U.S. EQUITIES 202 | U.S.

Equal Weight Indexing
A look at the S&P 500® versus the S&P 500 Equal Weight Index

INTRODUCTION
The S&P 500 Equal Weight Index (S&P 500 EWI) was launched 10 years ago on Jan. 8, 2003. Prior to its release, most indices were weighted by market cap. The launch of the S&P 500 EWI ushered a new exciting era of alternative-weighting in indexing.

The S&P 500 EWI is unique in that its methodology is defined not by factors like other alternatively weighted indices. In an equal weighted index, the weight of each stock is one divided by the total number of components in the index—making the index factor indifferent. It randomizes factor mispricing, making the index an attractive option for proponents of the theory that the market is inefficient and at times misprices factors.

In addition to being factor neutral, equal weighting captures another important stock price behavior, the mean-reversion, in a simple way. As an equal weight portfolio is often rebalanced periodically, it is in effect buying low and selling high, which benefits automatically from the short-term mean-reversion.

Besides, equal weighting represents a choice of portfolio construction in which the constituent weightings are not correlated with their expected returns. This makes the index a sensible performance benchmark in the alternative space.

By the end of February 2013, ETF assets linked to the index and related equal weighted sector indices reached USD 4.46 billion.

PROPERTIES OF THE S&P 500 EQUAL WEIGHT INDEX
Due to the nature of equal weighting, the S&P 500 EWI differs from the market cap weighted S&P 500 in several ways.

- **Small-cap biased**: The S&P 500 EWI tends to overweight small-cap stocks, so it has a lower stock concentration than the S&P 500 (Exhibit 1).
- **Different sector exposure**: As the sector weights in the S&P 500 EWI are only determined by the number of stocks in each sector, at any time, the S&P 500 EWI will have different sector exposure than the S&P 500. For example, the S&P 500 EWI has been consistently overweight materials, consumer discretionary and utilities, and underweight energy, health care and telecommunication services relative to the S&P 500 (Exhibit 2).
- **Higher index turnover**: An equal weight index tends to have a higher turnover due to the quarterly rebalancing of weights back to equal weights. In the past 10 years ended in 2012, the average annual turnover for the S&P 500 EWI was 24.7%, much higher than the S&P 500’s turnover of 6.3%. This is, however, still within a reasonable range for alternatively weighted indices and certainly much lower than the turnover for most actively managed portfolios, which tend to be in the 50%-100% range.
**Higher capacity & liquidity constraints**: Since all the constituents in an equal weighted index are held at equal weights regardless of their market cap, an investment product tied to the index will have relatively large holdings in the smallest stocks in the index, which could produce capacity and liquidity pressures. While true in abstract theory, neither is a serious hurdle in practice for the S&P 500 EWI. Assume for each stock in the S&P 500 EWI, maximum 10% of its outstanding shares could be held in products linked to the index without resulting in capacity issues. As of year-end 2012, the smallest stock had a market cap of USD 1.65 billion, which means the capacity for the products linked to the index can reach USD 82.4 billion. However, there were less than USD 10 billion in assets linked to the S&P 500 EWI as of year-end 2012. Similarly, assume trading at the level of three-month average daily value traded each day will not negatively affect stock liquidity. The maximum daily turnover supported by the S&P 500 EWI then could reach USD 6.1 billion based on the data as of December 21, 2012.

Exhibit 1: Difference in Constituent Weights between the S&P 500 EWI and S&P 500


Exhibit 2: Sector Breakdown of S&P 500 EWI vs. S&P 500


**PERFORMANCE OF THE S&P 500 EQUAL WEIGHT INDEX**

In the past 20 years ended 2012, the S&P 500 EWI had outperformed the S&P 500 by a compounded average of 2.0% annually. However, the level of out- or underperformance had varied considerably over time in line with different market cycles. For instance, the S&P 500 EWI outperformed the S&P 500 in the early 1990s but lagged behind for six straight years from 1994 through 1999, with significant underperformance during the technology bubble of the late 1990s. During the market correction from 2000 through 2002, the S&P 500 EWI significantly outperformed the S&P 500 and continued to beat it in the following four years through 2006.
The S&P 500 EWI had better absolute and relative returns over longer investment horizon but with higher volatility.

Exhibit 3: Risk & Return Profile of the S&P 500 EWI

Source: S&P Dow Jones Indices. Data as of December 31, 2012. Charts and graphs are provided for illustrative purposes only. This graph may reflect 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. Past performance is no indication of future results.

Exhibit 4: Annual Returns of S&P 500 EWI

Source: S&P Dow Jones Indices. Data from December 1989 to December 2012. Charts and graphs are provided for illustrative purposes only. This graph may reflect 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. Past performance is no indication of future results.

