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Index Education

Why Does the S&P 500® Matter to Hong Kong?

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Executive Summary

The S&P 500® is a renowned benchmark for large-cap U.S. equities. The index reflects approximately 80% coverage of investable market capitalization in the U.S. equity market and includes 500 leading companies, many of which are the world's largest and most recognizable companies with a global reach of operations, customers and revenue sources. As of the end of 2022, USD 11.4 trillion was indexed or benchmarked to the S&P 500, with indexed assets making up approximately USD 5.7 trillion of this.[1] As a consequence of an increasing popularity and scale of S&P 500-related products, including index funds, exchange-traded funds (ETFs) and listed derivatives such as futures and options, the typical cost and barriers to entry for S&P 500-linked investments have fallen over time.

In this paper, we examine the S&P 500 from the perspective of a Hong Kong-based investor, including:

- The relevance of the U.S. in the global economy and global equity markets;
- Comparison of the S&P 500 to the leading large-cap equity benchmark in Hong Kong;
- Complementary aspects of an S&P 500-linked investment for a broad-based Hong Kong equity portfolio; and
- The differences between the S&P 500 and other indices or active portfolios tracking U.S. equities.

[1] S&P Dow Jones Indices Annual Survey of Assets 2022

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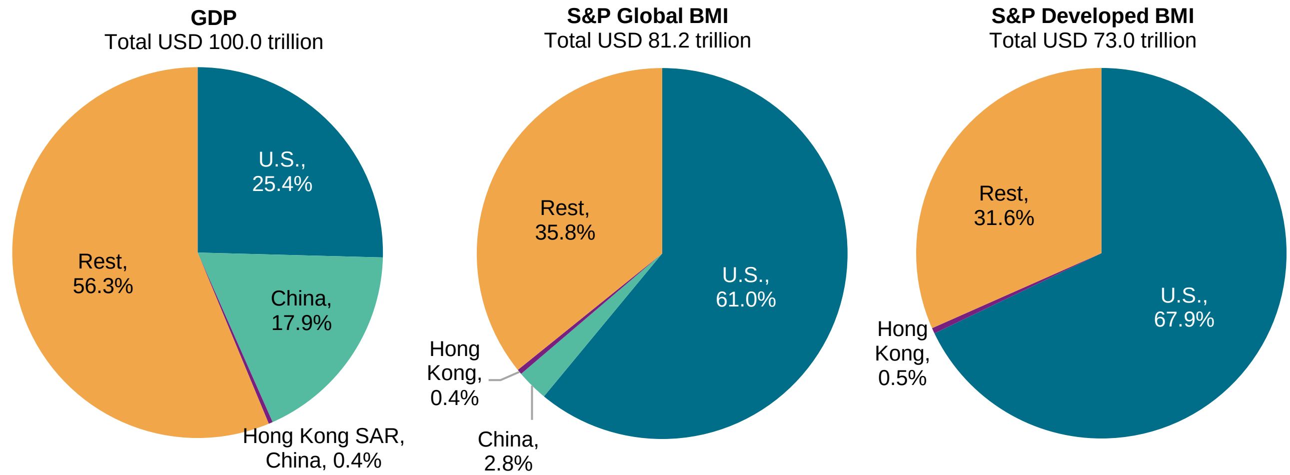
The Size and Relevance of the U.S.

The U.S. equity market represents a significant portion of the global economy and equity opportunity set. Exhibit 1 shows the relative sizes of gross domestic product (GDP) along with equity market capitalization for the U.S., China, Hong Kong and the rest of the world. When Hong Kong equity investors make choices among countries, over 60% of their opportunity set is composed of U.S. stocks.

