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## Equal Weight Indexing

### Seven Years Later

- In January 2003, the S&P 500<sup>®</sup> Equal Weight Index (EWI) was introduced, pioneering the subsequent development of non-capitalization weighted indices catering to those investors questioning market efficiency.
- Equal weighting is factor indifferent. It randomizes factor mispricing, and is thus an attractive option for proponents of the theory that the market is inefficient and, at times, misprices factors.
- The S&P Equal Weight Indices have different properties from their underlying headline indices, including a lower concentration of individual stocks and slower-changing sector exposures.
- Historically, the S&P Equal Weight Indices have outperformed their market cap weighted equivalents in the long-run. The level of performance has also varied considerably under different market conditions.
- The outperformance of the S&P Equal Weight Indices is a result of the differing weighting and rebalancing processes. In terms of risk factor exposures, a complex and dynamic combination of size and style risk factors have contributed to the difference in returns. It may be difficult to replicate equal weighted index return outcomes through a simplistic combination of style and sector indices.
- Equal weighting demonstrates long term outperformance internationally.
- Criticism of equal weighted indices has centered on increased turnover and capacity constraints relative to market capitalization weighted indices. While true in abstract theory, neither is a serious hurdle in practice.

**Liyu Zeng, CFA**  
Associate Director  
8610.6569.2947  
[liyu\\_zeng@sandp.com](mailto:liyu_zeng@sandp.com)

**Srikant Dash, CFA, FRM**  
Managing Director  
212.438.3012  
[srikant\\_dash@sandp.com](mailto:srikant_dash@sandp.com)

**Dave Guarino**  
Media Contact  
212.438.1471  
[dave\\_guarino@sandp.com](mailto:dave_guarino@sandp.com)

**S&P  
INDICES**

## The S&P 500 Equal Weight Index and Alternative Weighted Indices

Since the introduction of the S&P 500 in 1957, most indices have been weighted by market capitalization. The theoretical underpinnings for market capitalization weighted indices as a basis for investment lie in the Capital Asset Pricing Model (CAPM) and the Efficient Market Hypothesis. According to the CAPM model, the expected return implicit in the price of a stock should be commensurate with the risk of that stock. However, stocks are subject to two types of risk – systematic risk, resulting from potential movements in market factors; and unsystematic risks, resulting from factors associated with individual assets. Since unsystematic risk can be diversified away, stocks should be priced solely based on systematic risk. This also implies that it is optimal to hold a well diversified portfolio in order to minimize unsystematic risk for a given level of expected return. According to the efficient market hypothesis, it is impossible to beat the market because prices already incorporate all relevant information. Based on this, the most efficient portfolio would be the entire market and a broad market capitalization index would represent the optimal investment. However, there is much debate as to how efficient the market is in practice. Thus, there are countless different strategies being used in an attempt to beat the market. This has led to indices created based on alternative factors that measure different strategies.

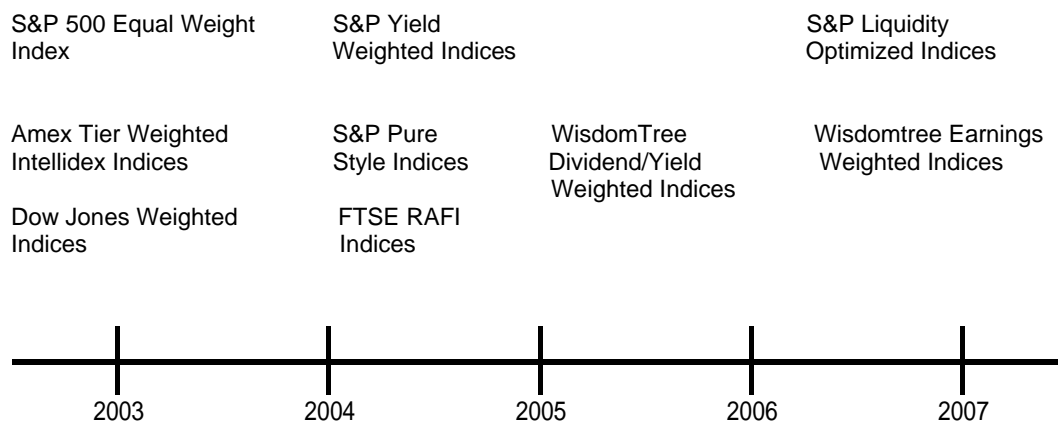
From a methodological standpoint, all equity indices can be thought of as weighted by a certain factor raised to a power, as shown below:

$$Weight_i = Factor_i^{Exponent} / \sum_{i=1}^n Factor_i^{Exponent}$$

The factor used can be one of any number of attributes, such as market capitalization. If it is desired to amplify the influence of the factor, an exponent can be applied. For instance, to achieve a portfolio with as high a dividend yield as possible, the index could be weighted based on dividend yield squared. In general, however, most indices do not use an exponent, and are therefore weighted by a factor or a score derived from several factors. The S&P 500 EWI is unique in that its methodology is defined not by the factor used but by the exponent. In an equal weighted index, the exponent used is zero. Therefore, regardless of what factor is used, the overall score for each component stock is always one, and the weight of each stock in the index is one divided by the total number of components in the index. Since the index is factor indifferent, it randomizes factor mispricing and is thus an attractive option for proponents of the theory that the market is inefficient and, at times, over- or underweight certain factors.

At the time of its release on January 8, 2003, the S&P 500 EWI represented the first major equity index to use an “alternative” weighting methodology. Since the introduction of the S&P 500 EWI, several indices and index families using alternative weighting schemes have been developed, examples of which are shown in Exhibit 1. (The S&P 500 EWI was certainly not the first non-market capitalization weighted index – MSCI GDP weighted indices and GRA wealth weighted indices were published in the 1990s – but the S&P 500 EWI was the first such index to be widely used for index products).

## Exhibit 1: Index Products Utilizing Alternative Weight Factors



Note: Not all index series are covered.

There has also been strong interest in the S&P 500 EWI since the introduction of the index. By the end of 2006, assets linked to the index reached US\$ 8.47 billion based on Standard & Poor’s Annual Survey of S&P Indexed Assets.

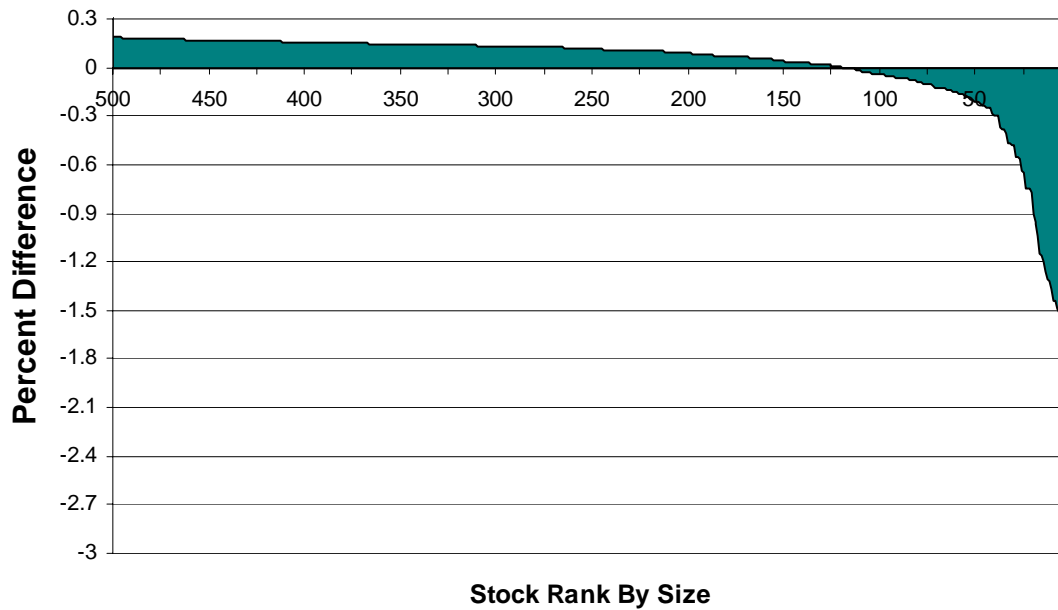
## Properties of Equal Weighted Indices

Due mostly to the nature of the equal weighted scheme, an equal weighted index has several different properties from its corresponding headline index. For instance, the S&P 500 EWI will have a lower stock concentration than the S&P 500, will tend to have a higher turnover due to the quarterly rebalancing of weights back to equal weights, and will have higher liquidity constraints since all stocks in the index are given the same weight regardless of market cap.

