The Risks of Index Concentration in Today's Markets

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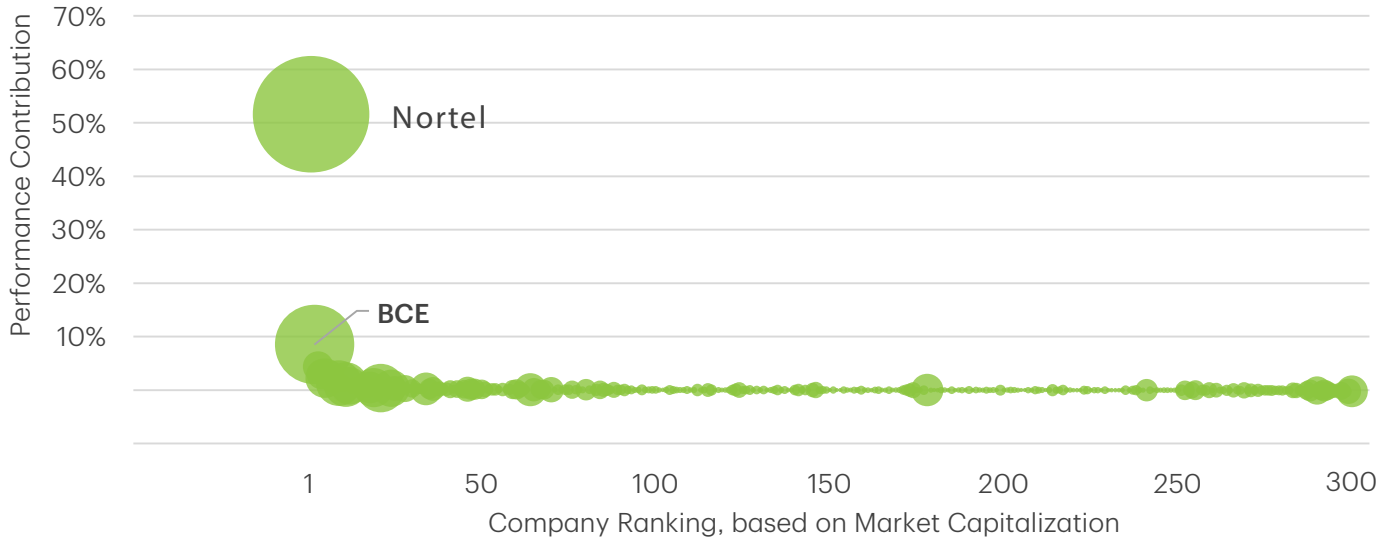
It was the end of August 2000 and Canadian investors were jubilant. The country's main stock market index, the TSE 300[1], had just posted a record return of 63.4% over the past year. However, many equity managers were worried, as the reason for the index's extraordinary performance was principally due to only two stocks: Nortel Networks and BCE. Without these two stocks, the index's return would have been 27.5%; 35.9% lower than what was realized.

FIGURE 1: Return Contributions of equity holdings within the TSE 300 Index (Aug. 1999 - Aug. 2000)

