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WHISKY INTELLIGENCE REPORT

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Contributing Members



Duncan McFadzean

Head of Food & Drink

Duncan is Noble & Co's Head of Food & Drink. He has led work for The Borders Distillery, Adelphi, The Macallan, Compass Box, Innis & Gunn and Rare Whisky 101 amongst others. Prior to Noble & Co, Duncan had 10 years as a sell-side equity research analyst for Merrill Lynch and various fund management firms.



Susi Crawford

Head of Corporate Finance

Susi is Noble & Co's Head of Corporate Finance and has worked on a number of transactions in the whisky industry including The Borders Distillery. Prior to Noble & Co, Susi was a finance lawyer working for companies such as Clifford Chance, Deutsche Bank and Goldman Sachs in London and in Dubai.



Will Hartop

Corporate Finance Analyst

Will is an experienced corporate finance analyst at Noble & Co, working on transactions across a wide range of sectors including food & drink and renewables. He has been involved on projects for The Borders Distillery and The Macallan. He has been involved in all of the Whisky Intelligence Reports to date.



Steven Coates

CEO

Steven co-founded Brainnwave seven years ago aiming to improve the quality and speed of decision making in business by bringing together cloud technologies and thought leadership in AI and Data science. He previously spend 20 years as a consultant at top firms Accenture and The Boston Consulting Group.



Tim Hurst

Chief Data Scientist

Tim leads the Data Science team at Brainnwave. With a PhD in applied mathematical modelling, he moved towards statistical analysis and now works in related areas. He can create and apply state-of-the-art machine learning techniques to our clients' data, helping them understand its predictive and analytic potential.



Anne Braae

Data Scientist

Anne is a data scientist with a PhD in molecular genetics and bioinformatics with experience analysing large gene therapy datasets in the biotech industry. With interest in geospatial data, she moved to Brainnwave to solve problems using data from a range of industries to help provide valuable insights for our clients.



Image credit: Sotheby's

Executive Summary

This report is the second in our Whisky Intelligence series, and the first quarterly update following our annual review in November 2022. We continue the look at economic context, trends in the whisky industry, analysing how brands performed relatively and taking a deeper dive on an important brand.



In the period October 2022 to January 2023, we've seen some sizable shifts within the whisky market. It's been a particularly challenging time with high inflation, the continued war in Ukraine and the knock-on effects of quantitative tightening. The market is far from steady as we see weaknesses across almost every segment.

In the period October 2022 to January 2023, we've seen some sizeable shifts within the whisky market. It has been a particularly challenging time with high inflation, continued war in Ukraine and the knock-on effects of quantitative tightening. The market is far from steady as we see weaknesses across almost every segment.

We looked at performance by price bracket and surprisingly saw the strongest performance coming in the £100 to £1000 bracket. By region, January 2023 showed growth in volumes for Speyside, Campbeltown and Islay, with volume declines in Highland and Lowland. Every region saw a decline in average value realised per bottle sold.

As relative brand analysis has less value in a market moving meaningfully downwards, the strongest performers of the big brands, by volume growth,

were The Macallan, GlenAllachie and Springbank, who also took top slots by total value traded. The top three fastest growing by percent volume growth were Annandale, Glenugie and Tamdhu. Across all of the closed distilleries, we saw the greatest positive move in average value per bottle for Kinclaith, Glen Mhor and Imperial.

We continued to look at major brands in the secondary market, analysing how the Bowmore brand has performed recently and, unsurprisingly, in a macro-climate that is leading to whisky prices in decline, Bowmore saw similar trends.

We looked at bottles by price segment, which channel Bowmore sells via and which bottles show greatest volatility.

The long-term trends towards collecting fine and rare whisky remain in place. Rising level of wealth in China, India and Africa

is leading to a demand for luxury and trophy assets. Emphasis on gifting in many Asian cultures plays well for whisky. Tightness of stocks, growing awareness by brands of the value of the stocks they hold, as well as the increasingly sophisticated strategies for launching these to the market, all should support the longer term outlook.

However, in the near term the picture is more cloudy. We said in our last report that the macro outlook will make 2023 a much tougher year than 2022 and this is happening.

One small positive is that the macro-climate is now seemingly stabilising and this may limit the downside. The market could recover later this year but it is a brave call to predict this for certain at this point.

We're grateful for the support of the following in the creation of this report: The Macallan;

Bowmore; Sotheby's; Christie's; Bonhams; Scotch Whisky Auctions; Speyside Whisky Auctions; Volpe & Castello; MALTDAQ; Just Whisky Auctions and Prestige Auctions.

Our aim with this series of reports is to provide detailed and informative insights into a high-value market and to do so in an informative, accessible and enjoyable way. We hope you agree that this report achieves that aim.

Slàinte Mhath



Duncan McFadzean
Head of Food & Drink
Noble & Co



Steven Coates
CEO
Brainnwave

NOBLE & CO

INVESTMENT BANKING WITH A MODERN TWIST

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Noble & Co is a boutique Scottish advisory firm, providing intelligent and creative advice to companies during key financial and corporate milestones. We specialise in equity fund raising at scale, debt advisory, and research.

With focus on six sectors - Food & Drink, Energy & Power, Technology, Financial Services, Sustainability and Infrastructure - we work with a range of market-leading clients on a number of the country's most ambitious projects.

Distilling Insight. Informed decisions, every time.

Brainwave's decision intelligence, paired with the latest technology and data science offerings, results in efficient problem solving and confident decision making.

We use our intelligence platform, Mosaic, to give clients access to the most distilled data-driven insights, allowing them to harness the power they need to make the most informed decisions.

Every single time.

brainwave.ai/whisky

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Whisky at Auction Performed Poorly in a Challenging Economy

Like any other collectible, whisky is subject to market trends and shifts in buyer preferences. Since publishing our first report in November 2022, whisky at auction has faced numerous headwinds including rising inflation, higher interest rates, quantitative tightening, the continuing war in Ukraine, geopolitical tensions and the cost of living crisis. The near-term future might not look completely positive but there may be signs of stability on the horizon.

Headwinds facing whisky are causing the market to decline

Since our last report, which covered the period between January to September 2022, the economic backdrop has remained volatile. Base rates in the UK have risen from 0.25% in January 2022 to 4.25% in March 2023. GDP growth has slowed but fears of a harsh recession in the UK have come and gone, with a shallower trough and flatter recovery now being the market consensus.

Inflation has been the shock, with UK CPI rising from a rate of 5.5% in January 2022 to 10.4% in February 2023. Hopefully now, with commodities prices in decline, we may have seen inflation peak.

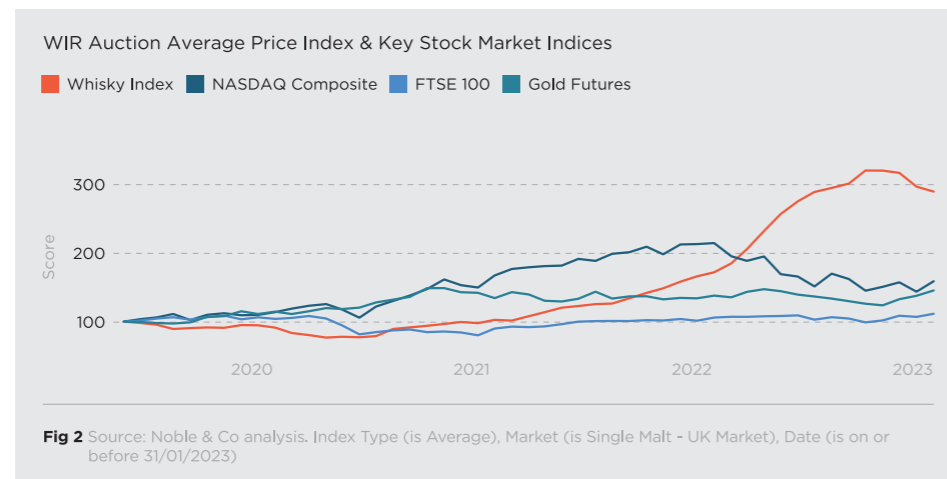
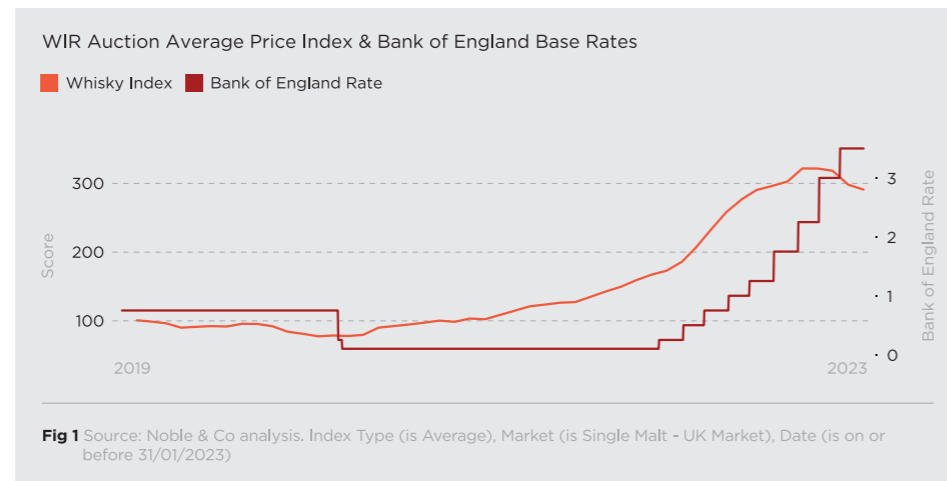
At the time of writing, copper is down 18% from its cycle high, wholesale energy prices are

down over 80% from their 2022 peak and world food prices are down 18% since a record high in March 2022. The stock markets seem to believe the worst might be over. At this point, the FTSE 100 is up by 13% from its lowest point in the last year, the Nasdaq-100 up by 13% and the S&P 500 up by 8% in the same period.

Launching a Whisky Auction Index of select bottles

Along with our partners Brainnwave, we have created an initial Whisky Auction Index. This is a pre-cursor to building a comprehensive Whisky Index based on a basket of selected bottles.

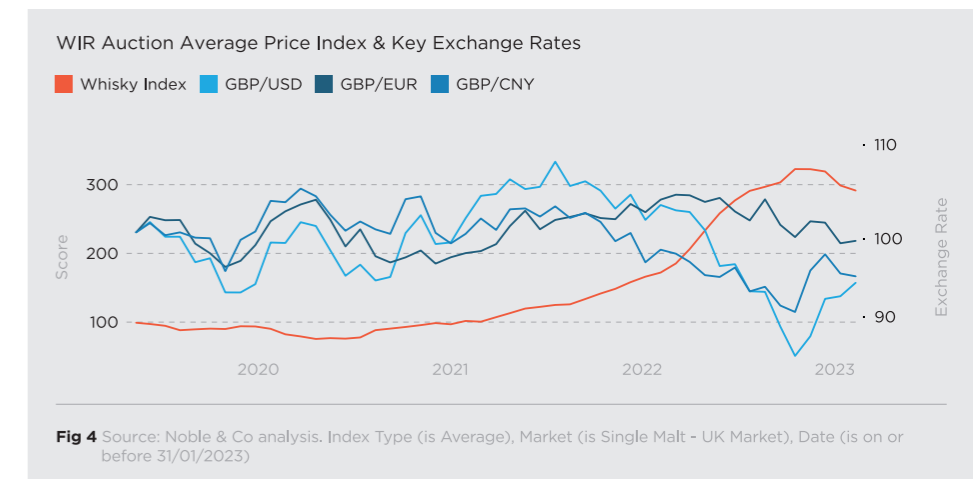
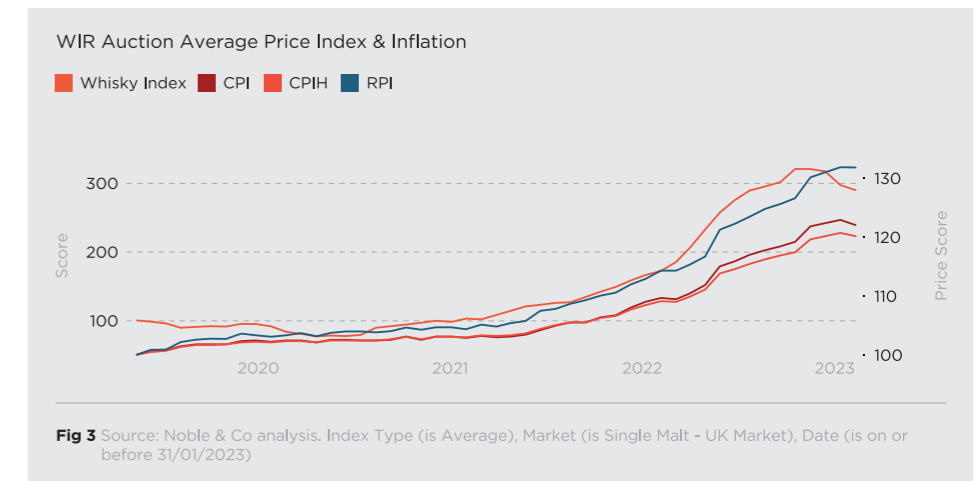
This is currently underway, as we work on the weightings of the bottles and brands within it, and will be available later this year.



Indexing the dataset to assess overall performance

For the purpose of this report, Brainnwave has created two Whisky Auction Indices, based on two definitions of a market index. The Whisky Auction Index (Value) is structured as a capitalisation-weighted index and the Whisky Auction Index (Average) is based on a price-weighted index. These indices are based on the transacted bottles in the dataset, rather than on specific bottles.

The methodology's downside is that the bottles sold in any given period will change, thus skewing the index. The upside is that it is more representative of what is happening as a whole in the auction market. Past performance is no guide to the future. The indices are subject to fine-tuning and may change in future releases, but Brainnwave expects the overall behaviour of the indices to be the same. Index values were set to 100 in January 2019.



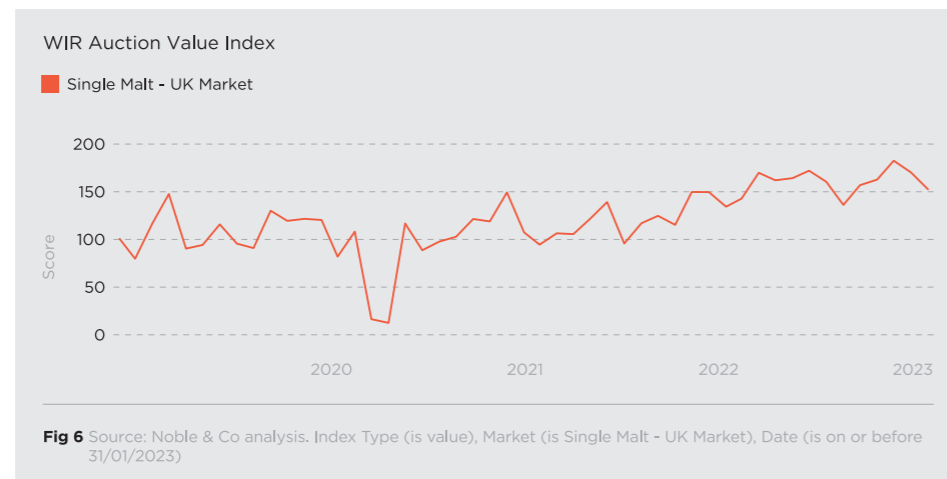
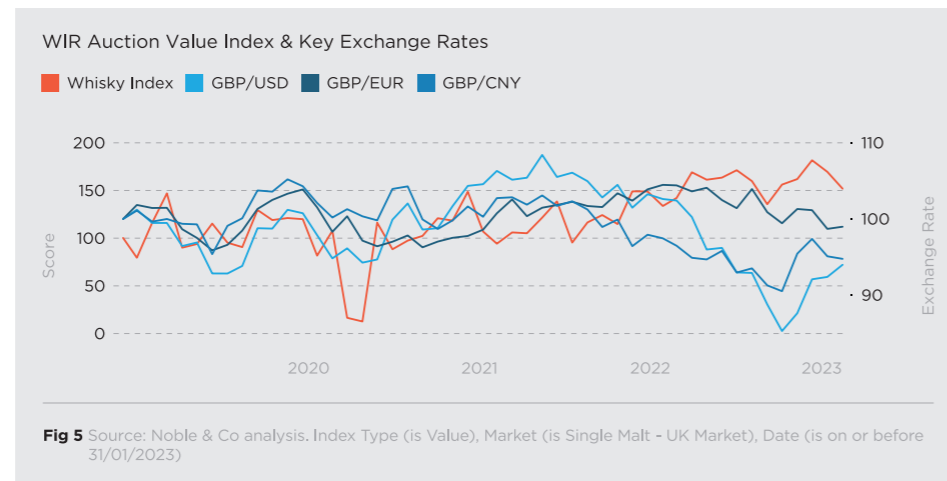
Assessing the correlation with macro-economic & indicators & market indices

We compared our Whisky Index to key market indicators. The correlation was low, as you would expect from a luxury asset class. However, we have not yet looked at these correlations over a longer time period, which may well show different patterns. Correlation is not causation!

