

**Global**

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**Guide to the triAngle Quarterly Track Record**

Graham Simpson | Quest Analyst | Canaccord Genuity Limited (UK) | [gsimpson@canaccordgenuity.com](mailto:gsimpson@canaccordgenuity.com) | +44 20 7523 8499

**triAngle quarterly performance**

## triAngle Quarterly Track Record goes online

For over 17 years, since the Quest<sup>®</sup> triAngle was launched, we have been calculating and storing triAngle performance data building up a rich history and live track record. We frequently write reports reviewing performance, analysing style data and updating the track record. For example, see [our report](#) for the most recent quarter for the UK and Europe.

We have also added a new feature on the Quest<sup>®</sup> website which will allow our clients to access the quarterly performance data in all the regions where we have collected and stored data. This note is a user guide to the new feature. We believe the combination of the triAngle methodology, functionality and the live track record means that the triAngle is a unique offering.

**Benefits of the online Quarterly Track Record:**

- Ability to interrogate the track record of triAngle online in a user friendly way.
- A rich source of data for Fund Managers who follow a particular style.
- Place recent style moves in the historic context.
- See and compare data across multiple regions.
- Quarterly data will be produced in a more timely fashion.
- History for the new Quest<sup>®</sup> universes will also start to be built up.
- Complements the shorter term analysis provided by the Style Matrix.

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## Introduction and methodology

Since we launched the Quest<sup>®</sup> triAngle in March 2000, we have been building up a useful historic repository of performance. This data is now available online, providing a rich source of data.

### Methodology

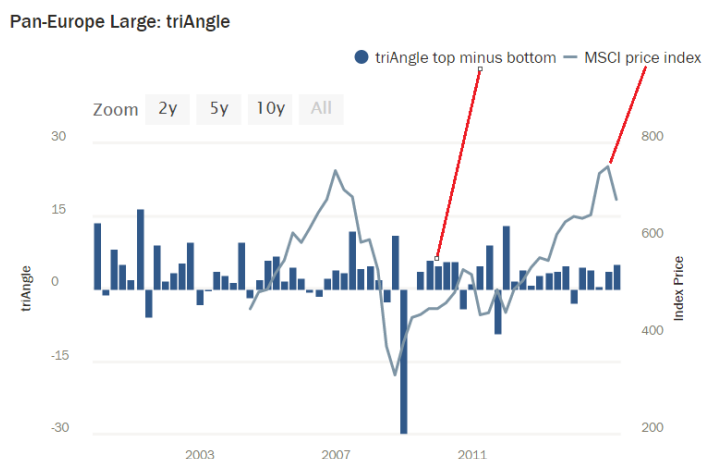
**Quarterly Dates:** The Quarterly Track Record is based on performance at 4 points in the year; end-February, end-May, end-August and end-November. This off-set approach to the quarter-ends is partly for historical reasons, but also helps avoid price volatility, thin markets and market holidays around the end of December.

**Calculating performance:** On each quarter date, the track record is calculated by taking the top quintile at the start of the quarter and measuring the relative performance over the subsequent 3 months. The performance of the bottom quintile is subtracted to give an overall top minus bottom quintile number. Each stock has an equal weight in the 'basket'. The calculation is repeated for triAngle, the three primary factors (Value, Quality and Momentum), and the 15 individual factors, allowing us to measure which factors are having the biggest influence. The track record is based purely on price performance. Dividends and trading costs are not taken into account. Data is calculated relative to the closest market benchmark. Historically we have used FTSE based indices. In New Quest<sup>®</sup> the benchmarks are MSCI indices. There is a very close correlation between the FTSE and MSCI index values.

**Non-financials:** We only include non-financials in the calculation – specifically, companies using the Quest<sup>®</sup> Banks model are excluded. Banks have triAngle scores which are based on different metrics to the non-financials (see page 14 of our [Quest<sup>®</sup> Banks' presentation](#)), so we exclude them from the performance calculation as we believe this gives a purer number, particularly when it comes to analysing style trends.

**Interpreting the charts:** Most of the charts and data presented show the top quintile minus bottom quintile as a bar chart. Also plotted is a line showing up to 10 years of the MSCI benchmark for that index (Figure 1), which is there to provide market context to performance. If you hover over a bar you can see the underlying data and there is also a Zoom feature if you want to focus on a particular area of the chart.

**Figure 1: Example triAngle performance chart**



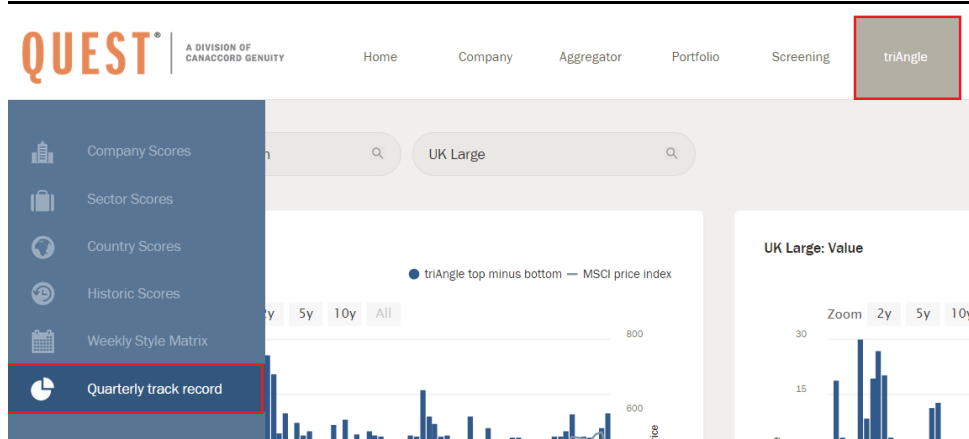
Source: Canaccord Genuity Quest<sup>®</sup>

**Data availability:** The history of each of the different universes varies in length depending on when the universe was introduced into Quest<sup>®</sup> and also based on how much data has been calculated, stored historically and imported into new Quest<sup>®</sup>. For more information see the appendix on data availability. UK Large cap data starts in 1999, Pan-Europe Large in 2000, UK Small caps in 2001. Several universes in North America, Asia and globally start in 2003. The rest of the regions, added to new Quest<sup>®</sup>, have data starting in August 2015.

## Quarterly track record: Menu

The Quarterly track record can be found on the triAngle tab of the Quest<sup>®</sup> Website. The symbol on the sidebar looks a bit like a big (quarter) slice of pizza.