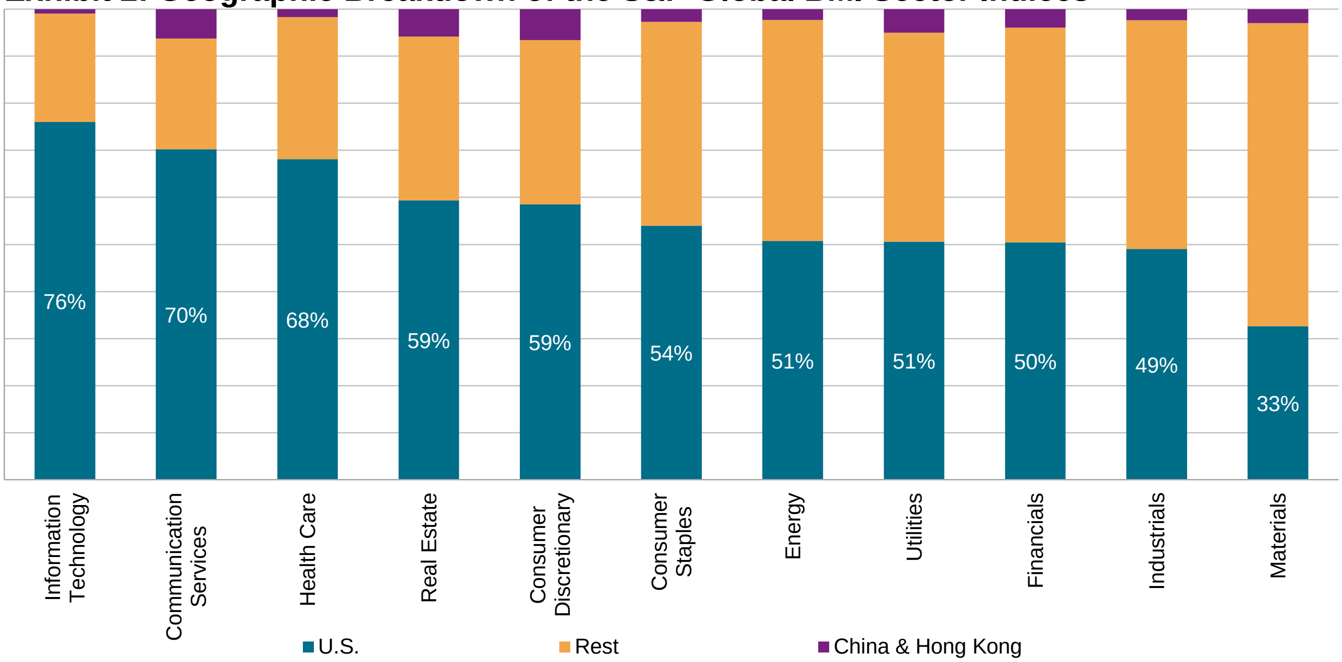
Exhibit 1: Economies and Equity Markets Compared -– Global, U.S. and China/Hong Kong



Source: S&P Dow Jones Indices LLC, the World Bank. GDP as of December 2022. Free-float market capitalization of the S&P Global BMI, S&P Developed BMI, S&P United States BMI, S&P China BMI and S&P Hong Kong BMI in USD trillions as of Feb. 29, 2024. Chart is provided for illustrative purposes.

The global relevance of U.S. equities can also be observed across most sectors. Exhibit 2 shows a geographic breakdown of companies' domiciles across the 11 GICS® sectors in the S&P Global BMI as of Feb. 29, 2024. U.S companies accounted for more than one-half of float-adjusted market capitalization in 9 out of 11 sectors, with the highest representation in Information Technology (76%), Communication Services (70%) and Health Care (68%). Therefore, investors may need to consider U.S. equity exposures in order to obtain certain sector exposures.

Exhibit 2: Geographic Breakdown of the S&P Global BMI Sector Indices



Source: S&P Dow Jones Indices LLC. Free-float market capitalization of the S&P Global BMI, S&P China BMI and S&P Hong Kong BMI in USD trillions as of Feb. 29, 2024. Chart is provided for illustrative purposes.

Exhibit 3 reinforces the global reach and sizeable representation of U.S. companies by showing the 50 stocks with the highest weightings in the S&P Global BMI. The size of the boxes represents the relative market capitalization (float-adjusted) of stocks, while the color of the boxes represents the country of domicile of stocks, with the U.S. in brown and gold and non-U.S. in grey. 38 out of the largest 50 companies are U.S. domiciled, making up a staggering 87% of the aggregate market capitalization of the largest 50 companies. They include the world's most recognizable brands such as Apple, Microsoft, Amazon, Google, Coca-Cola and McDonald's.[2]

[2] See Best Global Brands 2023 by Interbrand.