CPI is the most correlated factor, with an r-squared of 0.98.

With CPI now likely to fall, this may indicate that the tough market for fine and rare whisky may be ongoing. However, the period of correlation is short and may not be as highly correlated over time. The correlation with Bank of England base rates was just 0.73, indicating a moderately strong positive correlation.

The Whisky Auction Index is not correlated with the key stock exchanges and instruments (r-squared values of 0.34 for the NASDAQ Composite, 0.46 for the FTSE 100 and 0.37 for Gold



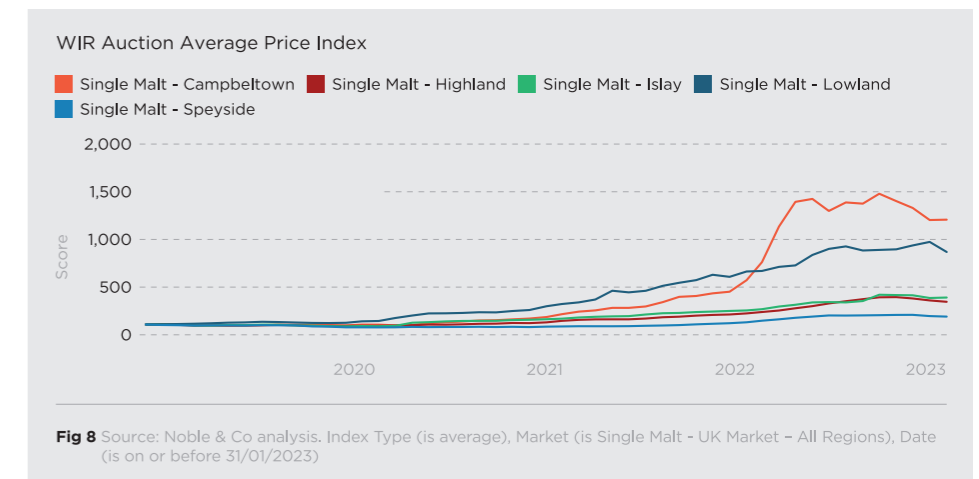
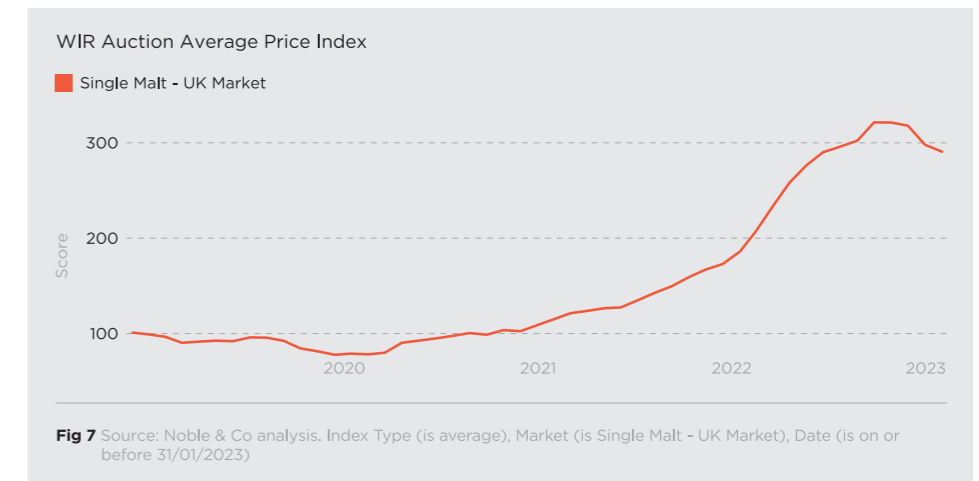
Futures). Most key exchange rates are also not strongly correlated with the Whisky Auction Index (r-squared values of -0.50 for GBP/USD and 0.32 for GBP/EUR). However, the Whisky Auction Index shows a strong negative correlation with the GBP/CNY exchange rate with an r-squared of -0.81.

Our average Whisky Auction Index tracks with the Bank of England base rate and shows similar trends to the Consumer Price Index.

The secondary whisky market is in decline

Whisky auction indices are on a downward trend for both value and average indices for nearly all markets.

The Value Index has fallen 17% since its peak in November 2022. Campbeltown is down by 40% over the same period; Highland down by 25%; Lowland down by 14%; Speyside down 7% and Islay the only slightly bright light at +2%.



Whisky vs other asset classes

So is whisky performance any different from other luxury asset classes? We don't think so. The performance of fine and rare single malt Scotch whisky in the first nine months of 2022 was strong and lagged declines seen in similar asset classes.

Liv-ex, the fine wine global marketplace, noted that the performance of fine wines in 2022 was +7% to the end of November, with a decline in

the final month of the period. According to Decanter magazine, 45% of wines in the Liv-ex 100 index fell in value in the month of November.

ArtTactic has a confidence index, based on the views of art industry experts, which saw a significant decline by July 2022. The index seen a fall from +54 in February 2022 down to +18 by February 2023.

Watchfinder & Co, the Richemont-owned company

specialising in the sale of pre-owned watches, reduced prices by 15% in February 2023. Media reports noted that Rolex prices were down by 21% and popular Patek Philippe watches fell by 19%. Gold, which is more of a macro instrument than a true collectable, saw continued outflows from ETFs in February.

As for the future, the near-term environment will remain a challenge, although the macro news recently has stabilised and this may help limit the downside.

A Sector Overview Reveals Weakness in Most Segments

In this part of the report we dive deeper into analysing the impacts on the whisky market at auction between October 2022 to January 2023. These include overall market dynamics and volume to region and price segments. We identify weaknesses in nearly all segments but there are some areas where volumes and transacted values are up.

“Interest rates are hitting heights not seen for decades. Stock markets in Asia have declined significantly, with major losses in technology and cryptocurrencies. The price of gold has fallen and watches are having a tough second half. However, wine remains a strong performer and fine and rare whisky are surpassing them all. Can it continue? There are significant headwinds facing into 2023 and with the exception of the ultra-rich, Noble & Co envisages a less buoyant performance next year.”

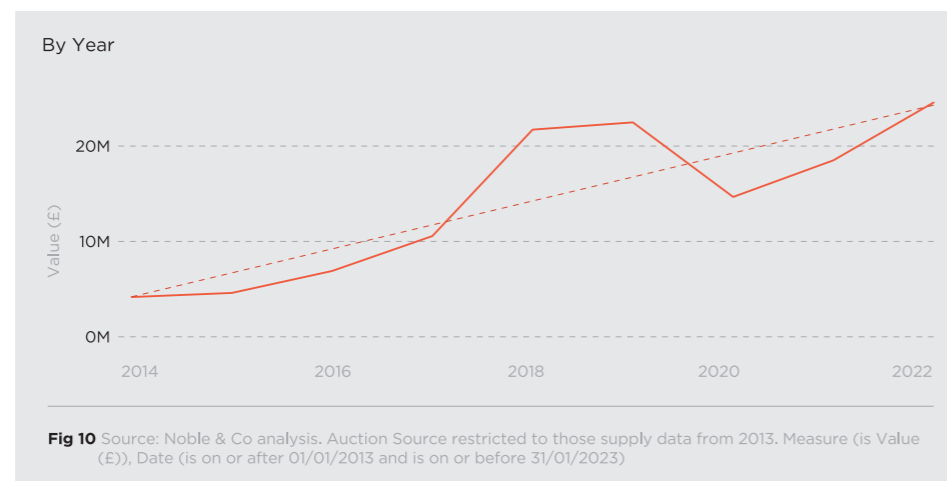
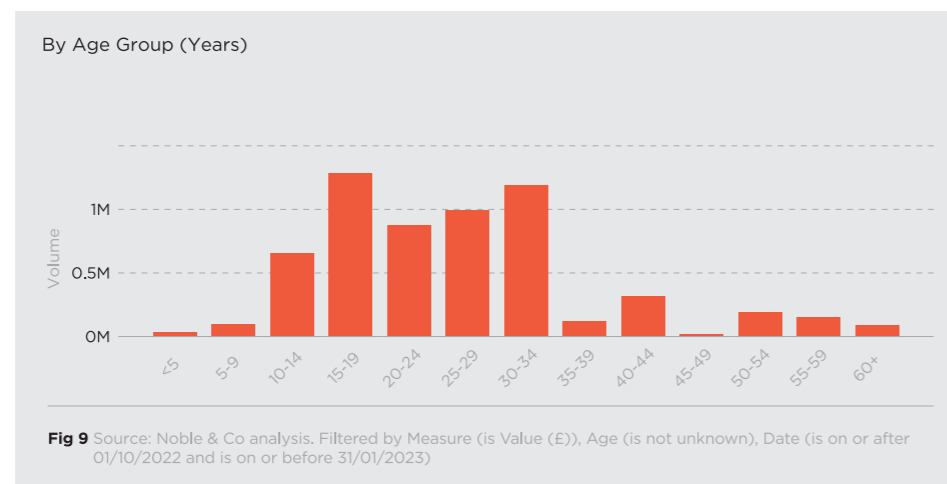
Whisky Intelligence Report, November 2022
Noble & Co

The market is in decline

Throughout 2022, the total volume transacted in our dataset was +28% and value +19%. For single malt whisky auctioned for over £100 in 2022, volume was 34% and value was +20%. The average price realised for single malt whisky at auction in our dataset in 2022 was £597.

From the end of September 2022, the value of fine and rare whisky traded has fallen. November saw value down by 18%, December down 9% and January down 11%, all year-on-year figures.

However, volumes have continued to grow, highlighting a big shift in the composition of the market. Low priced auction lots show high engagement and success while the higher end of the market has slowed. This is counter to what you might expect to happen in a market with a cost of living crisis that impacts less on the ultra-rich. This may be a supply change, with sophisticated and wealthy sellers holding back stock until the market recovers.



Age profile of bottles

Fig 9 depicts the age profile of bottles traded, excluding no age statement bottles.

Overall market dynamics

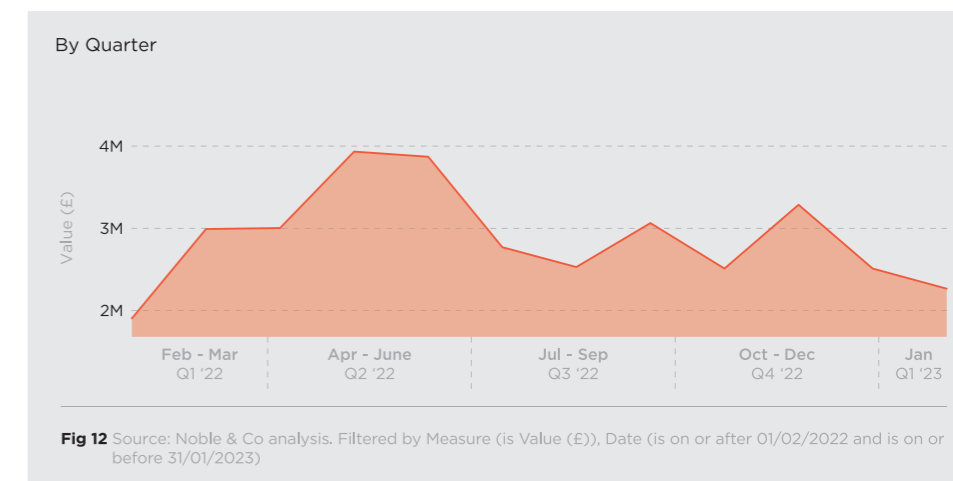
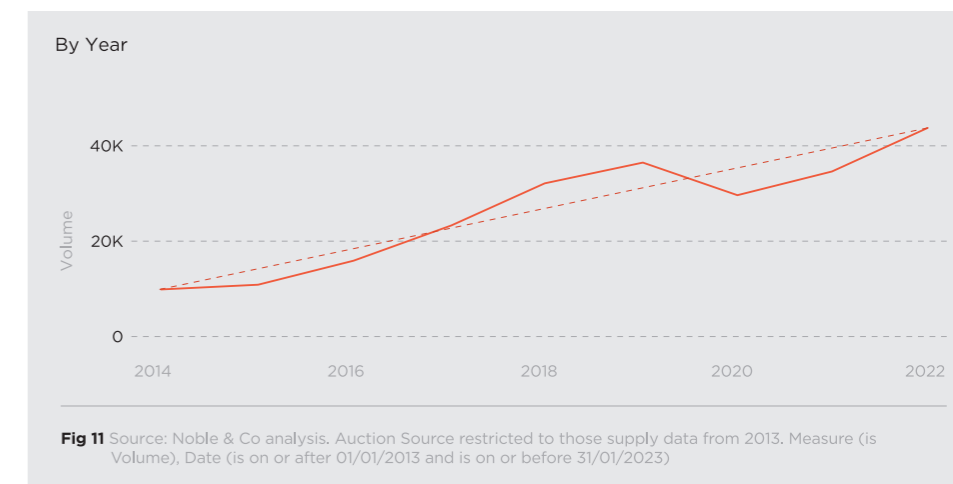
The chart in Fig 10 shows the longer-term growth in fine and rare single malt whisky. It's clear to see the decline as a result of Covid in 2020 but not yet the recent fall in the market.

In 2023, we anticipate the total value moving below trend.

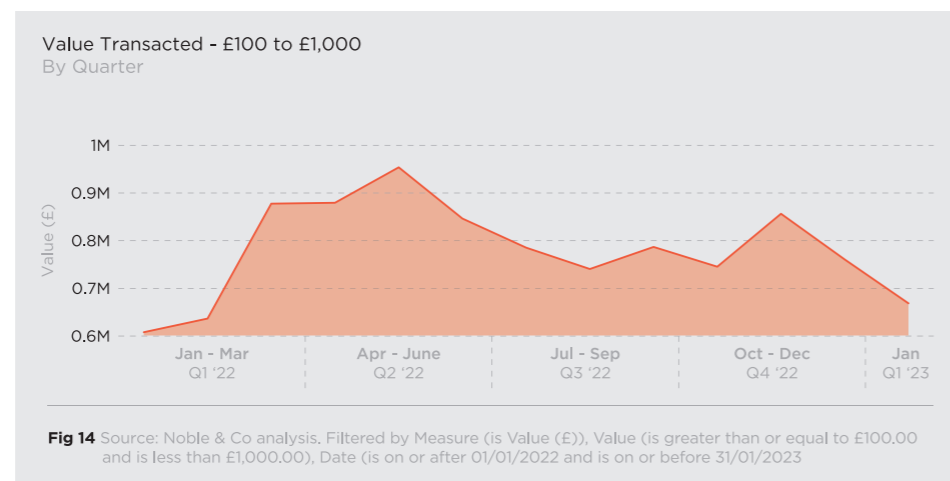
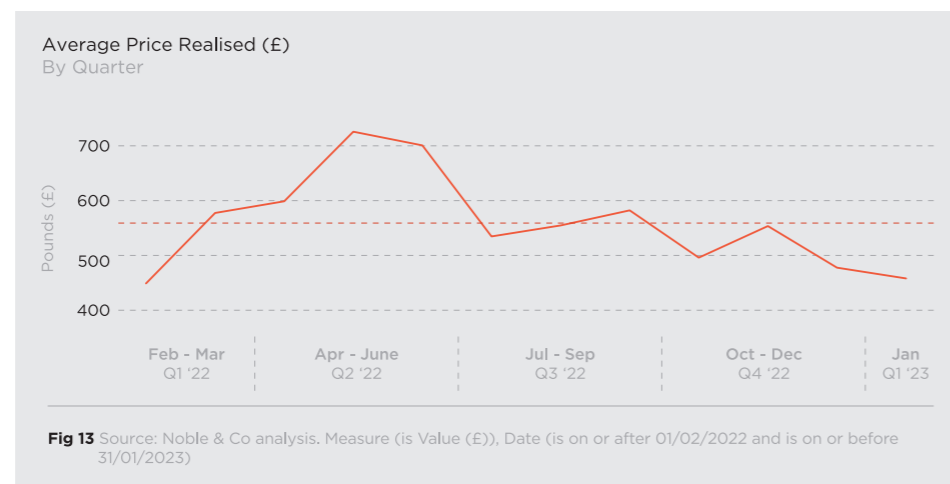
Volume movements above and below trend (shown in Fig 11) are not as extreme as value movements, reinforcing there is greater volatility in price in this market than there is in volumes.

