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Special Report

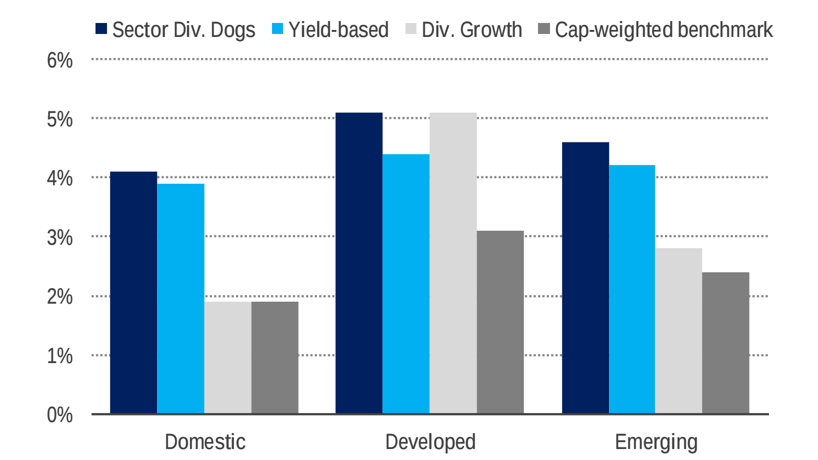
S-Network Sector Dividend Dogs Index Family

In this report:

- Simple yield-based dividend indices tend to have risky concentrations that can diminish the benefits of indexing, while indices based on dividend growth and size are typically better diversified but may lack the income producing qualities investors expect.
- The strategy of the S-Network Sector Dividend Dogs family of indices overcomes these drawbacks by adding a sector overlay to yield-based stock selection, allowing for enhanced yield and prudent diversification. The family consists of three indices covering U.S., foreign developed and emerging market equities.
- Our analysis of index composition, performance, fundamentals and valuation metrics concludes that Sector Dividend Dogs index family is worthy of investors' consideration as an alternative to more traditional dividend index strategies.
- Exchange traded funds tracking each of the "Dogs" indices give investors an easy way to implement the strategy in a global equity portfolio: the **ALPS Sector Dividend Dogs ETF (NYSE Arca: SDOG**) covering domestic stocks; the **ALPS International Sector Dividend Dogs ETF (NYSE Arca: IDOG)** in developed foreign markets, and the **ALPS Emerging Sector Dividend Dogs ETF (NYSE Arca: EDOG)** for emerging market shares**.**

Figure 1: Trailing Dividend Yields

Based on 2017 dividends per share, by index strategy and market



Note: Based on consensus figures for current constituents in each index as of 12/31/2017. Subject to change. The actual index used to represent each strategy across Domestic, Developed and Emerging Markets is detailed in Table 1 on page 3.

Past performance does not guarantee future results.

Source: AltaVista Research

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Worlds collide: dividend & index investing

Dividends are one of the most basic and time-tested factors in stock selection. For many investors, they represent both a tangible benefit of stock ownership—a fairly dependable and often growing source of income—as well as an intangible signal from management about the true health of the business. In their 1934 classic *Security Analysis,* Benjamin Graham & David Dodd recognized dividends as one of the key elements in determining a stock's intrinsic value, and therefore useful in the practice of what would become known as value investing.

Later academic work such as the Dividend Discount Model would expand upon the use dividends in valuing stocks, but in essence these are theories regarding stock *selection.* They are based on the premise that investors can use fundamental analysis to determine which stocks to buy and which to avoid. Value investors believe that by correctly identifying stocks selling for less than intrinsic worth, they can profit from the increase in price that will eventually result when the market recognizes the true value.

Mid-century a new concept called Modern Portfolio Theory (MPT) began to gain precedence based on the Efficient Markets Hypothesis, which says that market prices reflect all known information about a security, and therefore fundamental analysis by individuals in an effort to discern a security's true value were largely futile. Instead, investors are encouraged to own a portfolio of stocks representative of the broader market and accept market returns as optimal.

