



Global Investment Research | Equities

Composition changes of the Russell Indexes over 40 years:

Reflective of changes in the underlying
US economy?

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Executive summary

- The 40th anniversary of the Russell indexes gives us the opportunity to review how the indexes have changed over the 40-year period. In this paper we find that the indexes closely mirror changes in the underlying US economy, indicating that they are representative of the broader economy.
- Three mature industries (Basic Materials, Energy, and Utilities) have seen a marked reduction in industry weights over the period, mirroring the reduction of their relative importance in the US economy.
- Two industries driven by innovation, Health Care and Technology, have seen growth in industry weights reflecting the growing importance of these goods and services in the economy. Demographics and the permeation of technology into all areas of our lives seem to indicate that these trends will continue.
- The Financial industry saw a boom during the middle of the period, but that was checked by the Global Financial Crisis. This, too, is captured by index weights.
- Finally, changes in the capitalization breakpoint separating the large-cap Russell 1000 Index® from the small-cap Russell 2000 Index® are highly correlated with real GDP growth rates, indicating the indexes accurately capture economic growth patterns.

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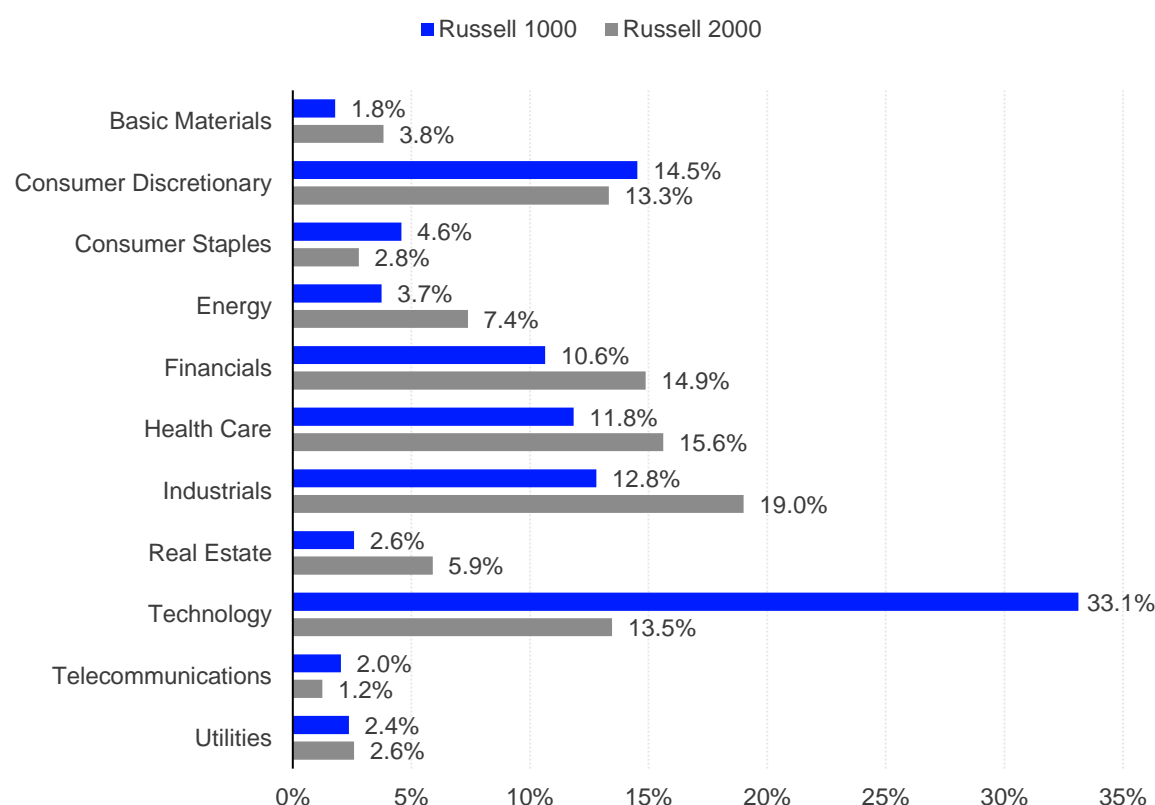
Introduction

The 40-year anniversary of the launch of the Russell indexes gives us an opportunity to review changes in the underlying US economy that we have seen during that period, and the corresponding changes in the Russell equity indexes. While investors are quite familiar with the current composition of the Russell indexes (see exhibit 1), it is interesting to see how this has changed over the years. Indexes are meant to be a representation of the underlying market, and here we analyze how the Russell indexes have evolved to represent changes in the US economy over their 40-year history. In this paper we give an overview of

- the industry composition** – using the Industry Classification Benchmark (ICB) industries for recent data and the Russell Global Sectors classification system for historical data, and
- the index capitalization profile** as reflected by the breakpoints between the large-cap Russell 1000 and small-cap Russell 2000 indexes.

We discuss how these index characteristics have tracked changes in the US economy.

Exhibit 1: Russell 1000 and Russell 2000 industry weights



Source: FTSE Russell and LSEG, as of February 29, 2024.

Industry weights reflect the importance of those industries within equity indexes, and more importantly, their impact within the US economy. While the Russell indexes' transparent construction methodology means that industry weights are simply a result of the composition of the public equity markets, we find that the Russell indexes have reflected important changes in the underlying economy over this period.