Value by month

When we compare the previous data sets from Fig 10 & 11 to the shorter period in Fig 12 & 13, the decline over the last 12 months is clear.



After a slowdown in the summer, there has been a downturn again since November



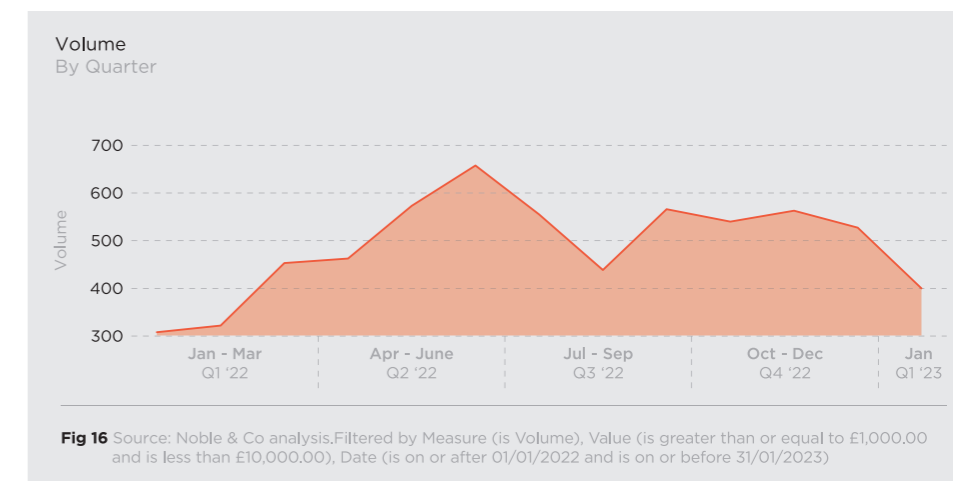
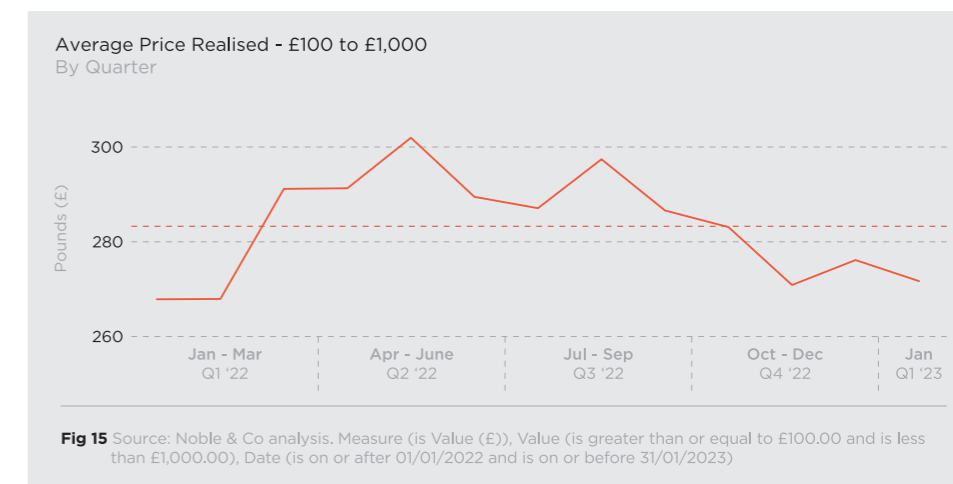
By price

We noted in our last report that there was strength in the £100 to £1,000 and also in the £1,000 to £10,000 price segments but the £10,000+ segment saw volumes up and prices down. We re-ran the analysis for the period from October 2022 to January 2023, to see if there was a significant trend in the data by price point.

£100 to £1,000

In this bracket we reviewed data for the 12 months from January 2022 to January 2023.

Although we have seen there to be a recent slow down in this segment, volumes year on year in January are actually up by 8%. Meanwhile, the average price is down by 6% over this time period.



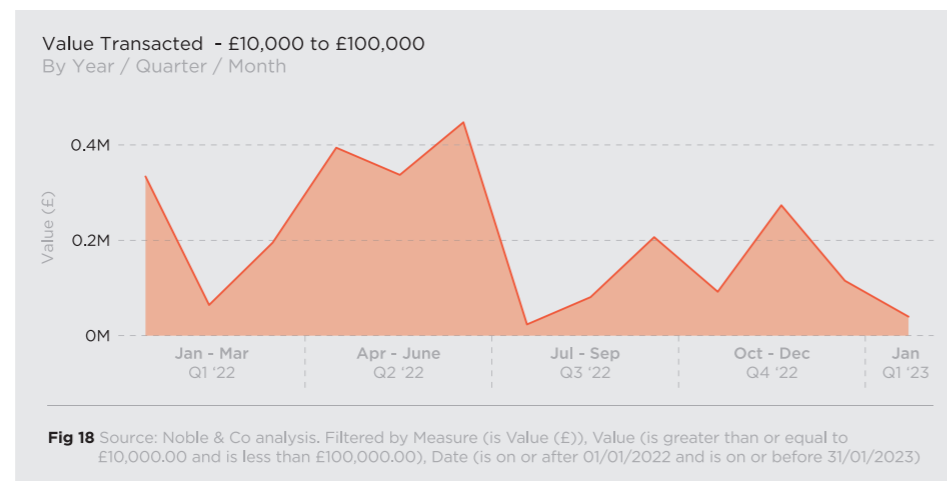
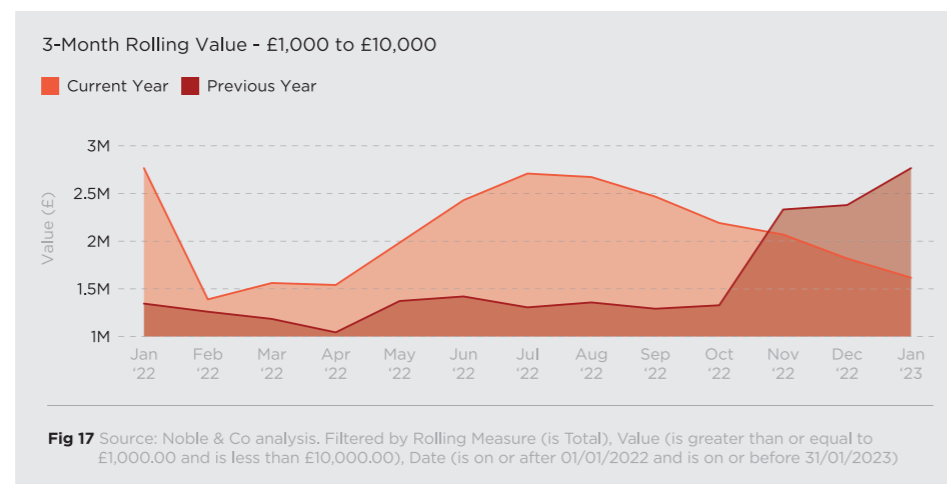
This segment remains a favourite of flippers, who are more likely to have access to bottles, and this may be helping to drive growth in the auction market. The strength in volumes of this segment is lowering the average price across the market as a whole.

£1,000 to £10,000

It is in the mid-tier of the £1,000 to £10,000 bottles that we see the slowdown in full force. Comparing January 2023 with January 2022, value transacted

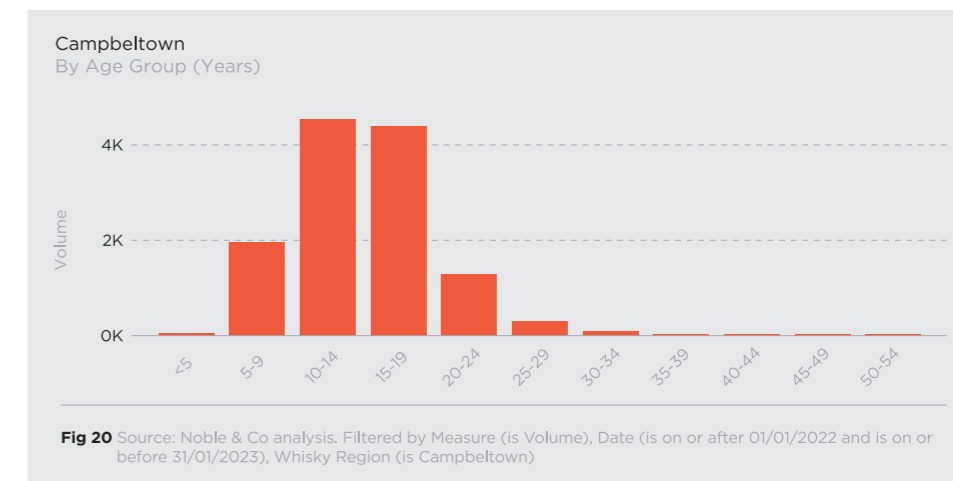
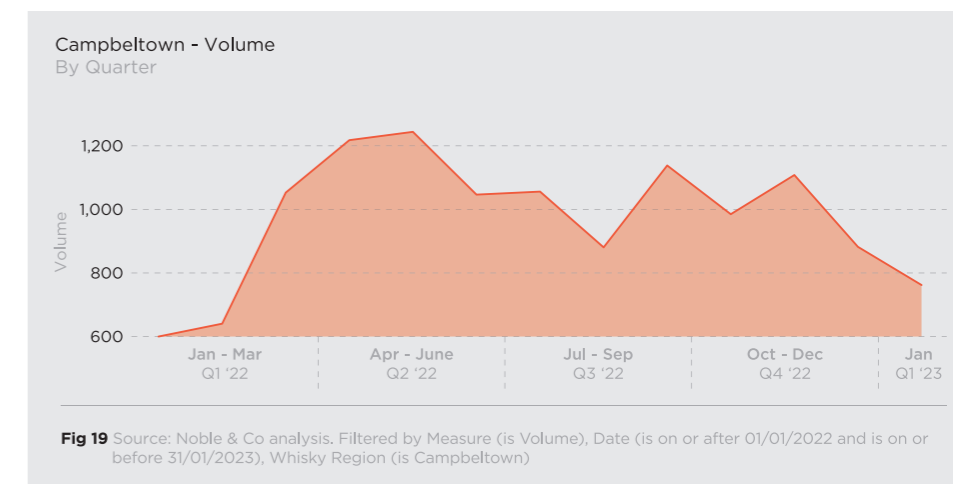
fell by 34%, the average price fell by 6% and volumes fell by 30%. We don't currently capture unsold lot data but it's possible that the drop in volumes is less about supply and more about bids not hitting reserve prices. This would be consistent with what we hear anecdotally and see online.

When we consider how the trend is changing over time, the trend analysis chart (in Fig 17) shows the scale of the decline versus the previous year.



£10,000 to £100,000

In the top bracket (our dataset had no £100,000+ sales in the month of January), volumes are low and meaningful analysis is limited. Volumes fell by 82%, average prices by 34% and value by 88%.



By region

In the last report, we noted strength in Campbeltown, Speyside and Lowland, with Highland down and Islay flat. Has the decline filtered equally across all regions?

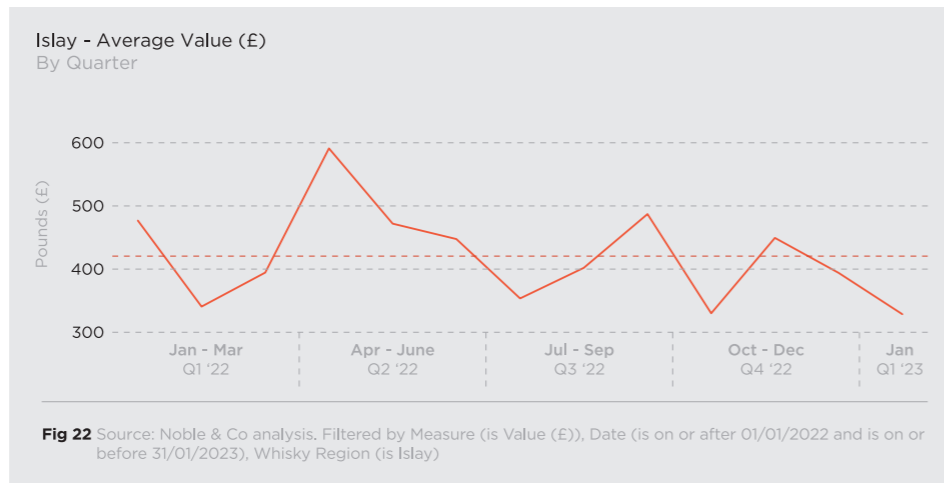
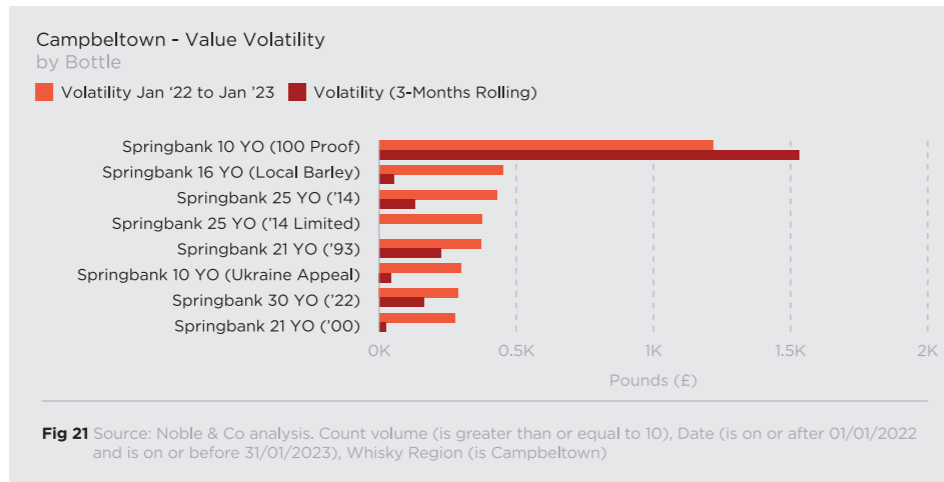
Speyside remains the largest region by far in the October 2022 to January 2023 period (43% of total by volume, 61% of total by value), followed by Islay

(19% of volume, 15% of value), Highland (22% by volume, 13% by value), Campbeltown (13% by volume, 8% by value) and Lowland (3% by volume and 3% by value).

Campbeltown

The star of 2022 has declined sharply. Most bottles traded in the October to January period are Springbank, followed by Glengyle and then Glen Scotia.

Although volume was up 20% in January 2023, the average price decline of 23% led to a value transacted decline of 7%. The age profile of bottles sold since January 2022 skews younger than the dataset as a whole. We have also shown the bottles with the greatest price volatility in the period.