### Stock Weighting and Concentration

Relative to the S&P 500, the S&P 500 EWI is expected to be overweight the smaller market-cap stocks and underweight the larger market-cap stocks. Looking at the S&P 500 EWI, the size distribution of the market, and thus the S&P 500, tends to be long-tailed with a few stocks that have market caps significantly higher than the mean of the index and many stocks that have market caps below the mean. Therefore, the S&P 500 EWI will be underweight a few large stocks and overweight a large number of smaller stocks. Exhibit 2 shows the difference in stock weightings between the S&P 500 and the S&P 500 EWI based on the market cap of each of the stocks in the index.

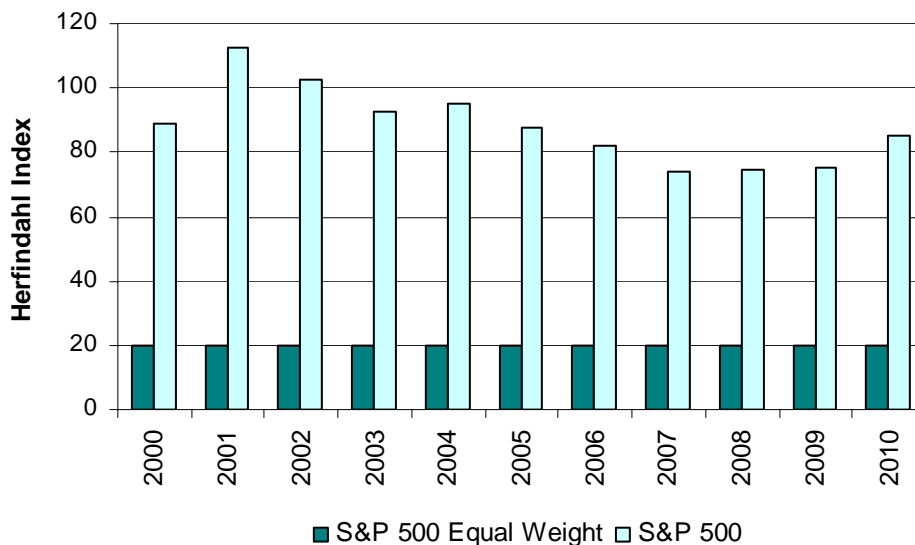
**Exhibit 2: Difference in Constituent Weights Between S&P 500 EWI and S&P 500**



Source: Standard & Poor's. Data as of December 21, 2009. Charts and graphs are provided for illustrative purposes only. The S&P 500 EWI was launched on January 8, 2003 and was not in existence prior to that date. Any information prior to January 8, 2003 is considered back-tested.

By definition, the S&P 500 EWI will have a lower stock concentration than the S&P 500. The Herfindahl Index is a commonly used measure of concentration that is calculated as the sum of squares of percent weight of each stock in a portfolio. Exhibit 3 plots the Herfindahl Index for the S&P 500 and the S&P 500 EWI. Since at each rebalancing the weights of the S&P 500 EWI are always .2% for each stock, it will always have a Herfindahl Index of about 20, while the Herfindahl Index for the S&P 500 will track the concentration of large-cap U.S. equities. Over time, the level of concentration of the S&P 500 has changed considerably. Unsurprisingly, it peaked in 2001 when mega-caps dominated the market. Since then, concentration has decreased.

**Exhibit 3: Herfindahl Index for S&P 500 EWI and S&P 500**

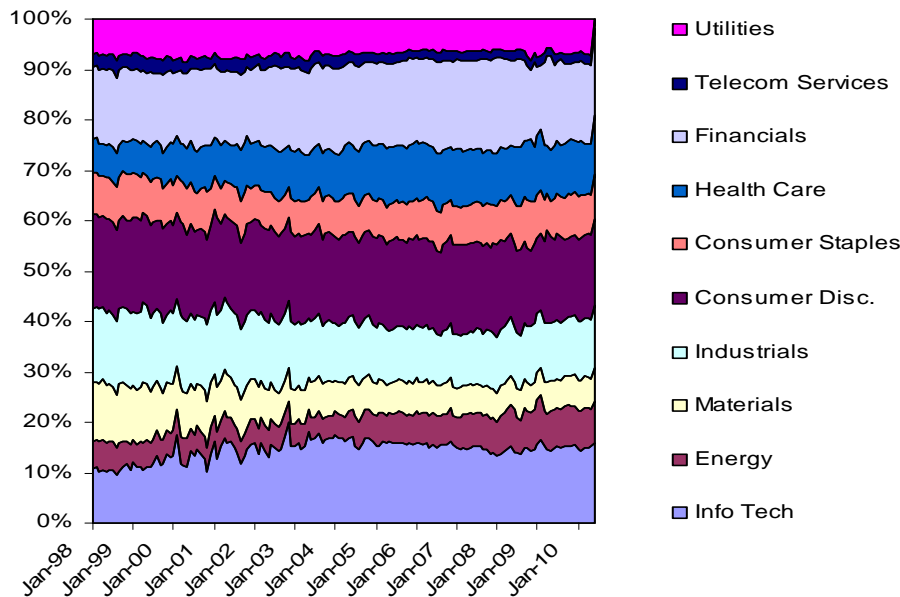


Source: Standard & Poor's. Data as of June rebalancing each year from 2000 through 2010. Charts and graphs are provided for illustrative purposes only. It is not possible to invest directly in an index. The S&P 500 EWI was launched on January 8, 2003 and therefore information prior to that date is back-tested.