As expected, we find that some aspects of the economy changed, and some did not. We organize our discussion of these into three buckets:

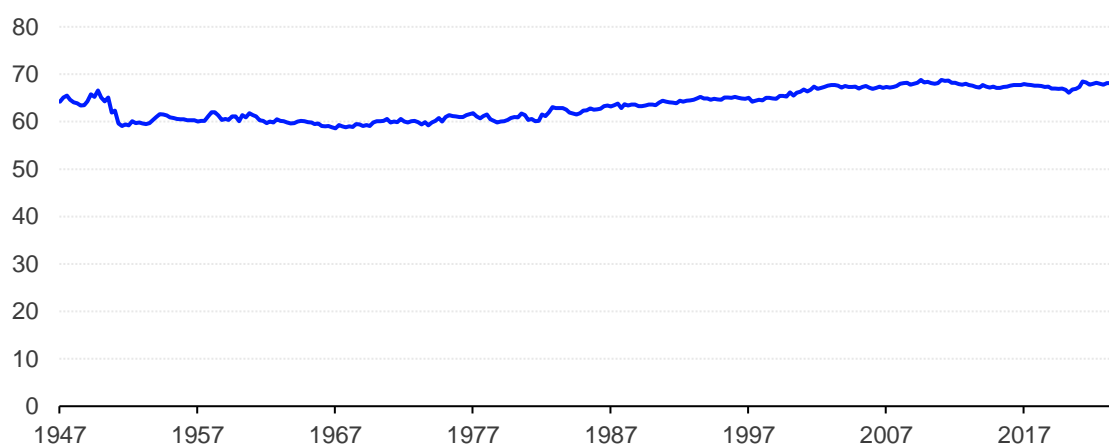
- **Stability**: characteristics that have not changed much.
- **Secular change**: characteristics that fundamentally changed over this period.
- **Boom-and-bust**: characteristics that did change dramatically but saw a dissipation of much of the change.

We also analyze whether the size breakpoint used to divide the Russell 3000 index into constituents in the large-cap Russell 1000 and the small-cap Russell 2000 reflects the trends in US GDP growth. The a-priori hypothesis would be the following: If the underlying US economy grows, then US companies will benefit and grow larger; and hence the breakpoint between the Russell 1000 and Russell 2000 will trend higher (and vice versa during recessions and slowdowns).

Stability in consumption

One characteristic of the US economy that has not changed much is that it continues to be driven by consumption. Exhibit 2 shows that consumption's share of US GDP has been between approximately 60 and 70% for the last 75 years.

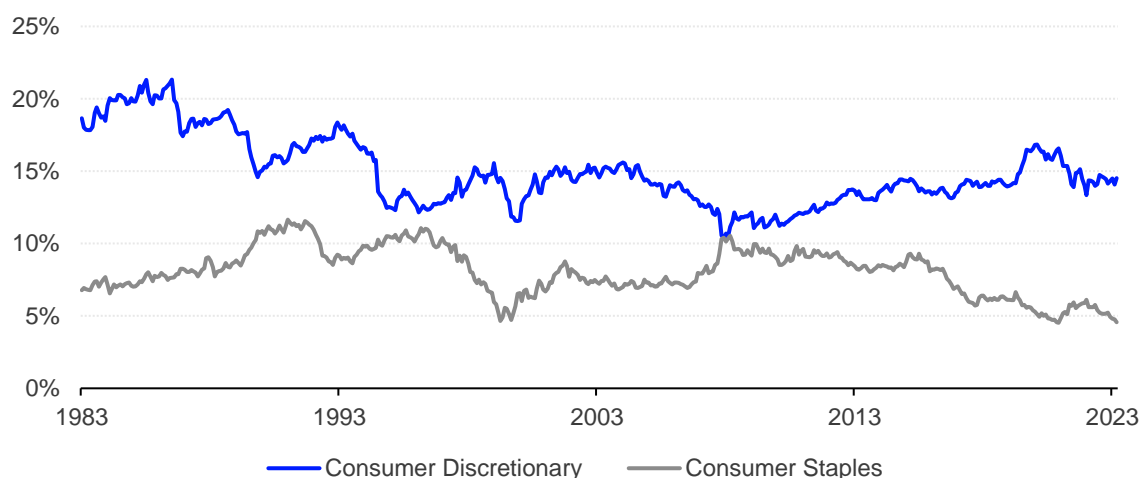
Exhibit 2: Consumption as share of US GDP (%). The US economy remains mainly consumption driven.



Source: Federal Reserve Economic Data, as of 2023 Q4.

The continued importance of consumption can be seen in the following charts. Exhibit 3 shows the weights of the Consumer Discretionary and Consumer Staples industries in the large-cap Russell 1000 Index. Discretionary continues to have a higher weight in the index than Staples. Recent increases in the weight of Discretionary is likely tied to the increased importance of technology-driven online commerce (Amazon and Netflix) and service sharing platforms (Uber, Lyft, and Airbnb).