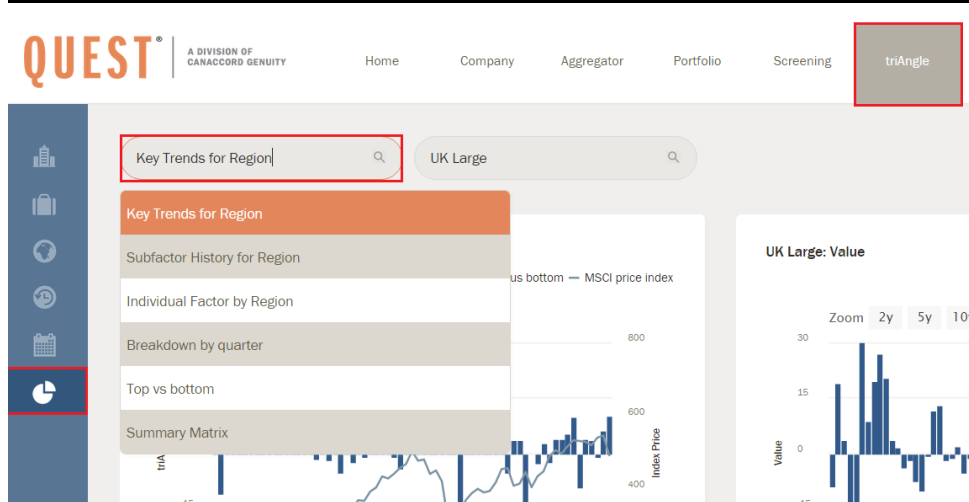
**Figure 2: Finding the Quarterly Track Record**



Source: Canaccord Genuity Quest<sup>®</sup>

You can then click on the drop down box to find the sub menu. We'll explain briefly how to use each section.

**Figure 3: Quarterly Track Record Sub Menu**



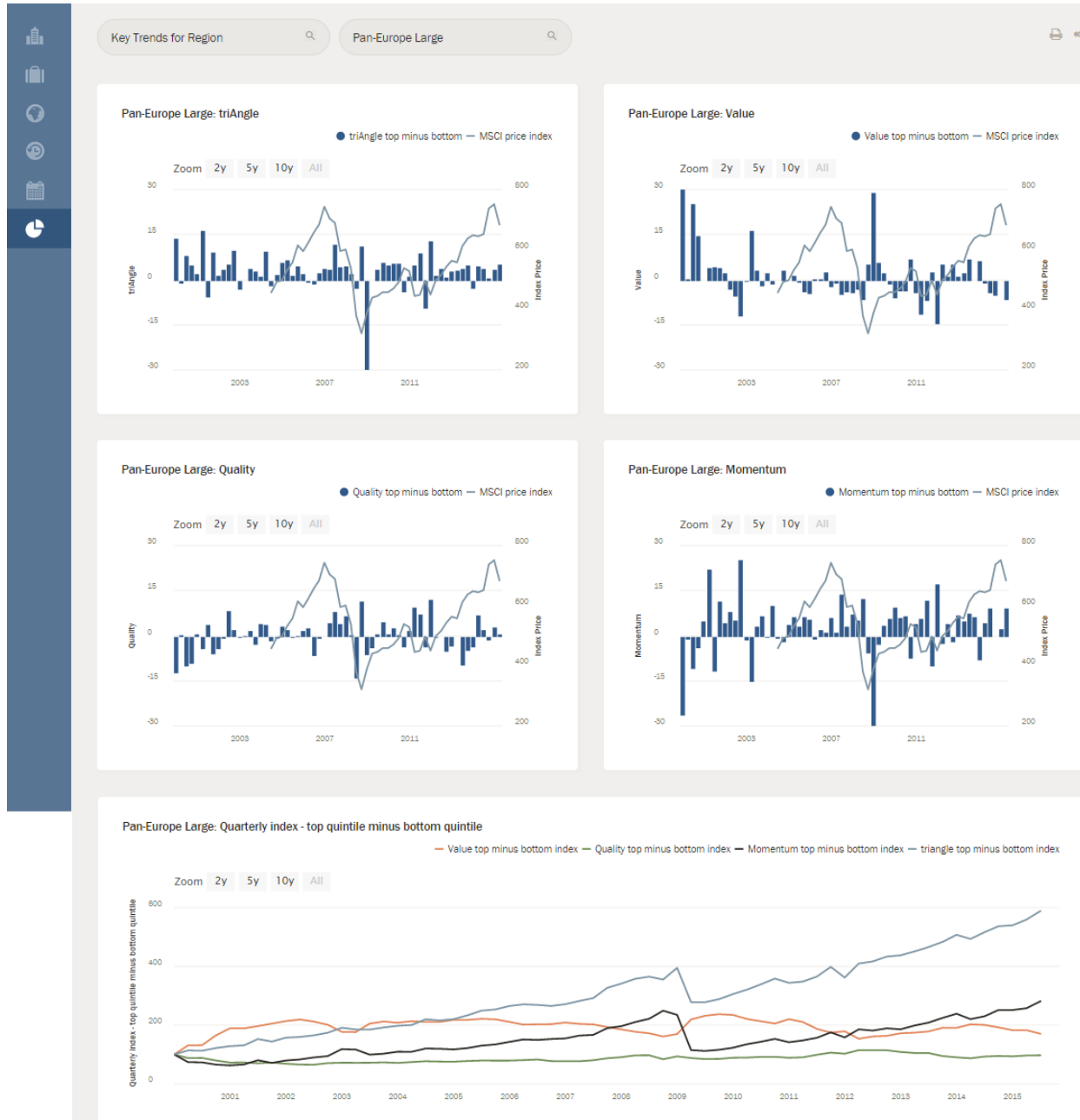
Source: Canaccord Genuity Quest<sup>®</sup>

# Key Trends for Region

For a specific region, we show the charts for the primary factors (triAngle, Value, Quality and Momentum) followed by a line chart which converts each series into a cumulative index starting at 100.

Currently available for World Large cap (Developed), UK Large, UK Small, Pan-Europe Large, US Large, North America, Japan, Asia Pac Ex Japan, South Africa.