**Sector Weightings**

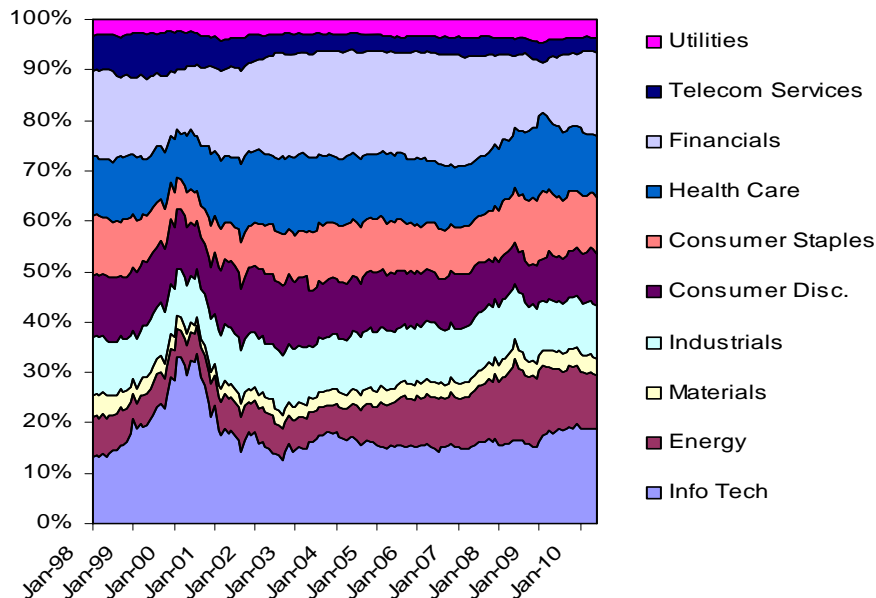
The differences in sector weightings of the S&P 500 EWI versus the S&P 500 have varied markedly over time. At any time, the S&P 500 EWI will have different sector exposures than the S&P 500. The S&P 500 is designed to have sector weightings close to those of the large-cap market. The weight of each sector in the index at any time is dependent on the total market cap of the stocks in that sector relative to the market cap of the entire index. On the other hand, the sector weights of the S&P 500 EWI are determined at each rebalancing by the number of stocks in each sector in the S&P 500. Therefore, the S&P 500 EWI will be overweight relative to the S&P 500 in sectors that contain stocks that are, on average, smaller than the average stock in the S&P 500 and will be underweight sectors that contain larger than average companies. Exhibits 4 and 5 illustrate how the sector weightings for the two indices have evolved over time.

### Exhibit 4: Sector Weightings of S&P 500 EWI



Source: Standard & Poor's. Data is monthly from January 31, 1998 to June 30, 2010. Charts and graphs are provided for illustrative purposes only. It is not possible to invest directly in an index. The S&P 500 EWI was launched on January 8, 2003 and therefore any information prior to that time was back-tested and such information is hypothetical.

### Exhibit 5: Sector Weightings of S&P 500



Source: Standard & Poor's. Data is monthly from January 31, 1998 to June 30, 2010. Charts and graphs are provided for illustrative purposes only.

Since 1998, the S&P 500 EWI has been consistently overweight certain sectors, such as Materials, Consumer Discretionary, and Utilities, and underweight certain sectors, such as Energy, Health Care, and Telecommunication Services relative to the S&P 500. However, for other sectors the situation has varied considerably over time. In fact, even for sectors where the S&P 500 EWI has been consistently overweight or underweight, the difference in concentration between the two indices has altered significantly.

More important than the differences in sector weights between the two indices is the variance of the sector weights themselves. As can be seen in the exhibits above, the sector weights of the S&P 500 EWI have changed far less than those of the S&P 500. This is unsurprising since the sector weights of the S&P 500 will vary based both on the number of stocks in each sector in the index as well as the performance of each sector over time, whereas, for the S&P 500 EWI it will only vary due to the number of stocks in each sector. Therefore, when a certain sector underperforms or outperforms the market by a large percentage, the sector weights of the S&P 500 will adjust relatively quickly, while those for the S&P 500 EWI will not adjust as quickly due to the quarterly rebalancing of the index back to equal weights. The largest change in the relative sector weights of the two indices has been in the Information Technology (IT) sector. During the internet bubble in the late 1990s, the S&P 500 EWI would have gone from being underweight in the sector by less than three percent at the start of 1998 to being underweight by close to twenty percent in March 2000. This would have been attributed almost entirely to the change in the sector weight of the S&P 500 during this time. While the IT sector weight of the S&P 500 EWI would have increased slightly, that of the S&P 500 increased from thirteen percent to thirty three percent over the same time period.

## Criticism of Equal Weighted Indices

### Turnover

Since the launch of the S&P 500 EWI, two main concerns have been expressed primarily from the perspective of investment products based on the index. These concerns are turnover and capacity constraints.

Admittedly, equal weighted indices have higher market capitalization turnover than their parent indices due to the rebalancing of the indices on a quarterly basis to equal weights. During the period of the five years ending in 2009, the average annual turnover for the S&P 500 EWI has been over eight times that of the S&P 500 (28.1% and 2.8% respectively). However, the S&P 500 has a very low turnover relative to most indices. The S&P 500 EWI and S&P 100 EWI would have turnover approximately two times that of the S&P MidCap 400 and S&P SmallCap 600 (13.4% and 13.1% respectively), but remains in line with other alternatively weighted indices which generally have turnover in the 15% to 30% range. Thus, while turnovers for the S&P Equal Weighted Indices are somewhat larger than other indices, they are within a reasonable range for indices and are certainly much lower than turnover for most actively managed portfolios which tend to be in the 50% to 100% range.

## Exhibit 6: Average Index Turnover of S&P Equal Weighted Indices

Indices	Average Mcap Turnover (one-way, from 2005 to 2009)
S&P 100	4.3%
S&P 100 EWI	27.2%
S&P 500	2.8%
S&P 500 EWI	28.1%
S&P 400	13.4%
S&P 600	13.1%

Source: Standard & Poor's. Data from 2005 through 2009. Only the turnovers associated with adds, drops and quarterly rebalancing are considered. Charts and graphs are provided for illustrative purposes only. It is not possible to invest directly in an index. The S&P 100 EWI was launched on August 21, 2009 and was not in existence prior to that date. Information from 2005 through August 2009 is back-tested and therefore such results are hypothetical only.

### Capacity Constraints

Another concern regarding equal weighted indices is capacity constraints. Since all constituents are held at equal weights regardless of their market capitalization, an investment product tied to the index will have relatively large holdings in the smallest stocks in the index. This aspect could produce liquidity pressures at rebalancing. However, deeper investigation shows that this concern is true only in theory.

Again, we will take the S&P 500 as an example. At the end of 2009 there were approximately US\$ 1.1 trillion in assets linked to the S&P 500, while the index had a total market capitalization of US\$ 10.4 trillion. Let's assume that for each stock in the S&P 500, roughly 10% of its shares were held in products linked to the index. The capacity of the S&P 500 EWI is constrained by the smallest stock in the index. As of the end of 2009, the smallest stock had a market cap of US\$ 1.13 billion. Applying the 10% ratio to this, it can be estimated that at least US\$ 113 million can be linked to the smallest stock in the S&P 500 EWI without resulting in capacity issues. Since each stock in the index represents .2% of the index, this implies that US\$ 56.6 billion can be linked to the index without any optimization. If stocks below US\$ 2 billion in market capitalization are optimized, the capacity reaches US\$ 100 billion. However, there were less than US\$ 10 billion in assets linked to the index as of the end of 2009, which suggests that assets can increase by more than fivefold before reaching the level of index effect seen in S&P 500 index changes.