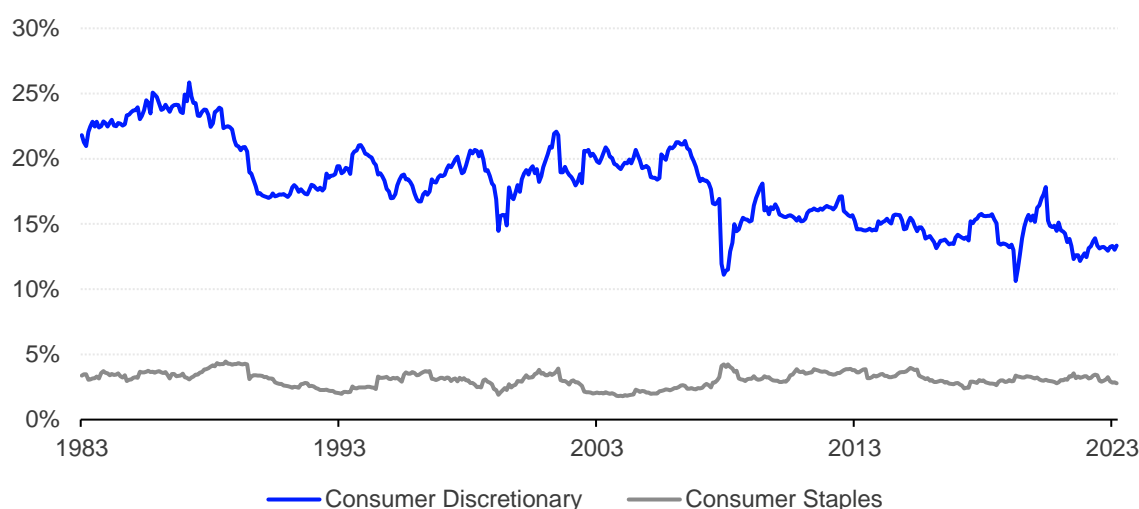
Exhibit 3: Russell 1000 Consumer industry weights. The higher and increasing weight of Discretionary relative to Staples reflects the consumption-heavy nature of the US economy.



Source: FTSE Russell and LSEG, as of February 29, 2024.

Exhibit 4 shows the equivalent chart for the small-cap Russell 2000 Index. Staples has played a smaller role than Discretionary in the small cap index compared to the large cap index, with Discretionary making up close to 25% of the Russell 2000 Index early in its history.

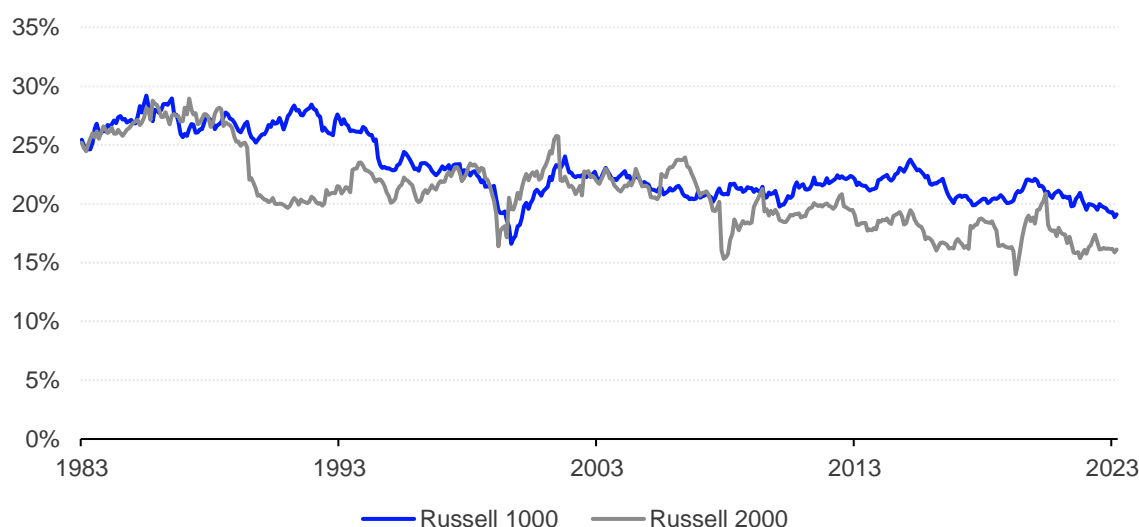
Exhibit 4: Russell 2000 Consumer industry weights. The higher weight of Discretionary relative to Staples indicates that the consumption-heavy nature of the US economy is pervasive across the size factor.



Source: FTSE Russell and LSEG, as of February 29, 2024.

Despite these differences, when we combine the two consumer industries, two interesting patterns emerge. The combined consumer industry weight in the large- and small-cap indexes has been almost the same over the history of the indexes. While the consumer industry weights have drifted down a bit, they have been remarkably stable around 20% of the index, again reflecting the importance of the consumer in the US economy.

Exhibit 5: Russell combined Consumer industry weights. Weight of Consumer industries remains broadly flat, in-line with the share of consumption in GDP.



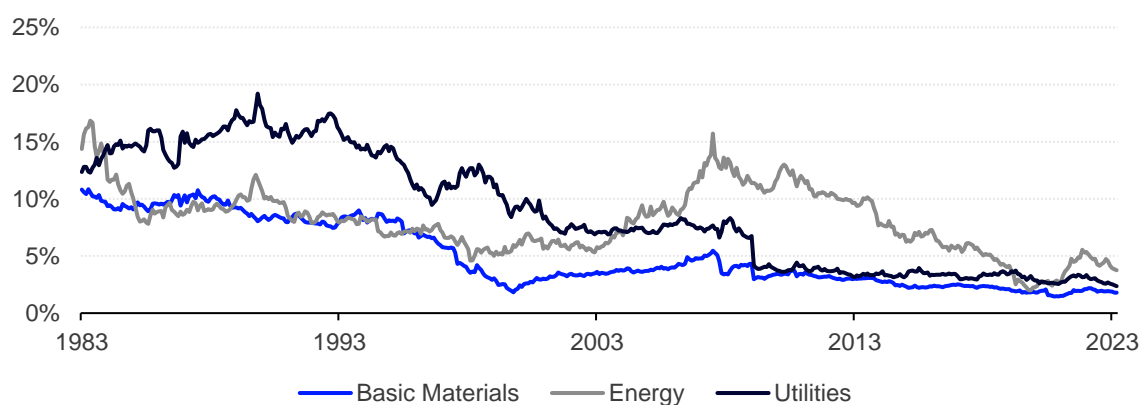
Source: FTSE Russell as of February 29, 2024.