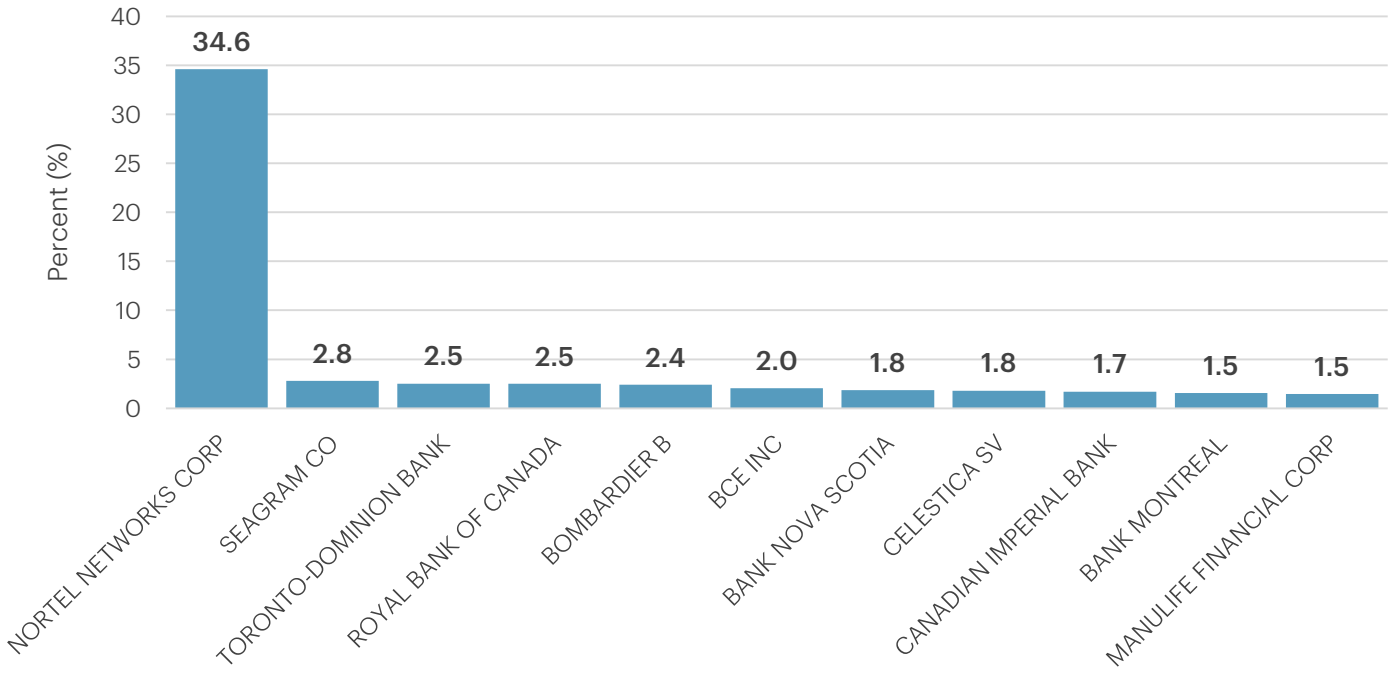


Source: TDAM, Bloomberg Finance LP. August 2020

[1]The TSE 300 Index was a Canadian stock market index that tracked the prices of 300 influential stocks which were traded on the Toronto Stock Exchange. On May 1, 2002, it was replaced by the S&P/TSX Composite Index.

The return contribution to the TSE 300 Index of those two stocks accounted for more than the return contribution made by the remaining 298 stocks of the index. To understand why, let's look at the weight of the top 10 stocks from the TSE 300 index at the end of August 2000:

FIGURE 2: Top 10 Names in TSE 300 Composite Index as of Aug. 31, 2000



Source: TDAM, Bloomberg Finance LP. August 2020

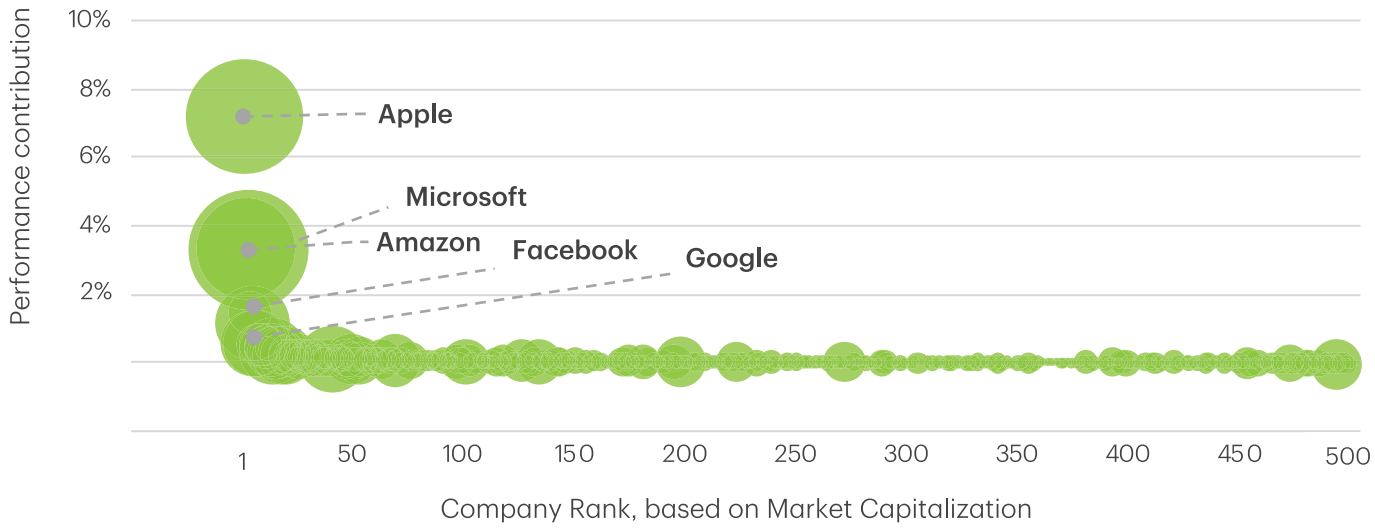
The TSE 300 was a float-weighted index, meaning that the weight of each stock was proportional to the publicly available shares of the company times the share price. By that criteria, Nortel Networks represented close to 35% of the index, while the second biggest company Seagram had a weight of only 2.8%. Within the more concentrated S&P/TSE 60 index, Nortel's weight was close to 43%. With so much weight attributed to a single company, it was not surprising that it had such a significant impact on index performance.