The excess return of the S&P 500 EWI relative to the S&P 500 has been generated more from up-markets than down-markets. This asymmetric pay-off pattern of outperforming in up-markets and underperforming in down-markets appears to stem from its small-cap bias and high beta feature.

The underweight of the S&P 500 EWI in the IT sector partly explains the under-performance and out-performance of the index during the bubble formation period in late 1990s and the following market correction respectively.
The S&P 500 EWI is small-cap biased with higher market beta compared to the S&P 500.

With small-cap bias, it is not surprising that the S&P 500 EWI had higher volatility than the S&P 500 historically.

The correlation between the S&P 500 EWI and the S&P 500, as measured by rolling 36 monthly returns in Exhibit 6, has, for the most part, consistently stayed between 95%-99%. The major exception to this was the technology bubble of the late 1990s and the following correction, in which the correlation was much lower.

**STYLE AND FACTOR EXPOSURE OF THE S&P 500 EWI INDEX**

In most of the periods over the past six years, the S&P 500 EWI had been both small-cap and value-biased relative to the S&P 500 (Exhibit 7).
A complex and dynamic combination of size and style risk factors has contributed to the risk and return of the S&P 500 EWI.

CONCLUSION

Often the most powerful investment ideas are simple. Ten years ago, the S&P 500 EWI pioneered equal weighted indexing. This simple investment concept has now expanded in the U.S. into the S&P 100, a mega-cap index, S&P MidCap 400® and S&P SmallCap 600®, as well as international equities and other asset classes such as fixed income indices and commodity indices. It has become one of the most popular alternatively-weighted investment ideas.
Performance Disclosure

The S&P 500 Equal Weight Index and S&P 500 were launched on January 8, 2003 and in 1957 respectively. All information presented prior to the launch date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect on the launch date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency on their products. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live; index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public Web site or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of Introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com 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.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities (or fixed income, or commodities) markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

Additionally, it is not possible to invest directly in an Index. The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. For example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US$ 10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US$ 1,650), the net return would be 8.35% (or US$ 8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US$ 5,375, and a cumulative net return of 27.2% (or US$ 27,200).
tax-exempt securities on portfolios and the tax consequences of making any particular investment decision. Inclusion of a security within an
other investment vehicle. S&P Dow Jones Indices LLC is not a tax advisor. A tax advisor should be consulted to evaluate the impact of any
funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or
Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers
software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or
believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, model,
software or other application or output therefrom) or any part thereof (Content) may be modified, reverse-engineered, reproduced or
distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones
Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers
and licensors (collectively “S&P Dow Jones Indices Parties”) do not guarantee the accuracy, completeness, timeliness or availability of the
Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from
the use of the Content. THE CONTENT IS PROVIDED ON AN “AS IS” BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND
ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR
FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE
CONTENT’S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR
HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental,
exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost
income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.
Credit-related and other analyses, including ratings, research and valuations are generally provided by affiliates of S&P Dow Jones Indices,
including but not limited to Standard & Poor’s Financial Services LLC and Capital IQ, Inc. Such analyses and statements in the Content are
statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement
decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the
suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or
format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management,
employees, advisors and/or clients when making investment and other business decisions. S&P Dow Jones Indices LLC does not act as a
fiduciary or an investment advisor. While S&P Dow Jones Indices has obtained information from sources they believe to be reliable, S&P Dow
Jones Indices does not perform an audit or undertake any duty of due diligence or independent verification of any information it receives.[
To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for
certain regulatory purposes, S&P Ratings Services reserves the right to assign, withdraw or suspend such acknowledgement at any time and
in its sole discretion. S&P Dow Jones Indices, including S&P Ratings Services disclaim any duty whatsoever arising out of the assignment,
withdrawal or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof.
Affiliates of S&P Dow Jones Indices LLC may receive compensation for its ratings and certain credit-related analyses, normally from issuers or
underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC reserve the right to disseminate its opinions and
analyses. Public ratings and analyses from S&P Ratings Services are made available on its Web sites, www.standardandpoors.com (free of
charge), and www.ratingsdirect.com and www.globalcreditportal.com (subscription), and may be distributed through other means, including via
S&P Rating Services publications and third-party redistributors. Additional information about our ratings fees is available at
www.standardandpoors.com/usratingsfees.
S&P Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and
objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available
to other business units. S&P Dow Jones Indices has established policies and procedures to maintain the confidentiality of certain non-public
information received in connection with each analytical process. In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive
fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate,
include in model portfolios, evaluate or otherwise address.