Decline in mature industries

To examine secular changes in industry weights, we first focus on industries that have seen a significant reduction in index weight, and three industries stand out: Basic Materials, Energy and Utilities. In some sense, all three of these industries are “mature” industries in that they are built around extractive industries (Materials and Energy) or are focused on utility services such as the provision of electricity, gas, water, and waste services, which have always been important but are of decreasing relative importance given the faster growth of “newer” or more dynamic industries.

Exhibit 6 shows the weights of these three industries in the large-cap Russell 1000 Index. Over the index’s history we see a fairly steady decline in their weights to below 5% currently, although Energy has seen some volatility in its index weight.

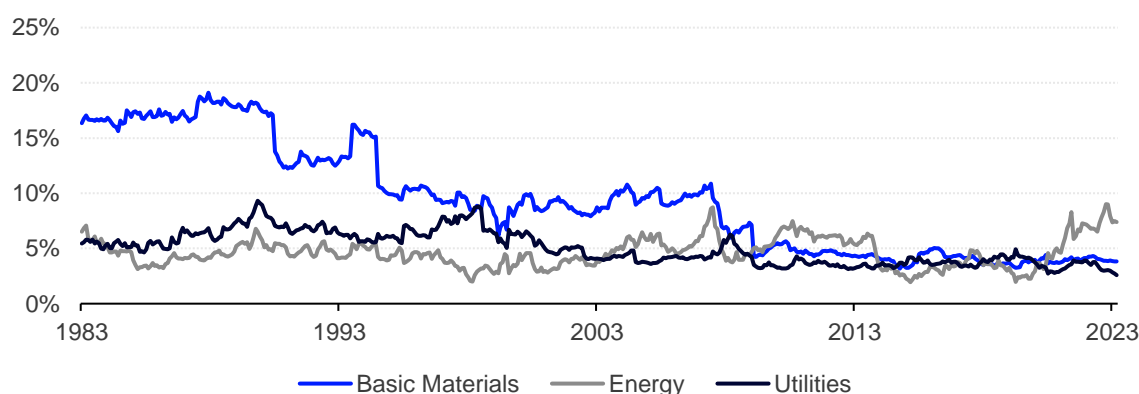
Exhibit 6: Russell 1000 industry weights. Reduced weight of mature industries as other parts of the US economy grow faster



Source: FTSE Russell and LSEG, as of February 29, 2024.

The small-cap Russell 2000 Index shows a different compositional pattern (exhibit 7). There has been a significant decline in the weight of Basic Materials over this period, but Energy and Utilities have seen a much more modest decline. The difference between their weights in the large-cap and small-cap indexes suggests that while these industries continue to be important, the representation of very large companies in them has decreased, reflecting that companies from these industries are not growing to be very large.

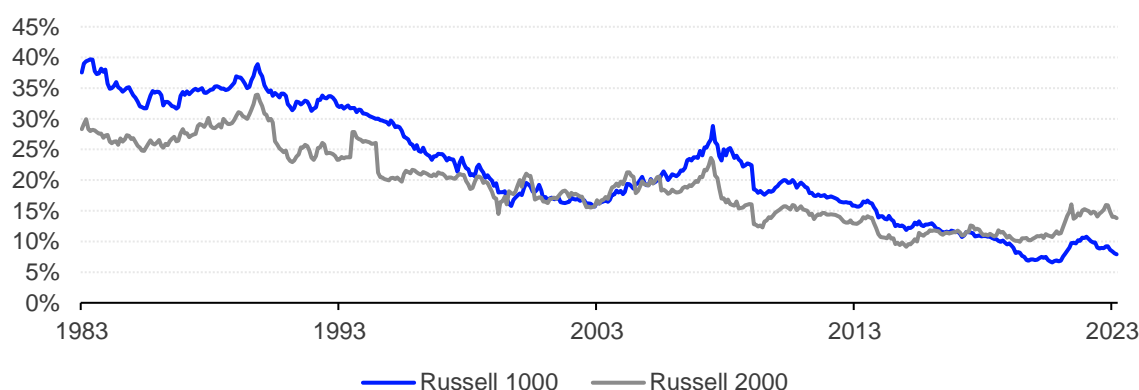
Exhibit 7: Russell 2000 industry weights



Source: FTSE Russell and LSEG, as of February 29, 2024.

Exhibit 8 shows an aggregated view of the decline of these industries by combining the weights of the three. As noted above, the large-cap Russell 1000 has seen a more pronounced decline in the weights of these indexes but at the aggregate level we can see the declining importance of these industries in both the large cap and small cap indexes, with even the Russell 2000 Index seeing a 50% reduction in the combined weight. Again, the difference in the large and small cap index weights highlights that even though the industries maintained some significance, they were not prominent in the stocks that dominated the public equity markets.

