WisdomTree Research

CELEBRATING 10 YEARS IN EMERGING MARKETS

WISDOMTREE®

We hear time and time again that when venturing into emerging market equities, investors feel compelled to use an active manager. There is a belief that these markets are less efficient, and therefore the expertise and flexibility of an active manager should lead to greater potential value added over time.

Now that WisdomTree has been managing emerging market equity assets that track indices that began their live calculation more than 10 years ago, we believe our index family has demonstrated how structured, disciplined, rules-based strategies tied to smart index construction can add value over traditional market cap-weighted indices. In this paper, we will demonstrate:

+ **The attractive live performance of WisdomTree's Emerging Market Dividend Index family:** From the inception of both the WisdomTree Emerging Markets Dividend and High Dividend Indices, the MSCI Emerging Markets Index (MSCI EM Index) delivered a 2.28% average annual return. The MSCI Emerging Markets Value Index underperformed this figure, while the MSCI Emerging Markets Growth Index outperformed it. Notably, the WisdomTree Emerging Markets Dividend Index outperformed the MSCI EM Index by 67 basis points[1] per year for the decade, and the High Dividend strategy outperformed the MSCI EM Index by more than double this figure at 151 basis points per year, despite value lagging growth indices from MSCI.[2]

  From the inception two months later of the WisdomTree Emerging Markets SmallCap Dividend Index, the MSCI Emerging Markets Small Cap Index (MSCI EM Small Cap) delivered a 1.32% average annual return, and its value cut significantly outperformed. The WisdomTree Emerging Markets SmallCap Dividend Index added 267 basis points per year relative to the MSCI EM Small Cap and 100 basis points per year relative to the MSCI Emerging Markets Small Cap Value Index.[3]

+ **Risk:** While we saw the WisdomTree indices all outperform their market capitalisation-weighted[4] benchmarks, it's even more notable that this was achieved with a lower risk level across the board, whether risk was measured on the basis of absolute standard deviation or relative beta[5] to a benchmark.

+ **Performance with minimal tracking error leads to good information ratios:** One important factor is how much tracking error is taken relative to the market in pursuit of alpha.[6] Our broadest emerging market dividend index has a tracking error of just 3.74% versus the MSCI EM Index, while the High Dividend Index, which is a yield- and value-oriented selection strategy, had a higher tracking error of 6.96%. While the High Dividend Index had a higher value added over the last 10 years, its tracking error resulted in only a slightly higher information ratio than the broader EM Dividend Index.[7]

1 Basis point: 1/100th of 1 percent.

2 Sources: WisdomTree, Zephyr StyleADVISOR. Period from 31/5/07 to 31/5/17.

3 Sources: WisdomTree, Zephyr StyleADVISOR. Period from 31/7/07 to 31/5/17.

4 Market capitalisation weighting: Market cap = share price x number of shares outstanding. Firms with the highest values receive the highest weights in approaches designed to weight firms by market cap.

5 Beta: Measure of the volatility of an index or investment relative to a benchmark. A reading of 1.00 indicates that the investment has moved in lockstep with the benchmark; a reading of -1.00 indicates that the investment has moved in the exact opposite direction of the benchmark.

6 Alpha: Measure of risk-adjusted performance that compares how the constituents move relative to a benchmark.

7 Sources: WisdomTree, Zephyr StyleADVISOR. Period from 31/5/07 to 31/5/17.

This paper will drill into how and why the WisdomTree Indices were created. We will:

+ **Examine the philosophical and fundamental underpinnings for the creation of the WisdomTree Emerging Markets Dividend Indices more than 10 years ago.**
+ **Deconstruct some of the critical factors that were most influential in determining periods of outperformance and underperformance relative to market capitalisation-weighted benchmarks.**
+ **Conclude with how we think these strategies fit into what we believe to be an appropriate asset allocation framework today.**

THE "NOISY MARKET HYPOTHESIS" AND BUBBLE AVOIDANCE

After reviewing WisdomTree's proprietary Indices more than a decade ago, Wharton finance Professor Jeremy Siegel developed a theory—the "Noisy Market Hypothesis"—that provides a rationale for why fundamentally weighted indices may be able to add value over market capitalisation-weighted indices over time. Most of the time, markets are microefficient at digesting new information. However, widespread evidence exists that markets can become overextended in both overvaluing and undervaluing swathes of the market.

Market cap-weighted indices, at the top of bubbles, become momentum-chasing vehicles; they assume the latest stock price, no matter how high, is the best estimate of a company's fundamental value, and therefore lack any corrective mechanism that can reduce exposure to areas of the market where fundamentals cannot justify high stock prices.

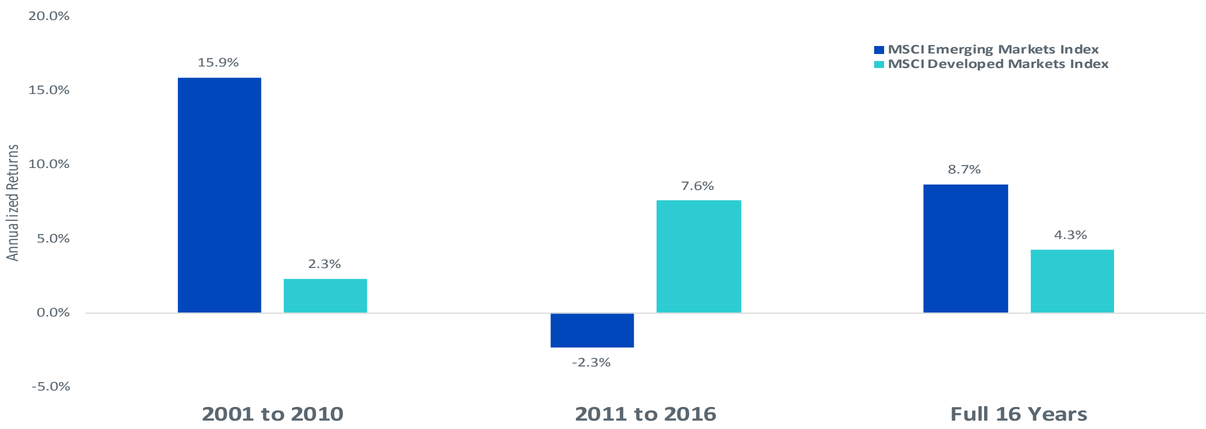
DEVELOPING A VALUATION-SENSITIVE INDEXING APPROACH

WisdomTree's Jonathan Steinberg and Luciano Siracusano in the early 2000s were developing indices during the aftershocks of the technology bubble. The two co-creators of WisdomTree's original Indices found in their research that rebalancing indices with valuation sensitivity in mind could create a value-added experience by helping mitigate the impact of deflating market bubbles. Let's look more closely at the background to varying index-based approaches before reviewing the real-time results of WisdomTree's Emerging Markets Dividend Indices.

THE INHERENT PROBLEM OF EMERGING MARKETS

The last 16 years in emerging market equities provide a window into investor psychology.

Figure 1: The Pitfalls Of Performance Chasing



Source: Bloomberg, period from 31/12/00 to 31/12/16. You cannot invest directly in an index. Past performance is not indicative of future results.