**Figure 4: Key Trends for Region**



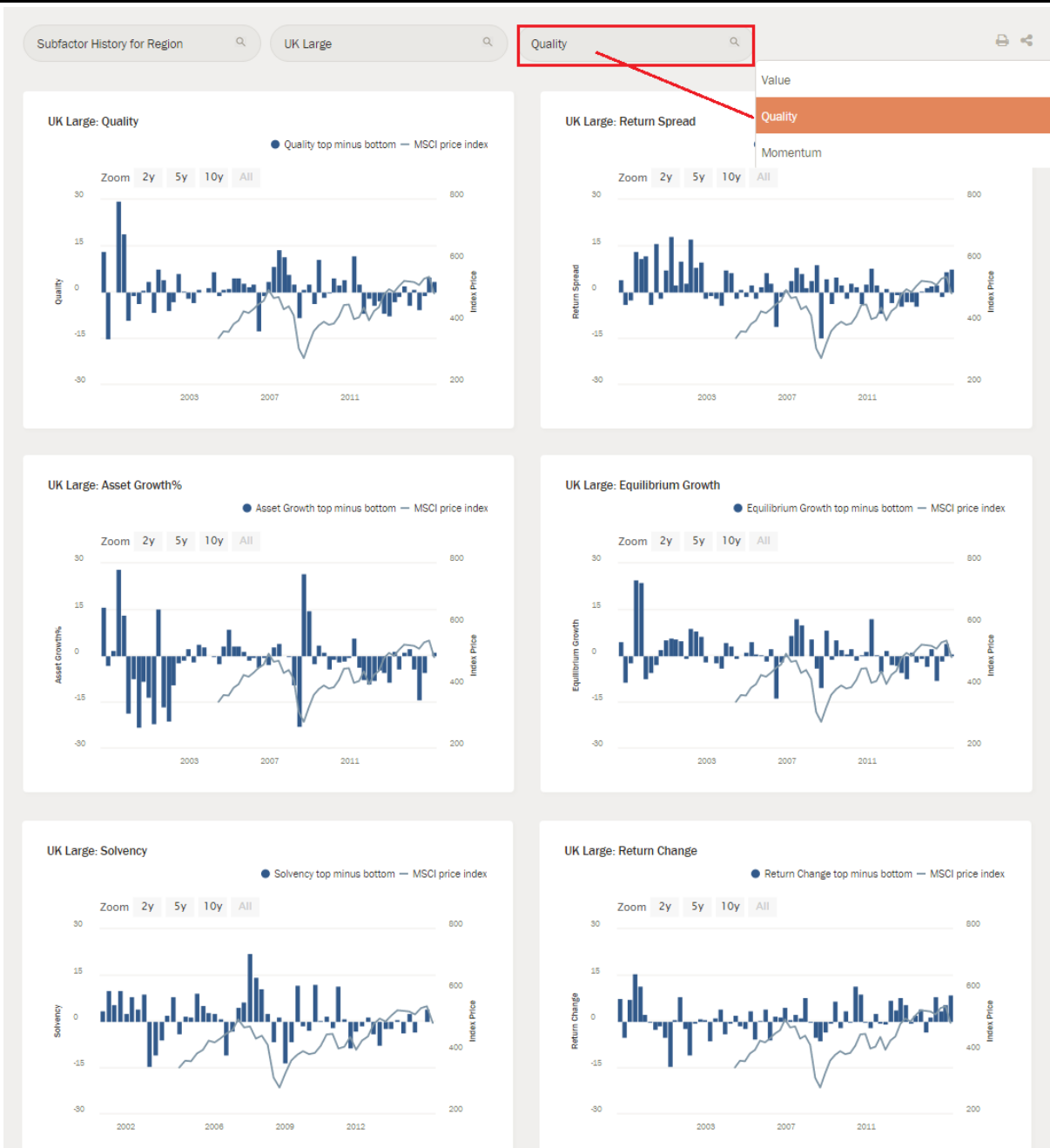
Source: Canaccord Genuity Quest®

## Subfactor History for Region

For a specific region, we show the subfactor charts for Value, Quality or Momentum. This starts with the composite factor followed by the five subfactors. In the example below Quality is followed by its 5 sub-factors, return spread, asset growth, equilibrium growth, solvency and return change.

Currently available for World Large cap (Developed), UK Large, UK Small, Pan-Europe Large, US Large, Japan, Asia Pac ex Japan and South Africa.

**Figure 5: Subfactor History for Region**



Source: Canaccord Genuity Quest®

# Individual Factor by Region

If you want to look at how performance for a specific factor varies across regions, use the 'Individual Factor by Region' chart. You can choose any of the composite factors or the individual sub-factors. An example below is shown for Earnings Momentum.

The page layout shows UK Large (where the history is longest), followed by Pan-Europe, UK Small, World Large Cap (Developed), US Large, North America (full data for Primary factors only), Japan, Asia Pac ex Japan and South Africa.

**Figure 6: Individual Factor by Region**

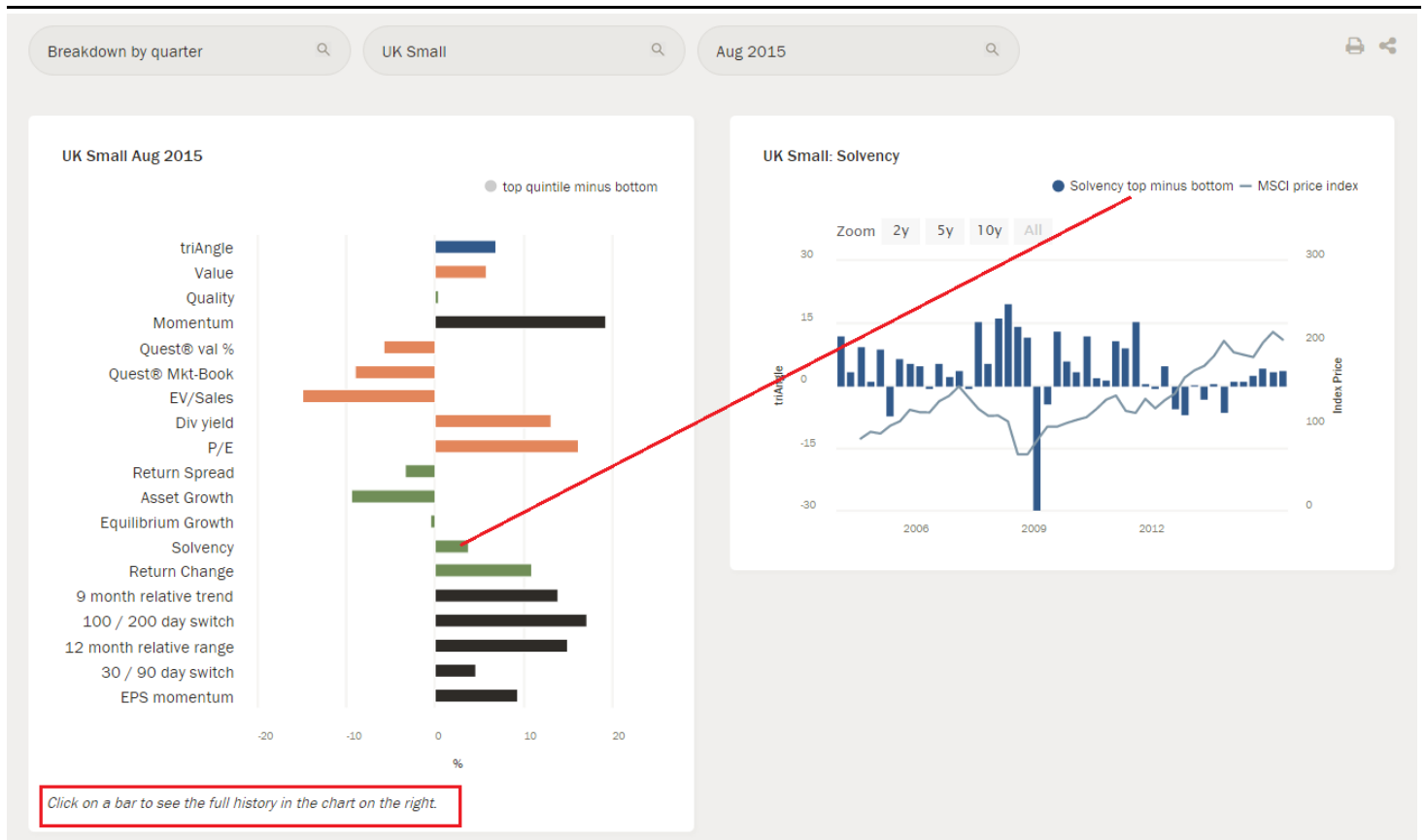


Source: Canaccord Genuity Quest®

## Breakdown by quarter

Allows you to view the breakdown for a specific region and quarter. The data for the quarter is shown underneath the chart. There is also a function which allows you to click on a specific factor to see the full history of that factor. In Figure 7 we show the solvency factor in UK Small cap as an example. History varies for each product group, starting with UK Large cap in February 1999. The new universes which were added in new Quest® already have data available for the 3 months to August 2015 which will now start to build up.