### Performance of the S&P Equal Weighted Indices

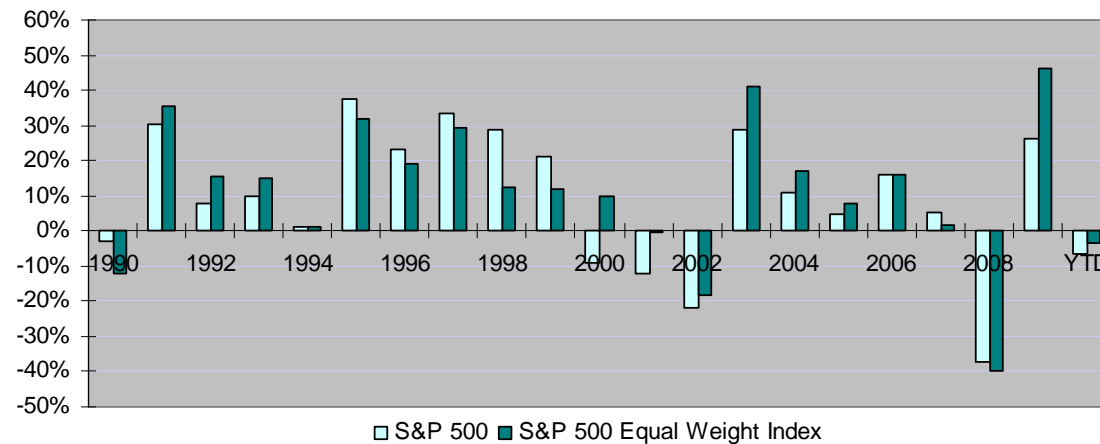
Exhibit 7 illustrates the performance of the S&P Equal Weight Indices relative to their headline indices. Since 1998, the S&P 500 EWI would have outperformed the S&P 500 by 1.8% annually. However, the level of performance has varied considerably over time in line with different market cycles. The S&P 500 EWI would have outperformed in the early 1990s but would have lagged the S&P 500 for six straight years from 1994 through 1999, significantly underperforming during the technology bubble of the late 1990s. The S&P 500 EWI would have significantly outperformed during the correction from 2000 through 2002, and would have beaten the S&P 500 for seven consecutive years through 2006.

### Exhibit 7: Annualized Returns of S&P Equal Weighted Indices

Returns (p.a.)	S&P 500	S&P 500 EWI	Returns (p.a.)	S&P 100	S&P 100 EWI
1 Yrs	26.5%	46.3%	1 Yrs	22.3%	34.9%
3 Yrs	-5.6%	-3.6%	3 Yrs	-5.7%	-4.4%
5 Yrs	0.4%	2.3%	5 Yrs	0.1%	1.7%
10 Yrs	-0.9%	5.1%	9 Yrs	-1.1%	2.4%
20 Yrs	8.2%	10.0%			

Source: Standard & Poor's. Data as of December 31, 2009. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Since the S&P 500 EWI and S&P 100 EWI were not in existence during all times referenced in this chart, some of the data is based on back-tested information. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

### Exhibit 8: Historical Performance of S&P 500 EWI



Source: Standard & Poor's. Data from December 1989 to June 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Since the S&P 500 EWI was not in existence during all times referenced in this chart, some of the data is based on back-tested information. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

**Exhibit 9: Historical Performance of S&P 100 EWI**

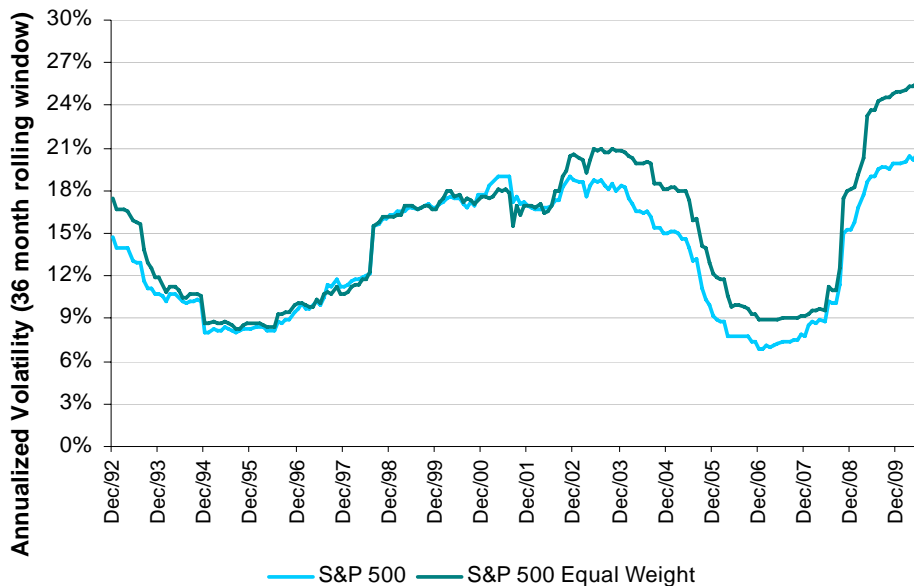


Source: Standard & Poor's. Data from December 2000 to June 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Since the S&P 100 EWI was not in existence during all times referenced in this chart, some of the data is based on back-tested information. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

Exhibits 10 and 11 show the historical volatility of the S&P 500 EWI and the S&P 500, as well as the correlation between the two indices. The volatility of the S&P 500 EWI, as measured by rolling three-year annualized standard deviations, would have exceeded that of the S&P 500 from 1992 through 1995 although the difference in volatility decreased over that period. For the next five years, the volatilities of the two indices would have been very similar. However, the volatility of the S&P 500 EWI would have remained higher relative to the S&P 500 after late 2002, and has remained between 4.6% and 5.2% higher than that of the S&P 500 since April 2009.

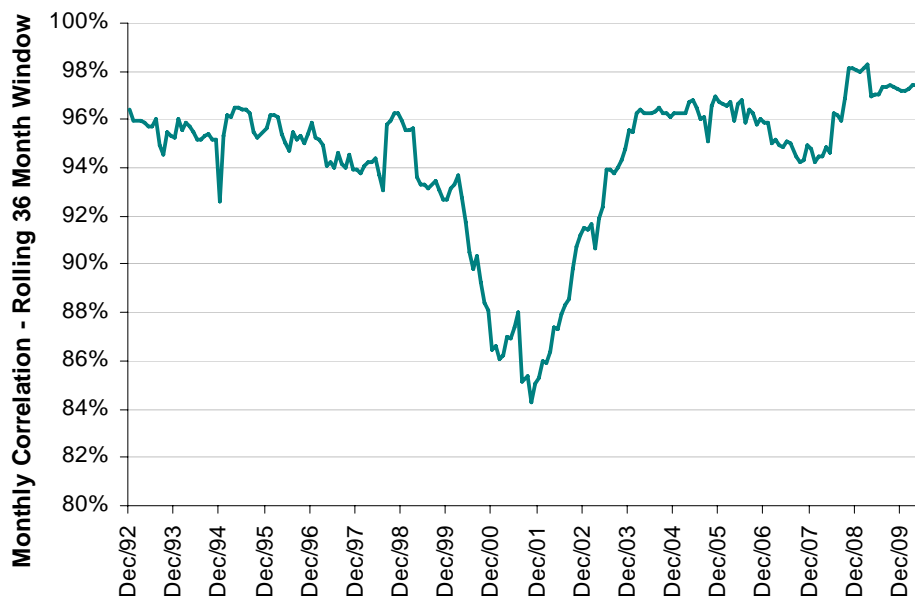
The correlation between the two indices, as measured by rolling 36 month returns, has, for the most part, consistently stayed between 93% and 96%. The one major exception to this would have been the technology bubble of the late 1990s and the following correction. During this time, the correlation was much lower between the two indices than during the rest of the S&P 500 EWI's history – it reached a low of 84% in late 2001.