Islay

In the first nine months of 2022, Islay held steady with volumes up just 6%. In January 2023, volumes were up by 4% but average prices were down by 31% versus the same period

a year ago. Bowmore is the largest brand in the auction market for Islay whiskies over the period January 2022 to January 2023. Bowmore and Laphroaig account for most of the high-volatility bottles in the period.



Image credit: Sotheby's

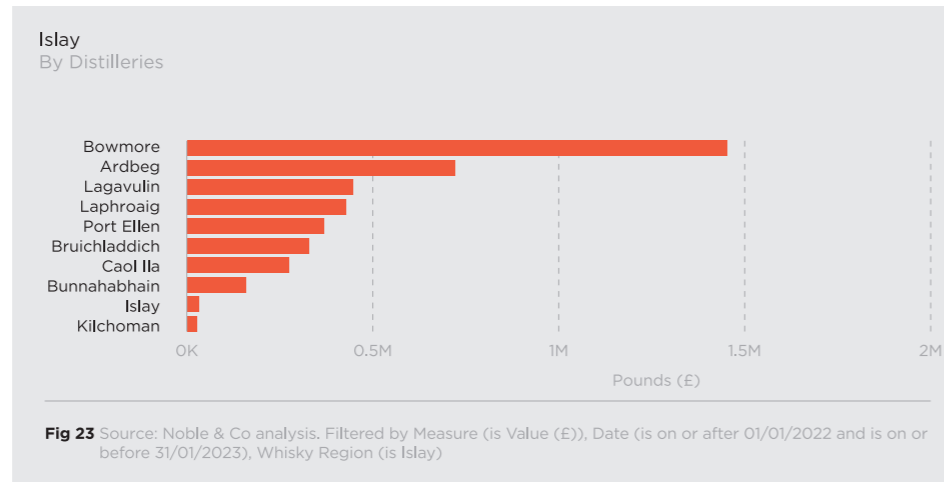


Fig 23 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Islay)

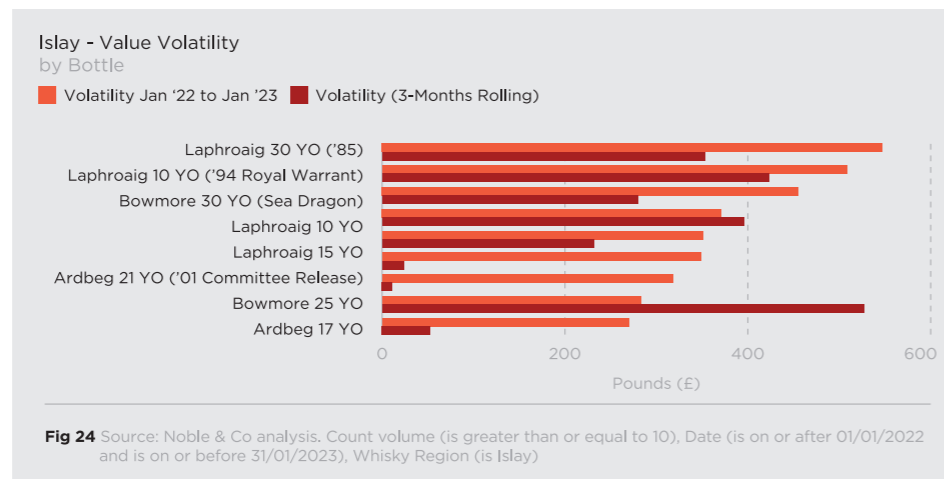


Fig 24 Source: Noble & Co analysis. Count volume (is greater than or equal to 10), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Islay)



Image credit: Sotheby's

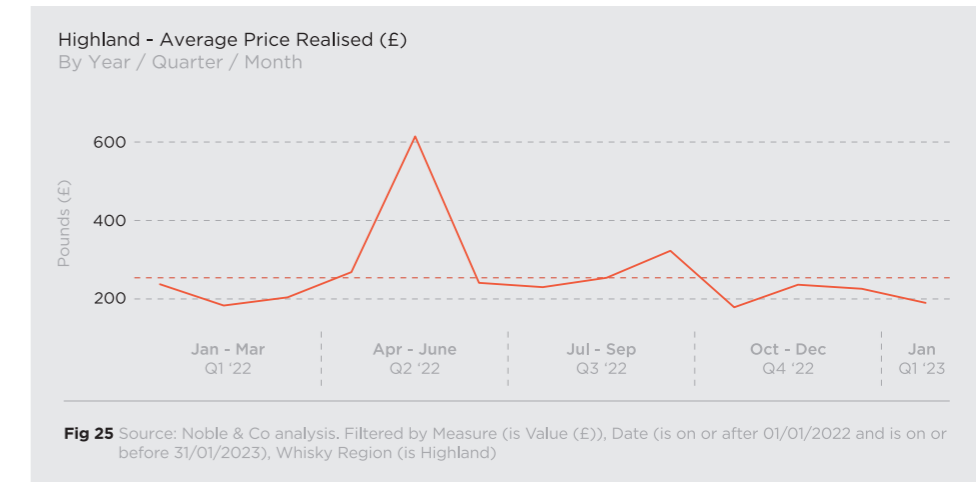


Fig 25 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Highland)

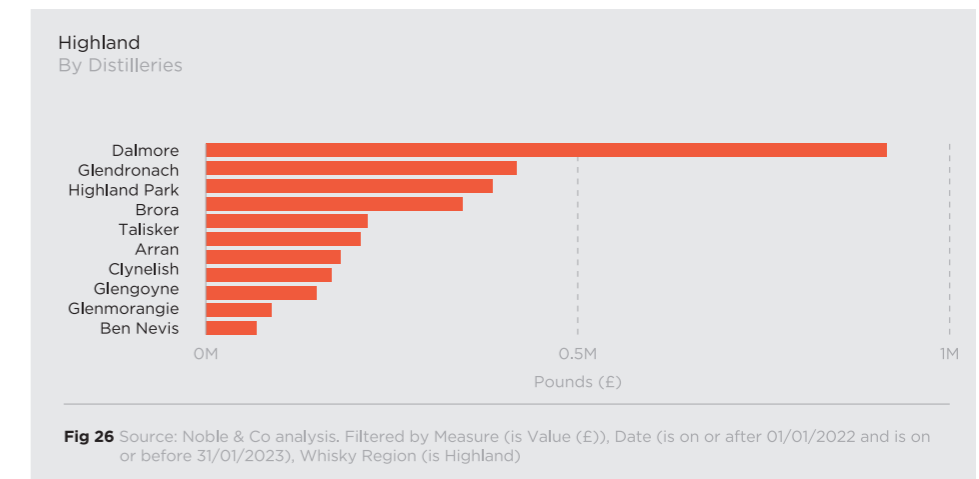


Fig 26 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Highland)

Highland

The Highland region was one of the weaker performers in the first nine months of 2022. Comparing January 2023 to January 2022, the value

transacted has fallen by 32%, price by 12% and volume by 23%. The Dalmore remains the largest brand by value in this market. Unlike other regions, the volatility is spread over several brands.

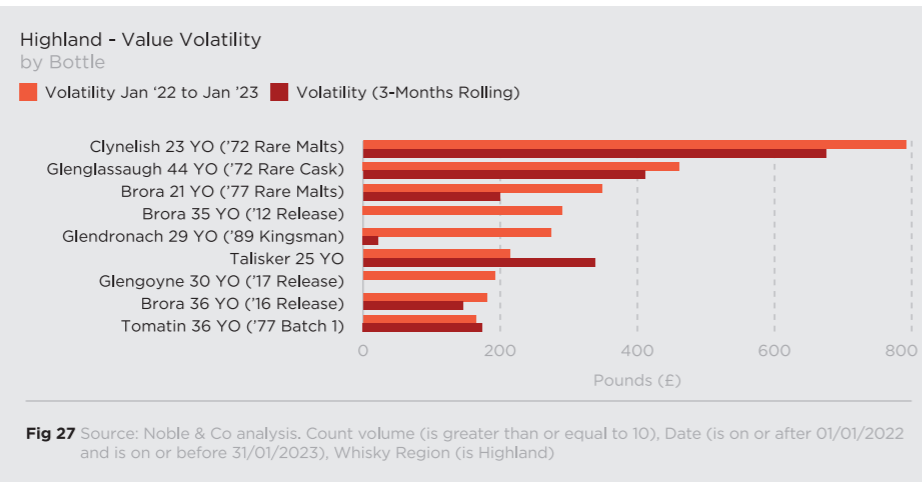


Fig 27 Source: Noble & Co analysis. Count volume (is greater than or equal to 10), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Highland)

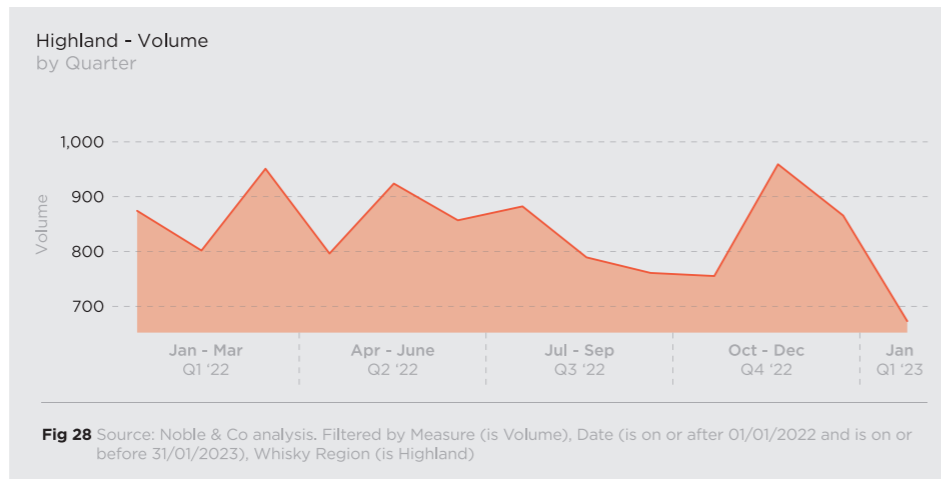


Fig 28 Source: Noble & Co analysis. Filtered by Measure (is Volume), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Highland)



Image credit: Sotheby's

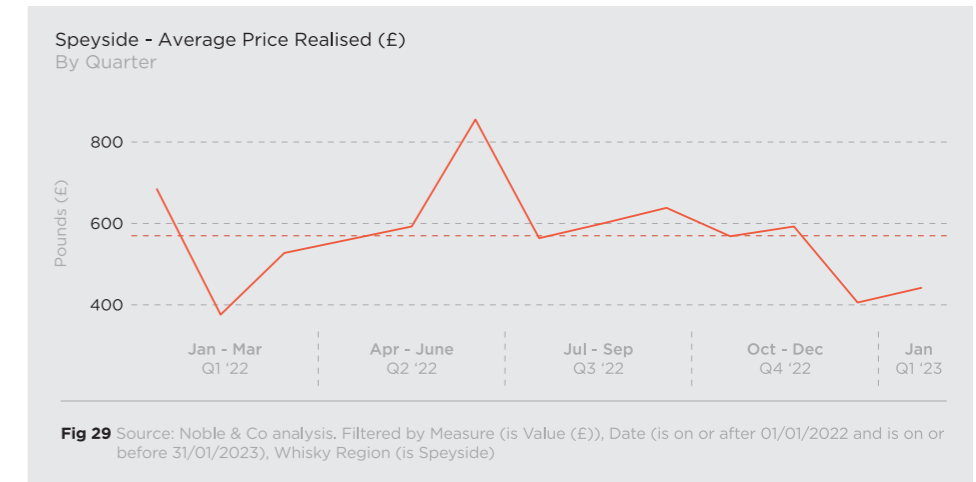


Fig 29 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Speyside)

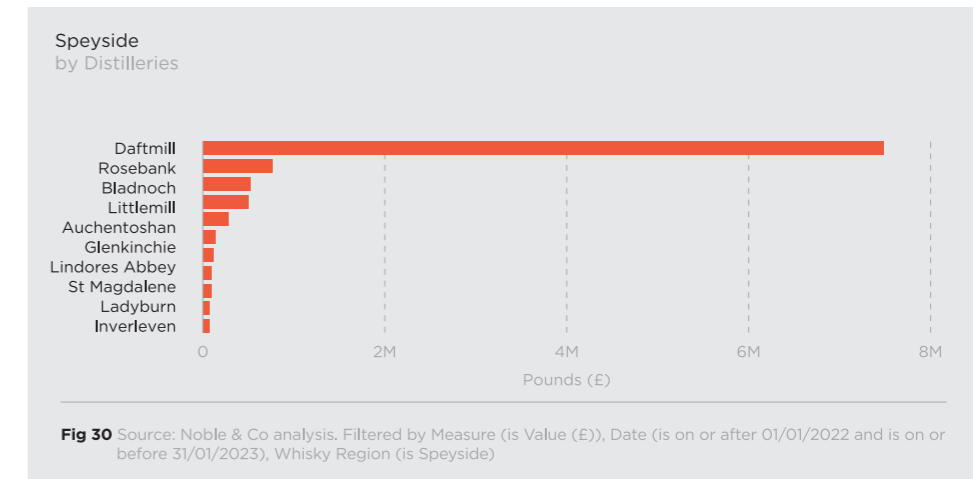


Fig 30 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Speyside)

Speyside

Home to The Macallan, as well as many other well-regarded distilleries, the Speyside average price fell by 27% in January 2023 versus January 2022. However, this was more than offset by a

significant jump in volume up 43%, leading to a 4% increase in value transacted. The most important brand in this region based on value transacted is The Macallan. Holding the next three positions are GlenAllachie, Balvenie and Glenfiddich

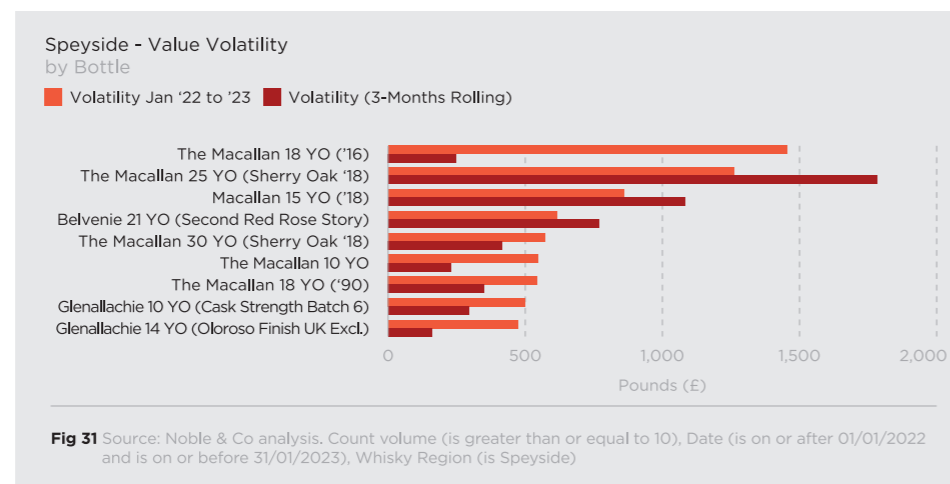


Fig 31 Source: Noble & Co analysis. Count volume (is greater than or equal to 10), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Speyside)

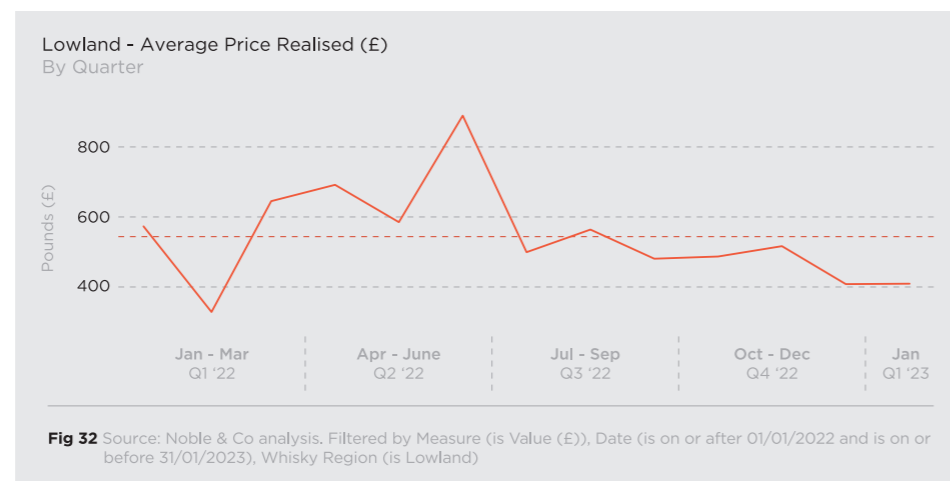


Fig 32 Source: Noble & Co analysis. Filtered by Measure (is Value (£)), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Lowland)

Lowland

The Lowland region saw a drop off in price, volume and value in January 2023 versus January 2022. Prices were down by 9%, volume by 23% and value by

30%. In the period from January 2022 to January 2023, Rosebank was the brand with the most value transacted but was overtaken in volume by Daftmill.

