A historic test of the strength of Russell index Reconstitution

Russell Indexes’ annual Reconstitution took place on June 24th this year — the same day the world woke up to a ‘Yes’ result in the UK’s so called Brexit vote. The unexpected vote by the UK to leave the European Union sent currency and equity markets worldwide into a temporary tailspin. That such a significant geo-political event happened on Reconstitution day was unprecedented. That the market was able to process the additional volume brought on by Brexit and Reconstitution was several decades in the making.

For those reading this who don’t know what Reconstitution is, it is a cornerstone of the Russell Indexes’ methodology. By recalibrating the delineations between large and small, growth and value, defensive and dynamic, based on market movements each year, Reconstitution allows for the accurate representation and measurement of those segments of the US equity market. Without it, the ability of an index to reflect an asset class is impaired and definitions like small cap or growth have less meaning.

The Russell 3000® Index began in 1984, and includes the Russell 1000® Index (large cap) and the Russell 2000® Index (small cap). While the notion of behavioral differences between large companies and small companies certainly existed prior to their launch, the Russell 3000 Index family was the first to quantify these differences. Before ’84 there was no index-driven way to identify a size range for large cap and small cap or monitor how those ranges change over time — all stocks were lumped together. That’s why the Russell 2000 Index of US small cap stocks was so ground breaking, beginning the process of indexed-based market segmentation across risk factors that continues today.

Embedded in the Reconstitution process is the belief that transparency should be at the core of the index construction and management processes. But who could have known 32 years ago this belief would help the market manage through two big events at the same time. The Russell indexes have been criticized in the past for their transparency, with some arguing that this telegraphed what stocks would have to be bought and sold, providing a potential advantage for active traders. However, through a variety of methodology enhancements, including the adoption of the NASDAQ closing cross in 2004, Russell index Reconstitution successfully addressed these concerns, and never stopped being transparent.

The market begins readying itself for Russell index Reconstitution as the snow is still falling in some places, and the first rounds of sell-side reporting come out. By early June, several weeks in advance of the final Reconstitution date, FTSE Russell releases its own preliminary reports, allowing institutional investors to prepare for market movement. Operationally, these investors are locked-in and ready to go on Recon day. But just imagine if the Russell 3000 Index family, with approximately $6 trillion in assets benchmarked, did not follow a transparent process. Imagine if the market had to contend with Brexit and going into Reconstitution blind, having learned which stocks were to be added to, and deleted from the index at the same time that voting was underway in the UK. The strain on market participants could have been tremendous. Instead, outside of some Brexit induced volatility, Reconstitution came off without issue, underscoring the power of transparency.

Market recap

Russell equity indexes show that the second quarter carried forward the positive momentum sparked in the second half of Q1. In a reversal of the condition we observed in the third quarter of 2015, risk was the clear winner in Q2 with performance aligned with market beta — the higher the beta, the better the performance. Moving down the cap tiers, the Russell Top 200® Index of mega cap companies fared “worst” on a relative basis (+2.3%), followed by the Russell 1000 Index (+2.5%), Russell Midcap® Index (+3.2%), Russell 2000 Index (+3.8%) and the Russell Microcap Index (+4.0%).

Value stocks continued their run, besting the performance of growth stocks across both large cap and small cap. The Russell 1000® Value outperformed the Russell 1000® Growth by 4 percentage points (+4.6% vs. +0.6%). The Russell 2000® Value Index outperformed the Russell 2000® Growth Index by a more modest 1.1 percentage points (+4.3% vs. 3.2%), as the tide coming in for small cap lifted all boats.
Fed watch becomes a stakeout

Fed watching has become something of an endurance sport, as external conditions have continued to push further rate hikes into the future. The risk of exogenous shocks and a weaker jobs market kept the Board of Governors sitting on their hands at both the April and June Open Market Committee meetings. Their concerns over international affairs were realized as the UK voted to leave the European Union and market volatility jumped in response. With the full impact of Brexit still to play out, the consensus (if one truly exists) among economists is now tilted towards a second rate hike coming in December 2016.1

Bottom line

The Russell equity indexes reveal that the second quarter was a positive one for US stocks across every size and style segment. However, the Brexit vote has potential to cast a shadow over the market that could extend into 2017 and beyond. Volatility ticked higher in the last days of the second quarter in response to Brexit, but the US economy has shown durable growth, in that volatility has tended to abate quickly. Geo-political events, including the US Presidential election, may create a non sequitur whereby investors’ fears would normally create the conditions for a market correction and heightened volatility; but the relative stability of the US and few compelling alternatives for growth keeps re-inflating the bubble.