In fairness the TSE 300, Canada's primary stock market index was not an isolated example of extreme index concentration. Around the same time, mid 2000, Nokia represented 60% of Finland's HEX25 Index, Ericsson represented 48% of Sweden's OMX30 index and Telefonica accounted for 28% of Spain's IBEX 35 Index. Bear in mind that all those stocks were "brick and mortar" companies with real assets and strong forecasted earnings, producing telecom, wireless and other network equipment and they were not the so-called dot-coms. Their valuations were the result of a paradigm shift as investors realized the potential of the Internet and wireless technology. It was widely believed that the value of these companies represented a "new normal" built on boundless optimism and expectations of everlasting demand. Until it suddenly came to a dramatic end.

Diversificati

Fast forward twenty years to 2020 and the world is very different. The stock markets have survived two major crises: the dot-com bubble of 2000 and the financial crisis of 2008; and major indices have recovered from the significant market drawdowns that occurred within the first quarter of 2020 in record time. However, there is a sentiment among equity managers that is akin to 2000. Let's have a look at the stock contribution to the performance of the S&P 500 index over the last year (where the size of the bubble reflects the weight in the index):

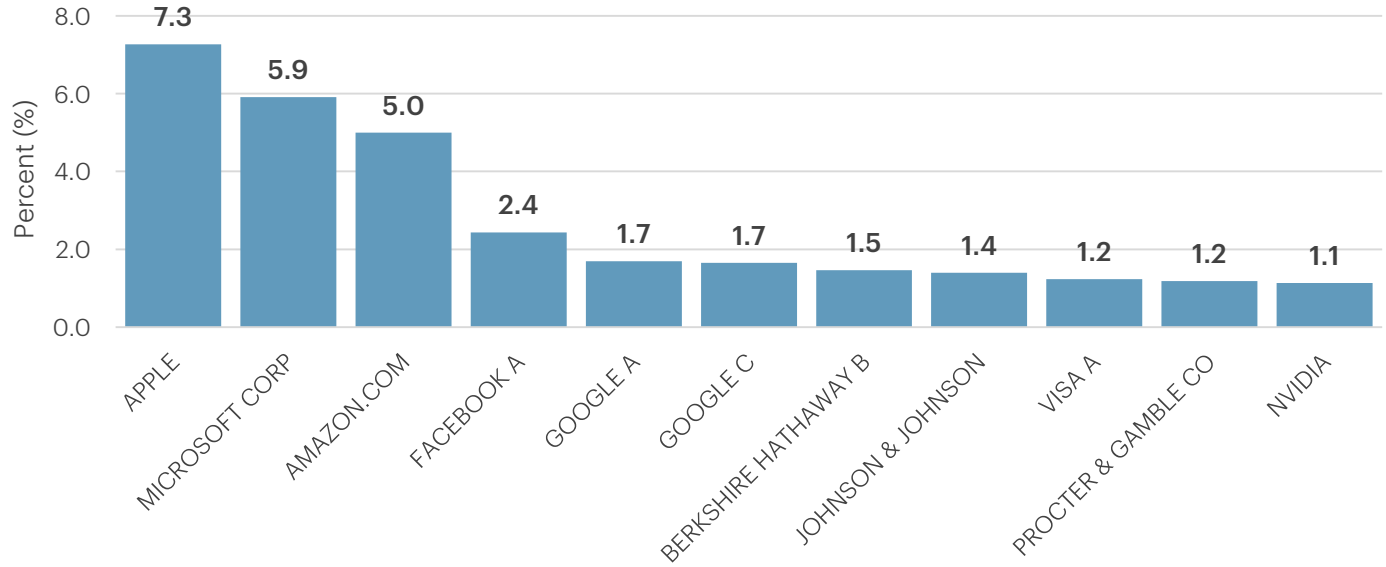
FIGURE 3: Return Contributions of equity holdings within the S&P 500 Index (Aug. 2019 - Aug. 2000)