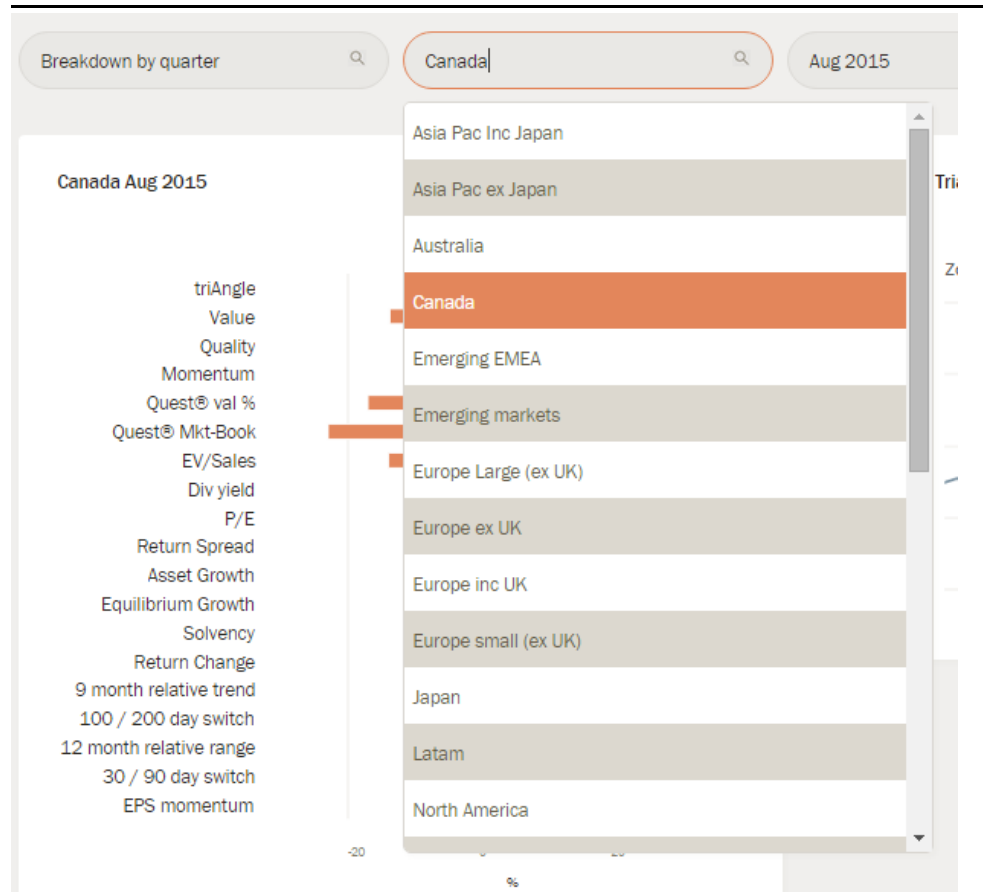
**Figure 7: Breakdown by quarter**



Source: Canaccord Genuity Quest®



**Figure 8: History for the new regions will start to build up**

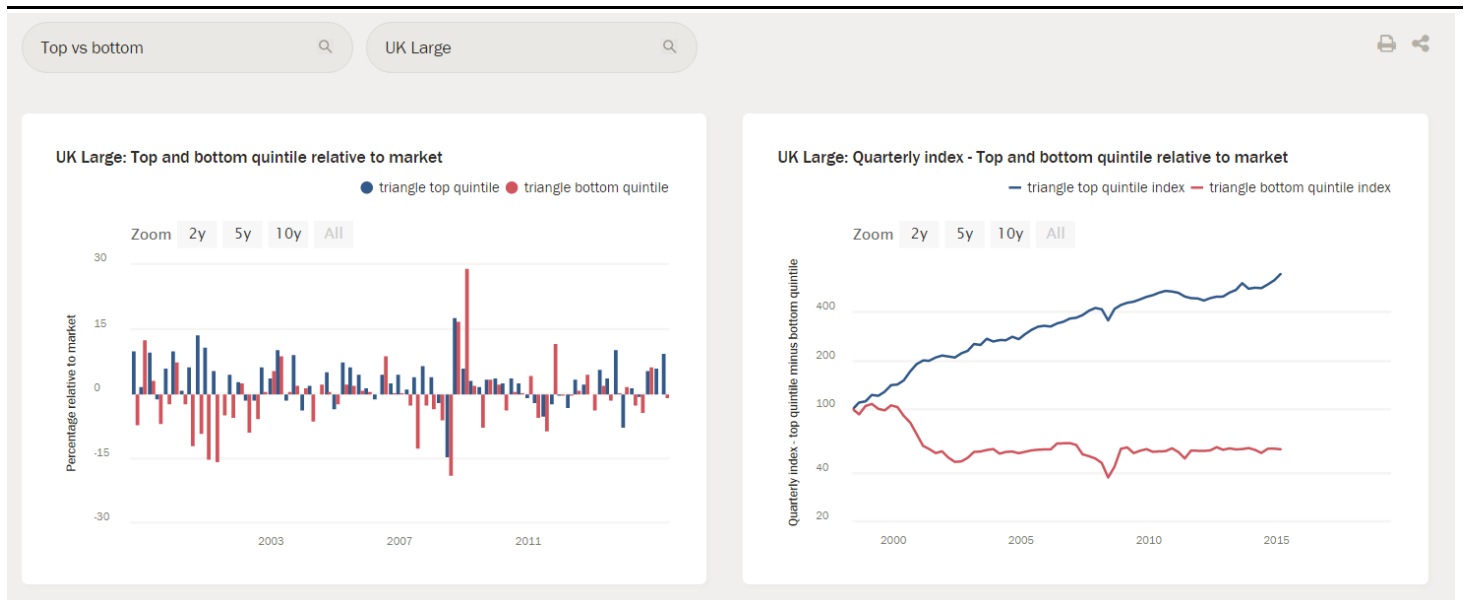


Source: Canaccord Genuity Quest®

## Top vs bottom

Sometimes we get asked to breakdown performance into the top and bottom quintiles. Data is available on this for the composite triAngle factor only in the following regions – UK Large, UK Small, Pan-Europe Large, North America and US Large. The blue bars in the left hand chart shown the top quintile relative to market. The red bars show the bottom quintile. Blue bars above zero and red bars below zero are seen as making a positive contribution to performance. The right hand chart converts these series into an index starting at 100 to give an idea of cumulative performance.