In 1974 John Bogle founded Vanguard Group, which introduced the first index fund a year later. This made it possible for investors of even very modest means to "own the market" via purchase of shares in a fund that closely mimicked the broad stock market. Commonly called *indexing,* this strategy also allows investors to "buy and forget" because the market portfolio is by definition optimal, whereas a stock-picking strategy requires constant reassessment.

Late in life Graham even came to embrace MPT, but in the decades following his seminal work the notion that an investor would want to own the market would have been absurd. Today, these basic ideas of investing—stock picking versus indexing—remain in conflict. We are not going to add to that debate; rather this report will examine how the *combination* of these investment practices can lead to unintended consequences, and how a new index family, the S-Network Sector Dividend Dogs indices covering domestic, foreign developed and emerging markets, aims to overcome them.

Not your father's index fund

The growth and popularity of index funds—first index mutual funds and more recently exchange traded funds (ETFs) have made it easy and cheap to own the market. However, recent innovations mean that investors are no longer limited to funds tracking well-known broad market indices, and some have objectives that are in fact very different. One of the biggest innovations has been the development of *fundamental* indices that combine aspects of stock selection with index investing in an effort to create a "better" index.

Dividend-oriented strategies are one of the most prevalent types of fundamental indices, aiming to provide the income and value benefits that dividend-based stock picking is meant to offer. Unfortunately, many of these have an unintended consequence in that they are highly concentrated in a few sectors or countries, thus failing to offer the broad market diversification that is the foundation of traditional indexing. Other dividend indices do offer broad diversification, but as we'll see this often comes at the expense of income and value qualities investors expect.

There is nothing sacred about traditional market indices. Fundamental indices have a lot to offer investors, but they don't always have the same buy-and-forget qualities of more traditional approaches. As with any investment, investors should know and understand what they own, so that's where we'll begin.

Foundations: index construction methodologies

Because an index is based on a set of rules that determine its makeup, understanding these rules is key for investors in selecting the funds most suitable to their needs. Seemingly minor differences in universe, selection criteria and weighting can significantly alter the composition of an index and therefore its overall investment potential.

Before proceeding we define these key terms. Universe means the entire population of stocks eligible for inclusion in an index. It can be as wide as all the stocks in the world, but typically is a smaller set such as “U.S. stocks” or “Emerging Markets” or even “U.S. large caps.” Selection criteria determine which stocks from the broad universe are to be included in the index, and weighting determines the importance of each component in the overall index.

Although the methodologies surrounding the available dividend-oriented indices have many nuances, for the sake of simplicity we can divide them into three basic categories:

- **Yield-driven strategies.** Index constituents are select for and weighted by yield.
- **Dividend growth strategies.** Index constituents are selected for growth and/or yield, but weighted by size.
- **Sector Dogs strategy.** A “crossbreed” strategy employed by the Sector Dividend Dogs index family, where constituents are selected for yield, but equally weighted individually and by sector.

By examining the construction methodologies of a representative index in each category we can shed some light on its investment characteristics. Table 1 sets forth the indices we’ve chosen to represent each strategy for U.S., developed, and emerging market stocks, as well as a cap-weighted benchmark for each market.

Yield-driven strategies have delivered high yields but with risky concentrations; dividend growth strategies look like “growth stocks that pay dividends”

In general what we find in the analysis that follows is that yield-driven strategies have delivered high yields but have unintended concentrations that can hinder performance and result in heightened volatility, while dividend growth index strategies often look more like “growth stocks that pay dividends” without the income and value characteristics dividend investors expect. In contrast, the Sector Dogs strategy employed by the Sector Dividend Dogs index family can deliver yields almost as attractive as the purely yield-based strategies, but while maintaining prudent sector and geographic diversification. This in turn has a major impact on performance, both past and potential.