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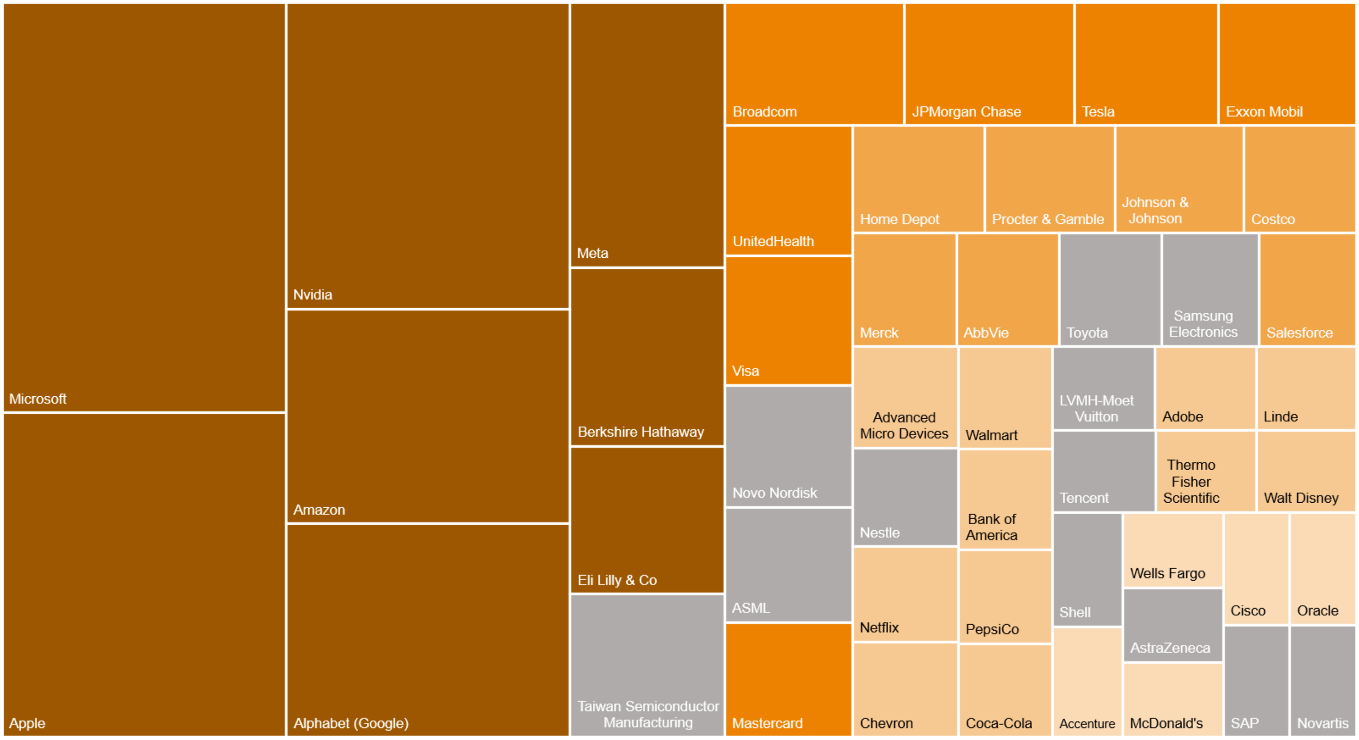
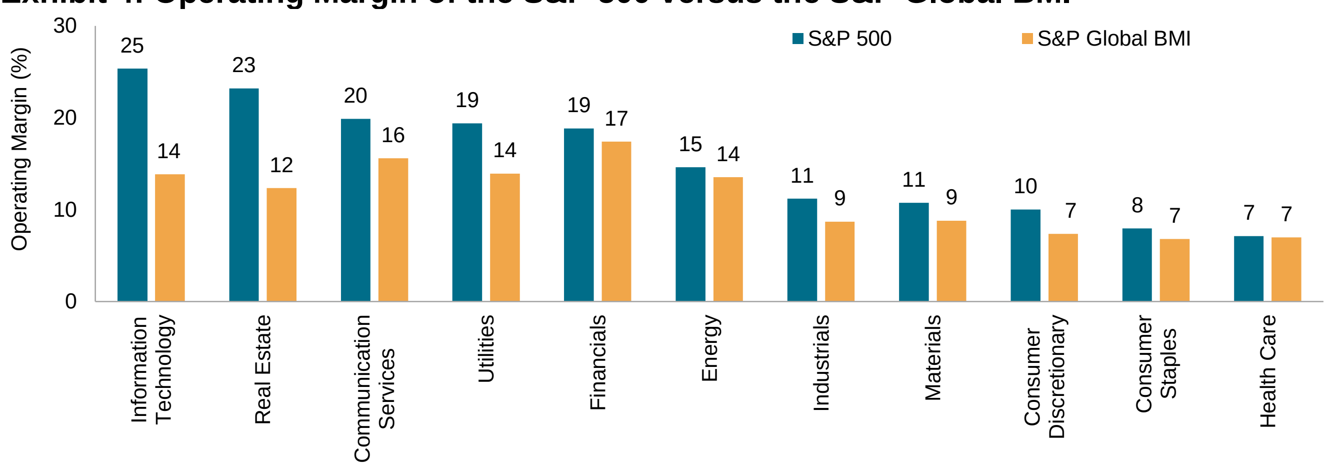
Exhibit 3: The S&P Global BMI's Largest 50 Companies (by Index Weight)