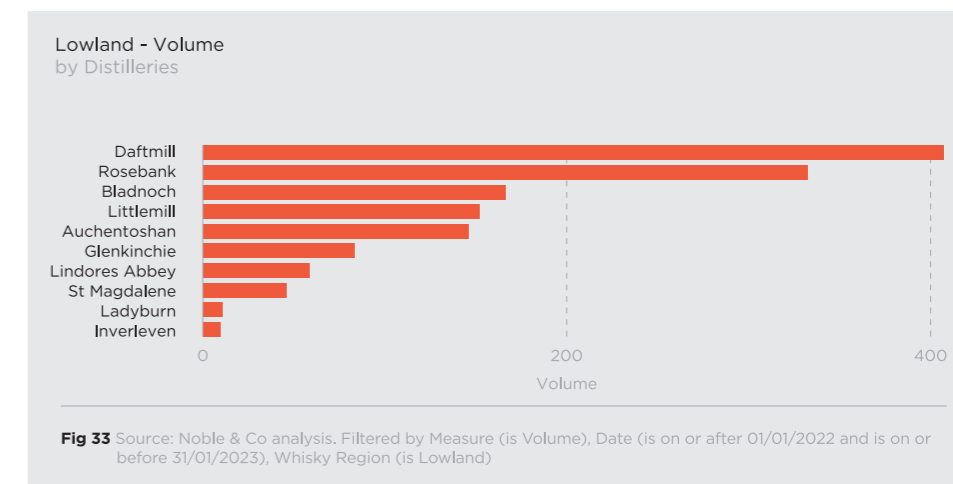


Fig 33 Source: Noble & Co analysis. Filtered by Measure (is Volume), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Lowland)

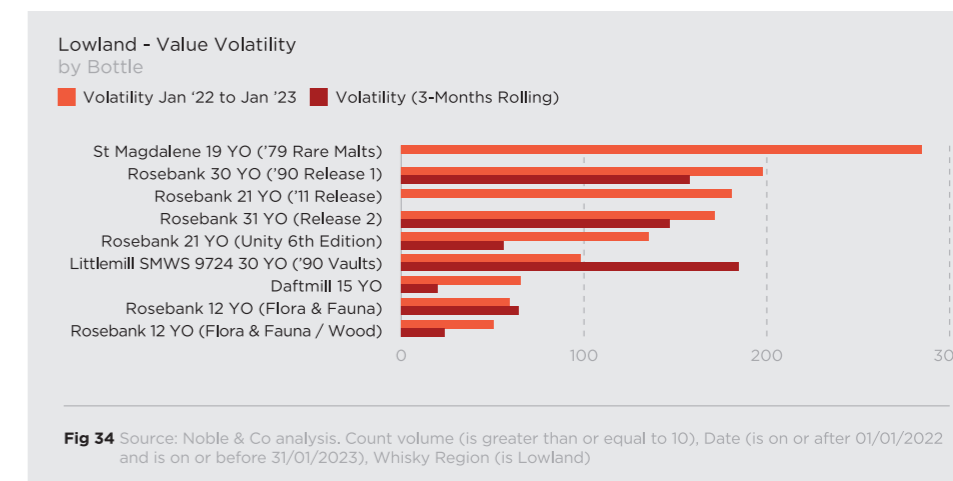


Fig 34 Source: Noble & Co analysis. Count volume (is greater than or equal to 10), Date (is on or after 01/01/2022 and is on or before 31/01/2023), Whisky Region (is Lowland)

Bottle Analysis

The top bottle by value is The Macallan 30 year old Sherry Oak 2018 release and the top bottle by volume is the Springbank 15 Year Old.

The Macallan dominates the top ten bottles by value with seven of the ten. Springbank has the

most bottles with the highest volume, accounting for five of the ten.

The top bottle, based on average price achieved at auction in the period, is The Macallan Red Collection 40 Year Old (£20,744.89). Nine of the top ten highest bottles by average value are The Macallan.

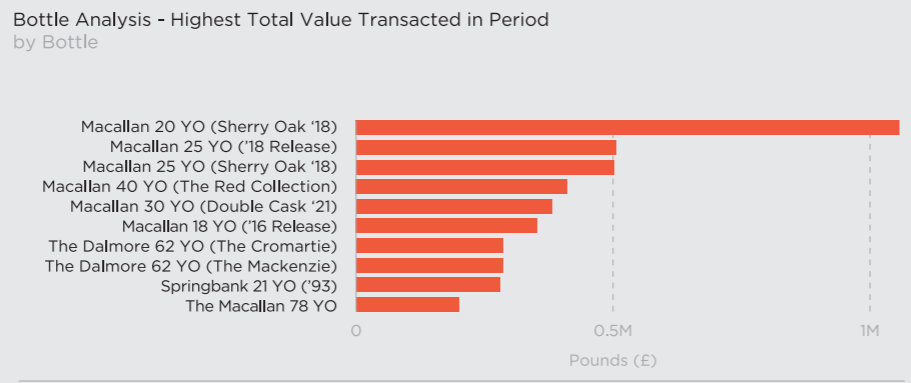


Fig 35 Source: Noble & Co analysis. Filtered by Date (is on or after 01/01/2022 and is on or before 31/01/2023)

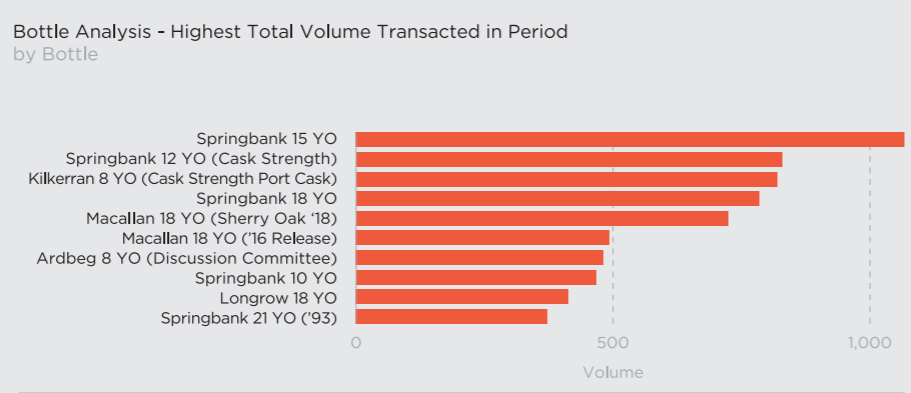


Fig 36 Source: Noble & Co analysis. Filtered by Date (is on or after 01/01/2022 and is on or before 31/01/2023)

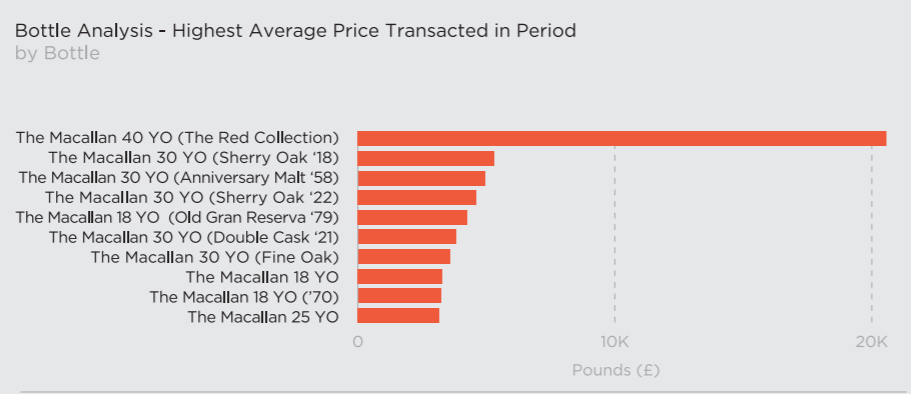


Fig 37 Source: Noble & Co analysis. Filtered by Count of Volume (is greater than or equal to 10), Date (is on or after 01/01/2022 and is on or before 31/01/2023)



Image credit: Scotch Whisky Auctions

Who Performed Best in the Secondary Market?

While this report confirmed analysis we covered in our previous report, it also highlighted some other meaningful trends. We're seeing a continued rise of newer brands, such as Annandale and Arran.

Here we've compiled data for the top ten brands by volume and by value from October 2022 to January 2023. We've continued our analysis in this segment because collectors love the scarcity of closed, or 'ghost', distilleries.

Top 10 Brands By Volume

Source: Noble & Co Analysis

Distillery	Volume Oct - Jan '22	Volume Oct - Jan '23	Percent Change
The Macallan	4,201	7,564	80%
Springbank	2,477	3,413	38%
Ardbeg	1,625	1,650	2%
Bowmore	935	1,007	8%
GlenAllachie	644	968	50%
Bruichladdich	628	766	22%
Lagavulin	664	729	10%
Arran	622	690	11%
Highland Park	759	664	-13%
Glenfiddich	459	587	28%

Top 10 Brands By Value

Source: Noble & Co Analysis

Distillery	Value Oct - Jan '22	Value Oct - Jan '23	Percent Change
The Macallan	4,629,693	5,459,385	18%
Springbank	882,822	861,356	-2%
Bowmore	519,863	501,488	-4%
Ardbeg	516,827	486,007	-6%
Balvenie	374,575	257,401	-31%
GlenAllachie	96,134	232,486	142%
Glendronach	211,489	184,759	-13%
Lagavulin	184,929	177,412	-4%
Glenfarclas	229,861	142,513	-38%
Laphroaig	174,498	139,283	-20%

The Macallan remains the dominant brand across the secondary market, by value and volume. In the period October 2022 to January 2023, it grew 80% in volume year on year but only by 18% in value, highlighting the decline in average value per bottle realised - which is heavily mix driven. Average bottle prices decreased by 35%, from £1,102 to £723. New releases included James Bond Decades, 2022 releases of The Macallan M and The Macallan Harmony collection. The highest volume selling bottle in our secondary

market dataset was The Macallan 18 Year Old Sherry Cask 2016 with the greatest value increase seen across The Macallan 25 Year Old Sherry Oak 2018.

The greatest volatility in pricing over the period October 2022 to January 2023 came from The Macallan 30 Year Old Double Cask 2021. The Macallan remains a brand that collectors and investors are prepared to pay a premium for.

Top 10 Fastest Growing by Volume

Source: Noble & Co Analysis

Distillery	Volume Oct - Jan '22	Volume Oct - Jan '23	Percent Change
Glenugie	6	22	267%
Annandale	5	15	200%
Tamdhu	105	280	167%
Pittyvaich	10	26	160%
Strathearn	5	13	160%
The Macallan	4,201	7546	80%
Glencadam	30	52	73%
Glenkinchie	21	36	71%
Wolfburn	103	166	61%
Benromach	80	124	55%

Top 10 Increase in Value

Source: Noble & Co Analysis

Distillery	Value Oct - Jan '22	Value Oct - Jan '23	Percent Change
Annandale	403	1,663	312%
Glenugie	5,184	20,628	298%
Tamdhu	19,690	66,882	240%
GlenAllachie	96,134	232,486	142%
Dallas Dhu	11,093	26,719	141%
Pittyvaich	3,410	6,761	98%
Clynelish	52,032	91,129	75%
Glengyle	32,152	46,657	45%
Imperial	11,128	16,022	44%
Banff	4,614	6,541	42%

Across the whole dataset of single malt whisky, the fastest growing single malt between October 2021 to January 2022 and October 2022 to January 2023 was Glenugie (+298% in value and +267% in volume). The distillery, originally known as Invernettie, was near Peterhead. It closed in 1983 in the whisky loch era. Most of the spirit went for blending but it did have a couple of own-brand releases. The brand is now owned by Chivas Brothers and so is part of the Pernod Ricard stable.

The best price performers

Price movements can be driven by underlying price increases or the mix of bottles being sold. A few bottles sold at over £100,000 each will give a healthy boost to the average. However, there are also concerns amongst collectors that some brands are no longer seen as 'ultra-premium' since launching a wide range of new releases at low price points. This may have ripple effects on the secondary market.



Image credit: Sotheby's

Top 10 Decrease in Volume

Source: Noble & Co Analysis

Distillery	Volume Oct - Jan '22	Volume Oct - Jan '23	Percent Change
Strathmill	81	34	-58%
Port Ellen	141	65	-54%
Nc'nean	189	94	-50%
Longmorn	118	59	-50%
Dalmunach	26	13	-50%
Speyburn	32	18	-44%
Glenglassaugh	91	52	-43%
Fettercairn	145	84	-42%
Glen Grant	131	77	-41%
Auchentoshan	110	67	-39%

Top 10 Decrease in Value

Source: Noble & Co Analysis

Distillery	Value Oct - Jan '22	Value Oct - Jan '23	Percent Change
Ladyburn	89,035	5,572	-94%
Lochside	14,150	1,982	-86%
Tamnavulin	28,598	4,693	-84%
Strathmill	13,708	2,918	-79%
Glen Grant	103,724	29,034	-72%
Glensesk	9,856	2,830	-71%
Port Ellen	318,642	97,478	-69%
North Port	7,758	2,513	-68%
Glen Spey	6,760	2,332	-66%
Nc'nean	21,734	8,072	-63%

The ongoing rise of the newer brands

In the last report we noted the strength of the Arran Distillery, notable as one of the original 'new' distilleries from the post-2000 era of construction.

It recently announced an expansion of its Lochranza Distillery, with plans to add four new washbacks to increase the capacity to 1.2m LPA. As a new brand in the context of fine and rare whisky, it remains relatively small compared to the major

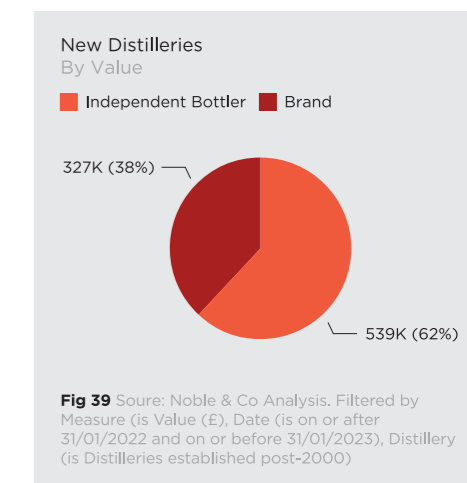
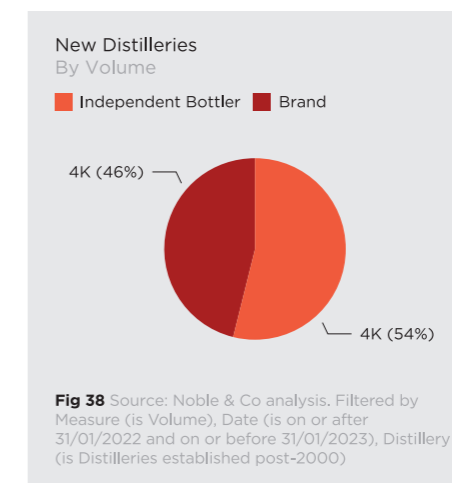
players in the secondary market. However, it is seeing continued growth with volumes +11% year-on-year and value +6% in the period from October 2022 to January 2023 versus the same period a year earlier. It appears to be a staple favourite among collectors.