**Figure 9: Top vs bottom**

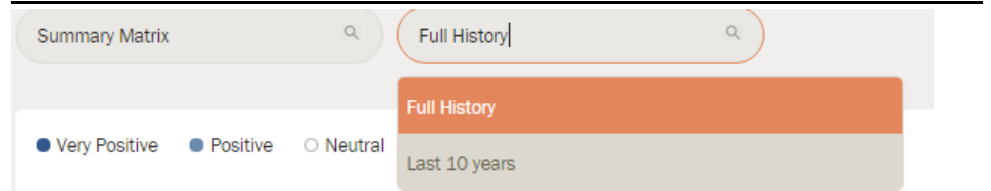


Source: Canaccord Genuity Quest®

# Summary Matrix

Designed to give an overview of performance across factor and region, the matrix looks at the eight regions where we have the most history. It shows the number of quarters available for each item. The average performance (top quintile minus bottom quintile) and the 'Winloss' ratio shows the percentage of quarters which has seen the top quintile beating the bottom quintile. The page view can be 'collapsed' to see only the primary factor performance, or 'expanded' to see all the sub factor detail.

**Figure 10: Summary Matrix – time period selector**



Source: Canaccord Genuity Quest®

**Figure 11: Summary Matrix collapsed view**

The screenshot displays a collapsed view of the Summary Matrix. It features a legend at the top with categories: Very Positive (dark blue), Positive (medium blue), Neutral (white), Negative (red), and Very Negative (dark red). The main content is a grid of data points for various factors (triAngle, Value, Quality, Momentum) across eight regions: UK Large, Pan-Europe Large, US Large, World Large cap (Developed), UK Small, Japan, Asia Pac ex Japan, and South Africa. Each cell in the grid contains a 'Count', 'Average', and 'Winloss' percentage. A red box highlights a 'Click for more detail' button in the top right corner. Red arrows point to specific data points with explanatory text: 'Number of Quarters available' points to the 'Count' column, 'Average quarterly performance of top quintile minus bottom' points to the 'Average' column, and 'Win/loss ratio - percentage of positive quarters' points to the 'Winloss' column.

	UK Large			Pan-Europe Large			US Large			World Large cap (Developed)		
Top Quintile minus Bottom	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss
triAngle	67	3.6%	76%	62	3.1%	79%	49	0.1%	53%	50	0.7%	62%
Value	67	0.0%	42%	62	1.2%	48%	49	0.3%	55%	50	0.6%	54%
Quality	67	1.2%	57%	62	0.1%	53%	49	-0.4%	57%	50	-0.1%	46%
Momentum	67	3.1%	70%	62	2.4%	69%	49	0.6%	53%	50	0.5%	70%

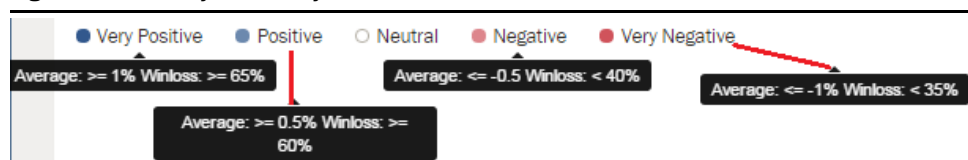
  

	UK Small			Japan			Asia Pac ex Japan			South Africa		
Top Quintile minus Bottom	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss
triAngle	56	6.1%	84%	49	-0.9%	47%	49	1.5%	65%	39	2.9%	67%
Value	56	0.9%	50%	49	0.7%	65%	49	0.7%	51%	39	-2.6%	31%
Quality	56	2.2%	63%	49	-0.6%	41%	49	0.5%	63%	39	1.0%	49%
Momentum	56	6.2%	79%	49	-1.2%	39%	49	1.0%	61%	39	4.2%	74%

Source: Canaccord Genuity Quest®

The colour coding is designed to give an indication of the best performing and most consistent factors.

**Figure 12: Summary Matrix Key**



Source: Canaccord Genuity Quest®

**Figure 13: Summary Matrix expanded view part 1**

	UK Large			Pan-Europe Large			US Large			World Large cap (Developed)		
Top Quintile minus Bottom	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss
triAngle	67	3.6%	76%	62	3.1%	79%	49	0.1%	53%	50	0.7%	62%
Value	67	0.0%	42%	62	1.2%	48%	49	0.3%	55%	50	0.6%	54%
Quest® val %	67	1.3%	51%	62	2.6%	56%	49	0.4%	55%	50	1.1%	64%
Quest® Mkt-Book	67	-0.3%	45%	62	0.9%	53%	49	0.2%	47%	50	0.8%	56%
EV/Sales	67	-0.8%	46%	62	0.2%	44%	49	0.5%	57%	50	0.2%	42%
Div yield	67	2.3%	52%	62	0.8%	52%	49	-0.9%	35%	50	-0.6%	38%
P/E	67	-0.1%	45%	62	1.2%	55%	49	0.3%	63%	50	0.4%	58%
Quality	67	1.2%	57%	62	0.1%	53%	49	-0.4%	57%	50	-0.1%	46%
Return Spread	67	2.2%	63%	62	0.5%	53%	49	-0.2%	49%	50	-0.2%	48%
Asset Growth	67	-1.7%	39%	62	-1.5%	42%	49	-0.9%	35%	50	-0.6%	32%
Equilibrium Growth	67	1.2%	55%	62	0.5%	60%	49	-0.1%	47%	50	-0.1%	48%
Solvency	57	1.3%	61%	57	1.3%	67%	46	-0.2%	57%	46	0.3%	57%
Return Change	67	1.2%	57%	62	0.7%	61%	49	0.2%	55%	50	0.4%	62%
Momentum	67	3.1%	70%	62	2.4%	69%	49	0.6%	53%	50	0.5%	70%
9 month relative trend	67	3.2%	69%	62	1.7%	65%	49	0.4%	55%	50	0.2%	68%
100 / 200 day switch	67	2.6%	67%	62	1.5%	65%	49	0.6%	59%	50	-0.1%	68%
12 month relative range	67	2.8%	64%	62	1.8%	73%	49	0.8%	59%	50	0.4%	68%
30 / 90 day switch	67	1.4%	64%	62	1.3%	69%	49	0.4%	57%	50	0.8%	56%
EPS momentum	67	2.4%	75%	62	2.3%	77%	49	0.1%	49%	50	0.8%	62%