Source: S&P Dow Jones Indices LLC. Data as of Feb. 29, 2024. The size of the boxes represents the relative float-adjusted market capitalization of stocks in the S&P Global BMI. The color of the boxes represents the country of domicile of stocks, with the U.S. stocks in brown and gold versus non-U.S. stocks in grey. Chart is provided for illustrative purposes.

In addition to the sizeable representation of U.S. companies in the global opportunity set, we also observe that the S&P 500 companies provided higher operating margins than their global peers across all sectors, particularly in the Information Technology sector with a spread of over 11% between the S&P 500 and the S&P Global BMI (see Exhibit 4).

Exhibit 4: Operating Margin of the S&P 500 versus the S&P Global BMI



Source: S&P Dow Jones Indices LLC, Bloomberg. Data as of March 31, 2024. Operating margin is calculated based on the 12-month trailing operating profit and net sales of index constituents being aggregated at the index level with index shares taken into consideration. Chart is provided for illustrative purposes.

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Comparison of the S&P 500 and the Hang Seng Index

The S&P 500 and the Hang Seng Index are widely regarded as primary indicators of overall equity market performance in the U.S. and Hong Kong, respectively. Both indices comprise the largest and most liquid stocks from their respective markets.[3] These indices vary significantly in many aspects, however, due to the differences in economic structure and financial market developments.

The S&P 500 currently comprises 500 companies and represents around 80% of the investable market capitalization of the U.S. equity market, while the Hang Seng Index consists of 82 constituents (in the process of expansion to 100) and reflects approximately 65% of the stocks listed on the HKEX Main Board. Both indices are float-adjusted market capitalization weighted, but the S&P 500 has greater stock diversification than the Hang Seng Index. For example, the 10 largest index constituents represent 32% of the index in the S&P 500, as compared to 52% in the Hang Seng Index, with the top three stocks (namely HSBC, BABA and Tencent) being subject to an 8% cap.[4]

Exhibit 5: Top 10 Index Constituents – S&P 500 versus Hang Seng Index

S&P 500	Index Weight (%)	Hang Seng Index	Index Weight (%)
Microsoft Corp	7.19	HSBC Holdings	8.50
Apple Inc.	6.18	BABA - SW	8.25
Nvidia Corp	4.57	Tencent	7.30
Amazon.com Inc	3.76	AIA	6.97
Meta Platforms, Inc. Class A	2.54	CCB	5.03
Alphabet Inc A	1.92	Meituan - W	4.50
Berkshire Hathaway B	1.74	China Mobile	3.85
Alphabet Inc C	1.63	ICBC	2.84
Eli Lilly & Co	1.40	HKEX	2.78
Broadcom Inc	1.33	Bank of China	2.45
Total	**32.25**	**Total**	**52.47**

Source: S&P Dow Jones Indices LLC, FactSet. Data as of Feb. 29, 2024. Table is provided for illustrative purposes.

The S&P 500 is also relatively more diversified in terms of sectors. As shown in Exhibit 6, the top three sectors of the S&P 500 include Information Technology (28%), Financials (14%) and

[3] The S&P 500 is not simply the largest 500 U.S.-domiciled companies; new index additions must meet various criteria, including a history of positive earnings in addition to liquidity and market capitalization requirements. See the S&P U.S. Equities Methodology for further details.

[4] See Hang Seng Index methodology for further details.