### Exhibit 10: Volatility of the S&P 500 and S&P 500 Equal Weight Index



Source: Standard & Poor's. Data is from December 31, 1992 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

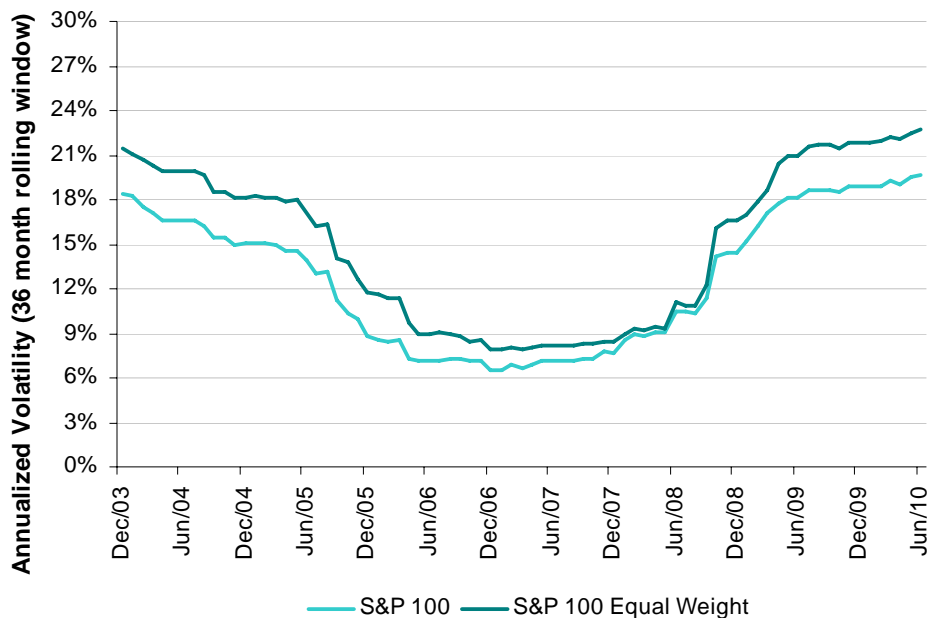
### Exhibit 11: Correlation Between the S&P 500 and S&P 500 Equal Weight Index



Source: Standard & Poor's. Data is from December 31, 1992 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

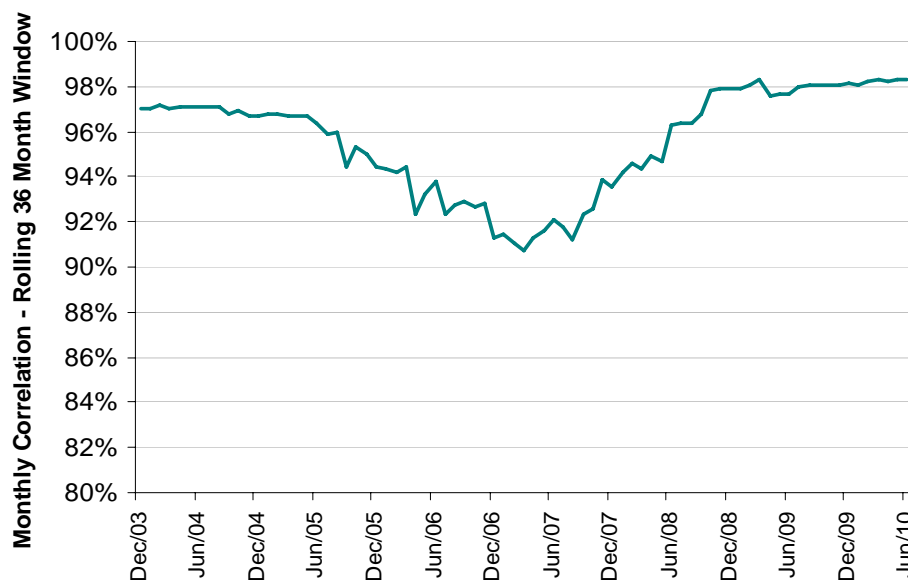
The S&P 100 EWI would have displayed similar volatility and correlation patterns relative to the S&P 100 for the past 6 years ending 2009, as plotted in Exhibit 12 and 13.

### Exhibit 12: Volatility of the S&P 100 and S&P 100 Equal Weight Index



Source: Standard & Poor's. Data is from December 31, 2003 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

### Exhibit 13: Correlation Between the S&P 100 and S&P 100 Equal Weight Index

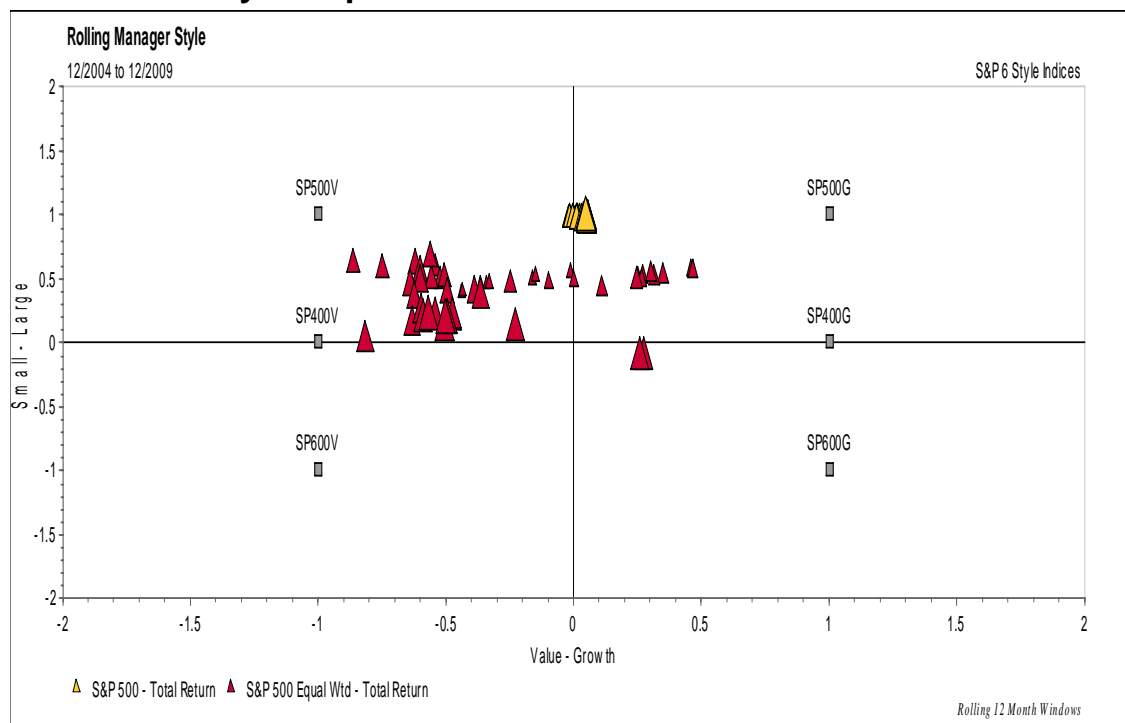


Source: Standard & Poor's. Data is from December 31, 2003 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

### Risk Factor Attribution

The question often arises - from where is the outperformance of the S&P 500 EWI derived? Exhibit 14 shows a style map of the S&P 500 and S&P 500 EWI. The map exhibits the influence of both style and size on the relative performance of the two indices. The performance of the S&P 500 EWI, while mostly in the large-cap half of the chart, tends to fall somewhere between the S&P 500 and S&P MidCap 400 style indices, thus showing an influence on its return by movements in mid-size stocks. Also, the S&P 500 EWI varies between being more heavily influenced by growth or value factors. However, in the majority of periods it falls on the value side of the chart. Thus, over the last five years, the S&P 500 EWI has been influenced both by the size factor and the value factor relative to the S&P 500. This suggests that equal weighting results in a unique exposure to a complex and dynamic combination of size and style risk factors. It may be difficult to replicate the S&P 500 EWI return outcomes through a simple combination of style and sector indices.