Source: TDAM, Bloomberg Finance LP. August 2020

Between the end of August 2019 and August 2020, the S&P 500 Index posted a gross total return of 21.9%. However, that return was largely driven by only a handful of stocks, the so-called FAANGs (Facebook, Amazon, Apple, Netflix, Alphabet) to which we can add Microsoft. Without these six stocks, the return over the past year would have been only 9.7%. With Apple now a 2 trillion-dollar company with a market cap more than the entire FTSE 100 Index, and the others above mentioned close behind, the concentration of the US equity markets is again worrying.

FIGURE 4: Top 10 Names in S&P 500 Index as of Aug. 31, 2020



Source: TDAM, Bloomberg Finance LP. August 2020

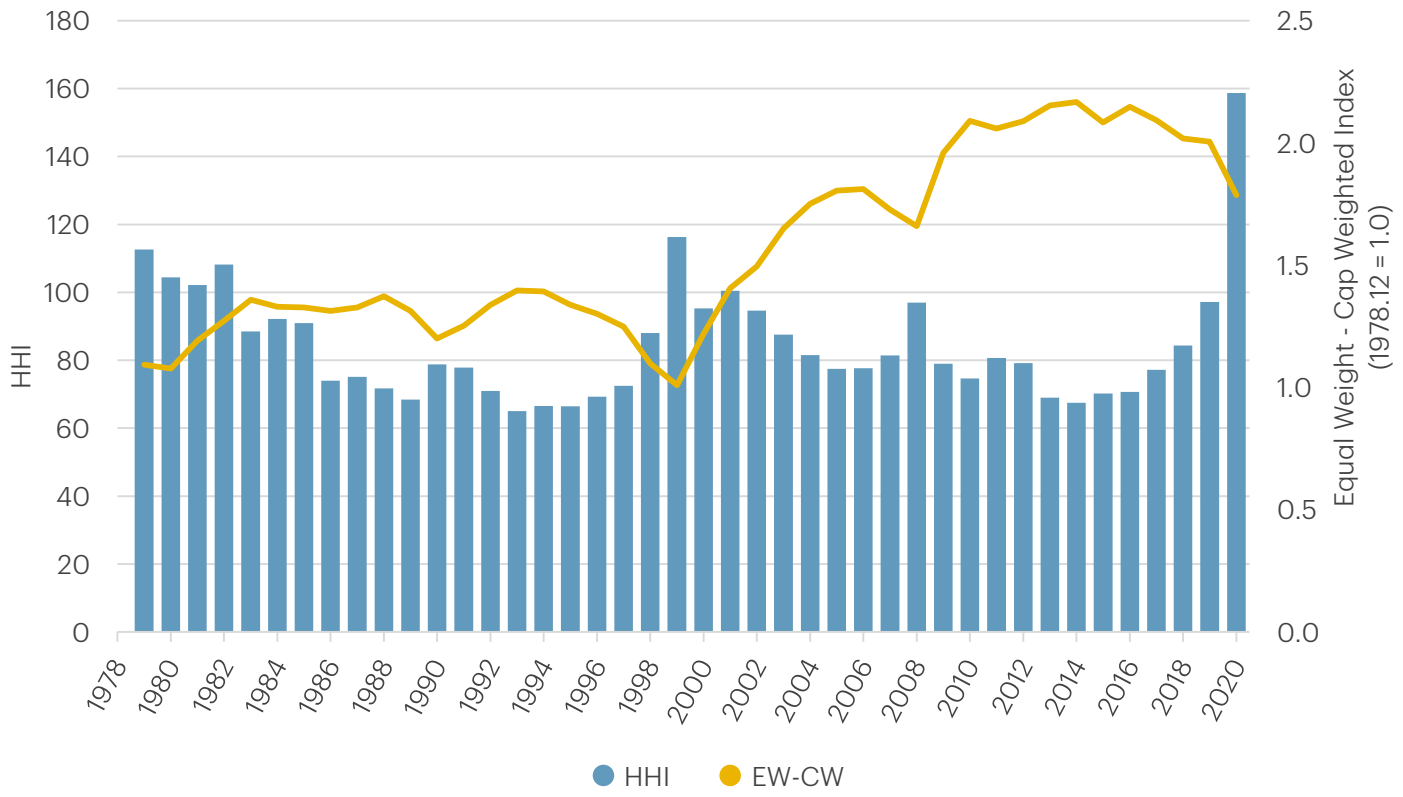
Because the biggest U.S. stocks are also the world's biggest, we can observe a similar concentration in global indices such as MSCI World and MSCI ACWI.