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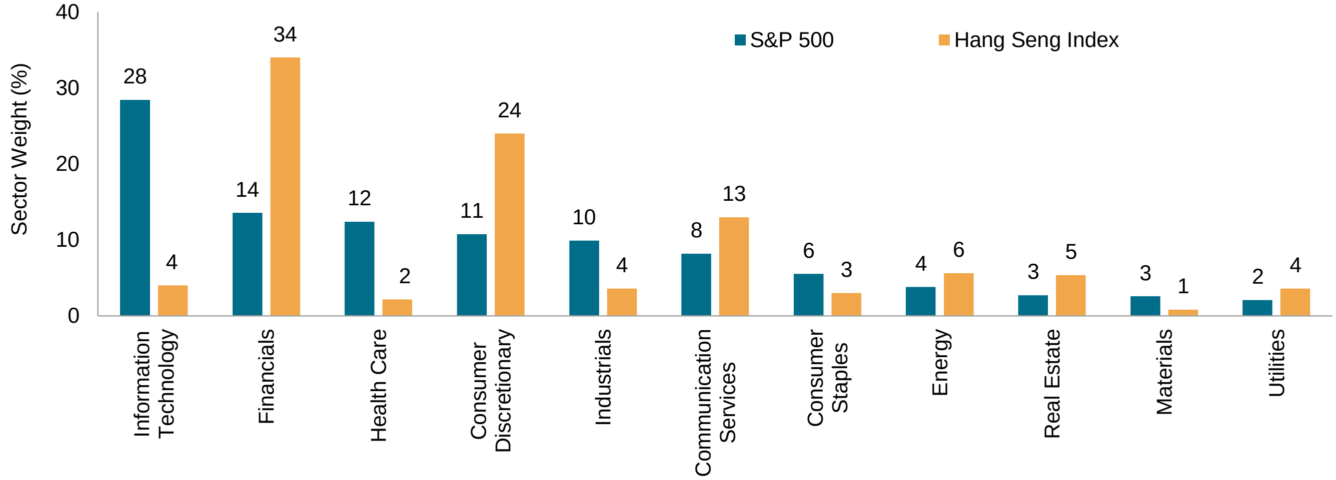
Healthcare (12%), which in total account for 54% of the index. Meanwhile, the top three sectors of the Hang Seng Index are Financials (34%), Consumer Discretionary (24%) and Communication Services (13%), which altogether make up 71% of the index. Therefore, the S&P 500 may offer a complementary blend for Hong Kong investors who wish to gain exposure to the Information Technology or Health Care sectors.

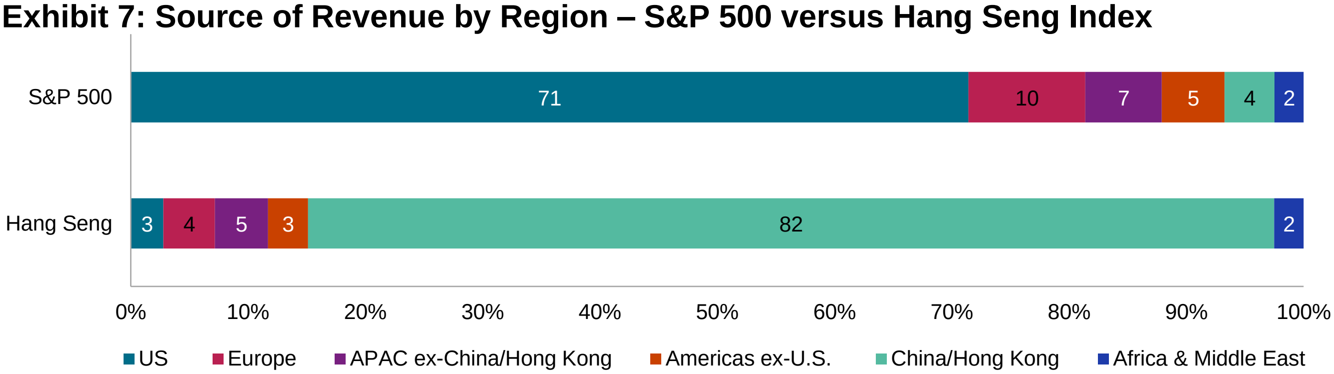
Exhibit 6: The GICS Sector Breakdown – S&P 500 versus Hang Seng Index



Source: S&P Dow Jones Indices LLC, FactSet. Data as of Feb. 29, 2024. Chart is provided for illustrative purposes.

The distinct geographical revenue exposures offer another potential diversification benefit for Hong Kong investors incorporating U.S. equities. Exhibit 7 shows the revenue source by region for the S&P 500 and the Hang Seng Index. The S&P 500 companies obtained 71% of their revenue from the U.S. and 29% from the rest of the world, with a small fraction (4%) coming from China and Hong Kong. In contrast, the Hang Seng Index constituents had a vast majority (over 80%) of their revenue from China and Hong Kong, with only 3% revenue exposure to the U.S. Hence, incorporating U.S. equities could help Hong Kong market participants gain greater exposure to the U.S. economy and diversify geographical revenue exposure.