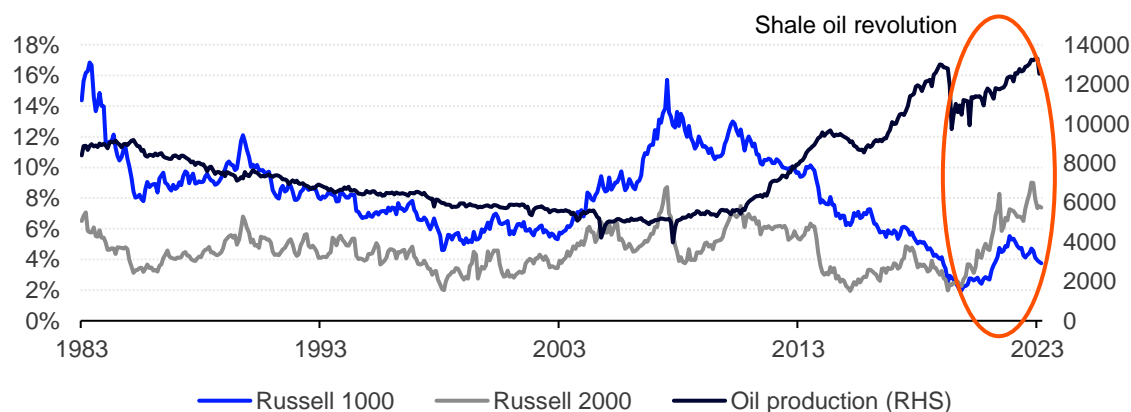
Exhibit 8: Combined 'mature' industry weights. Weight of mature industries in the large-cap and small-cap indexes decline as the US economy moves towards more innovative industries.



Source: FTSE Russell and LSEG, as of February 29, 2024.

One of these three industries that deserves more discussion is Energy. Exhibits 6 and 7 show that more recently Energy's weight drifted up in both Russell 1000 and Russell 2000. While the centrality of Energy to US equity markets has decreased over these 40 years, there has been a dramatic change in the US energy market in the last decade or so, as technological innovation in the extraction of shale oil led to a boom in US oil production. Exhibit 9 shows that after a slow decline in US oil production at the beginning of the period (which is the continuation of a much longer declining trend), US oil production increased dramatically after 2008 as these technological changes brought significant shale oil production on-line. This increased importance of oil production is reflected in the increased Energy industry weights which saw a dramatic jump at the end of the period.

Exhibit 9: Energy industry weights (LHS) and US crude oil production (1000 barrels/day). Recent increase in weight of Energy industry reflects the shale oil revolution in the US.

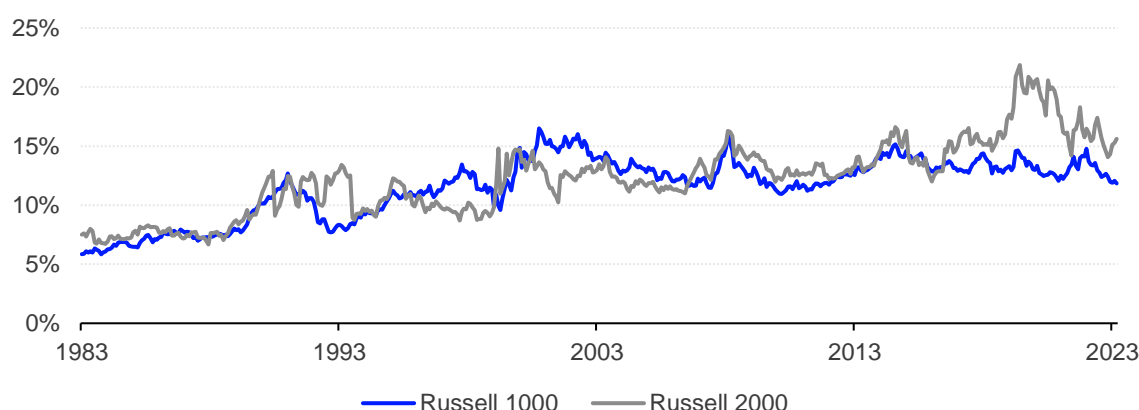


Source: FTSE Russell and LSEG, as of February 29, 2024.

Innovation in Health Care

Turning to industries that have seen a notable increase in index weight, we start with Health Care. Exhibit 10 shows the weight of the Health Care industry in the two Russell indexes. In both cases, the industry rose from around 5% to more than 10% of index weight. The small-cap Russell 2000 saw a more dramatic swing with Health Care pushing past 20% in 2020 during the COVID crisis when investor interest in potential pandemic cures focused on small biotech companies.

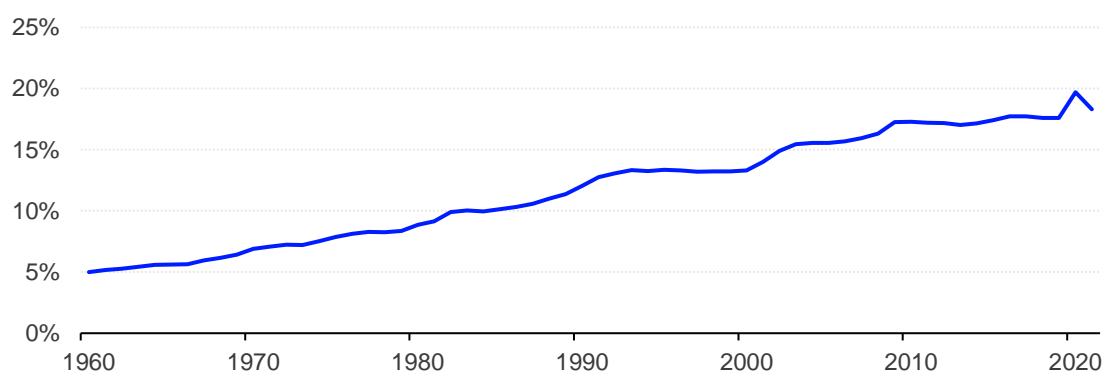
Exhibit 10: Health Care industry weights. Health care becomes more important, in-line with aging America.