The leading Canadian equity index is also becoming more concentrated. Little known a year ago, Shopify has seen its weight in the S&P/TSX Composite Index jump from 2.2% to 6.5% as of August 31, 2020. Shopify ranks first in the Canadian index, surpassing Royal Bank of Canada, Canada's largest bank, by 0.4%. It looks like déjà-vu, but should we be worried? Might this be a "new normal" reflecting a post COVID-19 world? After all, companies such as the FAANGs have sound earnings forecasts and billions of cash to spend.

History may provide some insight into what is taking place. A well-known measure of market concentration is the Herfindahl-Hirschman Index (HHI), computed as the index constituent's percentage weights, squared. For example, the HHI measure of a single-stock portfolio is 10,000 (the maximum possible). The HHI measure of a 100-stock, equally-weighted index is 100. We can examine the historical relationship between the index concentration as measured by the HHI and the difference in performance of an equally weighted (EW) index and an index weighted by market capitalization (CW).

Let's take the S&P 500 Index as an example:

FIGURE 5: Concentration vs Equally Weighted - Cap Weighted Index Performance (1979 - 2020)



Source: TDAM, Bloomberg Finance LP. August 2020.

The orange line on this graph represents the relative performance of the equally-weighted index to the capitalization-weighted index. Over the past 40 years, the equally-weighted index has out-performed the capitalization-weighted version of the S&P 500. This is consistent with the so-called "size" effect documented in financial academic literature on this topic. Over shorter time periods, changes in the degree of equity market concentration interfere with the size effect.

We can observe that the equity market index is the most concentrated it has been in the last 40 years. The previous peak in U.S. equity market index concentration was in 1999. The same is true for other indices such as the S&P/TSX Composite and the MSCI World indices. As concentration increases, the capitalization-weighted indices outperform all other weighting schemes, because markets tend to reward large cap stocks more than others; which in turn realize even greater index weightings. However, bubbles historically come to an end, after which cap-weighted indices struggle against more equally-weighted equity portfolios.

Higher concentration is a result of increased demand for the stocks of some companies relative to other index constituents. The demand itself is a result of higher expectations for future earnings. In a world of perfectly rational investors, changes in stock prices should reflect changes in expected earnings. In practice, quite often, there is a decoupling as people extrapolate recent trends (possibly driven by irrational greed) and overbuy recent winners. However, when equilibrium is restored by a pricing correction, greed is replaced by grief. Let's look at the historical average price-to-earnings ratios of the biggest five stocks from the S&P 500 Index compared to the rest of the index:

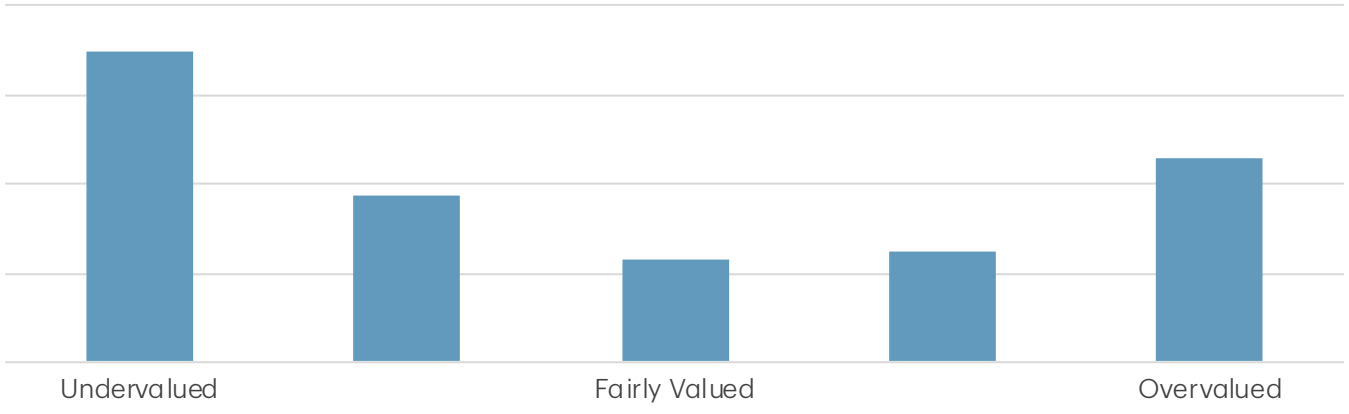
FIGURE 6: Historical Price / Earnings Ratio (S&P 500 Index)

Source: TDAM, Bloomberg Finance LP. August 2020.

The current valuations of the five largest US companies recently climbed above 40x, a level last observed in 1999. As observed from the chart, the five largest US companies are clearly valued at a premium compared to the rest of the index.

Stock valuations are closely related to future volatility, but this relationship is not linear. Both the most expensive stocks and the cheapest tend to hold more risk; the former because of the likely return to equilibrium between the stock price and earnings and the latter because of the increased probability of a bankruptcy. The chart below captures the above premise by illustrating the relationship between valuations and future volatility of the stocks composing the S&P 500 index over the last 20-years.

FIGURE 7 : One Year Future Volatility of Price-to-Earning Quintiles S&P 500 (2000 - 2019)



Source: Source: TDAM, Bloomberg Finance LP. August 2020.

With this information in mind, the question should then be asked, what are the implications of historically significant index concentration for equity managers?

First, as index concentration increases, capitalization-weighted indices and strategies with low tracking errors will likely continue to perform strongly. Such indices will be increasingly difficult to beat, and many investors will be tempted to choose passive investing as a way to achieve their investment goals. Other actively managed equity strategies, especially those that seek diversification, such as low volatility strategies, or portfolios constructed without tight constraints to cap-weighted indices will likely be disadvantaged in the short-term. However, historical evidence suggests that the trend toward higher concentration eventually comes to an end and these other strategies outperform capitalization-weighted indices over the longer-term, mostly due to the "size" effect.

Second, the small number of disproportionately large stocks that benefit from increases in index concentration see their valuation multiples, both in absolute terms and relative to the rest of the index, increase at a faster pace and become overvalued. Sooner or later, their values tend to fall to more closely match their earnings which leads to poor relative performance.

Third, increasing index concentration is caused by stocks that are steadily trending up giving the appearance of reduced volatility which is also reflected by measures from simple or very short-term risk models. However, this appearance is misleading because it ignores the likelihood that these stocks are becoming overvalued which may result in greater volatility.

Finally, financial theory suggests that an optimal stock portfolio or index should have most of its stock-specific risk diversified away. Concentrating the weight in a few overvalued and risky growth stocks runs contrary to that concept. Trying to achieve a quick gain at the expense of reduced diversification typically undermines the future prospects of any investment strategy. Instead of relying on portfolios dependent on a few star performers, prudent investors are better served by choosing strategies that spread their bets more equally. In the long run, such an approach, like low volatility investing, has proven to deliver superior risk adjusted return over capitalization-weighted indices. ■

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