+ From 2001 to 2010, many investors were focused on the paltry returns provided by broad developed markets as represented by the MSCI World Index which returned 2.3% per annum. This compared poorly to the preceding 10-year period (1991 to 2000) which saw returns of close to 12% per annum for global developed equity markets. Now, while global equities were faced with a tough decade from 2001 to 2010, emerging market equities delivered stronger returns compared to what developed market equities had delivered the decade before at 15.9% per annum.
+ From 2011 to 2016, global developed equities shifted back into prominence, and delivered close to 10% outperformance per annum relative to emerging markets over this period. For many investors there is an expectation that this recent period of quantitative easing-based outperformance is likely to end at some point. Over this period investors have hesitated to allocate to emerging markets, especially as it has been characterised by generally weaker emerging market currencies.

The bottom line: *Over this full period of 16 years, emerging market equities actually outperformed global developed equities by over 4.4% per annum and delivered more than double the annualised return. Psychologically, it is difficult not to try to chase returns. It's also hard to hold volatile equity markets like emerging markets over full cycles. Finding a way to make it easier for investors to stay exposed to emerging market equities over a full market cycle was one of the reasons WisdomTree created its suite of emerging market dividend Indices.*

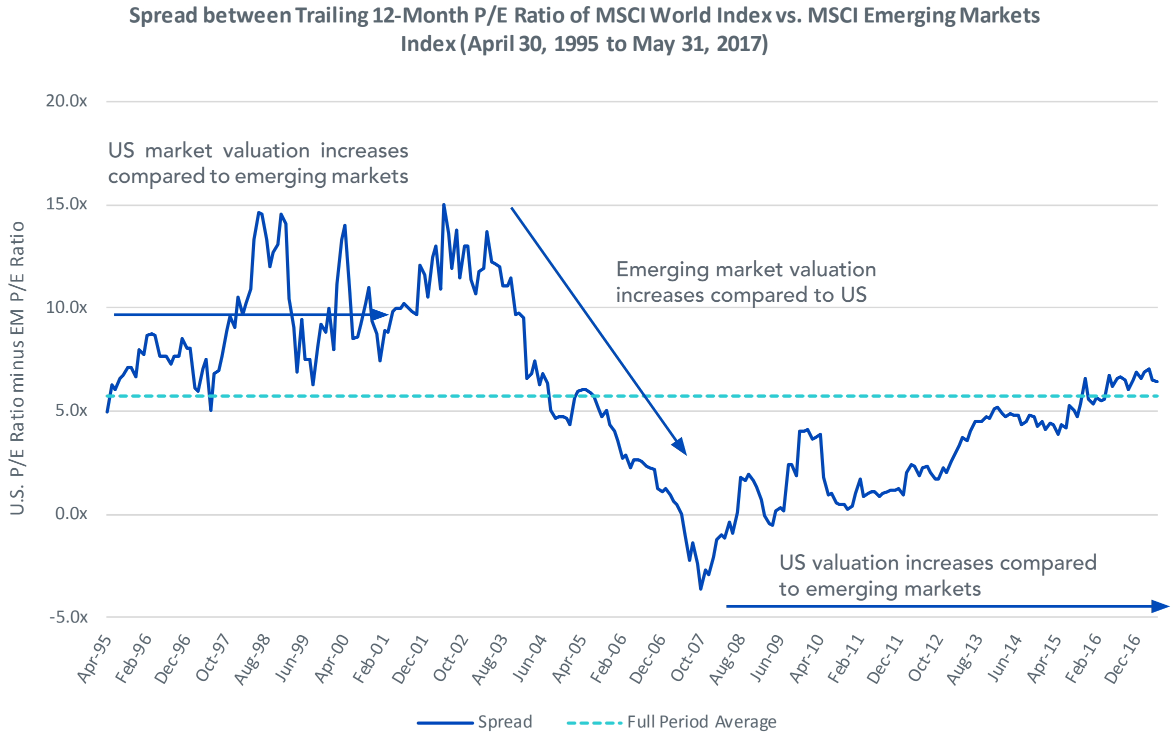
PLACING TODAY'S EMERGING MARKET LANDSCAPE INTO HISTORICAL CONTEXT

WisdomTree's live performance history in emerging markets has come at a very interesting time. Equity investors—when they allocate on a global basis—often compare the performance of developed and emerging markets. The thought process: Anything that has underperformed developed markets is seen as the "wrong choice" in a given allocation.

A more realistic way to consider emerging markets—which we know ahead of time will tend toward wide swings of both favorable and unfavorable relative performance against the developed market equities —is based upon a foundation of valuation. There isn't a way to know exactly whether emerging market equities will outperform developed market equities ahead of time, but we can put valuation trends into a longer-standing historical context.

The bottom line: *Since markets today are so interconnected, relative valuation of one market against another ultimately will tend to be influential. At a certain point, when investors consider the risks of emerging market equities and compare to the risk of developed equities, they will see the relative difference in valuation equate the risks of the two markets. Once this occurs (though it is almost impossible to know with certainty), it becomes much easier to allocate incrementally to emerging markets.*

Figure 2: Cyclical Nature Of Us Valuation Vs. Emerging Market Valuation



Source: FactSet, period from 30/4/1995 to 31/5/2017. Price-to-earnings (P/E) ratio: Share price divided by earnings per share. Lower numbers indicate an ability to access greater amounts of earnings per dollar invested. P/E ratio is the trailing P/E. You cannot invest directly in an index. Past performance is not indicative of future results.

+ **Global equities almost never trade at a discount to emerging market equities:** On average, global equities have traded with a P/E ratio about 5.7 points higher than emerging markets over this period. Since global equities are typically lower risk market than emerging markets, this makes sense.

+ **During 2000–2002's technology-focused market disruption, the P/E spread was 15.0 points higher in developed markets:** Global developed market equities grew very expensive during the technology market bubble in 2000. In a way, this sets a marker at a period where we know that equity valuations were extremely extended, and it would be difficult to foresee moving up to this level, absent a similarly stretched global equity valuation experience.

+ **Developed markets relative valuation vs. emerging has been trending up:** As of 31 May 2017, the P/E difference between the US and emerging markets had expanded to 6.4x. Considering that the long-term average is close to 5.7x, this means we're approximately 12% higher than this level today. While we don't know exactly when or if emerging market equities will outperform developed markets, this does tend to provide less resistance to future, forward-looking returns of emerging market stocks.

WISDOMTREE'S FAMILY OF EMERGING MARKETS DIVIDEND-WEIGHTED INDICES

On 1 June 2007—more than a full decade ago—WisdomTree launched its first Emerging Markets Dividend Indices, and then followed with the WisdomTree Emerging Markets SmallCap Dividend Index on 1 August 2007. WisdomTree's methodology is designed with the following attributes:

+ **Selection:** WisdomTree limits the selection of stocks only to those that pay regular cash dividends.

+ Weighting: Once a year, WisdomTree weights components based on the US Dollar value of cash dividends paid in the prior year.

+ **Valuation - sensitive rebalancing:** The rebalance itself seeks to avoid market bubbles by implementing a disciplined rebalancing mechanism of stocks and sectors based on relative value.

+ **Improvement in risk-adjusted returns:** We will highlight how focusing on dividends has tended to lower volatility while improving returns measured against market capitalisation-weighted benchmarks at various points over the 10-year history

Let's examine how this is accomplished.

WHAT IS THE DIVIDEND STREAM®?

WisdomTree's Emerging Markets Dividend Stream looks at the annual dividend cycle for emerging market companies with regular dividend policies on an annual basis, 30 September, of each year.