1 Source: http://projects.wsj.com/econforecast/#qa=20160701001
Source: FTSE Russell, data as of June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Market performance

Size
- US equity indexes posted positive returns in the second quarter of the year, as reflected by the Russell 1000 Index (up +2.5%) and the Russell 2000 Index (up +3.8%).
- Taking a look at the extremes of the market capitalization spectrum, at +2.3% for the quarter, the Russell Top 200 Index came in behind the Russell 2000 and Russell Microcap® Indexes at +3.8% and +4.0%. On a year-to-date basis, however, results are reversed, with the Russell Top 200 Index at +3.0% and the Russell Microcap Index at -1.7%. Performance in the first quarter, and specifically negative performance in January, continues to be a major drag on small and mid cap for the year overall. For example, the Russell 2000 Index returned -1.5% in Q1 2016 before posting a strong 3.8% return in Q2. But because large cap as represented by the Russell 1000 Index held up better early in the year, it continues to lead year-to-date (+2.2% vs. +3.7%).
- Looking beyond large/small and mega/micro, mid cap continued to grow as demonstrated by the Russell Midcap Index increasing +5.5% YTD. Its +3.2% return for the quarter was additive to positive first quarter performance, versus first quarter headwinds faced in other size categories. The sectors rewarded this quarter, particularly Utilities, are heavily comprised of companies in the mid cap range.

Style
- The Value style continued to assert its leadership in the cycle of style performance. Both the Russell 1000 Value Index (+4.6%) and the Russell 2000 Value Index (+4.6%) showed the highest returns for the quarter across size-style segments. On a year to date basis, the Russell Midcap® Defensive Index (+11.3%) was a standout among the market cap style indexes. The Russell Midcap® Value Index (+8.9%), Russell 1000® Defensive Index (+7.1%), Russell 2000 Defensive Index (+6.5%), Russell 1000 Value Index (+6.3%) and Russell Top 200® Defensive Index (+6.2%) followed. Clearly the index data demonstrates that, regardless of cap size, defensive characteristics — companies with less economic sensitivity and more stable earnings profiles — are showing strength for the year, as are Value companies as determined by higher relative Book-to-Price characteristics.
- Flip the coin over, and Growth, as measured by I/B/E/S earnings growth and Sales-per-share, and Dynamic indexes, measuring companies with greater economic sensitivity and more variable earnings profiles, were clearly out of favor. The Russell Midcap® Growth Index was down year to date (-5.9%), followed by the Russell 2000 Dynamic Index (-2.5%). Growth/Dynamic seemed to fare better among large cap companies, as the Russell 1000 Growth Index (+1.4%) and Russell 1000® Dynamic Index (+0.3%) remained in positive territory for the year.

Exhibit 1: Market Cap Performance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2nd qtr</td>
<td>1st qtr</td>
<td>4th qtr</td>
<td>3rd qtr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russell 3000® Index</td>
<td>2.6</td>
<td>1.0</td>
<td>6.3</td>
<td>-7.3</td>
<td>3.6</td>
<td>2.1</td>
</tr>
<tr>
<td>Russell Top 200® Index</td>
<td>2.3</td>
<td>0.7</td>
<td>7.7</td>
<td>-6.3</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Russell 1000® Index</td>
<td>2.5</td>
<td>1.2</td>
<td>6.5</td>
<td>-6.8</td>
<td>3.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Russell Midcap® Index</td>
<td>3.2</td>
<td>2.2</td>
<td>3.6</td>
<td>-8.0</td>
<td>5.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Russell 2000® Index</td>
<td>3.8</td>
<td>-1.5</td>
<td>3.6</td>
<td>-11.9</td>
<td>2.2</td>
<td>-6.7</td>
</tr>
<tr>
<td>Russell Microcap® Index</td>
<td>4.0</td>
<td>-5.4</td>
<td>3.7</td>
<td>-13.8</td>
<td>-1.7</td>
<td>-12.1</td>
</tr>
</tbody>
</table>