Source: FTSE Russell and LSEG, as of February 29, 2024.

While small cap Health Care has been volatile recently, the secular increase in Health Care weights in both large and small cap indexes is clear. This secular change can be tied back to two important changes in the economy. The first is the general trend of technological innovation that led to rapid improvements in medical devices, health care procedures, and pharmaceuticals. The second change comes from a remarkable increase in demand for medical goods and services over recent decades that will likely continue due to US demographics. Exhibit 11 shows the health care expenditure in the US as a percent of GDP which has increased dramatically in the last 65 years from about 5% of GDP to close to 20%. Reasons for this expansion is beyond the scope of this paper but this increase has been reflected in the importance of publicly traded health care companies in equity markets as we saw above.

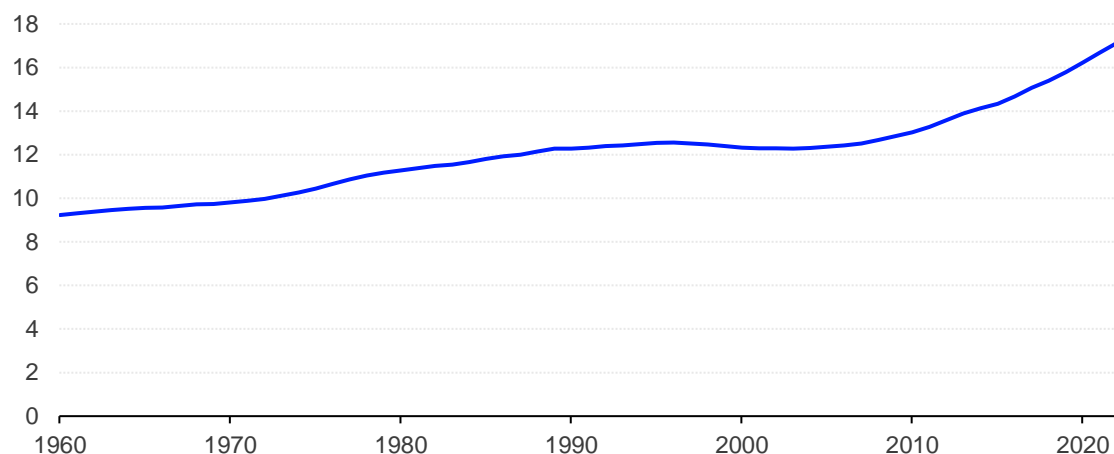
Exhibit 11: Health care expenditure as percentage of GDP. Rising share of health care in US GDP, a driver of the rising weight of the Health Care industry



Source: Centers for Medicare & Medicaid Services, as of 2021.

Exhibit 12 shows an interesting demographic trend that likely feeds into the increased health care expenditure. As the US population, and in particular the Baby Boomer cohort, ages, the share of older population has increased dramatically. As the elderly require more medical care, the increased importance of health care is likely to be with us for some time.

Exhibit 12: Share of US population 65 year and over (%). US demographics drive the rising share of health care in GDP and rising weight of the Health Care industry in US equity indexes.



Source: Federal Reserve Economic Data, as of 2022.

Innovation in Technology

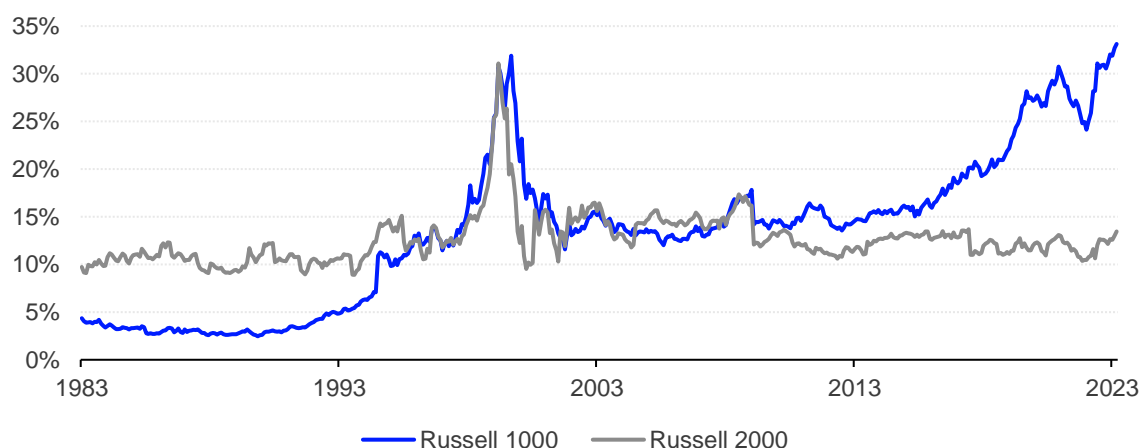
When discussing secular changes in the economy and publicly traded equity markets, the industry that stands out is Technology, and in particular large-cap Tech. Exhibit 13 shows the Technology industry weight in the large and small cap indexes. Given the importance of technology in our lives now, it is difficult to imagine that when the Russell indexes were launched 40 years ago, the small cap index had a Technology weight of around 10% and the large cap index had a weight below 5%. Technology was of marginal importance and was not well-represented in the large companies dominating equity markets.