**Exhibit 14: Style Map of S&P 500 EWI**



Source: Standard & Poor's, Factset. Data calculated from December 31, 2004 through December 31, 2009 on Factset SP2 platform. Larger triangles show more recent time periods. Charts and graphs are provided for illustrative purposes only.

The attribution analysis by sectors yields results mostly in line with expectations. Exhibits 15 and 16 show attribution by sector for two periods – 1995 through 1999, the major period of significant underperformance for the S&P 500 EWI, and 2000 through 2007, a period of significant outperformance for the S&P 500 EWI.

**Exhibit 15: Sector Attribution From 1995 Through 1999**

Sector Attribution from 1995 through 1999	S&P 500 EWI Index		S&P 500 Index		Attribution Effect
	Average Weight	Annualized Return	Average Weight	Annualized Return	
Energy	5.58%	14.62%	8.16%	19.80%	-7.42%
Materials	11.15%	8.52%	5.02%	12.12%	2.58%
Industrials	15.95%	15.33%	11.80%	24.42%	-6.34%
Consumer Discretionary	18.18%	16.57%	12.63%	26.27%	-8.29%
Consumer Stables	8.78%	17.78%	11.66%	18.09%	-5.36%
Health Care	6.46%	21.19%	10.87%	28.71%	-14.30%
Financial	13.71%	27.33%	14.75%	29.06%	-6.56%
Info Tech	9.87%	41.07%	13.99%	52.32%	-42.34%
Telecom Services	2.77%	40.22%	7.58%	29.83%	-11.91%
Utilities	7.54%	13.66%	3.53%	12.77%	3.73%
Total		20.58%		28.56%	-96.22%

Source: Standard & Poor's. Data is from December 30, 1994 through December 31, 1999. Charts and graphs are provided for illustrative purposes only. As discussed previously, the S&P 500 EWI was not in existence during the time period covered in this chart and therefore the sector attribution has been hypothetically constructed based on the methodology that was used when the Index was launched.

**Exhibit 16: Sector Attribution From 2000 Through 2007**

Sector Attribution from 2000 through 2007	S&P 500 EWI Index		S&P 500 Index		Attribution Effect
	Average Weight	Annualized Return	Average Weight	Annualized Return	
Energy	5.39%	22.73%	7.64%	16.26%	4.28%
Materials	7.03%	12.13%	2.81%	8.76%	7.22%
Industrials	12.25%	10.83%	11.01%	5.11%	9.59%
Consumer Discretionary	17.42%	5.66%	11.48%	-0.77%	10.18%
Consumer Stables	7.47%	9.24%	9.39%	6.92%	2.94%
Health Care	9.83%	13.19%	13.14%	4.35%	8.87%
Financial	16.17%	8.66%	19.40%	4.90%	6.22%
Info Tech	15.26%	-4.68%	17.70%	-7.69%	13.91%
Telecom Services	2.18%	-4.13%	4.27%	-5.13%	2.77%
Utilities	7.02%	11.98%	3.17%	9.23%	7.09%
Total		8.15%		1.66%	73.07%

Source: Standard & Poor's. Data is from December 31, 1999 through December 31, 2007. Charts and graphs are provided for illustrative purposes only. As discussed previously, the S&P 500 EWI was not in existence during all time periods covered in this chart and therefore information from December 31, 1999 through January 8, 2003 was hypothetically constructed based on the methodology that was used when the Index was launched.

As expected, the majority of the underperformance of the S&P 500 EWI during the late 1990s would have been attributed to the Information Technology sector which would have contributed 42.34% of total underperformance. During this period, Information Technology had the largest return of any sector in both the S&P 500 and S&P 500 EWI. However, the S&P 500 EWI had both a lower weight in this sector and a lower sector return. Health Care and Telecommunication Services would have also been large contributors to the underperformance. For the time period from 2000 through 2007, the largest contributors to outperformance would have been the Information Technology and Consumer Discretionary sectors. During this period, the attribution was much more spread out between sectors. In fact, all of the sectors would have positively attributed to the outperformance of the S&P 500 EWI during this period.

Interestingly, looking at sector attribution further clarifies the importance of the differences in constituent weights due to equal weighting. For the 1995 through 1999 period, the S&P 500 EWI would have not

only underperformed as a whole but also in eight out of the ten sectors. Conversely, for the period of 2000 through 2007, the S&P 500 EWI would have outperformed in every sector, and every sector had a positive attribution, implying that most of the outperformance would have been due not to differences in sector weightings but to the sector index returns of the S&P 500 and S&P 500 EWI. However, since the stocks in the indices, and thus in each of the sectors, are the same, the differences are caused solely by the different weighting and rebalancing schemes of the two indices.

## Does Equal Weighting Work Internationally?

It would be interesting to see if equal weighting an international portfolio results in similar differences in the risk/return characteristics of the portfolio as it does when equal weighting a U.S. portfolio. To provide some insight into this issue, a backtest was run for an equal weighted version of the S&P International 700, with a similar methodology and rebalancing schedule as that of the S&P 500 EWI. The S&P International 700 is the international equivalent of the S&P 500. The index is comprised of 700 of the largest, most liquid stocks from outside the United States. The S&P International 700 and the S&P 500 together comprise the S&P Global 1200.

To construct the international equal weighted index, we equal weighted constituents of each of the following regional indices – S&P Europe 350, S&P TOPIX 150 for Japanese stocks, S&P/TSX 60 for Canadian stocks, S&P/ASX 50 for Australian stocks, S&P Asia 50 representing Asia ex-Japan stocks and S&P Latin America 40. These equal weighted regional indices are then GDP weighted to arrive at the composite international equal weighted index. We adopt this process to ensure that each region's weight is driven by its economic output, and not the count of stocks in its benchmark index.

Our results suggest that equal weighting does seem to work as well in international markets. Similar to the S&P 500 EWI, the S&P International 700 EWI would have outperformed relative to its market weighted equivalent, had somewhat higher volatility, particularly in recent years, and over time would have become increasingly correlated to its market weighted equivalent.

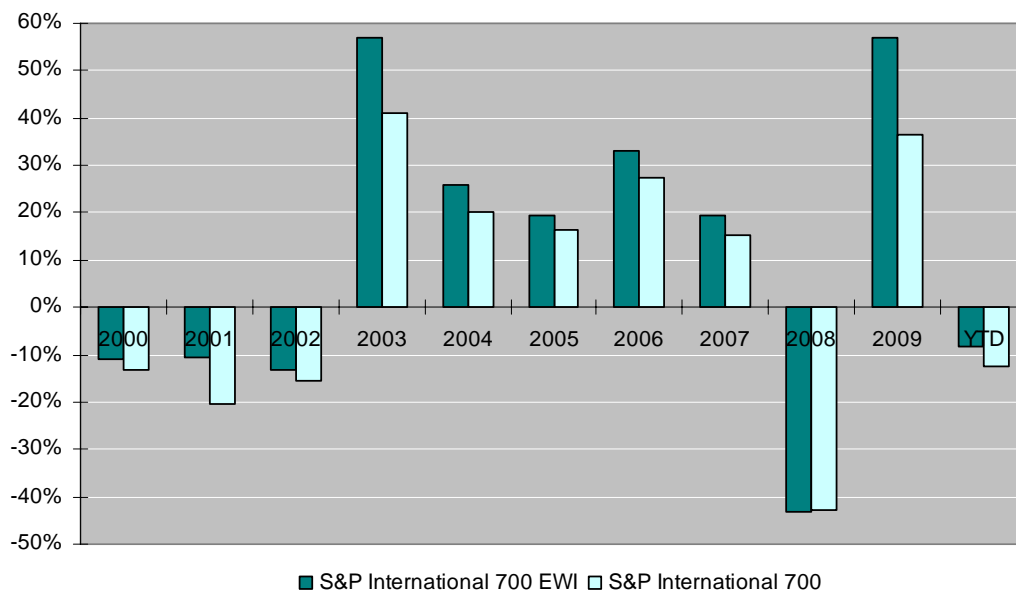
The S&P International 700 EWI would have significantly outperformed the S&P International 700 by a greater margin than the S&P 500 EWI outperformed the S&P 500. In fact, while the S&P 500 EWI has outperformed in certain market cycles and underperformed in others, the S&P International 700 EWI would have consistently outperformed.