Exhibit 2: Style Performance

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2nd qtr</td>
<td>1st qtr</td>
<td>4th qtr</td>
<td>3rd qtr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russell 1000® Growth Index</td>
<td>0.6</td>
<td>0.7</td>
<td>7.3</td>
<td>-5.3</td>
<td>1.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Russell 2000® Growth Index</td>
<td>3.2</td>
<td>-4.7</td>
<td>4.3</td>
<td>-13.1</td>
<td>-1.6</td>
<td>-10.8</td>
</tr>
<tr>
<td>Russell 1000® Value Index</td>
<td>4.6</td>
<td>1.6</td>
<td>5.6</td>
<td>-8.4</td>
<td>6.3</td>
<td>2.9</td>
</tr>
<tr>
<td>Russell 2000® Value Index</td>
<td>4.3</td>
<td>1.7</td>
<td>2.9</td>
<td>-10.7</td>
<td>6.1</td>
<td>-2.6</td>
</tr>
<tr>
<td>Russell 1000® Defensive Index</td>
<td>3.3</td>
<td>3.7</td>
<td>6.8</td>
<td>-3.6</td>
<td>7.1</td>
<td>10.2</td>
</tr>
<tr>
<td>Russell 2000® Defensive Index</td>
<td>3.8</td>
<td>2.6</td>
<td>3.5</td>
<td>-6.5</td>
<td>6.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Russell 1000® Dynamic Index</td>
<td>1.8</td>
<td>-1.5</td>
<td>6.2</td>
<td>-10.0</td>
<td>0.3</td>
<td>-4.1</td>
</tr>
<tr>
<td>Russell 2000® Dynamic Index</td>
<td>3.9</td>
<td>-6.2</td>
<td>3.7</td>
<td>-17.4</td>
<td>-2.5</td>
<td>-16.5</td>
</tr>
</tbody>
</table>

FTSE Russell considers style along three dimensions: size, valuation and stability. The size dimension includes large cap and small cap as defined by market capitalization. Valuation includes growth and value measures. Stability provides a risk dimension to style by assessing a variety of factors related to quality and volatility exposures. Stability includes dynamic (companies with greater economic sensitivity and more variable earnings profiles) and defensive (companies with less economic sensitivity and more stable earnings profiles). For more information on style definitions, please refer to the complete methodology document available at ftserussell.com.

Source: FTSE Russell, data as at June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Small cap performance analysis

- Relative strength in the second quarter helped lift small cap returns out of negative territory for the first half of the year, providing the Russell 2000 Index with a +2.2% return year to date. From the index low on February 11th, performance was positive for 57 of the 98 days through June 30. The second quarter saw 34 days with the markets moving ahead, and 30 retreating.

- The topography of the quarter saw a peak on April 27th followed by a relatively rapid decline (down 5.14%) to the 2nd lowest point in the quarter on May 19th — 10 out of 16 declining days. This was followed by another upswing, with the peak for the quarter was on June 27th post Brexit. Brexit came at an interesting time for the Russell equity indexes. June 24th brought to a close annual index reconstitution — the rebalance of the Russell family of equity indexes. The Nasdaq closing cross at June 24th provided another orderly liquidity event. In the last 0.8 seconds of trading, 933 million shares traded, representing $20.6 billion.