Figure 3: Top 10 WisdomTree Emerging Markets Dividend Stream[8] weights

Company name	Country	Sector	2016 Dividend Stream (in US Dollars, billions)	2016 Dividend yield	Initial weight	Final weight
China Mobile Ltd.	China	Telecommunication Services	$7.09	2.86%	3.68%	3.77%
China Construction Bank Corp H Shares	China	Financials	$9.88	5.54%	5.13%	3.68%
Taiwan Semiconductor Manufacturing Co Ltd	Taiwan	Information Technology	$4.96	3.29%	2.58%	2.95%
Gazprom PJSC GDR	Russia	Energy	$2.96	5.85%	1.54%	1.76%
Samsung Electronics Co	South Korea	Information Technology	$2.80	1.36%	1.46%	1.67%
Lukoil PJSC GDR	Russia	Energy	$2.39	5.77%	1.24%	1.42%
Hon Hai Precision Industry Co Ltd	Taiwan	Information Technology	$2.00	4.60%	1.04%	1.19%
Ambev S.A.	Brazil	Consumer Staples	$1.98	2.07%	1.03%	1.18%
Rosneft PJSC GDR	Russia	Energy	$1.98	3.43%	1.03%	1.17%
Industrial and Commercial Bank of China Ltd H Shares	China	Financials	$3.04	5.59%	1.58%	1.13%
Total/Average			**$193.14**	**4.18%**	**100.00%**	**100.00%**

Source: WisdomTree, FactSet. Data as of the 30/9/16 index screening date. Universe includes the top 10 index weights as of the rebalance. You cannot invest directly in an index. Past performance is not indicative of future results.

[8] Dividend Stream: References the WisdomTree Dividend Index universe. For each firm, the most current indicated dividend per share for each constituent is multiplied by the number of shares outstanding, and then the sum is taken for all constituent firms.

HOW RELATIVE VALUE REBALANCING WORKS

To understand how dividend-weighted indices work, it's critical to think about the relationship between a firm's share price performance and the change in the Dividend Stream.

+ **Falling dividend yields (rising price-to-dividend ratios) = more expensive and reduced weight:** Companies whose stock prices increased compared to their peers but saw their dividend growth rates trail their peers would typically see reduced weight during WisdomTree's annual emerging markets rebalance. In a market capitalisation-weighted index, however, a rising price relative to peers would lead to greater weight in the index.

+ **Rising dividend yields (falling price-to-dividend ratios) = less expensive and increased weight:** Companies whose stock prices fell while their dividends were flat or grew would typically see increased weight in WisdomTree's Emerging Markets Dividend-weighted indices. In a market cap-weighted index, however, the lower price would result in a lower weight, due again to the change in market capitalisation.

Figure 4: The Rebalance Methodology

Lower weights

Rebalance process lowers weight to companies who had below average growth or contracting dividend growth or companies whose share prices out-performed dividend growth and became more expensive vs peers.

Higher weights

Rebalance process adds weight to companies who had above average dividend growth or companies whose share prices lagged dividend growth and became less expensive vs peers.

WISDOMTREE'S THREE EMERGING MARKETS DIVIDEND INDICES

In 2007, WisdomTree created three emerging market indices that covered a broad cross-section of the market, a small- cap index and a value-oriented, high-dividend-yield index. The flow diagram and selection rules are described below.

Figure 5: Summary of WisdomTree index methodology for WisdomTree Emerging Markets Dividend-Weighted Indices

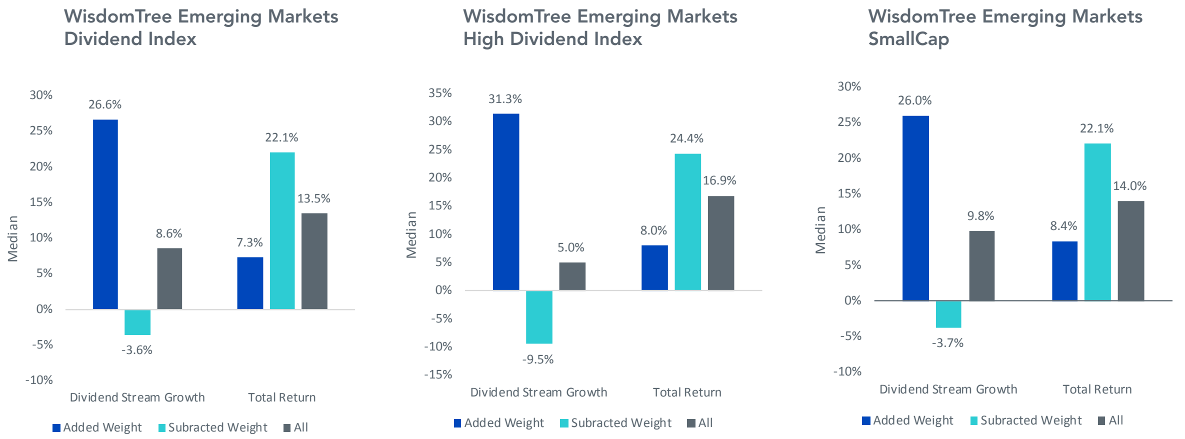
Methodology			
Eligible universe	Companies must pay at least $5 million in gross, regular cash dividends on shares of common stock and be incorporated in one of the following 17 emerging market nations: Brazil, Chile, China, Czech Republic, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, Turkey.		
Liquidity	Component companies must meet minimum market cap and liquidity screens to be eligible. An additional calculated volume factor is also applied to help improve liquidity.		
Weighting	The initial weight of a component in the Index is based on each component's Dividend Stream (derived by multiplying the US Dollar value of the company's annual gross dividend per share by the number of common shares outstanding for that company) divided by the Dividend Stream of the Index.		
Focus	**Index name**	**No. of stocks**	**Selection criteria**
Broad market	WisdomTree Emerging Markets Dividend Index	1363	All companies that pass the initial screening requirements are included in the Index.
High yield	WisdomTree Emerging Markets High Dividend Index	429	Securities ranking in the highest 30% by dividend yield within the WisdomTree Emerging Markets Dividend Index are selected for inclusion. Companies are deleted from the Index if their dividend yield ranking falls outside of the top 35% of companies at the annual rebalance.
Small cap	WisdomTree Emerging Markets SmallCap Dividend Index	780	Securities ranking in the lowest 10% by market capitalisation within the WisdomTree Emerging Markets Dividend Index are selected for inclusion. To be deleted, the market capitalisation rank of securities must rise above the smallest 13% in the universe.

Source: WisdomTree, with data as of 30/9/16 screening date. You cannot invest directly in an Index. Weights subject to change. Past performance is not indicative of future results.

A central element to WisdomTree's value-added process is its rebalance process, which adjusts once a year for relative value.

Let's illustrate how this rebalancing process works across the WisdomTree Index family.

Figure 6: Linking Total Returns And Dividend Growth To The Decision To Increase/Decrease Index Weight



Source: WisdomTree, with data as of 30/9/16 screening date. You cannot invest directly in an Index. Weights subject to change. Past performance is not indicative of future results.

As an example, during the 2016 rebalance, we saw:

+ **Dividend Stream growth:** Looking at the median values in order to mitigate the impact of outliers, we saw that, for the WisdomTree Emerging Markets Dividend, Emerging Markets High Dividend and Emerging Markets SmallCap Dividend Indices, stocks where weight was raised tended toward higher dividend growth rates, as compared to all of the stocks, through the course of the prior year. On the other hand, stocks where weight was subtracted saw median Dividend Stream growth that was negative.