Source: Canaccord Genuity Quest®

**Figure 14: Summary Matrix expanded view part 2**

● Very Positive ● Positive ○ Neutral ● Negative ● Very Negative

Top Quintile minus Bottom	UK Small			Japan			Asia Pac ex Japan			South Africa		
	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss	Count	Average	Winloss
triAngle	56	6.1%	84%	49	-0.9%	47%	49	1.5%	65%	39	2.9%	67%
Value	56	0.9%	50%	49	0.7%	65%	49	0.7%	51%	39	-2.6%	31%
Quest® val %	56	2.5%	55%	49	1.0%	61%	49	0.9%	55%	39	-1.8%	44%
Quest® Mkt-Book	56	0.4%	54%	49	0.9%	59%	49	0.3%	51%	39	-2.1%	41%
EV/Sales	56	-1.3%	36%	49	0.8%	53%	49	-1.2%	43%	39	-3.6%	28%
Div yield	56	1.7%	55%	49	0.5%	59%	49	0.6%	57%	39	0.1%	56%
P/E	56	1.3%	54%	49	-1.0%	55%	49	0.7%	51%	39	-0.9%	38%
Quality	56	2.2%	63%	49	-0.6%	41%	49	0.5%	63%	39	1.0%	49%
Return Spread	56	2.7%	63%	49	-0.7%	49%	49	1.5%	59%	39	1.6%	62%
Asset Growth	56	-0.3%	54%	49	-0.7%	39%	49	-1.1%	39%	39	-0.3%	38%
Equilibrium Growth	56	2.9%	73%	49	-0.5%	45%	49	0.7%	59%	39	-0.1%	54%
Solvency	46	3.7%	78%	46	-0.4%	59%	49	1.5%	61%	39	-0.5%	46%
Return Change	56	-0.1%	50%	49	-0.4%	45%	49	-0.2%	47%	39	0.1%	59%
Momentum	56	6.2%	79%	49	-1.2%	39%	49	1.0%	61%	39	4.2%	74%
9 month relative trend	56	5.5%	75%	49	-0.6%	47%	49	1.1%	63%	39	4.0%	72%
100 / 200 day switch	56	4.8%	79%	49	-0.8%	49%	49	0.4%	57%	39	3.2%	72%
12 month relative range	56	5.7%	77%	49	-1.0%	47%	49	1.0%	57%	39	3.3%	74%
30 / 90 day switch	56	3.7%	77%	49	-1.0%	45%	49	1.1%	63%	39	3.5%	67%
EPS momentum	56	6.2%	82%	49	-0.7%	53%	49	1.9%	65%	39	3.9%	77%

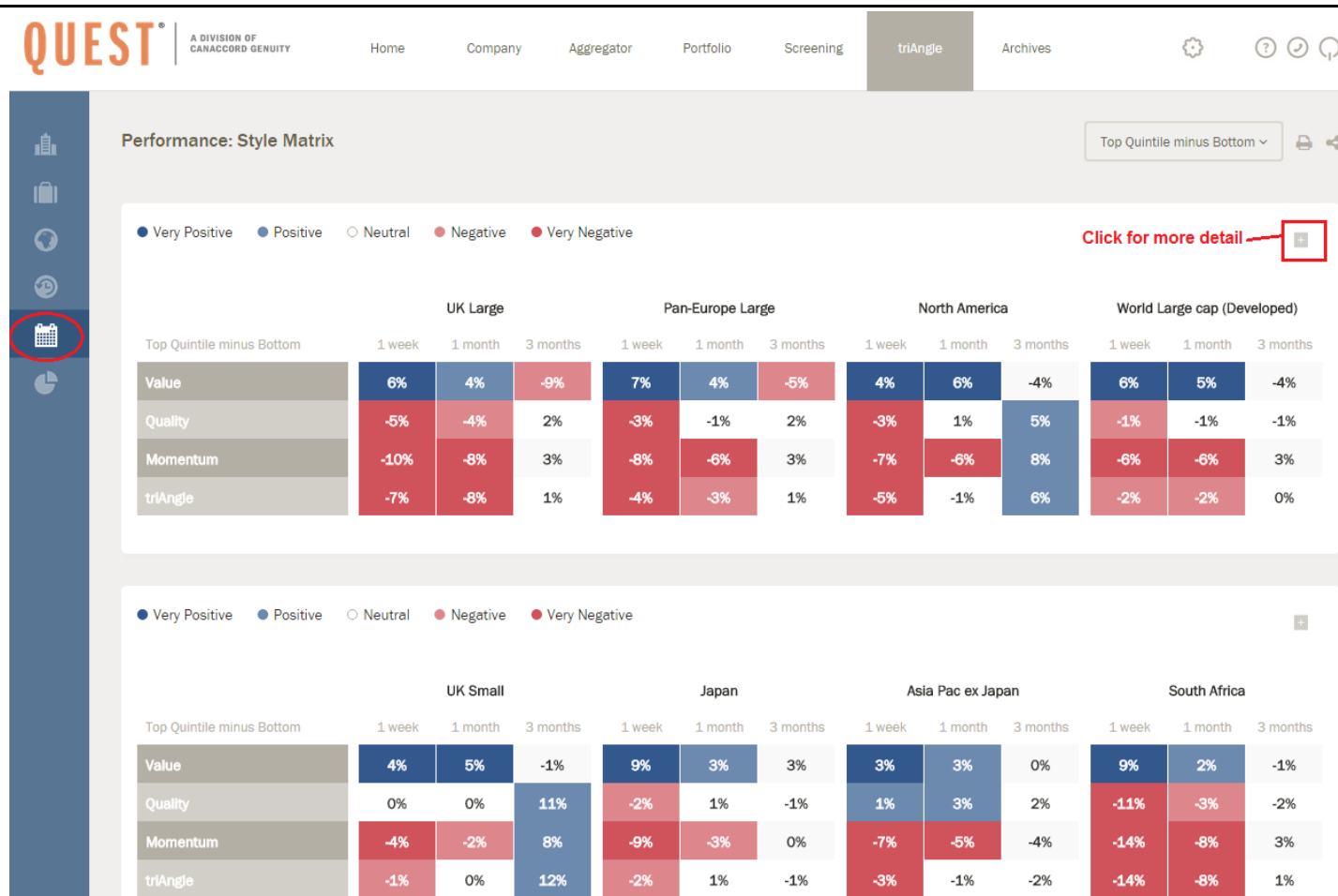
Source: Canaccord Genuity Quest®

## Shorter term Trends – Style Matrix

All the above new features in the Quarterly track record are designed to show the long-term performance history of the triAngle.

This complements the existing Style Matrix feature, which shows performance over 1 week, 1 month and 3 months for 8 regions – When we have more history for the new regions we plan to make the Style Matrix region selection more interactive. The initial view shows the primary factors and there is an option to click through to a more detailed picture. The Style Matrix is updated every day.