The evolution of the Technology industry's weights in the indexes reflects what has happened in the industry. Successive waves of innovation brought now commonplace technologies such as personal computers, internet connectivity, smart phones, and most recently Artificial Intelligence-driven products and services. While small-cap Tech weights drifted up in the 1980s and early 1990s, large-cap Tech weights languished until the industry exploded during the late-1990s Dot-com bubble before crashing. However, Tech weights did not return to pre-bubble lows and Tech continued to be a significant part of the index until taking off again around 2016. Some of the post-2016 exceptional growth can probably be attributed to a series of fortuitous events that impacted Tech including the growing importance of social media, COVID-induced lockdowns, and most recently Artificial Intelligence excitement. Nevertheless, many of these shocks seem to have made enduring impacts on the way consumers and businesses behave and so appear to be more long-lasting than the mercurial price bubbles we saw during the Dot-com period.

One aspect of the pattern of Technology's weights that jumps out is that the increase in its weight after 2009 or so is much more pronounced in the large-cap Russell 1000 Index than the small cap index. Of course, some of the growth in large cap Technology weights was due to small Tech companies growing to be large companies. However, at the end of the period, there was an additional surge in large Tech weight. Some of this may be related to network effects and ecosystem effects, that have benefited mega-cap Tech companies like Apple, Meta (Facebook), and Alphabet (Google). These have all contributed to the profitability of these companies that has led to tremendous cashflows that have by extension increased their ability to invest in new technologies such as Artificial Intelligence. While smaller tech companies have also benefited from improvements in technology, it is these tech giants that seem to have reaped the larger rewards from economies of scale.

A final comment about Tech is that it has grown so rapidly that it has pushed down the relative importance of other industries. Even industries that have retained importance in the economy and in the indexes have become less important, relatively speaking, because of the massive surge of technology companies. This needs to be understood when considering the changing industry weights throughout this report.

Exhibit 13: Technology industry weights. Technology becomes more important, and large-cap Tech benefits the most.



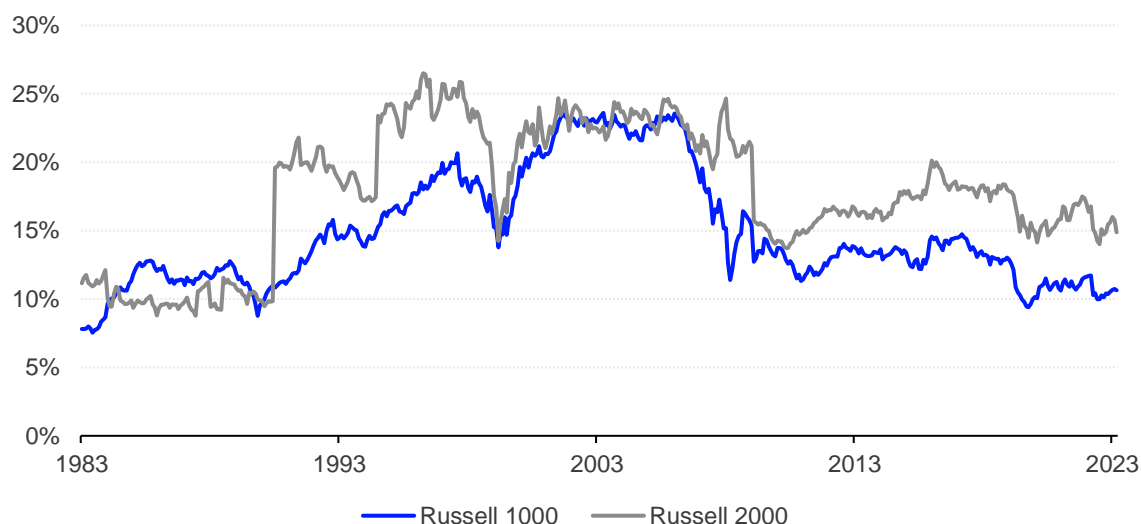
Source: FTSE Russell and LSEG, as of February 29, 2024.

The rise and fall of Financials

One industry that has seen significant change in index weights over this period is Financials. Exhibit 14 shows the weight of the Financials industry in both core indexes. They show a noteworthy similarity in pattern as they started in the 10% range, jumped to between 20% and 25% and then dropped significantly again.

The period in which they gained index share corresponded broadly with the increased financialization of the economy.¹ Beyond the importance of local banks for mainstream banking services, the 1990s saw a financial deepening within the economy, and the expansion of the use of financial instruments in investing and corporate financial engineering. The end of this expansion in index weight coincided with the Global Financial Crisis when some of the financial engineering and financial instruments proved problematic for financial stability. In the aftermath of the crisis, the weight of Financials stabilized as the industry recovered, but later expansion of weights was likely hampered by the dominance of Tech as described above.

Exhibit 14: Financial industry weights. The rise in Financials industry weights was checked by the Global Financial Crisis.



Source: FTSE Russell and LSEG, as of February 29, 2024.