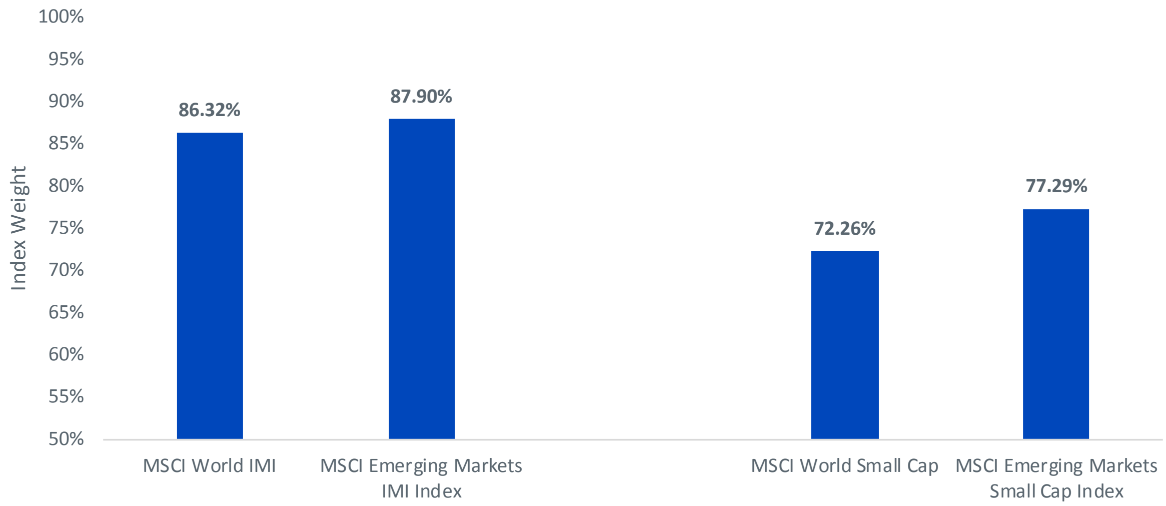
+ **Total return:** Again, looking at the median values, we saw that for these three indices, stocks where weight was increased tended toward lower total returns as compared to all the stocks in each universe. On the other hand, stocks where weight was subtracted tended toward higher performance.

The data illustrates how the Index once a year adjusts based on relative valuations: adding weight to stocks with lower performance and higher Dividend Stream growth and subtracting weight from stocks with higher performance and lower Dividend Stream growth.

HOW SELECTIVE ARE DIVIDEND-FOCUSED INDICES IN EMERGING MARKETS?

For many investors, the developed equity markets represent an important anchoring to a frame of reference. Since only 86% of the global developed equity market capitalisation is in dividend-paying stocks, many see that statistic and assume that the percentage of emerging market equities in dividend payers would have to be lower.

Figure 7: Emerging Market Equities Exhibited A Greater Percentage Of Market Cap In Dividend Payers Than US Equities



Sources: Bloomberg, MSCI. Data as of 31/5/17. You cannot invest directly in an index. Weights subject to change.

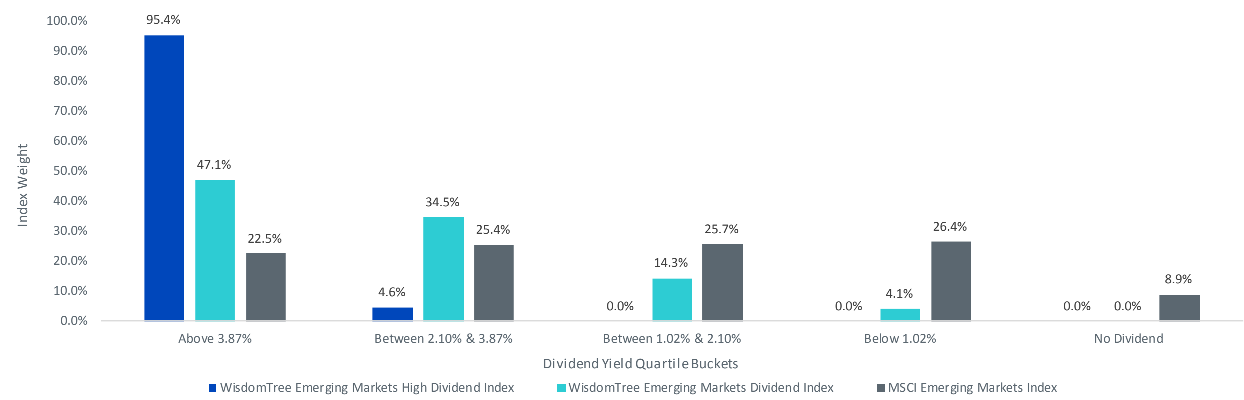
+ The MSCI World Investable Market Index (MSCI World IMI) had about 86% of the market cap in dividend payers, while the MSCI Emerging Markets Investable Market Index (MSCI Emerging Markets IMI) had nearly 88%.
+ The comparison is broadly similar in small caps. The MSCI World Small Cap Index had about 72% of the market cap in dividend payers, while the MSCI Emerging Markets Small Cap Index had just over 77% of the market cap in dividend payers.

With the broad cross-exposure of dividend-paying stocks in emerging markets, there should be little concern that focusing on dividend-paying stocks unduly narrows the opportunity set in emerging markets.

ANNUAL RESULT—RAISING THE DIVIDEND YIELD OF THE INDEX RELATIVE TO MARKET CAPITALISATION WEIGHTING

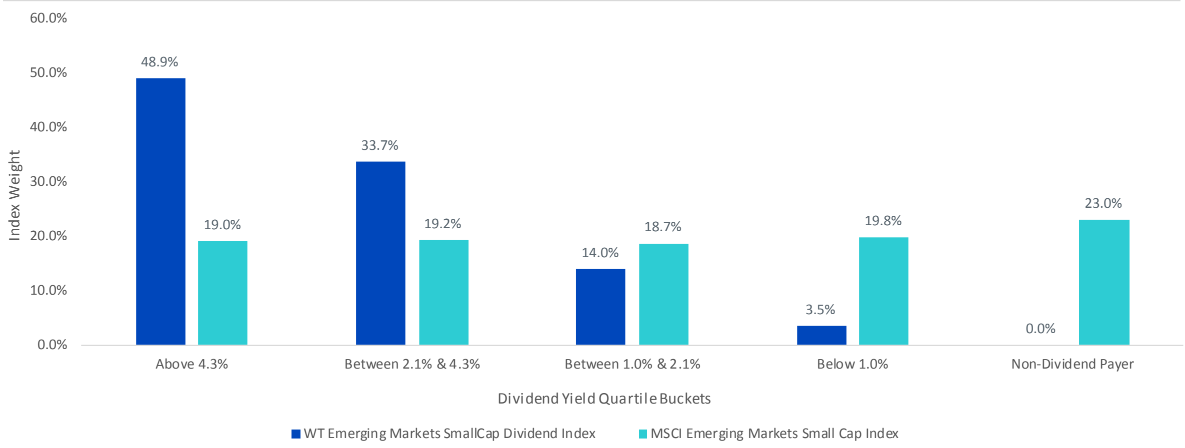
When one tilts weight away from market cap and toward dividend yields, mathematically one is taking a market cap weight and multiplying it by the dividend yield, which tends to raise the dividend yield of these indices relative to a similar universe of market cap-weighted stocks. We can illustrate how this occurs in Figures 8a and 8b—the dividend indices tilt a greater proportion of the index weight to stocks with higher dividend yields.