Exhibit 7: Source of Revenue by Region – S&P 500 versus Hang Seng Index



Source: S&P Dow Jones Indices LLC, FactSet. Sales-weighted revenue exposure as of Feb. 29, 2024. Chart is provided for illustrative purposes.

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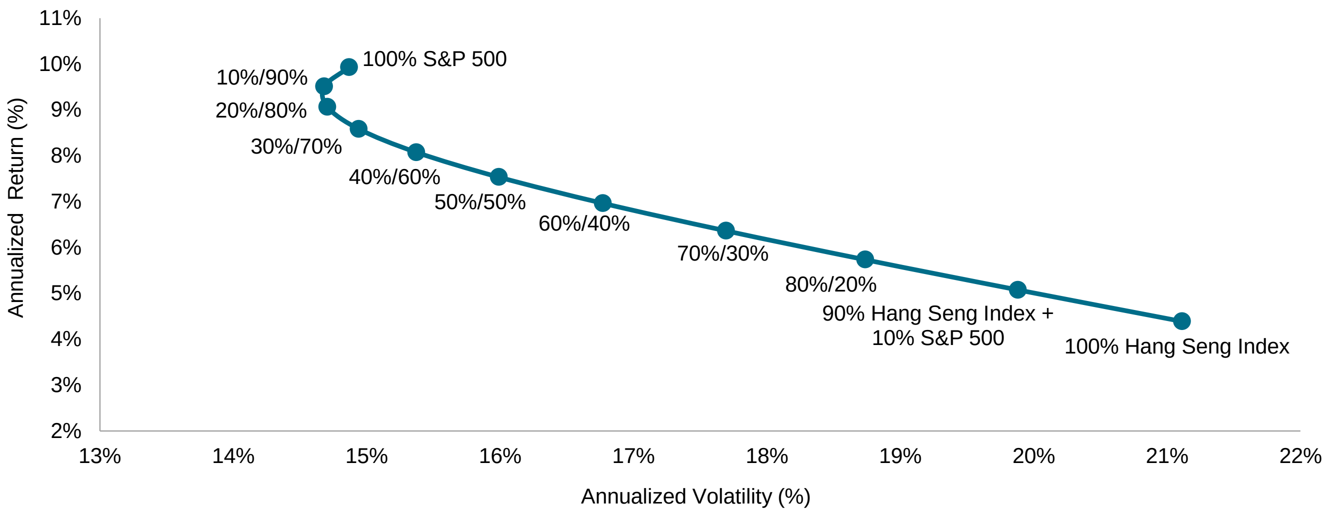
Blending the S&P 500 and Hang Seng Index

Incorporating U.S. equities could have also helped Hong Kong investors improve their risk/return profiles historically, with different economic and political factors driving these two markets. In order to help illustrate the potential impact of incorporating U.S. equities into Hong Kong equity allocation, we consider several hypothetical portfolios. Each hypothetical portfolio combines the S&P 500 and Hang Seng Index and rebalances back to target weights at the end of each month. Target weights start with a 100% allocation to the Hang Seng Index and move in 10% increments until a 100% allocation to the S&P 500 is reached. Exhibit 8 shows the annualized return and volatility for the various hypothetical portfolios over the entire period between February 2004 and February 2024. Overall, incorporating U.S. equities typically helped to lower volatility and increase hypothetical historical performance.

Exhibit 8: Risk/Return Characteristics of Hypothetical Portfolios Combining the S&P 500 and Hang Seng Index



All portfolios are hypothetical portfolios
Source: S&P Dow Jones Indices LLC, Bloomberg. Data from Feb. 27, 2004, to Feb.29, 2024. Index performance is based on monthly total return in HKD. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Comparison of the S&P 500 and Other U.S. Large-cap Indices

Other common U.S. large-cap indices include the Dow Jones Industrial Average® (DJIA) and Nasdaq-100 Index. The DJIA is a price-weighted measure of 30 U.S. blue-chip companies, while the Nasdaq-100 Index includes 100 of the largest U.S. and international companies listed on the Nasdaq Stock Market with full market capitalization weighting. Exhibit 9 shows the comparison of the S&P 500, DJIA and Nasdaq-100 Index. The S&P 500 comprises the largest

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number of constituents, consequently with the highest market coverage and the smallest average market capitalization of constituents. A larger number of constituents allow greater stock diversification in the S&P 500, with the top 10 stocks weighing 32% as compared to 49% in the Nasdaq-100 Index and 57% in the DJIA. The S&P 500 also stands out with the highest U.S. revenue exposure, at 71%, while the Nasdaq-100 Index has lower exposure to the U.S. (57%) as the index includes several non-U.S. companies listed on the Nasdaq Stock Market.