Our previous report also noted the strength of Bladnoch. We have doubts as to whether Bladnoch should be considered a 'newer distillery' given it was built in 1817 and it has bottles in the market that are 30 years

Top 10 Best Price Performers

Source: Noble & Co Analysis

Distillery	Average Price Oct - Jan '22	Average Price Oct - Jan '23	Percent Change
Dallas Dhu	584	1,484	154%
Clynelish	206	373	81%
Glenglassaugh	293	471	61%
GlenAllachie	149	240	61%
Imperial	232	373	61%
Royal Lochnagar	159	242	52%
Kinclaith	703	1,064	51%
Glenlochy	671	928	38%
Annandale	81	111	37%
Glensesk	299	404	35%



old. However, the ownership change between the Armstrong brothers and David Prior has led some industry observers to conclude there's a fundamental shift in the trajectory and in the presence of Bladnoch. In the period October 2022 to January 2023, versus the same period a year earlier, volumes in the secondary market rose by 16% and value rose by 38%.

We have found, on average, that independent bottlings of newer distilleries trade at a premium to the original distillery bottlings

of newer distilleries. This is not consistent for brands from older distilleries. Perhaps this is because an established distillery has established routes to market? New distillers are far more likely to sell off stock in order to fund growth and cash requirements for distilling.

In our November report, we noted there have been 42 new distilleries built since 2004, with a further 56 planned to be built, and 4 to be re-opened. There have also been a further three new distilleries planned,



Top 10 Closed Distilleries by Volume

Source: Noble & Co Analysis

Distillery	Volume Oct '21 - Jan '22	Volume Oct '22 - Jan '23	Percent Change
Glenugie	9	27	200%
Pittyvaich	11	27	145%
Banff	8	10	25%
Caperdonich	47	49	4%
Littlemill	64	61	-5%
Glen Albyn	12	11	-8%
Convalmore	15	13	-13%
Glenury Royal	14	12	-14%
Imperial	53	44	-17%
St Magdalene	30	23	-23%

including Lerwick, Uilebheist and one other not yet disclosed. It is years too early for many of these to influence the auction market in a significant way but the long-term trend towards increased fragmentation in a meaningful proportion of the market is clear.

The closed distilleries

We have continued our analysis of closed distilleries, knowing how much collectors love the ever-increasing scarcity of

brands such as Littlemill, Glen Mhor, and Dallas Dhu. With Brora having now re-opened, Rosebank scheduled to open again in 2023 and Port Ellen planned to re-open, the truly 'closed' distilleries list has again shrunk. With the rising rates of financing, we may see this list grow throughout the year as distilleries are mothballed.



Image credit: Sotheby's

Top 10 Closed Distilleries by Value

Source: Noble & Co Analysis

Distillery	Value Oct '21 - Jan '22	Value Oct '22 - Jan '23	Percent Change
Glenugie	6,209	25,672	313%
Imperial	11,310	15,786	40%
Glen Mhor	14,356	15,354	7%
St Magdalene	27,014	23,883	-12%
ConvalMore	13,339	10,595	-21%
Caperdonich	16,505	10,832	-34%
Millburn	12,963	7,874	-39%
Glenury Royal	20,467	10,409	-49%
Lochside	15,090	2,477	-84%
Ladysburn	89,035	6,854	-92%

Top 5 Closed Distilleries Average Bottle Price Change

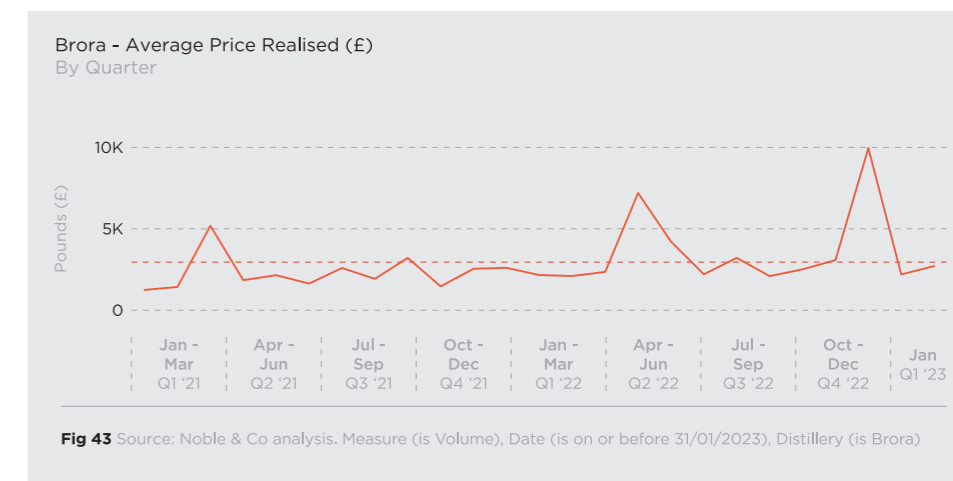
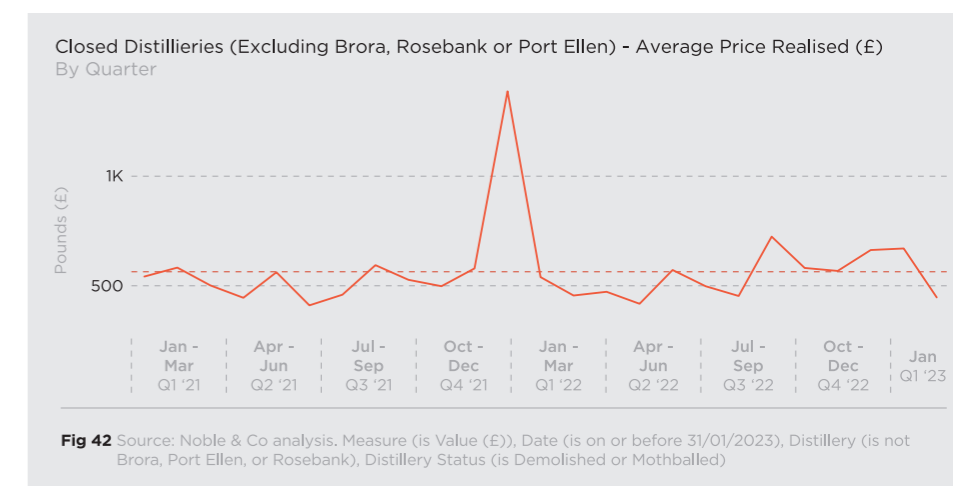
Source: Noble & Co Analysis

Distillery	Average Price Oct '21 - Jan '22	Average Price Oct '22 - Jan '23	Percent Change
Kinclaith	300	543	81%
Glen Mhor	495	853	72%
Imperial	213	359	68%
Glen Flagler	364	503	38%
Glenugie	690	950	38%

The Independent bottlers

There are many collectors that prefer the bottlings from independent bottlers, knowing they can often achieve excellent whisky without paying the same premium. Some independent

bottlers have unbelievable whisky collections, such as Gordon & Macphail for example, and bottlings are much sought after. Fig 46 (on p46) shows the fastest-growing independent bottles by volume, in the auction market in January 2023.



Will Brora, Rosebank and Port Ellen hold their value after re-opening?

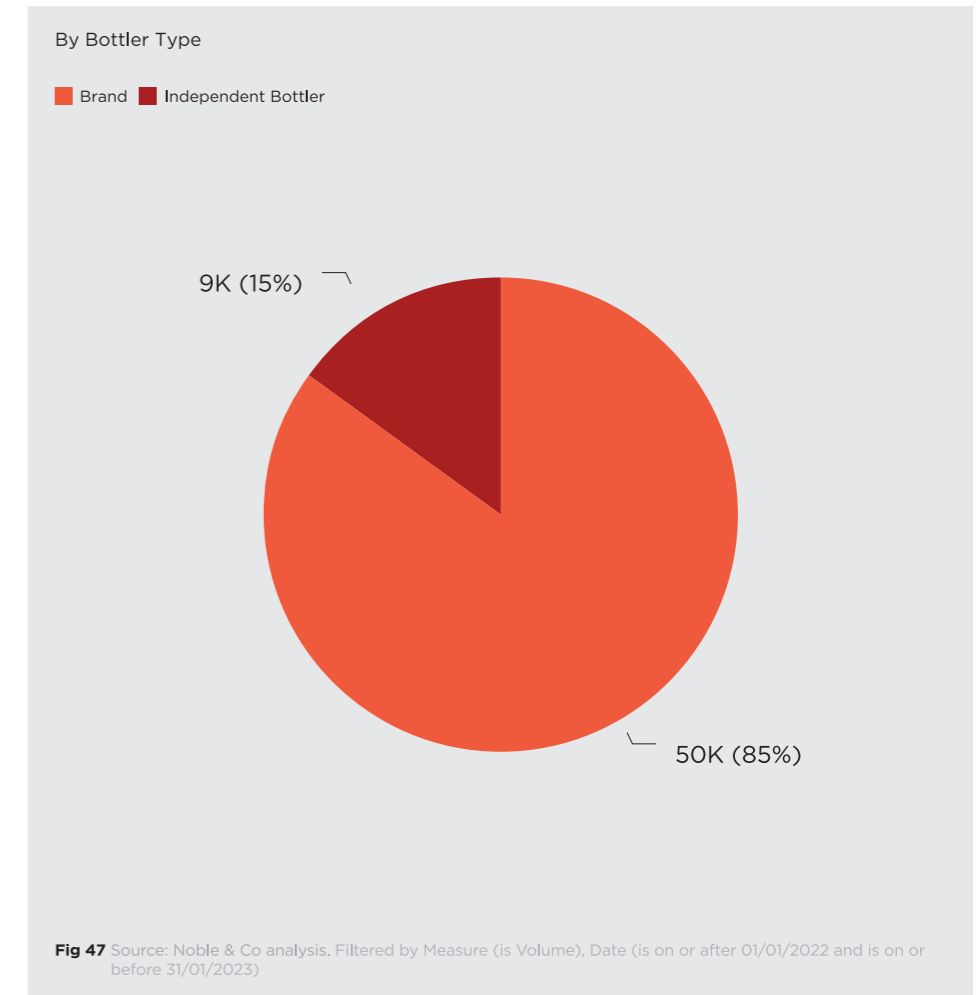
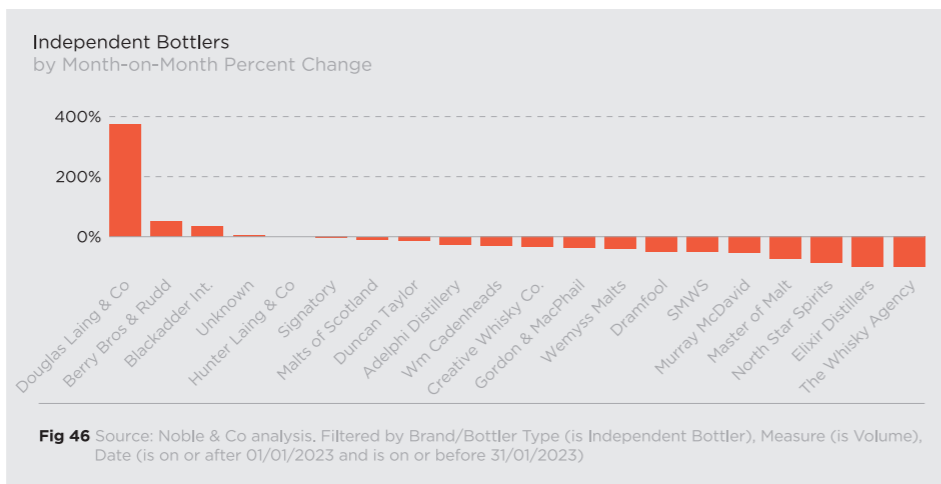
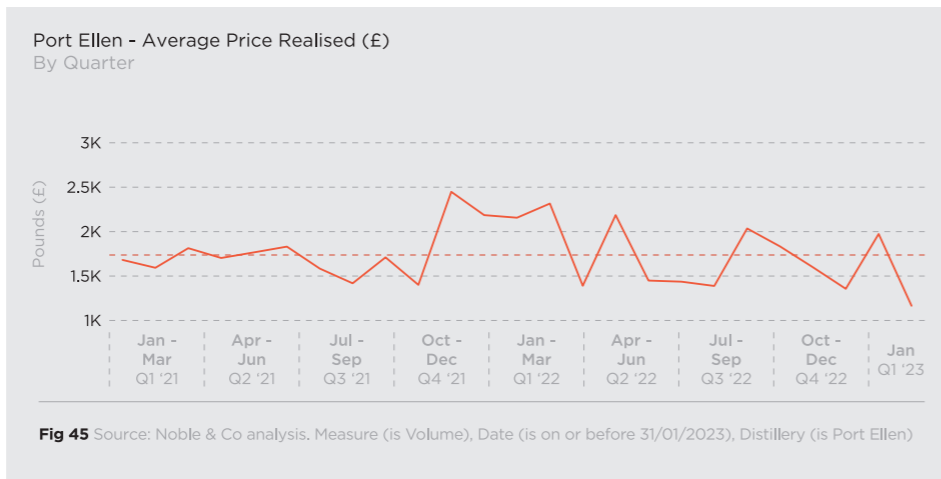
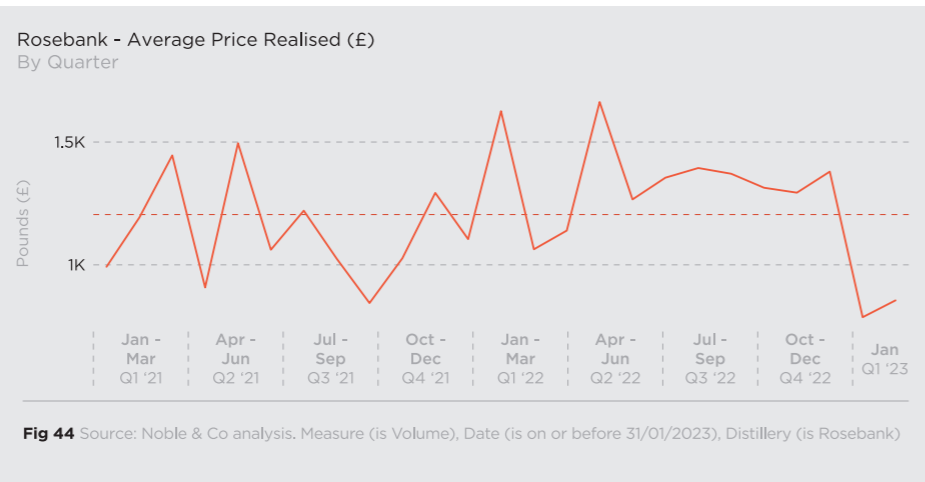


Image credit: Volpe & Castello Limited

Bowmore: A Quarterly Deep Dive

Bowmore is an iconic brand and owner of the second oldest distillery in Scotland. Managed within the Beam Suntory portfolio, alongside Laphroaig, it's seen as one of the most desirable brands in the secondary market, hence our inclusion of it in this report. As we engaged in discussions with Bowmore for this report, we were keen to understand why collectors prefer some eras over others in the distiller's portfolio.