Figure 8a: How Wisdomtree's Methodology Generated Exposure To Higher-Yielding Stocks (Large Caps And Broad Market)



Sources: WisdomTree, Bloomberg, Standard & Poor's. Data as of most recent index screening, 30/9/16. You cannot invest directly in an index. Weights subject to change.

Figure 8b: How Wisdomtree's Methodology Generated Exposure To Higher-Yielding Stocks (Small Caps)

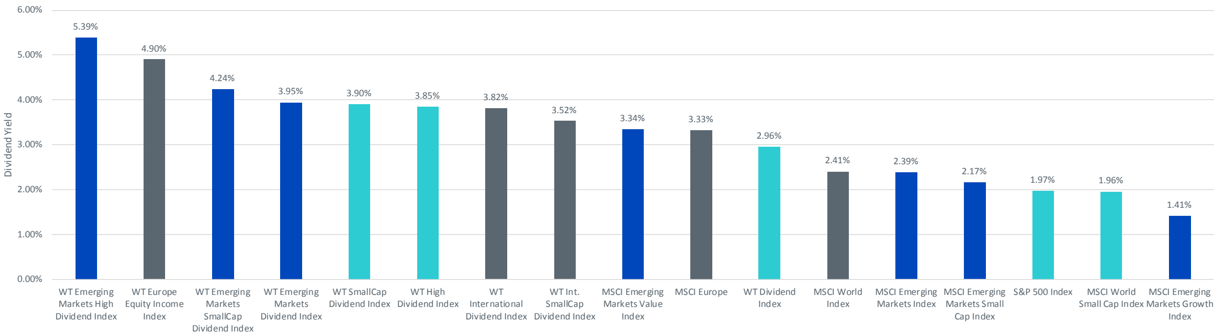


Sources: WisdomTree, Bloomberg, Standard & Poor's. Data as of most recent index screening, 30/9/16. You cannot invest directly in an index. Weights subject to change.

THE GLOBAL DIVIDEND YIELD ROAD MAP CURRENTLY FAVORS EMERGING MARKETS

In today's world, where global central banks have tended to keep interest rates low for the better part of the past decade, dividend yields have become a greater and greater focal point for investors. Where are some of the highest dividend yields located? Emerging markets is where—particularly if one utilises WisdomTree's dividend-focused approaches to the region.

Figure 9: Dividend yields on WisdomTree's Emerging Markets Dividend-Weighted Indices vs. Dividend and Market Capitalisation-Weighted indices around the world



Source: Bloomberg, data as of 31/5/17. You cannot invest directly in an index. Weights subject to change. Past performance is not indicative of future results

+ **MSCI World Index sets the baseline at 2.41%:** As we have noted, a frequent initial approach is to place things in context with the MSCI World Index.

+ **Broad-based dividend indices:** The WisdomTree Dividend Index in the US added approximately 100 basis points of yield above the S&P 500 Index—2.96%. The WisdomTree Emerging Markets Dividend Index set the highest mark across broad WisdomTree Dividend Indices, coming in at 3.95% (as compared to the MSCI Emerging Markets Index at 2.39%).

+ **High dividend indices:** The WisdomTree High Dividend Index in the US added about 190 basis points to the S&P 500 Index, coming in at 3.85%. The WisdomTree Europe Equity Income Index came in at 4.90% a premium of 158 basis points to MSCI Europe, while the WisdomTree Emerging Markets High Dividend Index came in at 5.39%, a yield premium of over 200bps compared to the MSCI Emerging Markets Value Index and a premium of over 300 basis points to the benchmark MSCI Emerging Markets Index. Given current conditions, we find the incremental yield advantage in emerging markets of particular interest.

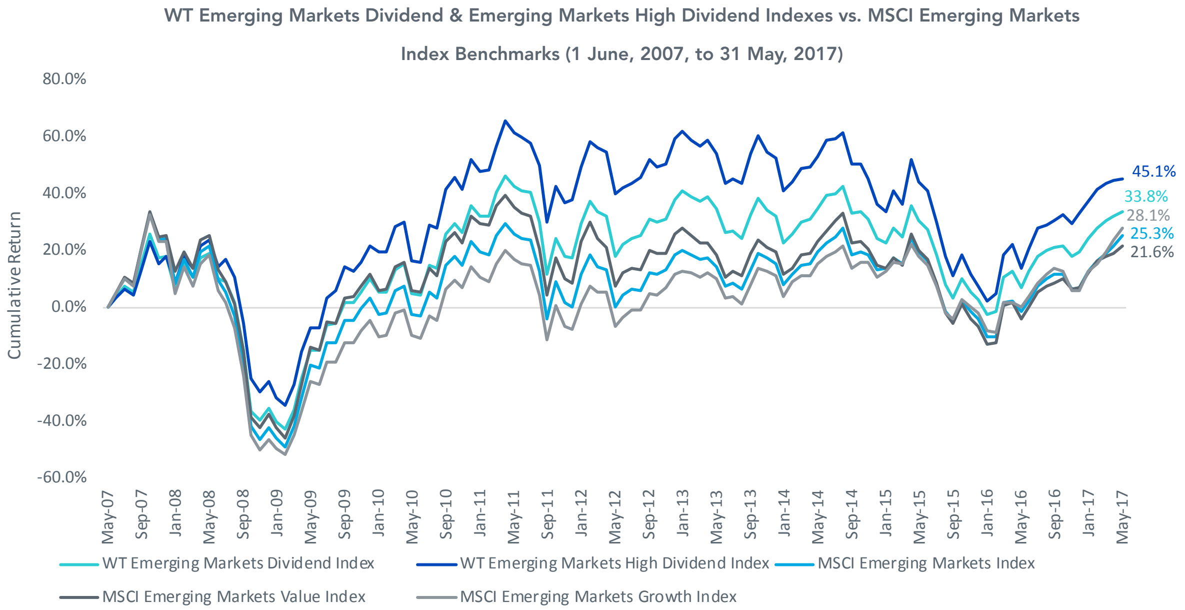
+ **SmallCap dividend indices:** Small-cap equity indices are not widely considered as opportunities for those in search of high dividend yield, partly because at a global level, the MSCI World Small Cap Index had a dividend yield of 1.96%, a substantial discount to its large cap peer. The impact of WisdomTree's approach in the WisdomTree SmallCap Dividend Index of US dividend payers is rather transformative, driving the dividend yield for a US small-cap equity exposure to 3.90%. In the case of the WisdomTree Emerging Markets SmallCap Dividend Index, the focus on dividends has created a yield of 4.24%, which represents a premium of 274 basis points over the equivalent MSCI Emerging Markets Small Cap Index.

WISDOMTREE INDICES HAVE A LONG HISTORY IN EMERGING MARKET EQUITIES

While the S&P 500 Index began its live history in 1957, the history of emerging market equity indices is nowhere near as long, as the MSCI Emerging Markets Index began its live calculation only in 1988.

WisdomTree was among the earliest index developers to take a non-market capitalisation-weighted, smart beta approach to emerging market equities, which began in the summer of 2007. The goal and rationale was simple, in that we believed in the potential to outperform the standard, market capitalisation-weighted approaches while maintaining a very broad exposure with higher correlation.[9]

Figure 10a: Was WisdomTree's First 10 Years In Emerging Markets A Success?