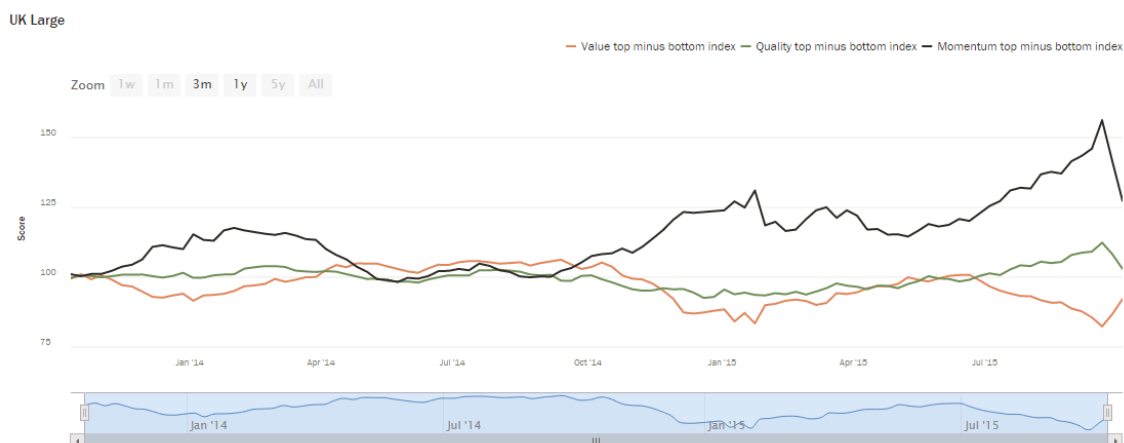
Figure 15: Style Matrix



Source: Canaccord Genuity Quest®. Data as at 13<sup>th</sup> October 2015.

The section below the style matrix table shows a 2 year trend in Value, Quality and Momentum for each of the 8 regions. The lines are calculated by compounding the weekly values of the style matrix data.

**Figure 16: Style Matrix chart**



Source: Canaccord Genuity Quest<sup>®</sup>. Data to 13<sup>th</sup> October 2015.

## Data availability

Figure 17 provides an overview as to the availability of data in the Quarterly Track Record universe by universe, providing a guide as to when data started in each universe and which areas of the functionality are available. The history of each of the different universes varies in length depending on when the universe was introduced into Quest<sup>®</sup> and also based on how much data has been calculated, stored historically and imported into new Quest<sup>®</sup>. Where appropriate the mappings of the legacy Quest<sup>®</sup> universes into new Quest<sup>®</sup> are also included. More details of this can be found in our document “[New Quest<sup>®</sup> vs legacy: The impact of triangle](#)”.

**Figure 17: Universe by Universe guide to Quarterly Track Record availability**

Quest 2.0 universes	Legacy universe	Performance data availability							
		1st Quarter (3m ending)	Key Trends for Region	Subfactor History for Region	Individual Factor by Region	Breakdown by quarter	Top vs bottom	Summary matrix	Comment
UK Large	UK Large	Feb-99	Y	Y	Y	Y	Y	Y	Data prior to May 2000 based on backtest. Fixed charge cover has been a live factor since 2004, with data between 2001-04 based on backtest
UK Small	UK Small	Nov-01	Y	Y	Y	Y	Y	Y	
UK Small Mid	UK Small Mid	May-15				Y			
UK	UK	May-15				Y			
Europe Large (ex UK)	Europe ex UK	May-15				Y			
Europe small (ex UK)	No	Aug-15				Y			
Europe ex UK	No	Aug-15				Y			
Pan-Europe Large	Europe (ex UK Small)	May-00	Y	Y	Y	Y	Y	Y	Fixed charge cover has been a live factor since 2004, with data between 2001-04 based on backtest
Europe inc UK	Europe inc UK	May-15				Y			
Emerging EMEA	No	Aug-15				Y			
South Africa	South Africa	Feb-06	Y	Y	Y	Y		Y	
US	No	Aug-15				Y			
US Large	No	Aug-03	Y	Y	Y	Y	Y	Y	Legacy history based on S&P500 constituents
US Large + Mid	No	Aug-15				Y			
US Small	No	Aug-15				Y			
Canada	No	Aug-15				Y			
North America	North America	Aug-03	Y		Y	Y	Y		Primary factor history since 2003. Individual factors since 2015
Latam	No	Aug-15				Y			
Australia	No	Aug-15				Y			
Asia Pac ex Japan	Asia ex Japan	Aug-03	Y	Y	Y	Y		Y	
Japan	Japan	Aug-03	Y	Y	Y	Y		Y	
Asia Pac Inc Japan	Asia inc Japan	Aug-15				Y			
World (Developed)	World	Aug-15				Y			
World ex North America	World ex North America	Aug-15				Y			
World Large cap (Developed)	World ex UK small	May-03	Y	Y	Y	Y	Y	Y	Top and bottom since May 2015
Emerging markets	No	Aug-15				Y			
World	No	Aug-15				Y			

Source: Canaccord Genuity Quest<sup>®</sup>

## Appendix: What is triAngle?

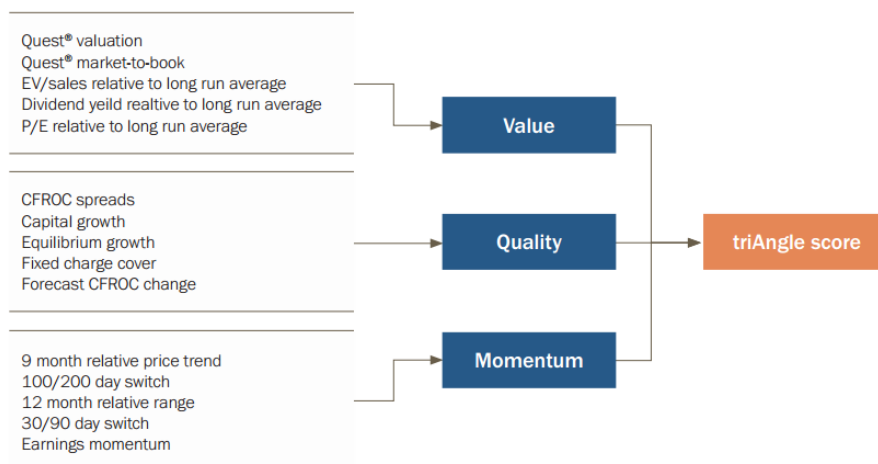
The Quest<sup>®</sup> triAngle is designed to provide broad-based measures of Value, Quality and Momentum, each consisting of five factors outlined below. This broad approach adds more consistency than reliance on one single measure, and also helps to address the issue that different factors work at different times.

Value combines Quest<sup>®</sup> CFROC valuation and Quest<sup>®</sup> market-to-book with more traditional measures of EV/sales, dividend yield and P/E.

Quality measures historic corporate performance through returns (CFROC spread), growth in invested capital, and free cash flow, together with forecast changes in CFROC, and fixed charge cover as a measure of solvency.

Momentum evaluates share price trends through the 9-month relative trend, the 12-month relative range and the 100/200-day switch. Inflection points are seen on the short-term 30/90-day switch, and changes in consensus earnings estimates also form part of the overall Momentum picture.