![Exhibit 3: 12-Month Rolling Returns](image)

**Exhibit 3: 12-Month Rolling Returns**
Total Return (%) — 10 Years (as of 6/30/2016)

<table>
<thead>
<tr>
<th></th>
<th>2nd Qtr</th>
<th>YTD</th>
<th>1 Yr</th>
<th>3 Yr</th>
<th>5 Yr</th>
<th>10 Yr</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell 2000 Index</td>
<td>3.79</td>
<td>2.22</td>
<td>-6.73</td>
<td>7.09</td>
<td>8.35</td>
<td>6.20</td>
<td>26.85</td>
<td>-4.18</td>
<td>16.35</td>
<td>38.82</td>
<td>4.89</td>
<td>-4.41</td>
</tr>
<tr>
<td>Russell 1000 Index</td>
<td>2.54</td>
<td>3.74</td>
<td>2.93</td>
<td>11.48</td>
<td>11.88</td>
<td>7.51</td>
<td>16.10</td>
<td>1.50</td>
<td>16.42</td>
<td>33.11</td>
<td>13.24</td>
<td>0.92</td>
</tr>
</tbody>
</table>

Source: FTSE Russell, data as at June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Relative returns analysis

- Large cap growth as measured by the Russell 1000 Growth Index (+0.6%) was significantly lower than the Russell 2000 Growth Index (+3.2%) for the second quarter. The value segment showed a more muted difference, with the Russell 2000 Value Index (+4.3%) marginally lower than the Russell 1000 Value Index by 30 basis points (+4.6%). Growth and value have been trading outperformance quarter-to-quarter recently, but value has outperformed growth overall year to date and for the last 12 months.

- When measuring the change in index value over ten years, large caps, as represented by the Russell 1000 Index continued to distance itself from small cap, as represented by the Russell 2000 Index (see Exhibit 8).

Source: FTSE Russell, data as at June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Risk analysis

- The RVX achieved its intra-quarter low of 16.7 on May 27th, ending with a median RVX value of 18.9 on June 30 and a 10-year median RVX value of 22.9 (see Exhibit 9). Not surprisingly, expected volatility peaked with the Brexit decision at the end of the quarter, reaching 27.8 on June 27th, as measured by the CBOE’s Russell 2000 Volatility Index (RVX).
- Realized volatility, as measured by the daily returns of the Russell 2000 Index, maintained standard deviation of approximately 1.5% in the first and 1.2% in the second quarter. June contained both the largest daily rise [+2.21%] and fall [-3.8%] (see Exhibit 10).
- The 12-month rolling standard deviation remained the same quarter-over-quarter for small cap and large cap. The Russell 2000 Index ended the quarter at 16.7% — a repeat of Q1. The Russell 1000 Index finished at 14.0% — a minor change from March’s 14.1% (see Exhibit 11).

Exhibit 9: Implied Volatility

Source: CBOE. CBOE®, Chicago Board Options Exchange®, CBOE Volatility Index®, and VIX® are registered trademarks of Chicago Board Options Exchange, Incorporated (CBOE). RVX is a service mark of CBOE. The Russell 2000 Index is a registered trademark of The Frank Russell Company, used under license. This data is believed to be correct but CBOE does not guarantee the accuracy of the data and will not be held liable for consequences of its use.

Exhibit 10: Russell 2000 Index Daily Returns
Total Return (%) — 20 Years (as of 6/30/2016)

Exhibit 11: 12-Month Rolling Standard Deviation (%)
10 Years (as of 6/30/2016)

Exhibit 12: Risk Characteristics
Annualized (as of 6/30/2016)

<table>
<thead>
<tr>
<th></th>
<th>Standard Deviation (%)</th>
<th>Sharpe Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 yr</td>
<td>3 yr</td>
</tr>
<tr>
<td>Russell 2000 Index</td>
<td>16.69</td>
<td>15.01</td>
</tr>
<tr>
<td>Russell 1000 Index</td>
<td>14.00</td>
<td>11.17</td>
</tr>
</tbody>
</table>

Source: FTSE Russell, data as at June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Small cap asset flows

• The value of small cap ETF assets ended the quarter up approximately 5.3% to $101.0 billion. The value of mutual fund assets were also up in line with market performance at 2.2%. The last 10 years saw total small cap assets at their lowest point on quarterly basis in March of 2009 ($178.2 billion) and peaking in June 2015 ($630.9 billion). Total assets are currently $46.5 billion off the peak level, at a respectable $584.4 billion (see Exhibit 13). Despite the apparent transfer of assets from mutual funds to ETFs, mutual funds still account for 82.7% of total small cap assets.