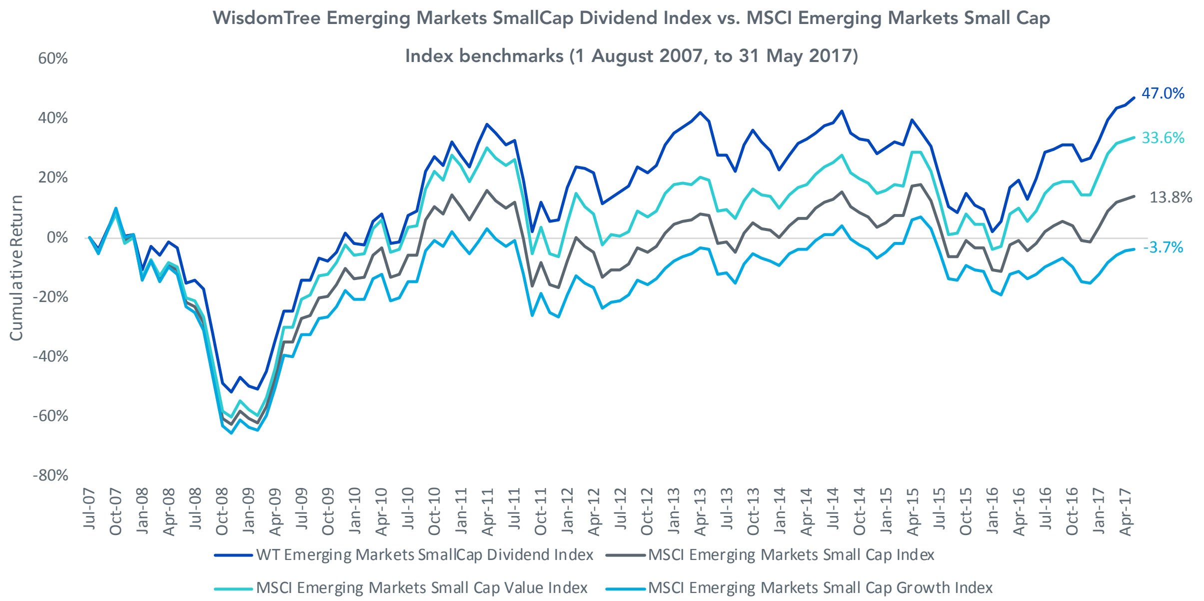
	vs. MSCI Emerging Markets Index Benchmark						
Index name	**Avg. ann. return**	**Avg. Ann. Std. Deviation**	**Sharpe Ratio**	**Beta**	**Correlation**	**Information Ratio**	**Tracking Error**
WisdomTree Emerging Markets Dividend Index	2.96%	21.65%	0.11	0.91	0.99	0.18	3.74%
WisdomTree Emerging Markets High Dividend Index	3.79%	20.73%	0.16	0.85	0.96	0.22	6.96%
MSCI Emerging Markets Index	2.28%	23.43%	0.07	1.00	1.00	0.00	0.00%
MSCI Emerging Markets Value Index	1.98%	23.65%	0.06	1.00	0.99	-0.12	2.51%
MSCI Emerging Markets Growth Index	2.50%	23.50%	0.08	1.00	0.99	0.09	2.50%

Sources: WisdomTree, Zephyr StyleADVISOR. Period from 1/6/07 to 31/5/17. Past performance is not indicative of future results. You cannot invest directly in an index. Index performance does not represent actual fund or portfolio performance. A fund or portfolio may differ significantly from the securities included in the index. Index performance assumes reinvestment of dividends but does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or brokerage commissions on transactions in fund shares. Such fees, expenses and commissions could reduce returns.

Sharpe ratio: Measure of risk-adjusted return. Higher values indicate greater return per unit of risk, specifically standard deviation, which is viewed as being desirable. Information ratio: A risk-adjusted return measure calculated by taking the excess return against the benchmark and dividing by the tracking error. Tracking Error: Refers to the difference in the return of a portfolio to its benchmark.

[9] *Correlation: Statistical measure of how two sets of returns move in relation to each other. Correlation coefficients range from -1 to 1. A correlation of 1 means the two subjects of analysis move in lockstep with each other. A correlation of -1 means the two subjects of analysis have moved in exactly opposite directions.*

Figure 10b: Was WisdomTree's First 10 Years In Emerging Markets A Success?



	vs. MSCI Emerging Markets Small Cap Index Benchmark						
Index name	**Avg. ann. return**	**Avg. Ann. Std. Deviation**	**Sharpe Ratio**	**Beta**	**Correlation**	**Information Ratio**	**Tracking Error**
WisdomTree Emerging Markets SmallCap Dividend Index	3.99%	22.38%	0.16	0.87	0.98	0.46	5.78%
MSCI Emerging Markets Small Cap Index	1.32%	25.06%	0.03	1.00	1.00	0.00	0.00%
MSCI Emerging Markets Small Cap Value Index	2.99%	25.14%	0.10	1.00	1.00	0.88	1.90%
MSCI Emerging Markets Small Cap Growth Index	-0.38%	25.14%	-0.03	1.00	1.00	-0.89	1.91%

Sources: WisdomTree, Zephyr StyleADVISOR. Period from 1/8/07 to 31/5/17. Past performance is not indicative of future results. You cannot invest directly in an index. Index performance does not represent actual fund or portfolio performance. A fund or portfolio may differ significantly from the securities included in the index. Index performance assumes reinvestment of dividends but does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or brokerage commissions on transactions in fund shares. Such fees, expenses and commissions could reduce returns.

Sharpe ratio: Measure of risk-adjusted return. Higher values indicate greater return per unit of risk, specifically standard deviation, which is viewed as being desirable. Information ratio: A risk-adjusted return measure calculated by taking the excess return against the benchmark and dividing by the tracking error. Tracking Error: Refers to the difference in the return of a portfolio to its benchmark.

Investment management and index development, of course, have many different definitions of "success," but we can simplify the picture by focusing on three distinct categories:

+ **Performance:** From the inception of both the WisdomTree Emerging Markets Dividend and High Dividend Indices, the MSCI Emerging Markets Index delivered a 2.28% average annual return. The MSCI Emerging Markets Value Index underperformed this figure, while the MSCI Emerging Markets Growth Index outperformed it. Notably, the WisdomTree Emerging Markets Dividend and High Dividend strategies both outperformed the MSCI Emerging Markets Index over this period, despite value lagging growth indices from MSCI.

  From the inception two months later of the WisdomTree Emerging Markets SmallCap Dividend Index, the MSCI Emerging Markets Small Cap Index delivered a 1.32% average annual return, and its value cut significantly outperformed. The WisdomTree Emerging Markets SmallCap Dividend Index added 267 basis points per year relative to the standard cut and 100 basis points per year relative to the MSCI Emerging Markets Small Cap Value Index.

+ **Risk:** While we saw the WisdomTree Indices all outperform their market capitalisation-weighted benchmarks, it's even more notable that this was achieved with a lower risk level across the board, whether one measured risk on the bases of absolute standard deviation or relative beta to a benchmark.

+ **Correlation:** High correlation is important, in that if investors desire exposure to a particular piece of the asset allocation pie, they will want the variability in returns of any given access vehicle to behave similarly to the variability in returns for the given benchmark for that space. The lowest correlation was seen with the WisdomTree Emerging Markets High Dividend Index versus the MSCI Emerging Markets benchmark at 0.96, a very high figure.

DECONSTRUCTING THE SOURCES OF EMERGING MARKET EQUITY RETURNS

There are many models that seek to explain how equity market returns are generated. Here we look at three particular drivers:

+ **Dividend yield:** Specifically, this is the rate of average annual dividend reinvestment over the period. Starting at a high dividend yield (lower valuation) will tend to help in raising this component of the model.