Table 1: Dividend Index Strategies

Strategy	Domestic	Developed Markets	Emerging Markets
Yield-driven	NASDAQ Dividend Achievers 50 Index	S&P International Dividend Opportunities Index	S&P Emerging Market Dividend Opportunities Index
Dividend growth	NASDAQ Dividend Achievers Select Index	NASDAQ International Dividend Achievers Index	WisdomTree Emerging Market Dividend Growth Index
Sector Dogs	S-Network Sector Dividend Dogs Index	S-Network International Sector Dividend Dogs Index	S-Network Emerging Sector Dividend Dogs Index
Cap-weighted benchmark	S&P500 Index	MSCI EAFE Index	MSCI Emerging Markets Index

Note: *For brevity and readability, in the text we may refer to an index without naming the owner or including the word “index.” For example, Dividend Achievers 50 refers to the NASDAQ Dividend Achievers 50 Index. We may also refer to any of the Sector Dividend Dogs indices in context as “Sector Dogs” or just “Dogs.”*

Construction Methodologies

Yield-driven Strategies

The main objective of yield-driven strategies is, obviously, to offer a much higher dividend yield than is available with a market-based index such as the S&P 500. As we'll show later, these strategies have delivered on the promise of high dividend yields.

For domestic stocks, we chose the NASDAQ Dividend Achievers 50 Index to represent the yield-driven strategy. It is the high-yielding version of the U.S. Broad Dividend Achievers Index, consisting of the fifty highest-yielding stocks in the index, weighted by yield.

The universe for the broader Dividend Achievers Index consists of U.S.-listed companies. To be selected for inclusion in the index, a company must have increased regular annual dividend payments for the past ten consecutive years, as well as meet certain liquidity.

A history of raising dividends is no guarantee of safety, as the Global Financial Crisis made clear

It is worth noting that while the requirement that companies have paid increasing dividends for at least 10 years prior no doubt excludes some unstable firms from inclusion in the index, it is no guarantee of safety. Many financial firms had in fact steadily increased dividends for decades before the Global Financial Crisis, until all of a sudden they could not.

For developed foreign markets, the S&P International Dividend Opportunities Index is a good representation of the yield-driven strategy. The index consists of the 100 developed market common stocks with the highest *risk-adjusted* yields from S&P Dow Jones Indices' equity database. The risk adjustment is a recent change in methodology that adjusts for volatility of yields (not stock prices) which serves to weed out firms with unstable dividends, even if their yields are high as of the measurement date. Constituents must be profitable and show EPS growth and maintain stable or increasing dividends over the past three years. Constituents are weighted by yield (standard yield; not risk-adjusted) subject to some basic diversification requirements, such that no stock may exceed 3.0% of the index at time of rebalancing and no single country may have a weight greater than 25%.

Similarly, the S&P Emerging Market Dividend Opportunities index represents the yield-driven approach in emerging markets. Constituents included in this index have also passed profitability and dividend stability criteria, and the 100 stocks with the highest risk-adjusted yields are selected and then weighted by yield. Three-percent limits apply to any single stock, and no country or sector may exceed 25% at the time of semi-annual index reconstitution.

Table 2: Yield-driven index construction methodologies

Strategy	Domestic	Developed Market	Emerging Market
Representative index	NASDAQ Dividend Achievers 50	S&P International Dividend Opportunities	S&P Emerging Market Dividend Opportunities
Universe	U.S. stocks	S&P Dow Jones equity database	S&P Dow Jones equity database
Selection criteria	• 50 highest yielding • Min. 10yr history of dividend increases • Min. liquidity standards	• 100 highest yielding, risk-adjusted* • EPS growth and dividend stability • Min. liquidity and market cap	• 100 highest yielding, risk-adjusted* • EPS growth and dividend stability • Min. liquidity and market cap
Weighting	Yield	Yield	Yield
Constituents	50	100	100
Reconstitution	Annual	Semi-annual	Semi-annual

**Note: Risk adjusted yield calculated as dividend yield divided by volatility of dividend yield over preceding 3 years.*
Source: AltaVista Research

Dividend Growth Strategies

By contrast, dividend growth strategies include the broader spectrum of dividend paying stocks without the emphasis on yield. By severing the relationship to yield, this strategy avoids the pitfall of concentration in a few relatively high yielding sectors (and countries, for international versions) but as we'll demonstrate, these indices often lack the income producing qualities that dividend-oriented investors likely expect.