• Following the significant small cap ETFs outflows of $2.6 billion in the first quarter, the second quarter, driven by April and June, had net inflows of $1.8 billion. Mutual funds on the other hand, have seen outflows in 7 of the last 8 quarters and 19 of the last 24 months (see exhibit 14/15).

Source: Morningstar Direct. Total assets and estimated net flows are for all U.S.-domiciled open-end mutual funds (excluding money market funds and funds-of-funds) and Exchange Traded Products (ETPs) categorized as small cap, small cap growth or small cap value by Morningstar.
Russell 2000 Index sector weights

- The largest sector weighting gains over the quarter were Materials & Processing, up +1.0 percentage points, followed by Energy (+0.6) and Producer Durables (+0.6). Financial Services (-0.7), Consumer Staples (-0.5) and Consumer Discretionary (-0.5) all gave ground during the quarter.
- For the YTD, Health Care’s slide within small cap continued with a negative weighting change of -2.9 percentage points. Materials & Processing expanded by +1.4 percentage points.
- The quarter saw no major sector shifts. Current sector composition of the Russell 2000 Index continues to be led by Financial Services (26.5%), Consumer Discretionary (14.3%) and Technology (14.3%). Energy (2.8%), Consumer Staples (2.9%) and Utilities (5.4%) remain the smallest sectors in the index.

Source: FTSE Russell, data as at June 30, 2016. Past performance is no guarantee of future results. Please see important legal disclosures at the end of this report.
Russell 2000 Index sector attribution analysis

- Russell 2000 Index sector contribution to return in the quarter aligned with its value tilt. Top contributions were provided by Financial Services (+1.1%), Health Care (+0.65%), Materials & Processing (+0.64%) and Utilities (+0.51%). Technology was the 5th highest sector contributor with 0.43%. Strong positive returns in Utilities (+10.3%) and Materials & Processing (10.2%) had a lower impact on performance than Financial Services and Health Care due to their lower weighting in the index (see Exhibit 18/21).

- Underlying the top level sector data, Computer Services (#5 Technology), Banks: Diversified (#1 Financial Services), Utilities: Electrical (#4 Utilities), Chemicals: Diversified (#3) provided the greatest contribution to return (see Exhibit 19).

- The only negative contribution in the quarter came from Consumer Discretionary (-0.2%) (see Exhibit 18). Specialty Retail was the worst industry performer in the quarter driving the negative Consumer Discretionary contribution. Total return for Consumer Discretionary in the quarter was -1.5%, its 14.3% sector weighting — at a tie for second largest sector with Technology — causing greater impact to total return (see Exhibits 20/21).
About FTSE Russell

FTSE Russell is a leading global provider of benchmarking, analytics and data solutions for investors, giving them a precise view of the market relevant to their investment process. A comprehensive range of reliable and accurate indexes provides investors worldwide with the tools they require to measure and benchmark markets across asset classes, styles or strategies.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create ETFs, structured products and index-based derivatives.

FTSE Russell is focused on applying the highest industry standards in index design and governance, employing transparent rules-based methodology informed by independent committees of leading market participants. FTSE Russell fully embraces the IOSCO Principles and its Statement of Compliance has received independent assurance. Index innovation is driven by client needs and customer partnerships, allowing FTSE Russell to continually enhance the breadth, depth and reach of its offering.

FTSE Russell is wholly owned by London Stock Exchange Group.

For more information, visit ftserussell.com.

To learn more, visit ftserussell.com; email info@ftserussell.com; or call your regional Client Service Team office:

**EMEA**
+44 (0) 20 7866 1810

**North America**
+1 877 503 6437

**Asia-Pacific**
Hong Kong +852 2164 3333
Tokyo +81 3 3581 2764
Sydney +61 (0) 2 8823 3521