**Exhibit 17: Hypothetical Risk & Return Profile of S&P International 700 EWI**

As of Dec 31, 2009	S&P International 700 EWI	S&P International 700
<b>Return (p.a.)</b>		
1 Yr	56.8%	36.6%
3 Yrs	2.1%	-3.5%
5 Yrs	11.1%	5.9%
10 Yrs	8.8%	2.8%
<b>Stdev (p.a.)</b>		
1 Yr	28.5%	26.8%
3 Yrs	27.3%	25.0%
5 Yrs	22.3%	20.4%
10 Yrs	20.3%	18.6%

Source: Standard & Poor's. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. The S&P 700 International EWI is not in existence at the time of this paper and therefore all information is back-tested. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

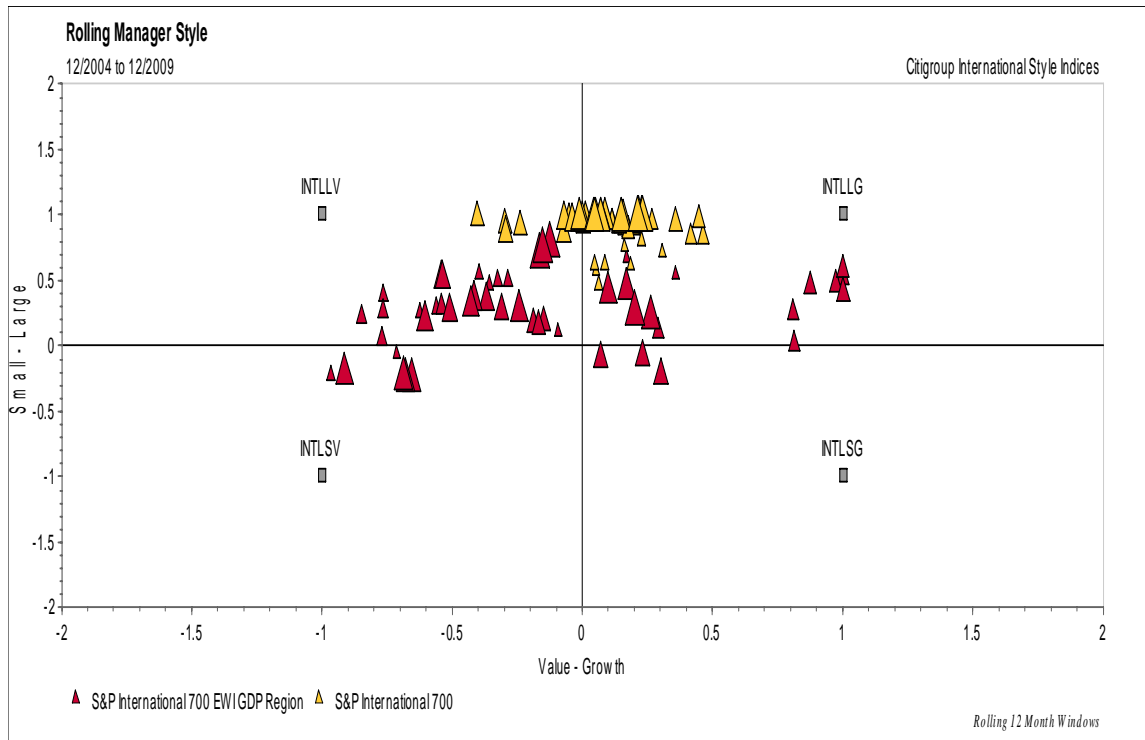
**Exhibit 18: Hypothetical Historical Performance of S&P International 700 EWI**



Source: Standard & Poor's. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. The S&P International 700 EWI is not in existence at the time of this paper and therefore all information is back-tested. Please see page 21 for a discussion on the calculations and the inherent limitations associated with back-tested performance.

Exhibit 19 shows how a style map would have looked for the S&P International 700 EWI relative to the S&P International 700 Index using Citigroup International Style Indices. Here too, one notices a similar time varying style map suggesting that international equal weighted strategy has a different set of style and size exposures compared to its market cap weighted equivalent.

**Exhibit 19: Hypothetical Style Map of S&P International 700 EWI**

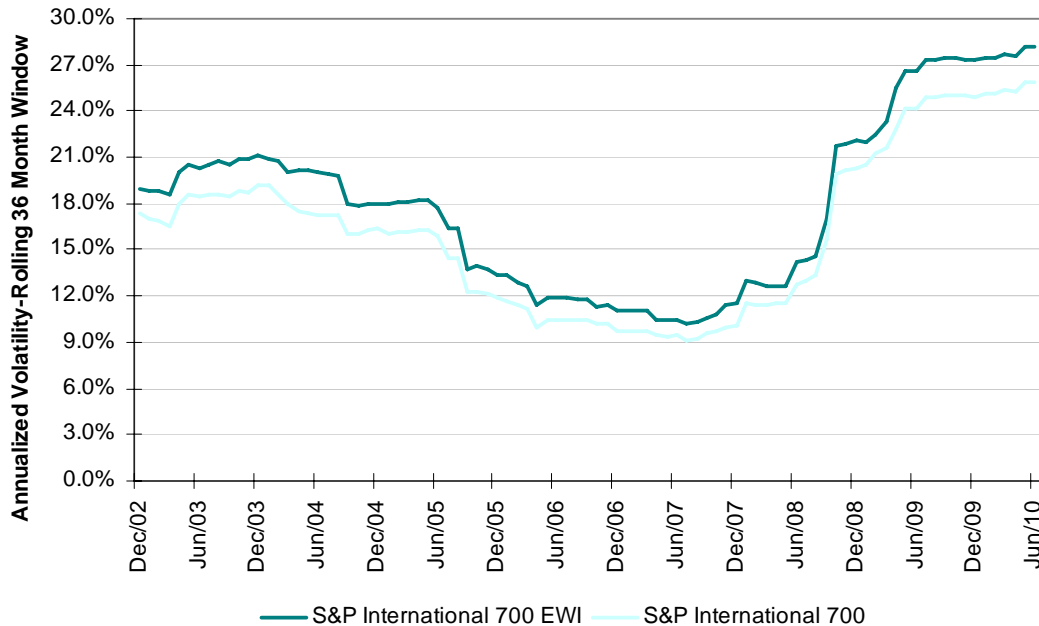


Source: Standard & Poor's, Factset. Data calculated from December 31, 2004 through December 31, 2009 on Factset SP2 platform. Larger triangles show more recent time periods. Charts and graphs are provided for illustrative purposes only. All data for the S&P International 700 EWI is hypothetical since the Index is not currently in existence. It is not possible to invest directly in an index.