+ **Dividend growth:** This is the rate of average annual dividend growth over the period.

+ **Valuation change:** This is the rate of average annual change in the price-to-dividend multiple (reciprocal of the dividend yield), and it seeks to measure the relationship between dividend levels and price levels—rising means prices are increasing faster than dividends; falling means prices are increasing slower than dividends.

Figure 11: Dividend Yield, Dividend Growth Or Valuation Change—How Were Returns Generated?

Total return deconstruction: 1June 2008, to 31 May 2017				
Index name	**Avg. ann. rate of dividend reinvestment**	**Avg. ann. rate of dividend growth**	**Avg. ann. rate of valuation change**	**Avg. ann. total return**
WisdomTree Emerging Markets Dividend Index	3.47%	-2.16%	0.06%	1.30%
WisdomTree Emerging Markets High Dividend Index	4.58%	-3.00%	0.33%	1.78%
MSCI Emerging Markets Index	2.41%	-1.44%	-0.60%	0.33%
MSCI Emerging Markets Value Index	2.95%	-1.46%	-1.73%	-0.30%
MSCI Emerging Markets Growth Index	1.88%	-2.13%	1.17%	0.88%
Total return deconstruction: 1 August 2008, to 31 May 2017				
Index name	**Avg. ann. rate of dividend reinvestment**	**Avg. ann. rate of dividend growth**	**Avg. ann. rate of valuation change**	**Avg. ann. total return**
WisdomTree Emerging Markets SmallCap Dividend Index	3.64%	-2.84%	5.52%	6.26%
MSCI Emerging Markets Small Cap Index	2.12%	-0.46%	2.85%	4.55%
MSCI Emerging Markets Small Cap Value Index	2.64%	1.01%	2.38%	6.15%
MSCI Emerging Markets Small Cap Growth Index	1.60%	-2.55%	3.94%	2.91%

Source: Bloomberg. You cannot invest directly in an index. Past performance is not indicative of future results.

We noticed some very interesting things over this period, where overall total returns, in the segment biased more toward larger market capitalisation size, were not very high:

+ WisdomTree's outperformance (where it occurred) was largely driven by a much higher rate of average annual dividend reinvestment. This is at the core of the methodology, through selecting only dividend-paying stocks and then tilting weight toward those with higher dividend yields. On an annual basis, this figure would tend to be refreshed during WisdomTree's rebalance.

+ It was tough to find any dividend growth in emerging markets over this period. Since WisdomTree is tilting toward companies with higher dividends to start with, it is notable that the higher starting point can make it harder for the WisdomTree Indices to showcase significant growth.

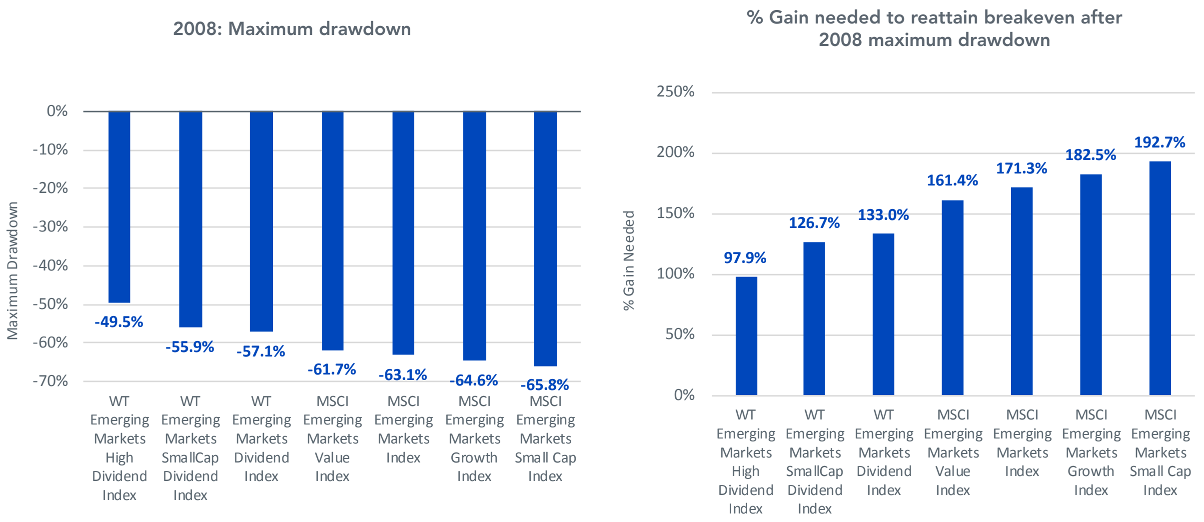
+ For the small caps (a two-month later starting date), the change in valuation was a relevant driver of total returns. This was also an important driver of the return differential for the WisdomTree Emerging Markets SmallCap Dividend Index over the MSCI market capitalisation-weighted benchmarks.

WHAT HAPPENED DURING THE 2008 "STRESS TEST"?

11 While the global financial crisis of 2008–09 was frightening at the time, the data that it provided for indices calculating in real time was invaluable. Many people might think that dividend-focused approaches would tend to go down less than the market during tough periods, but 2008 really tested that premise.

The key here lies in helping to bring levels back up to "even" after a big drawdown. The way that the math works, every percentage point of less downside return can be meaningful.

Figure 12: How Focusing On Dividends Mitigated The 2008 Drawdown And How That Was Helpful



Sources: WisdomTree, Bloomberg. Period from 1/1/08 to 12/31/08. You cannot invest directly in an index. Past performance is not indicative of future results.

+ The MSCI Emerging Markets Small Cap Index had a maximum drawdown of 65.8% during 2008. What's staggering is that this means it would need a return of 192.7% to return to its prior high-water mark. As we all know, waiting for 192.7% cumulatively in any equity market can take a lot of time (it would imply a near TRIPLING).

+ The WisdomTree Emerging Markets High Dividend Index had a maximum drawdown of 49.5% in 2008. Clearly, this is also significant, but a subsequent return of only 97.9% would be required to reattain the prior high-water mark—a big difference from 192.7%.