Bowmore's recent performance has been weaker at auction, largely driven by macro and mix effects

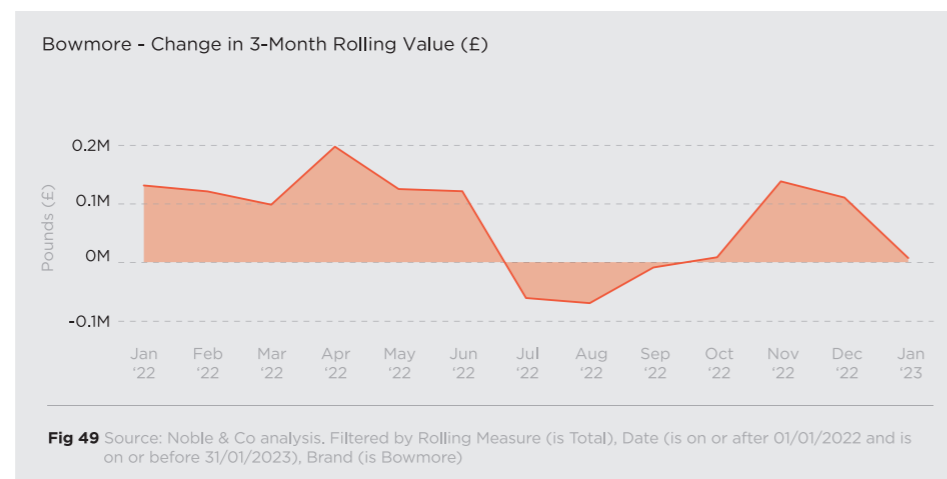
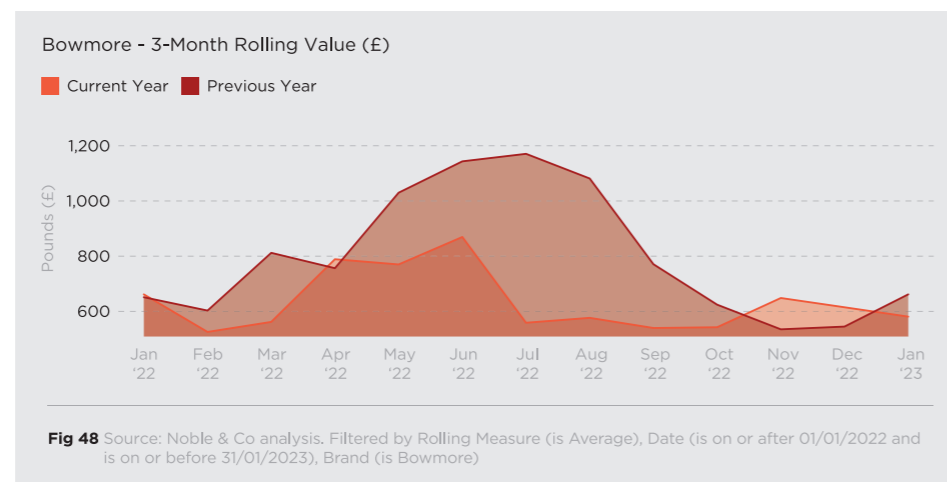
Bowmore is one of nine active distilleries on Islay, the iconic island home of complex and serious single malts. Of course, Port Ellen's reactivation will take the total to ten, with up to another three planned beyond this. Opened in 1779, it has the title of Scotland's second oldest distillery still working, after Glenturret. It has a floor malting and its distillation process includes long fermentations and slow run stills. The wood focus is ex-bourbon and sherry. It is known for having some of the oldest maturing stocks in Scotland. The brand has a high focus on age statement whisky and this appears to have been appreciated by the market over the years.

During the 'whisky loch' of the 1980s, Bowmore reduced to a 3-day work week and continued distilling. Stills ran harder than normal, creating 'perfumed' or 'soapy' flavours which divided opinion amongst collectors. As for the 1960's vintages, these

are much sought after. This is the period when Jim McEwan, Master Distiller for 38 years, was starting his career and the last years before coal-fired stills became steam-heated.

In recent years Bowmore has performed well in the secondary market. It has achieved success with the Bowmore Onyx selling for £400,000 in 2021 at the marquee Distillers One of One auction. The Black Bowmore Archive Cabinet, a collection of each of the bottles in the Black Bowmore range, also sold in the same year for £409,000 at an auction by Sotheby's in Hong Kong. The Black Bowmore DB5 range, a collaboration between Aston Martin & Bowmore, and of which only 27 bottles were distilled, was released by Bowmore at £50,000 per bottle and has since sold for £146,497 at auction.

Bowmore continued its strong volume performance in the secondary market over 2022,



with volumes in the secondary market up by 77% but value fell by 5%. In the period of October 2022 to January 2023, volumes rose by 34%, thanks to a strong November, and value fell by 47%. The value fall across the year and in the October to January period was a combination of a negative macro climate for whisky at auction as discussed previously in this report, along with Bowmore not having any significant releases for auction in November 2022.

Looking at the source of the Bowmore sales, 83% of sales by value in the period of October 2022 to January 2023 were on auction sites, with 17% being at auction houses, again reflecting the lack of high-value product releases to the auction market in November 2022. Interestingly, since January 2019, the auction houses have accounted for 47% of Bowmore sales at auction by value, with 53% on auction sites.

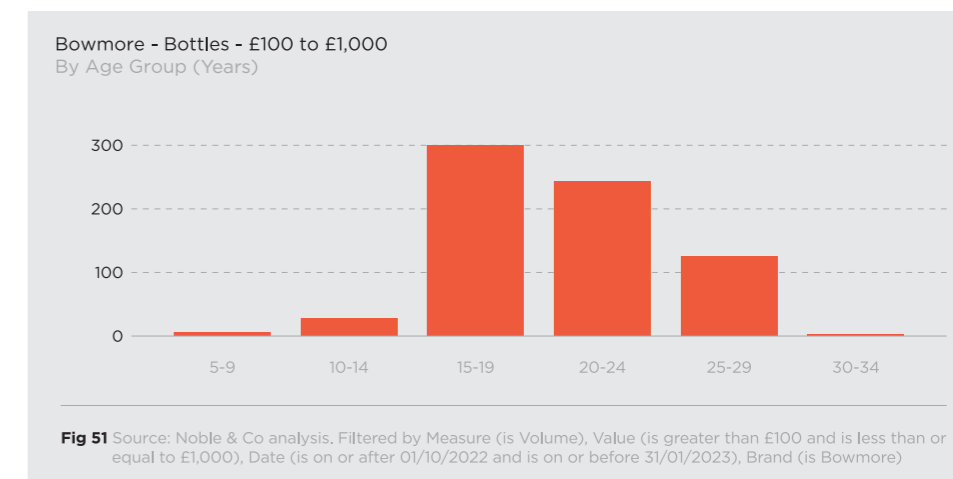
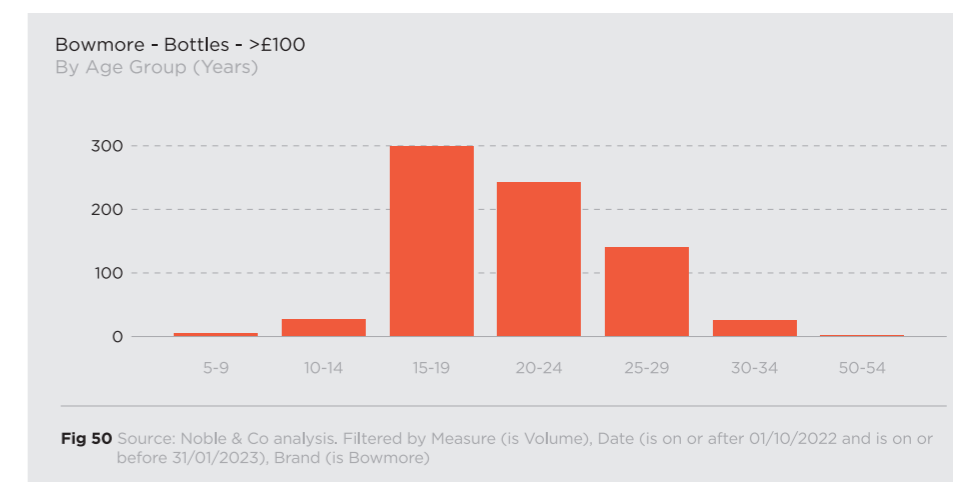
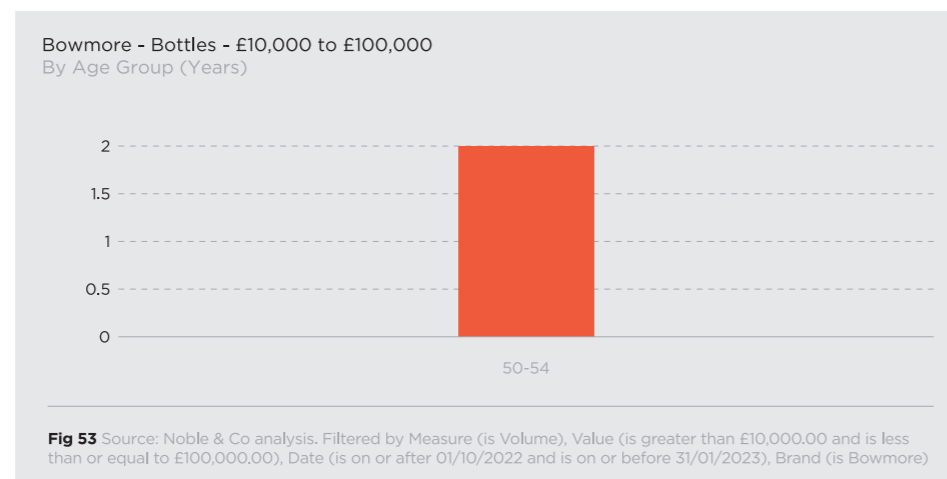
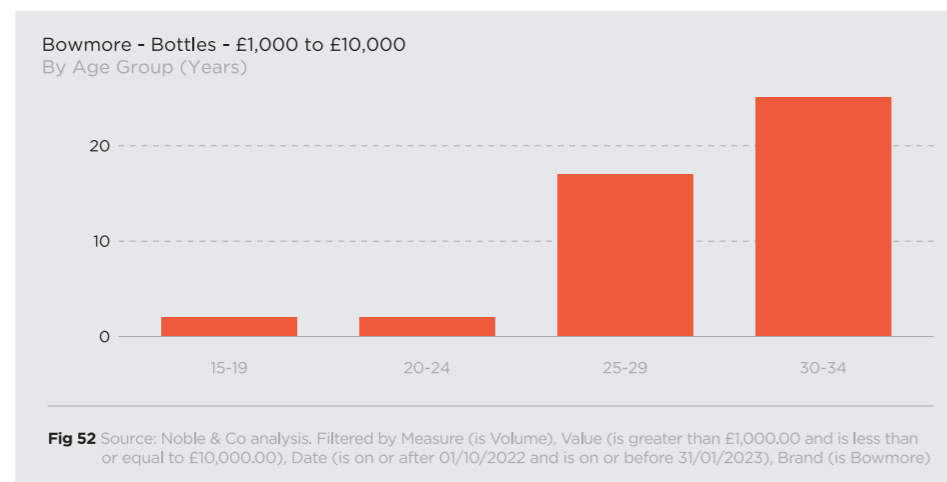


Image credit: Sotheby's



£10,000 to £100,000

The two bottles in this price bracket that sold in the period were the Bowmore 1965 52 Year Old (£42,644) and the Bowmore 1969 50 Year Old Vaults Series for £40,320.

Bowmore Bottle Volatility

Source: Noble & Co Analysis

Bottle Name	Change in Value	Bottle Count
26 YO (Cask 1550 '95)	£85	39
21 YO (Aston Martin Masters Selection Ed. 1)	£79	42
25 YO (The Distillers Anthology No 1 '95)	£76	59
22 YO (Frank Quietly the Changeling 2nd Release)	£63	14
22 YO (The Changeling)	£53	28
22 YO (Aston Martin Masters Selection)	£46	83
17 YO	£46	21
10 YO	£41	10
18 YO (Aston Martin Travel Retail Excl.)	£28	37
15 YO (Fèis Ìle '12)	£24	54

Bottle volatility analysis

We looked at Bowmore bottles that sold more than ten bottles at auction within the period 1st October 2022 to 31st January 2023. The results shown in the table above indicate the bottles that increased and decreased in value between the period from the end of December 2022 and the end of January 2023. Only c.1/3rd of the bottles traded increased in value. As the old stock market saying goes - "this is a stock pickers market".

Looking at volatility by bottle, where count is over ten bottles, we see that there is increased activity for special editions. The Aston Martin bottles and Fèis Ìle are among the most volatile expressions of Bowmore. This is not surprising since the value of a special edition becomes less about what's in the bottle and more about what it represents. A Bowmore enthusiast with a penchant for cars will likely pay more for a special edition Aston Martin bottle.

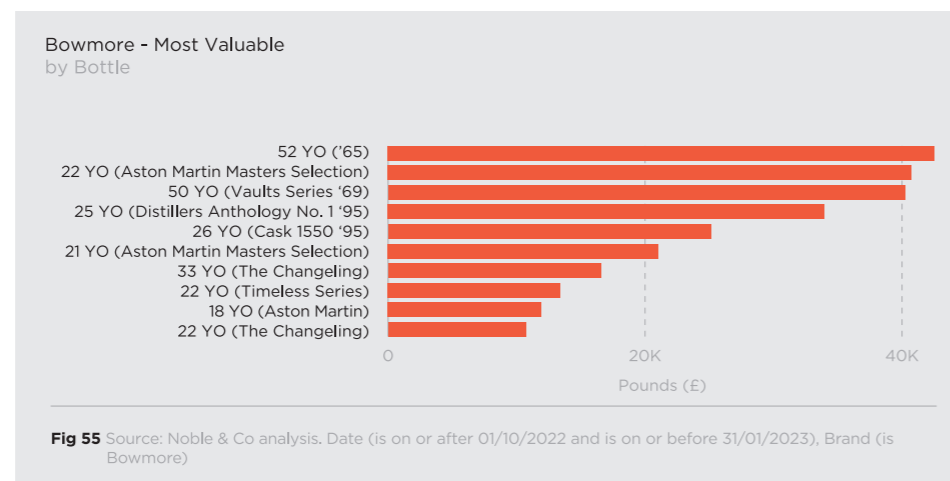
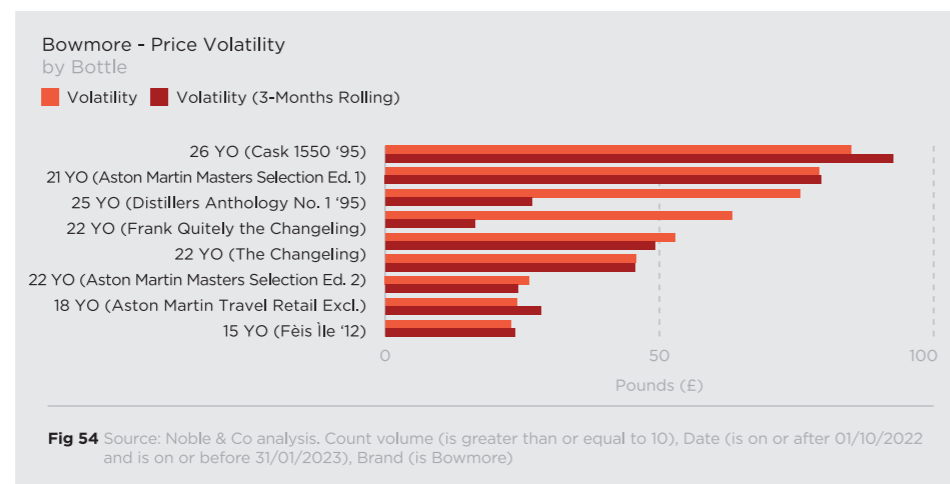


Image credit: Beam Suntory



Aston Martin Analysis

Bowmore’s long relationship with Aston Martin has led to a series of partnership bottles that are highly valued by collectors. There were a total of 292 bottles traded between October 2022 and January 2023, accounting for around 40% of all Bowmore bottles sold. The average price per bottle was £288.

Of the 20 most valuable bottles sold, 12 were the Aston Martin Masters Selection Edition No.1 (21 years old) with the balance

being the Aston Martin Masters Selection Edition No.2 (22 Year Old). Slightly confusingly, for us at least, the 18 year-old Aston Martin is not part of the same series, but is an 18 year-old Bowmore in Aston Martin packaging.