In terms of sector composition (based on the GICS classification), the Nasdaq-100 Index is more heavily tilted toward Information Technology, with none-to-trivial exposure to Financials[5] and relatively lower exposure to Health Care. The DJIA has the highest weight in Financials and is more balanced among the top five sectors but has no exposure to Real Estate and Utilities.

Exhibit 9: U.S. Large-Cap Index Comparison – S&P 500, DJIA and Nasdaq-100 Index

Category	S&P 500	Nasdaq-100 Index	DJIA
Weighting Based On	Float-adjusted market cap	Full market capitalization	Price
Number of Constituents	503	101	30
Total Market Cap (USD Trillions)	45	22	14
Average Market Cap (USD Billions)	89	216	473
Top 10 Stock Weight (%)	32	49	57
U.S. Revenue Exposure (%)	71	57	66
GICS Sector Breakdown			
Information Technology	28.5	50.7	19.8
Financials	13.6	0.5	21.8
Health Care	12.4	6.3	17.7
Consumer Discretionary	10.8	13.6	16.0
Industrials	9.9	4.8	13.9
Communication Services	8.2	15.6	2.5
Consumer Staples	5.5	6.6	4.7
Energy	3.8	0.5	2.6
Real Estate	2.7	0.3	-
Materials	2.6	-	0.9
Utilities	2.1	1.2	-

Source: S&P Dow Jones Indices LLC, NASDAQ, FactSet. Data as of Feb. 29, 2024. Invesco QQQ Trust constituents are used as a proxy for the Nasdaq-100 Index constituents. Total market capitalization and average market capitalization are calculated based on full market capitalization of index constituents. U.S. revenue exposure (%) is calculated based on the latest fully reported annual sales of index constituents broken down by regions and then aggregated at the index level. Sector breakdown is based on the GICS classification, which could be different from the ICB industry classification used by Nasdaq. Table is provided for illustrative purposes.

[5] Companies classified as a financial company (Financials industry) according to the ICB are ineligible for inclusion in the Nasdaq-100 Index. There could be a discrepancy between the ICB industry classification and the GICS sector classification.

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Exhibit 10 shows the historical return and volatility of the three indices from 2000 to 2023. Over this period, the DJIA generated the highest return of 7.6% annually, as compared to 7.3% by the Nasdaq-100 Index and 7.0% by the S&P 500. The Nasdaq-100 Index experienced sharp corrections in the early 2000s after the “tech-bubble” but posted the highest annualized performance in all of the following sub-periods, partially driven by the strength in Information Technology and an extended period of low interest rates giving a boost to growth stocks.

From a volatility perspective, the Nasdaq-100 Index was generally the most volatile due to higher average constituent stock volatility as well as less stock and sector diversification. The DJIA and S&P 500 had a similar level of volatility, while the DJIA’s volatility has historically tended to be lower by a small margin, as it consists of larger companies that tend to exhibit lower price volatility. Return and risk combined, the DJIA had the best performance over the given period, while the Nasdaq-100 Index was the best except for the 2000-2004 period.

Exhibit 10: Risk/Return Profile – S&P 500, DJIA and Nasdaq-100 Index

Index	2000-2004	2005-2009	2010-2014	2015-2019	2020-2023	Entire Period (2000-2023)
Annualized Return (%)						
S&P 500	-2.3	0.4	15.5	11.7	12.0	7.0
DJIA	0.7	1.9	14.2	12.6	9.5	7.6
Nasdaq-100 Index	-15.1	3.3	19.2	16.9	18.8	7.3
Annualized Volatility (%)						
S&P 500	20.2	24.1	16.0	13.5	23.1	19.6
DJIA	19.6	22.1	14.6	13.6	22.6	18.7
Nasdaq-100 Index	42.7	25.7	17.5	17.2	27.8	27.8
Annualized Risk – Adjusted Return						
S&P 500	n/a	0.02	0.96	0.87	0.52	0.36
DJIA	0.03	0.09	0.97	0.93	0.42	0.40
Nasdaq-100 Index	n/a	0.13	1.10	0.99	0.68	0.26

Source: S&P Dow Jones Indices LLC, Bloomberg. Data from Dec. 31, 1999 to Dec. 31, 2023. Index performance based on daily total return in USD. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Active versus Passive for U.S. Equity Exposure

Investing in the U.S. equity market can be done via the use of active fund managers or index-linked products that track an underlying index. S&P Dow Jones Indices publishes SPIVA® Scorecards twice a year, reporting on the performance of actively managed funds against appropriate benchmarks across several countries and regions. Although SPIVA results vary by country and region, the overall message has been consistent: **active managers typically underperformed their relevant benchmarks over multiple time horizons**.