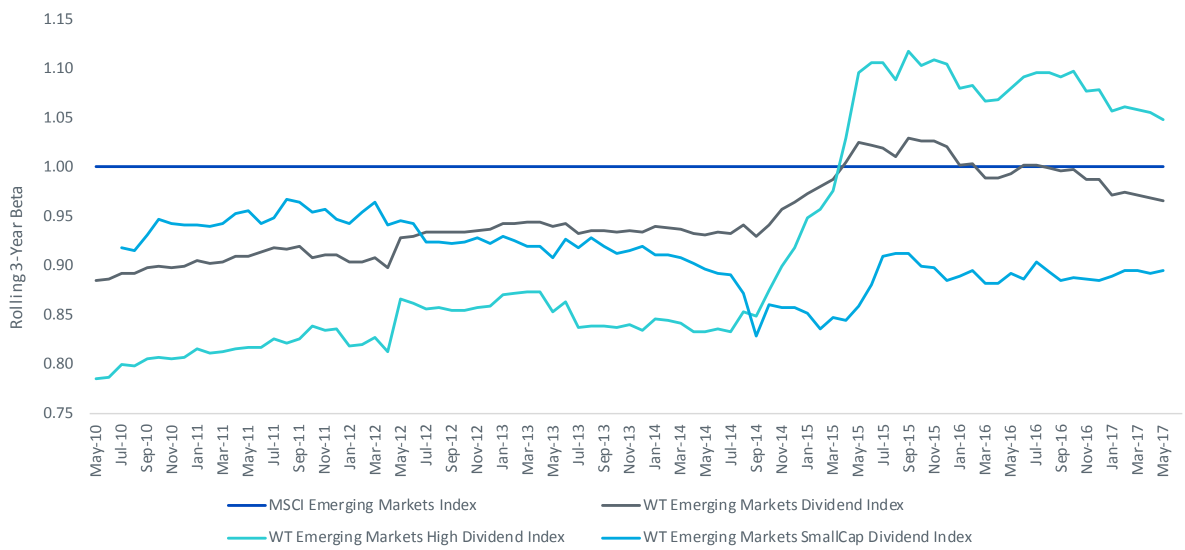
IMPORTANT TO KNOW WHERE THE DIVIDENDS (AND HIGH DIVIDEND YIELDS) ARE

Over the years, one of the few constants in emerging market equity investing is change. Conditions will change. Growth rates will change. Market characteristics will change. One thing that changed a lot was where both large-cap Dividend Streams grew to be the largest and where dividend yields became the highest over WisdomTree's live history in emerging markets.

+ During the 2012 rebalancing process, Russia's equity market saw its dividend yields increase dramatically along with its cash Dividend Streams. This led from Russian stocks being fairly insignificant in WisdomTree's Indices to a significant over-weight. Also, the rouble tends to be one of the more volatile, commodity-sensitive currencies in emerging markets. While emotionally it may have been very difficult to take an over-weight exposure to Russia's equities, one of the benefits of the process is that the rules operate independently of emotion.

+ A further consequence of this shift was an overall allocation to Energy and Materials that changed dramatically, again, particularly in the High Dividend Index. This is notable in that an index with an over-weight in these commodity- sensitive sectors may change its overall risk profile, as well as its sensitivity to movements in commodity prices.

Figure 13: The Same Indices With The Same Methodologies Can See Their Risk Profiles Shift Across Time



Source: Bloomberg. Period from 31/5/07 to 31/5/17. You cannot invest directly in an index. Past performance is not indicative of future results.

+ The WisdomTree Emerging Markets High Dividend Index was the strongest in its shift toward much higher weights in Russia as well as in the Materials and Energy sectors.

IMPORTANT TO KNOW WHERE THE DIVIDENDS (AND HIGH DIVIDEND YIELDS) ARE

One of the interesting features about the WisdomTree Emerging Markets SmallCap Dividend Index (WTEMSC) is how consistently lower its volatility is relative to traditional large-cap indices. The rolling three-year beta on the WisdomTree Emerging Markets SmallCap Dividend Index has been 0.91, and the since-inception number has been 0.87.

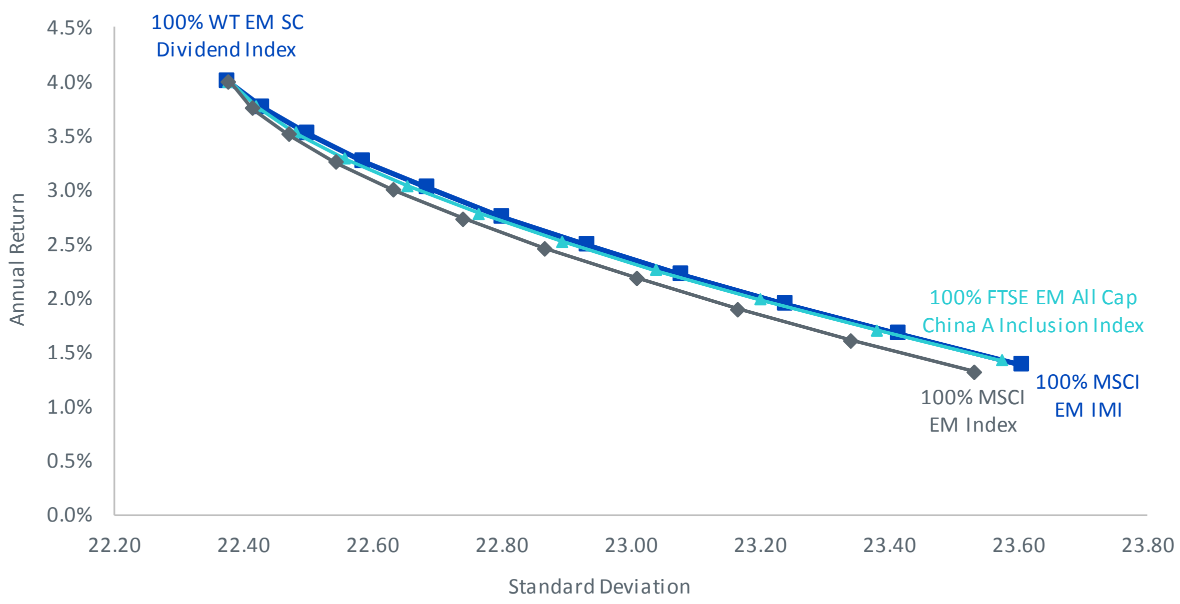
While investors typically associate small cap exposures as increasing risk profiles, it is interesting that larger allocations to small caps can be made without increasing the risk profile. Given the return features of emerging market small caps and the diversification from country and sector blends, this may be one of most important indices WisdomTree developed in this universe.

A hypothetical blended portfolio of the MSCI Emerging Markets Investable Market Index with WTEMSC would have historically experienced increased returns and reduced volatility, regardless of the size of the allocation.

As shown in the chart below, for every additional 10% allocation that the WisdomTree Index represented, the risk and return profile of the portfolio was enhanced.

This also holds true when blending WTEMSC with the two main emerging market indices: the FTSE Emerging Markets All Cap China A Inclusion Index and the MSCI Emerging Markets Index.

Figure 14: Emerging Markets Efficient Frontier



Sources: WisdomTree, Bloomberg, FactSet. Data for the period 1/8/07 to 31/5/17. Past performance is not indicative of future results. You cannot invest directly in an index.

	Average annual total teturns as of 31/3/17					
Index name	YTD	1 year	3 years	5 years	10 years	Since WisdomTree Index inception
WisdomTree Emerging Markets SmallCap Dividend Index	13.10%	22.38%	2.92%	3.09%	N/A	3.80%
MSCI Emerging Markets Index	11.45%	25.06%	1.18%	0.81%	2.72%	0.80%
MSCI Emerging Markets Investable Market Index	11.65%	25.14%	1.23%	1.05%	2.93%	0.92%
FTSE Emerging Market All Cap China A Inclusion Index	10.13%	25.14%	2.83%	1.86%	3.52%	1.41%

Sources: WisdomTree, Bloomberg, FactSet. Data since inception is 31/7/07 to 31/3/17. Past performance is not indicative of future results. You cannot invest directly in an index.

CONCLUSION

One of the growing topics in asset management is the development of factor indices to improve on traditional market capitalisation-weighted benchmarks. WisdomTree now has 10 years of real-time results across three Dividend Stream-weighted indices—a broad index, a high dividend index and a small-cap dividend index. Each of these incorporates a rules- based approach to manage valuation risks and also instill a quality discipline to remove companies that do not have cash flows to pay dividends. We believe the success of the 10-year, real-time track records shows that the conventional narrative— that an investor must use an active manager to capitalise on pricing inefficiencies and mispricing in emerging markets—is misguided and that index strategies can also be utilised to provide value-added enhancements over the market beta.