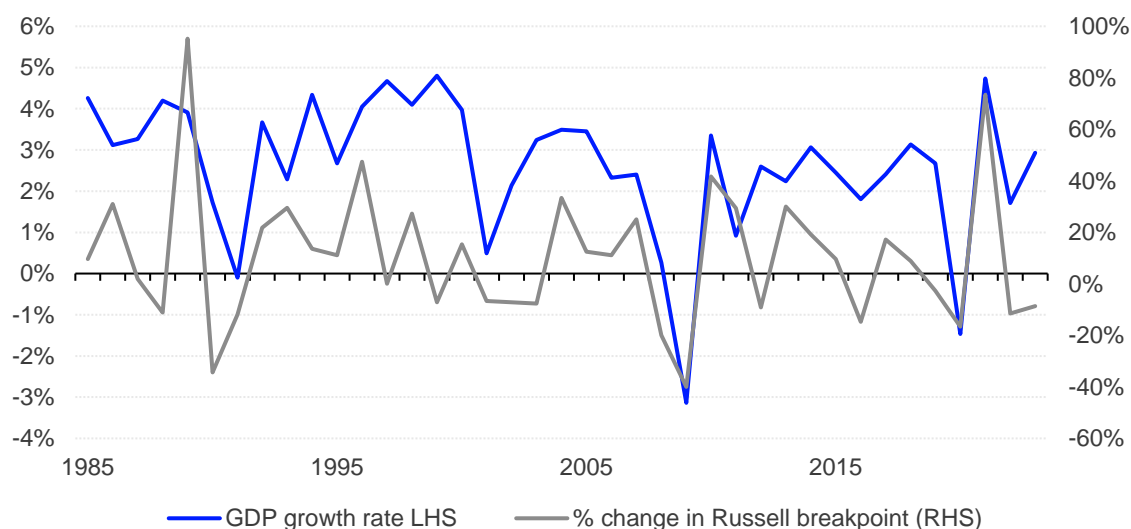
¹ See [Greenwood and Scharfstein \(2013\). "The Growth of Finance". Journal of Economic Perspectives.](#)

Market capitalization breakpoints in the Russell indexes and US GDP growth trends

A core tenet of the Russell index methodology is for index construction to be rules-driven and to rely on the underlying data without human judgement. The breakpoint used for assigning the constituents of the broad Russell 3000 index to the large-cap Russell 1000 and small-cap Russell 2000 indexes should then, by economic intuition, closely follow trends in US GDP growth. If the economy grows, companies should also grow.

To analyze this, we used the data on capitalization breakpoint between the large-cap Russell 1000 and small-cap Russell 2000 indexes from 1984 to calculate the annual change in the breakpoint (1985 was the first year with year-year change data). Since the Russell index reconstitution happens in June of each year, we calculated the annual growth in real US GDP, using mid-year data to align as closely as possible with the index reconstitution date. Exhibit 15 shows that the size breakpoint between the large cap and small cap indexes closely tracks trends in US GDP growth.

Exhibit 15 GDP growth rate (LHS) and percent change in Russell size breakpoint (RHS). The Russell indexes size breakpoint closely tracks the growth trends in US GDP.



Source: FTSE Russell and LSEG, as of February 29, 2024.

The size breakpoint methodology for the Russell indexes have evolved over time to improve implementation (see [Russell US Equity Indexes Ground Rules \(lseg.com\)](https://lseg.com/russell-us-equity-indexes-ground-rules)) but the intuition is simple. Essentially, since the top 1000 stocks are allocated to the large-cap Russell 1000 Index and the next 2000 stocks are allocated to the small-cap Russell 2000 Index, the breakpoint between the two naturally follows the growth of the economy. This relationship between the economy and Russell index breakpoints has held historically and exhibit 16 shows that the correlation grew stronger over time, indicating that the index construction methodology properly reflects changes in economic growth.

Exhibit 16: Correlation between GDP growth rate and change in Russell index breakpoints, by period. The correlation has increased over time.

Period	Correlation
1985-2023	52%
2000-2023	68%
2007-2023	71%

Source: FTSE Russell and LSEG, as of February 29, 2024.

Summary

Forty years of Russell index history provides a useful lens through which we can view important changes in the US economy and corresponding changes in the public equity markets. In this note, we focused on the industry composition of the indexes across time and noted how the changes seen there reflected important changes in the underlying economy. We highlighted that the two Consumer industries (Discretionary and Staples) continue to be a central component of the indexes, just as consumption continues to be central to US GDP. Other industries, however, have been characterized by significant changes over the 40 years. Basic Materials, Energy and Utilities have shrunk from being dominant industries to being marginal. In their place, we have seen the rapid expansion of two industries that are experiencing dynamic technological changes: Health Care and Technology. The rapid expansion of these industries reflects the growing importance of technology to the economy and the provision of health care to our aging population.

Finally, we noted that if public equity markets reflect the underlying economy, we would expect to see the market capitalization breakpoint between small and large cap equities move with economic growth, and indeed we do see this in the Russell family of indexes. This representativeness of the Russell indexes is important because they are intended to give investors exposure to the US economy and its growth.

Notes

The current [Industry Classification Benchmark \(ICB\)](#) has eleven industries at the highest level, and is the system that this paper uses to describe the industries for the period after 2009. The Russell Global Sectors classification had nine sectors at the top level and is used for the earlier history. The RGS Producer Durables sector became Industrials, and the Real Estate and Telecommunications industries are new.

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