support)

47%
Most used algo performance measurement method: VWAP TCA

Liquidnet

Liquidnet recorded a slight increase in the percentage of responses it received from long-only buy-side firms in this year's survey. Over three-quarters of long-only respondents for Liquidnet manage more than $10 billion of assets.

Liquidnet recorded a number of fluctuating scores from long-only respondents in this year's survey, both positively and negatively, although the overall results largely balanced out, as the firm's average score remained consistent with last year, dipping just 0.03 to 5.60 – this was, however, below the long-only survey average of 5.76. There were negligible movements to scores in the increasing trader productivity, reducing market impact, execution consistency, speed and flexibility and sophistication of smart order routing. Liquidnet recorded year-on-year improvements in the cost (up 0.27), price improvement (up 0.36) and customer support (up 0.27) categories. Meanwhile, there were year-on-year decreases in the anonymity (down 0.36), ease of use (down 0.22) and dark pool access (down 0.34) categories. Liquidnet also received two of the lowest scores for profiled providers – 5.33 in the speed category and 5.03 for data on venue/order routing logic or analysis, one of the two new categories introduced in this year's survey.

LIQUIDNET RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.79	6.09	5.60	5.19	5.33	5.91	5.88	5.16

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.83	6.11	5.52	5.81	5.38	5.37	5.03	5.60

KEY STATS

6.11

Highest score
(customer support)

5.16

Lowest score
(customisation)

44%

Most popular non-equity asset traded via algo by respondents: Listed derivatives

+0.36

Most improved year-on-year score
(price improvement)

-0.36

Least improved year-on-year score
(anonymity)

68%

Most used algo performance measurement method: Implementation shortfall TCA

Mirabaud Securities

Mirabaud Securities is a new entry for this year's long-only algo trading survey, garnering a respectable percentage of responses, with only four of the profiled providers attracting higher. Respondents for Mirabaud Securities were primarily from $10-50 billion AuM bracket, with only one firm managing more than $50 billion of assets.

Mirabaud Securities produced a strong showing according to long-only respondents this year, attaining an average score of 5.95, above the long-only survey average of 5.76. The firm recorded scores higher than 6.0 in six of the 15 categories under review: cost (6.03), ease of use (6.07), customer support (6.37), execution consulting (6.15), dark pool access (6.18), and data on venue/order routing logic or analysis (6.17). It also scored highest of all profiled providers in the execution consulting category, which has been a fiercely contest category in recent years, while its lowest score came in the customisation (5.36) category. The challenge for Mirabaud Securities will now be maintaining, or improving, these scores in next year's survey.

MIRABAUD SECURITIES RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.92	5.88	5.99	6.03	5.82	5.84	5.79	5.36

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
6.07	6.37	6.15	6.18	5.83	5.78	6.17	5.95

KEY STATS

6.37
Highest score
(customer support)

5.36
Lowest score
(customisation)

75%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

N/A
Most improved year-on-year score

N/A
Least improved year-on-year score

43%
Most used algo performance measurement method: VWAP TCA

Morgan Stanley

Morgan Stanley attracted a consistent percentage of long-only respondents, although the bank ranked only 11th among profiled providers in terms of overall response rates. Just under half of respondents for Morgan Stanley came from the highest AuM bracket (more than $50 billion), with around one-third managing between $10-50 billion.

Morgan Stanley produced the most consistent set of results in this year's survey. In nine of the 15 categories reviewed, the bank recorded scores with insignificant change (less than 0.2) year-on-year: execution consistency, cost, speed, anonymity, price improvement, customer support, execution consulting, dark pool access, and flexibility and sophistication of smart order routing. However, there were some clear areas of improvement, which pushed Morgan Stanley's average score to 5.49, an increase of 0.18 on its score in last year's survey. The most significant improvement was in the customisation category, which scored a respectable 5.55, a year-on-year increase of 0.88, while there were also improvements in the increasing trader productivity (up 0.45) and reducing market impact (up 0.35) categories. Morgan Stanley posted the lowest score of all profiled providers in the execution consulting category with 4.97, the same score it received from respondents in last year's survey.

MORGAN STANLEY RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.68	5.50	5.63	5.58	5.52	5.64	5.45	5.55

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.73	5.32	4.97	5.70	5.49	5.33	5.30	5.49

KEY STATS

5.73
Highest score
(ease of use)

4.97
Lowest score
(execution consulting)

44%
Most popular non-equity asset traded via algo by respondents: Listed derivatives

+0.88
Most improved year-on-year score
(customisation)

0
Least improved year-on-year score
(customer support, execution consulting)

68%
Most used algo performance measurement method: Implementation shortfall TCA

UBS

UBS saw a slight increase in the percentage of responses from long-only buy-side firms in this year's survey. The majority of long-only respondents for UBS came from the $1-10 billion of assets under management size bracket (one-third), with a marginally smaller percentage managing more than $50 billion.

UBS was the stand-out performer among the banks profiled for this year's survey, recording the highest average score of all banks profiled with 5.76, also the long-only survey average. UBS also recorded some of the most improved year-on-year scores in this year's survey, addressing some of its areas of poor performance in the 2018 survey. The bank saw increased scores from long-only respondents in 13 of the 15 categories under review (the other two being new categories introduced this year), with significant increases for increasing trader productivity (up 0.67), reducing market impact (up 0.56), execution consistency (up 0.45), speed (up 0.73), price improvement (up 0.74), customisation (up 0.46) and customer support (up 0.52). UBS' lowest score this year was in the algo monitoring capabilities category (introduced this year) with 5.51, still the seventh-highest score in this area of profiled providers.

UBS RATINGS FOR ALGORITHM PERFORMANCE

Increase trader productivity	Reduce market impact	Execution consistency	Cost	Speed	Anonymity	Price improvement	Customisation
5.81	5.77	5.82	5.69	5.91	5.98	5.62	5.67

Ease of use	Customer support	Execution consulting	Dark pool access	Flexibiltiy and sophistication of smart order routing	Algo monitoring capabilities	Data on venue/order routing logic or analysis	Average score
5.87	5.86	5.57	5.92	5.85	5.51	5.53	5.76

KEY STATS

5.98
Highest score
(anonymity)

5.51
Lowest score
(algo monitoring capabilities)

27%
Most popular non-equity asset traded via algo by respondents: Exchange-traded funds

+0.74
Most improved year-on-year score
(price improvement)

+0.20
Least improved year-on-year score
(flexibility and sophistication of smart order routing)

43%
Most used algo performance measurement method: Implementation shortfall TCA