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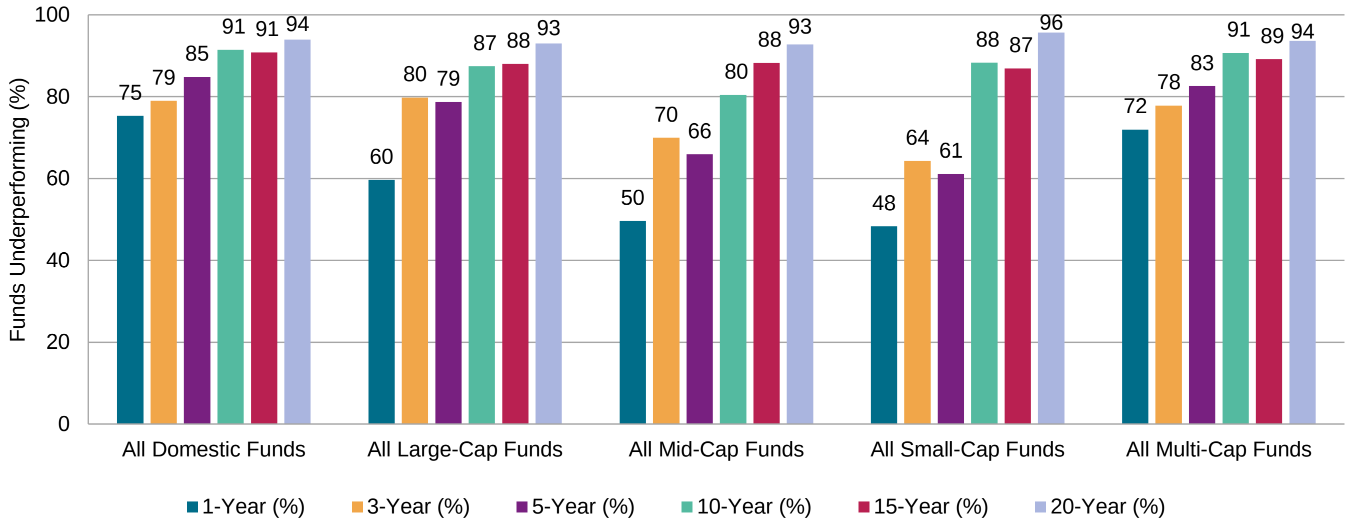
Exhibit 11: Percentage of U.S. Equity Funds Underperforming Their Benchmarks



Source: S&P Dow Jones Indices LLC, CSRP. Data as of Dec. 31, 2023. Underperformance is calculated based on equal-weighted fund counts comparing absolute returns. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Exhibit 11 summarizes the performance of the actively managed U.S. equity funds from the SPIVA U.S. Year-End 2023 Scorecard. Across the market capitalization spectrum, over multiple horizons, the majority of active managers underperformed on an absolute basis. In the U.S. Large-Cap Equity fund category, for example, 60% of active managers underperformed the S&P 500 in 2023, while the underperformance rate increased to 79%, 87% and 93% over the 5-, 10-, and 20-year periods, respectively. Similar results were also observed on a risk-adjusted basis. This indicates that **index-based investing may be a viable complement or substitute to actively managed investments in the U.S. equity market.**

Conclusion

The U.S. equity market represents a significant portion of the global equity opportunity set. Investing in a diversified basket of U.S. equities has become significantly easier, cheaper and more transparent through the widespread availability of S&P 500-linked products, including index funds and ETFs. The S&P 500 includes many of the largest companies in the U.S., and many of these names are the world's most recognizable companies, with high operating margins. For Hong Kong investors, the greater stock diversification and different sector makeup of the S&P 500 could offer a complementary blend for a broad-based Hong Kong equity portfolio, and one that historically improved the return and return/risk ratio, based on hypothetical back-testing.

Performance Disclosure/Back-Tested Data

All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology in effect on the index launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. Complete index methodology details are available at www.spglobal.com/spdji. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. Back-tested performance is for use with institutions only; not for use with retail investors.

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Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate S&P DJI's ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used.

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