**Figure 18: triAngle factors**



Source: CanaccordGenuity Quest<sup>®</sup>

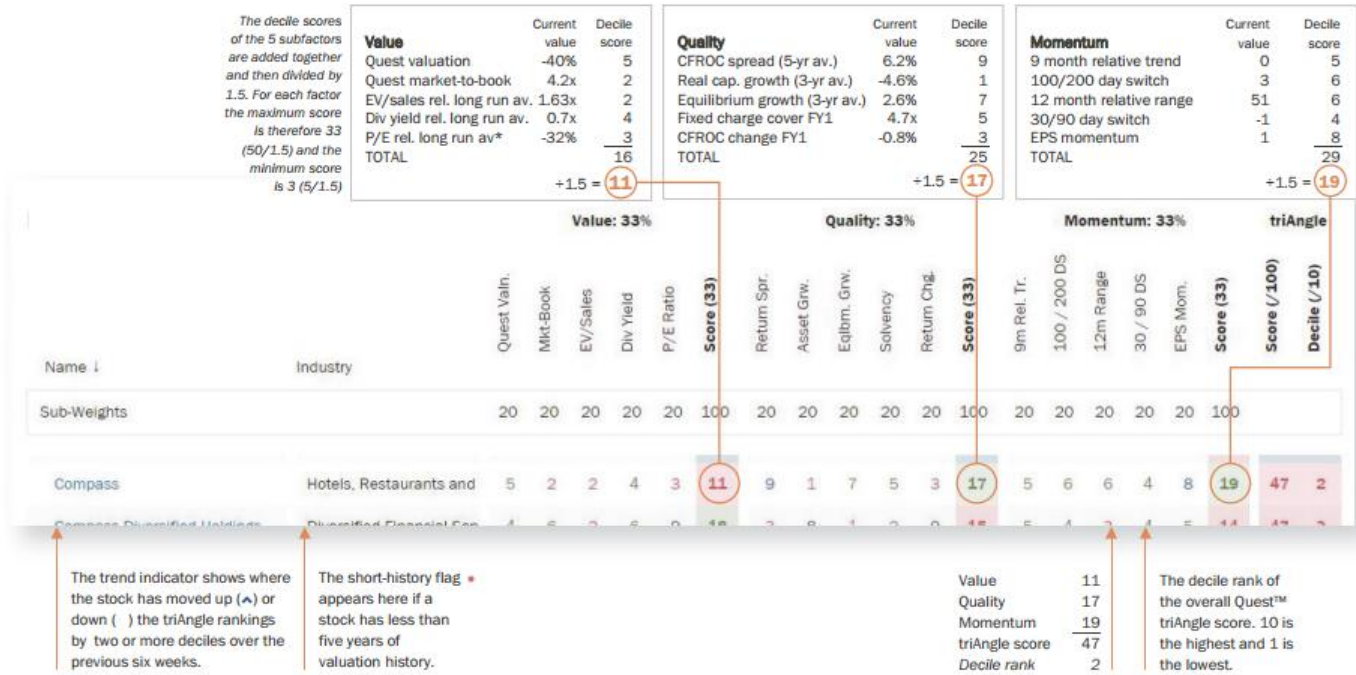
The triAngle is available at [www.canaccordquest.com](http://www.canaccordquest.com). The weekly triAngle Commentary provides clients with trading and investment ideas based on the triAngle.

### How the triAngle score is calculated

For each of the 15 triAngle measures, the universe of companies is ranked in order from top to bottom and divided into deciles. 10/10 is a positive signal (good or cheap), while 1/10 is negative. The decile scores of the five measures for each factor (Value, Quality and Momentum) are then added together and divided by 1.5, giving a maximum score of 33. The scores from the Value, Quality and Momentum are aggregated to give the total Quest<sup>®</sup> triAngle score. This has a maximum value of 100. The triAngle score is then ranked by decile, once again with 10 being positive and 1 being negative.



**Figure 19: How the triAngle score is calculated**



Source: CanaccordGenuity Quest ®

If you are interested in learning more about the extensive range of Quest® services, please contact [quest@canaccordgenuity.com](mailto:quest@canaccordgenuity.com) or call the Helpdesk on +44 (0)20 7523 8493.

## triAngle definitions

**Figure 20: Definitions of triAngle factors and historic changes**

The Quest<sup>®</sup> triAngle analyses companies on three factors: Value, Quality and Momentum. For each factor, five measures are analysed. On each measure stocks are compared with all other stocks in the universe, ranked in order, then divided into deciles.

<b>Value</b>	
	The rankings for Quest <sup>®</sup> valuation and Quest <sup>®</sup> mkt-to-book are based on the absolute valuation. For the other three Value factors, rankings are based on valuations against long-run averages.
1. Quest <sup>®</sup> valuation	The Quest <sup>®</sup> value per share, shown as a percentage upside or downside from the current share price. An absolute measure of whether the shares are cheap.
2. Quest <sup>®</sup> market-to-book	The total capitalisation of the company (market cap plus gross debt plus capitalised leases) divided by the estimated replacement cost of the firm's assets (excluding goodwill). This is akin to Tobin's q ratio. The definition used in triAngle changed in Q1 2004. The previous definition measured valuation relative to history and also included goodwill in the denominator. In 2015 intangibles were added to the asset base calculation.
3. EV/ sales rel LRA	Market cap plus net debt divided by sales. In O'Shaughnessy's best-selling book 'What Works On Wall Street' the best-performing strategy included the Value measure EV/ sales.
4. Dividend yield rel LRA	Dividend per share divided by the share price. High yield stocks are ranked above (cheaper than) low yield stocks.
5. Price earnings ratio (P/E) rel LRA	Still the most commonly quoted valuation measure. Earnings are calculated pre goodwill amortisation and pre-exceptional items.
<b>Quality</b>	
1. CFROC spread – five-year average	The five-year average of the spread between the Quest <sup>®</sup> CFROC (Cash Flow Return On Capital) and the weighted average cost of capital. A positive spread indicates a good company.
2. Real capital growth – three-year average	The average growth in the total capital base over the last three years. High growth companies are ranked above low growth companies although growth is only value creating when incremental capital earns a positive CFROC <sup>®</sup> spread.
3. Equilibrium growth – three-year average	Equilibrium growth is the ability to sustain growth in the invested capital base from internally generated free cash flow. Free cash flow is defined as gross cash flow less interest, tax, dividends & maintenance capex.
4. Fixed charge cover FY1	EBIT before operating lease payments divided by all fixed charges - interest, preference dividends & lease payments. A measure of solvency. Definition changed in Q1 2004. Previous factor measures earnings growth (EPS growth - FY1).
5. CFROC change FY1	The percentage change in the CFROC from the last historic year to the first forecast year. An indication of the forecast growth of the company.
<b>Momentum</b>	
1. 9-month relative trend	Measures the direction of the 9m moving average of the relative. A useful summary of the balance of institutional sentiment.
2. 100/ 200 day switch	Measures where the 100-day moving average of the share price relative is compared with the 200-day moving average.
3. 12-month relative range	Measures where a stock is within the relative trading range of the past 12m. Outperformers will tend to remain in the top half of that range.
4. 30/ 90 day switch	A shorter term dynamic version of the 100/ 200 day switch. Helps to identify short-term swings within the long-term trend and acts as an early warning signal of a turning point. Definition changed in Q1 2004. Previous definition was volume/move indicator.
5. EPS momentum – 3-month	Change in consensus earnings per share estimates in the past three months. Earnings momentum is a useful indicator of short-term share price performance since it indicates those companies that are performing above market expectations.

Source: CanaccordGenuity Quest<sup>®</sup>

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