Exhibits 20 and 21 graph the hypothetical volatility of the S&P International 700 EWI and the S&P International 700, and the correlation between the two indices. The volatility of the S&P International 700 EWI, as measured by rolling three-year annualized standard deviations, would have been consistently higher than that of the S&P International 700 since 2002.

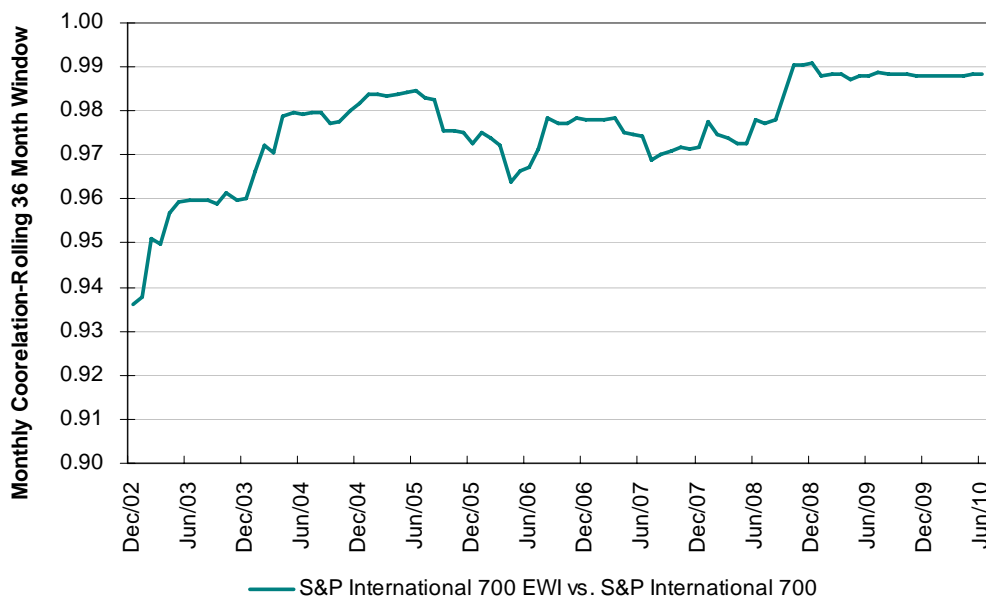
The correlation between the market cap and equal weighted versions of the international index has grown in recent times, consistent with the correlation between the S&P 500 and S&P 500 EWI. Since June 2003, it has been in the range between 0.96 and 0.98.

### Exhibit 20: Hypothetical Volatility of the S&P International 700 EWI



Source: Standard & Poor's. Data is from December 31, 2002 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. The S&P International 700 EWI was not in existence during the time period referenced in this chart and therefore all data is back-tested. Please see page 21 for inherent limitations associated with back-tested information.

### Exhibit 21: Hypothetical Correlation Between S&P International 700 and S&P International 700 EWI



Source: Standard & Poor's. Data is from December 31, 2002 through June 30, 2010. Charts and graphs are provided for illustrative purposes only. Indices are statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past correlations and performance are no indication of future results. The S&P International 700 EWI was not in existence during the time period referenced in this chart and therefore all data is back-tested. Please see page 21 for inherent limitations associated with back-tested information.

## Conclusions

Often the most powerful investment ideas are simple. The simple concept of equal weighted indexing has attracted billions of dollars in assets over the last seven years. While the main reason for the asset flows has been the outperformance of equal weighted indices over their market capitalization counterparts, sophisticated investors have realized that equal weighting creates a different set of risk factor exposures from those provided by market capitalization weighting, which makes the strategy seem to work over the long-run. Further, the concept randomizes factor mispricings in the market. As trading costs shrink globally, and as investors realize that turnover associated with equal weighted indexing is only about a fraction of active managers' turnover, we expect the concept to gain ground. Equal weighting has been used in fixed income indices to an extent, and given the positive results in international markets, we would not be surprised to see interest in equal weighted international products.

## S&P Indices Global Research & Design Contact Information

### Global Head

Srikant Dash +1 212-438-3012 [srikant\\_dash@standardandpoors.com](mailto:srikant_dash@standardandpoors.com)

### New York

Berlinda Liu +1 212-438-7834 [berlinda\\_liu@standardandpoors.com](mailto:berlinda_liu@standardandpoors.com)  
Frank Luo +1 212-438-5057 [frank\\_luo@standardandpoors.com](mailto:frank_luo@standardandpoors.com)  
Phil Murphy +1 212-438-1368 [philip\\_murphy@standardandpoors.com](mailto:philip_murphy@standardandpoors.com)  
Aye Soe +1 212-438-1677 [aye\\_so@standardandpoors.com](mailto:aye_so@standardandpoors.com)  
Peter Tsui +1 212-438-1493 [peter\\_tsui@standardandpoors.com](mailto:peter_tsui@standardandpoors.com)

### London

Gareth Parker +44 207-176-8443 [gareth\\_parker@standardandpoors.com](mailto:gareth_parker@standardandpoors.com)

### Beijing

Liyu Zeng +86 10-6569-2947 [liyu\\_zeng@standardandpoors.com](mailto:liyu_zeng@standardandpoors.com)

### Hong Kong

Simon Karaban +852 2532-8050 [simon\\_karaban@standardandpoors.com](mailto:simon_karaban@standardandpoors.com)

## Performance Disclosure

The S&P 500 Equal Weight Index is the equal weighted version of S&P 500 Index. The S&P 500 Equal Weight Index was launched on 1/8/2003 at the market close. This Index had not been in existence prior to that date. The base date, the date when the index history begins, is 12/29/1989 after the market close. The back-test period used in this presentation begins 12/29/1989 at the market close and ends 1/7/2003 at the market close. The actual performance period shown begins 1/8/2003 at the market close. The back-tested performance and other calculations were based on the same methodology that was used when the Index was launched in January 2003.

The S&P 100 Equal Weight Index is the equal weighted version of S&P 100 Index. The S&P 100 Equal Weight Index was launched on 8/21/2009 at the market close. This Index had not been in existence prior to that date. The base date, the date when the index history begins, is 12/29/2000 after the market close. The back-test period used in this presentation begins 12/29/2000 at the market close and ends 8/20/2009 at the market close. The actual performance period shown begins 8/21/2009. The back-tested performance and other calculations were based on the same methodology that was used when the index was launched in August 2009.

The S&P 700 Equal Weight Index is the equal weighted version of S&P 700 Index. The S&P 700 Equal Weight Index is not in existence as of the time of this document and therefore all information for this Index is back-tested. To construct the international equal weighted index, we equal weighted constituents of each of the following regional indices – S&P Europe 350, S&P TOPIX 150 for Japanese stocks, S&P/TSX 60 for Canadian stocks, S&P/ASX 50 for Australian stocks, S&P Asia 50 representing Asia ex-Japan stocks and S&P Latin America 40. These equal weighted regional indices are then GDP weighted to arrive at the composite international equal weighted index. We adopt this process to ensure that each region's weight is driven by its economic output, and not the count of stocks in its benchmark index.

Indexes are not collective investment funds and are unmanaged. It is not possible to invest directly in an S&P index. Past performance of an index is no indication of future results.

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