Dividend-growth strategies may lack the income producing qualities that investors expect

For U.S. stocks, the NASDAQ Dividend Achievers *Select* Index represents this strategy. Like its high-yielding counterpart the Dividend Achievers *50*, stocks in this index are comprised of firms the U.S. Broad Dividend Achievers Index, but they remain weighted under a modified market cap methodology, and there is no set number of constituents that qualify. However, the Select version of the index applies additional liquidity screens that trim the universe by about 30%.

Among developed market stocks, we've chosen the NASDAQ International Dividend Achievers Index to represent the dividend growth strategy. Stocks in this index are drawn from a universe of non-U.S. firms that have American Depository Receipts (or Global Depository Receipts) or other shares listed in the U.S. that meet certain liquidity screens. When the index was first created this requirement made sense, as shares listed on foreign exchanges were more expensive to trade, and reliable information harder to come by. Today however this requirement seems oddly limiting of the opportunity set.

In any case, to be included in the International Dividend Achievers Index securities must have a record of at least five years of consecutive increases in regular dividends. The number of constituents in the index therefore varies from year to year, but qualifying securities are weighted by yield.

Despite the weighting by yield, the stocks in this index are not particularly high *yielding*—as we will discuss later. Since the primary selection criteria is dividend *growth,* the index tends to include stocks with commensurate earnings growth to support those dividends, and which the market tends to assign higher valuations. By definition it excludes any company that has cut dividends or simply maintains a steady dividend payment, meaning defensive stocks and turnaround situations likely to have higher yields number few if any in the index.

Finally, for emerging markets we've selected the WisdomTree Emerging Markets Dividend Growth Index. It selects the top half of stocks from the broad universe of dividend payers in the WisdomTree Emerging Markets Dividend Index, ranked by growth and quality factors, and weighted by the size of annual cash dividends paid by each firm. The growth factor is long-term earnings growth expectations, while the quality factor ranking is based on three year historical averages for return on equity and return on assets.

Table 3: Dividend growth index construction methodologies

Strategy	Domestic	Developed Market	Emerging Market
Representative index	NASDAQ Dividend Achievers Select	NASDAQ Int'l Dividend Achievers Select	WisdomTree EM Dividend Growth
Universe	U.S. stocks	Non-U.S. firms with ADRs or GDRs	WisdomTree EM Dividend Index
Selection criteria	• Min. 10yr history of dividend increases • Min. liquidity standards	• Min. 5 yr. history of dividend increases • Min. liquidity standards	• Growth factor rating • Quality factor rating • Top half from universe
Weighting	Modified market cap	Yield	Dividend size
Constituents	varies	varies	varies
Reconstitution	Annual	Annual	Annual

Source: AltaVista Research

Sector Dividend Dogs Strategy

The conflict between dividend investing and indexing as we see it is this: an index constructed on the *stock-picking* criteria of yield is concentrated in a few sectors thus reducing the diversified market exposure that is the foundation of index investing; an index that severs the connection to yield may provide diversified exposure but loses much of the value and income benefits of dividends. This is the dilemma that the new S-Network Sector Dividend Dogs family of indices is meant to overcome.

The Sector Dividend Dogs strategy aims to deliver high yields without risky concentrations

The "Dogs" in the name is a nod to index's "Dogs of the Dow" heritage, in which yield is the primary selection criteria for constituents. However the similarities largely end there. Whereas the Dogs of the Dow select stocks from the Dow Jones Industrial Average, the domestic S-Network Sector Dividend Dogs index has as its universe the S&P 500.

Compared to a broader universe of U.S. stocks, this universe comes "pre-screened," meaning the companies already meet the liquidity and quality criteria necessary to qualify for inclusion. This doesn't guarantee financial stability since S&P 500 companies can and do run into trouble, but as we've seen neither does a lengthy history of dividend increases by individual issuers. Nonetheless, as a *universe* the S&P 500 is appealing with respect to dividends based on a history of favorable and unfavorable dividend actions for the group as a whole (Figure 2 & Figure 3).

We would also note that companies which get booted from the S&P 500 are automatically booted from (and replaced in) the Sector Dividend Dogs index. Given the amount of attention paid to these blue chips versus the rest of the U.S. stock universe, troubled firms or those with diminished prospects may well lose a following among investors and get booted from the S&P 500 before they are forced to cut dividends, which is often a measure of last resort.