Edition 1s traded at an average of £502 from October 2022 to January 2023, compared to an average of £520 from July 2022 to September 2022. Edition 2s traded at an average of £492 in October to January 2023. Both bottles have outperformed the

Top End of Bowmore

Source: Noble & Co Analysis

Auction Lot Title	Date of Lot	Winning Bid
31 YO (Black Aston Martin DB 5 '64)	13 Apr 2022	£146,497.60
52 YO ('65)	18 Nov 2022	£42,644.68
50 YO (Vaults Series '69)	11 Dec 2022	£40,320.00
37 YO (Fino Cask)	29 Sep 2022	£24,673.28
35 YO (Single Cask 3709 '64)	13 Mar 2022	£23,520.00
38 YO (Bourbon Cask '64)	29 Sep 2022	£21,589.12
43 YO (White Bourbon Cask 428 ABV '64)	14 Jun 2022	£20,800.00
42 YO (Black Sherry Cask 405 ABV '64)	14 Jun 2022	£19,500.00
43 YO (White '64)	8 Jun 2022	£18,504.96
44 YO (Gold Fine Oak Cask 424 ABV '64)	14 Jun 2022	£18,200.00
43 YO (White Bourbon Cask 428 ABV '64)	14 Jun 2022	£18,200.00
44 YO (Gold '64)	9 Jan 2022	£16,800.00
40 YO ('55)	9 Jan 2022	£14,000.00
38 YO ('57)	13 Apr 2022	£12,028.22
21 YO ('69)	18 Nov 2022	£7,139.66
43 YO ('73)	21 Jan 2022	£6,243.18
18 YO ('71)	23 Sep 2022	£6,045.41
32 YO ('68)	18 Nov 2022	£5,354.74
30 YO ('72)	23 Sep 2022	£5,289.73
37 YO ('68)	8 Jun 2022	£4,934.65

broader market price decline. The highest volatility bottles in the period October 2022 to January 2023 are shown in Fig 56 on the previous page.

Frank Quitely Changeling

In 2021, Bowmore released the Frank Quitely Changeling Series with 21 Year Old and 31 Year Old expressions. It supplemented these in 2022 with a 22 Year Old and 33 Year Old expression. The average 33 Year Old traded for £2,439 and the average 22 Year Old for £376.

The top-end of Bowmore

Among Bowmore's Rare & Aged releases are the Black Bowmore DB5, a bottle of which sold for £146k in April 2022, as noted before. There's also the Arc-52, an Aston Martin collaboration, and the Bowmore 40 Year Old.

In the secondary market, 2022 high values were realised mostly in the first half of the year, although November saw the year's second highest sale.

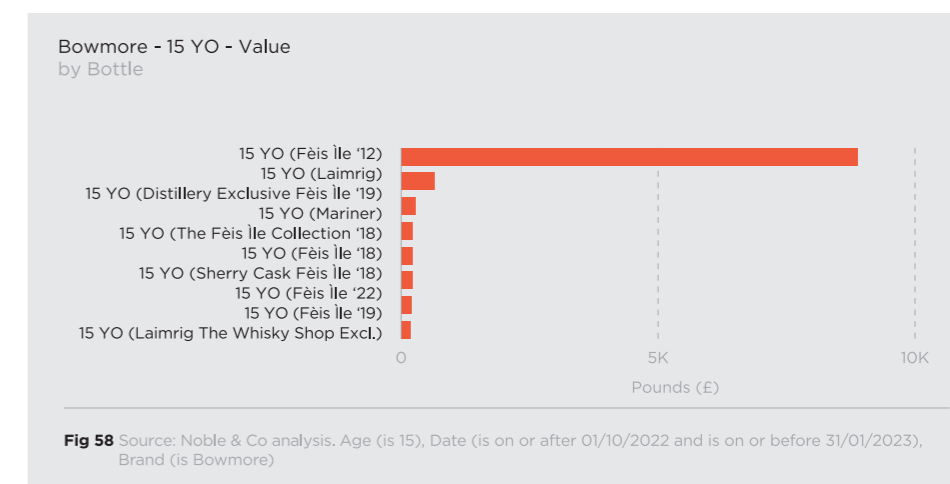


Fig 58 Source: Noble & Co analysis. Age (is 15), Date (is on or after 01/10/2022 and is on or before 31/01/2023), Brand (is Bowmore)

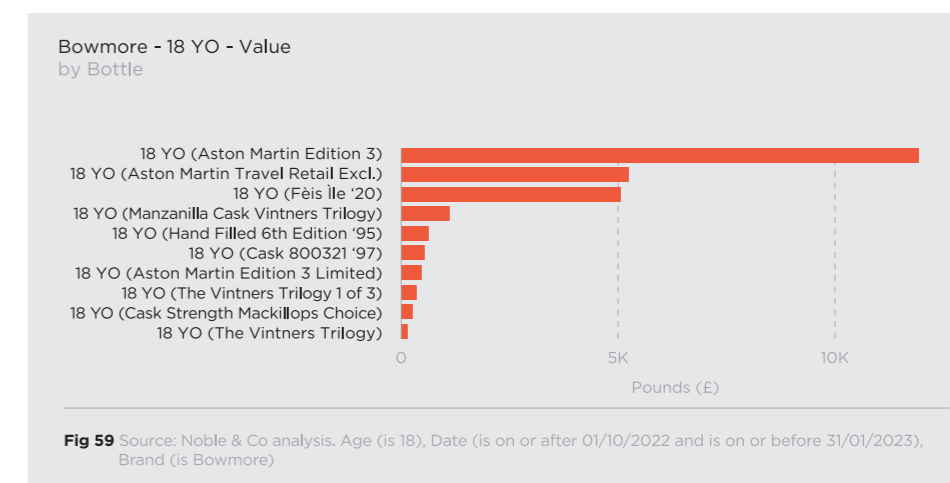


Fig 59 Source: Noble & Co analysis. Age (is 18), Date (is on or after 01/10/2022 and is on or before 31/01/2023), Brand (is Bowmore)

The core range

The 12, 15, 18 & 25 Year Old and duty-free offerings for Bowmore account for 70% of its sales in the primary market, with the approach being to focus on age statements. Future releases will place strong emphasis here with less reliance on whiskies with no age statements.

12 Year Old

Despite the 12 Year Old being a core expression for Bowmore, volumes at auction remain low

and this is no surprise given the continued availability at retail. Only three bottles were sold in the period between October 2022 and January 2023. The 12 Year Old is still available in major retail outlets, unlike competitors from The Macallan and Dalmore.

15 Year Old

There were 69 bottles of the 15 Year Old sold between October 2022 and January 2023 but the vast majority of these were the Fèis Ile 2012 bottlings. These averaged £165 per bottle.

18 Year Old

In the secondary market, the 18 Year Old is the highest volume bottle of the core range. 162 bottles were sold in the period but it still only accounted for £26k of value traded.

We did a simplistic analysis of various 18 Year Old bottlings for The Dalmore, The Macallan and The Bowmore, to look at relative pricing. Obviously the price point will be heavily influenced by the vintage - an 18 Year Old bottled in 1970 is going to be

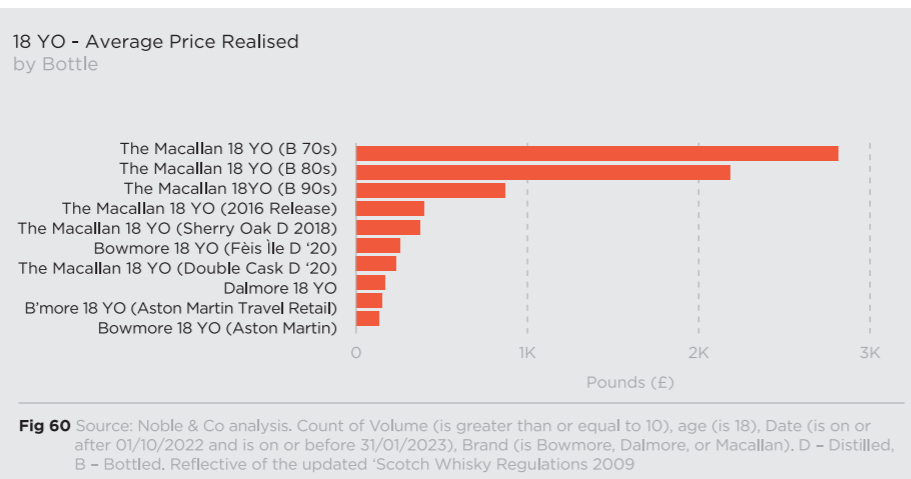


Fig 60 Source: Noble & Co analysis. Count of Volume (is greater than or equal to 10), age (is 18), Date (is on or after 01/10/2022 and is on or before 31/01/2023), Brand (is Bowmore, Dalmore, or Macallan). D - Distilled, B - Bottled. Reflective of the updated 'Scotch Whisky Regulations 2009

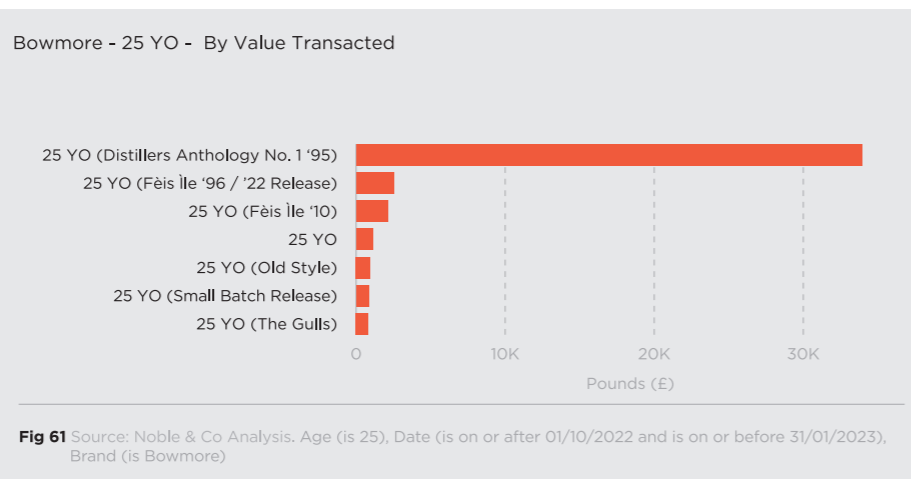


Fig 61 Source: Noble & Co Analysis. Age (is 25), Date (is on or after 01/10/2022 and is on or before 31/01/2023), Brand (is Bowmore)

worth more than one bottled in 2004. We do not have vintage information from Bowmore and The Dalmore that is comparable for the bottlings in these charts. The Macallan's premium stands out most.

25 Year Old

The 25 Year Old sold a mere 73 bottles at auction in the period between October 2022 and

January 2023, with an average price of £523. The majority of the value was in the Bowmore 1995 25 Year Old The Distillers Anthology No.1. As shown with The Macallan in our last report, limited collections generally are highly popular with collectors. The 25 Year Old expression has fell in average value from £657 in October 2022 to £523 in January 2023.



Image credit: Volpe & Castello Limited

Conclusion

Bowmore is arguably the brand collectors like most after The Macallan, which is shown by its continued presence in the league tables. Its focus on age statement releases distinguish it from others that rely more on NAS releases. With decent stock still to release, it is likely

to remain a strong player in the secondary market at the higher value end of the auctions. In the near term, the market malaise is impacting across to Bowmore also. We don't see any reason why the brand would underperform the market in the medium term.

Insights Into the Data Methodology

How We Collected Data

Our partner, Brainnwave, collected the data through APIs, file transfer and direct gathering with the express consent of the data providers.

The data includes transactions that mostly took place at auction within the UK and some that happened overseas, particularly in Hong Kong. The data goes back as far as 2010, but was not given this far back by all providers. The data was collated up to 31st January 2023 and the majority of the analysis refers to the time period from 1st October 2022 to 31st January 2023. The recorded price includes the sale total, auction fees and VAT.

Brainnwave secured data from the main auction houses as well as a meaningful proportion of the auction sites. We don't have a dataset covering 100% of the fine and rare whisky auction transactions but believe this is a representative sample. If 100% of the market were to be analysed, there may be the potential for trend differences.

Data points and sources

Brainnwave gathered new data for the period 1st October 2022 to 31st January 2023. This included 39,405 bottles and 38,853 auction lots, which accounted for 686,977 data points.

The total all-time dataset now includes 620,823 bottles: 609,675 auction lots and 10,890,980 datapoints. There were 34,908 single malt Scotch bottles in the period from 1st October 2022 to 31st January 2023.

Data sources included:

Bonhams, JustWhisky, Maltdaq, Prestige Whisky Auction, Scotch Whisky Auctions, Sotheby's, Speyside Whisky Auctions, Volpe & Castello and Christie's.

Not all sources provide data for the same time period and therefore, in general, the data analysed is either restricted to a shorter time period or for longer analysis, to a subset of the auction source.

Data cleansing and analysis

The data was cleansed and filtered by whisky type, geography, auction source, age, bottle size, region, brand, bottler, price of the auction, distillery, distillery status, date of the auction, edition, and the number of items in the auction lot. Single malt casks were not reviewed for this analysis. Certain keywords and phrases were also excluded before carrying out spot and manual checks where possible. The data analysis and visualisation

tools we used enabled us to review data by single transaction and gave us a glimpse of the raw data behind the filters. The full dataset does include blended Scotch transactions but we excluded these from our analysis, along with transactions from other countries wherever they were identifiable. We used the approved data to define the whisky indices.

The majority of the analysis was focused on bottles sold as single bottles, not as part of collections since it is complex to give value to a single bottle within a collection sold as a group. We've focused on 70cl bottles (700ml) and 75cl bottles (750ml) as these account for the vast majority of transactions and are the standard-size bottles in most markets.

Value and volume

We assessed the single malt Scotch whisky market with bottles selling for over £100 at auction. The £100 figure is arbitrary and was chosen by Noble & Co.

Volume, value and average prices paid can be skewed by a number of factors.

The value may change over a period because the mix of what is being sold is changing. A temporary release of

more supply or the timing of major auctions could also have an effect.

Volumes refer to the number of bottles sold and may increase for a particular brand because a collector released one large amount of stock, or there is a key brand announcement. We focus on the auction lots of single bottles, rather than including multiple bottle lots, where attribution of value per bottle is more complex and less reliable. However, Brainnwave analysis has shown that multiple-bottle lots only account for 3% of auction volumes.

Average prices paid can move based on currencies, taxation, fees and gaming of auctions by collectors. Prices taken were the winning bid in pounds and any reference to 'value' for a bottle or bottles relate to those winning prices.

In this report, value equals the amount paid by the buyer to acquire the bottle x the volume of transactions that occurred in the period. This is not representative of the value of all bottles of whisky held by investors or collectors. Instead, it is the amount transacted at auction.

Value in this report also excludes any private transactions that did not happen through auctions. The total

value captured in the 12 months to January 2023 was £40.5m. As noted in our November 2022 report, this is not the entirety of the auction market and trends for the whole market may be different. However, Brainnwave believes the dataset is statistically significant and any variation is unlikely to be meaningful. We estimate that this £40.5m is equivalent to 30% of the overall auction market.

Determining bottle types

Bottles were matched based on the title of the lot, the bottle age, volume (bottle size), brand, distillery and ABV. Any bottles which did not have all information available for age, volume, ABV and either a brand or distillery could not be confidently matched and were not grouped into bottle titles. Brainnwave then applied a natural language processing tool to perform 'fuzzy matching' of the bottle lot title to match bottles with similar titles.

A manual check was performed using the winning bid for each bottle title match to confirm outliers were indeed valid and to tune the natural language processing tool. Brainnwave's current method limits the number of false bottle matches but may create multiple bottle title matches for the same product. For the purposes of

this analysis, Brainnwave minimised the number of bottles to avoid incorrect groupings .

Indices

We have included indices in this report for the first time. These are indices based on all of the relevant bottles, rather than selecting particular bottles. The downside of this methodology is that the bottles sold in any given period will change, thus skewing the index. However, the upside is that it is more representative of what is happening in the auction market as a whole. Past performance is no guide for the future. The indices are subject to fine-tuning and may change in future releases, but Brainnwave expects the overall behaviour to be the same.

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Thanks to the auction houses and auction sites that shared data and insights for this report.

Auction Houses

Sotheby's EST. 1744 Wine

Bonhams

CHRISTIE'S

Auction Sites

SCOTCH
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