Figure 2: Favorable Dividend Actions
*S&P 500 vs. non-S&P 500 issues**

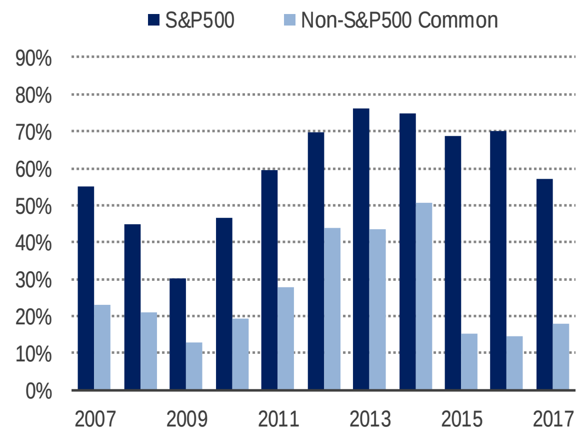
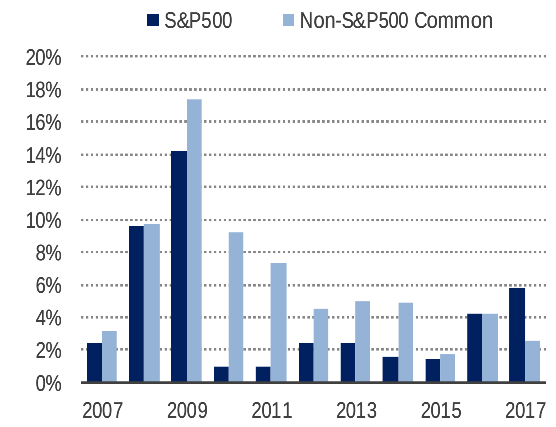


Figure 3: Unfavorable Dividend Actions
*S&P 500 vs. non-S&P 500 issues**



*Source: Standard & Poor's and FactSet. *Note: Non-S&P 500 issues consists of U.S.-listed common shares not in the S&P 500, excluding Real Estate Investment Trusts. Percentages shown indicate the rate of favorable/unfavorable actions for issues within each group.*

Beyond having a quality starting universe, the primary difference is the strategy's sector overlay: the five highest yielding common stocks (excluding REITs) in each sector are selected and equally weighted, meaning that each of the ten major sectors (according to Global Industry Classification System, or "GICS")[1] are also equally weighted at 10% each.

While the domestic Sector Dividend Dogs are drawn from the "pre-screened" universe of S&P 500 firms, the International Sector Dogs come from the specially-created S-Network Developed Markets Index (ex-Americas). Although similar to the well-known MSCI EAFE Index, the S-Net DMI is based on the World Bank High Income Countries. Some additional liquidity screens weed out thinly traded issues, so that the S-Net DMI consists of over 400 generally well-followed "blue-chip" dividend-paying companies across 22 developed markets representing about 70% of available market cap.

Like its domestic counterpart, the International Sector Dividend Dogs Index imposes a sector overly that selects the five highest yielding stocks in each of the ten GICS sectors and weights them equally. The result again is that each sector also has an equal weight in the International Sector Dividend Dogs index.

Finally, the Sector Dogs strategy in emerging markets selects the five highest yielding stocks from each sector in the S-Network Emerging Markets Index and weights them equally, but with a 10% cap on individual countries. This additional constraint in emerging markets prevents a country in crisis—for whatever reason—from growing to an imprudent 20% or 30% of the index. And as we'll show later, this also means the index less "top heavy" than other emerging market indices.

The S-Network Emerging Markets Index is itself drawn from the universe of stocks whose domicile and primary exchange listings are in countries identified by the World Bank as Upper Middle Income, as well as certain Lower Middle Income countries, so as to capture a minimum of 85% of total float market capitalization of each country contained in the universe.

Table 4: Hybrid (Sector Dogs) index construction methodologies

Strategy	Domestic	Developed Market	Emerging Market
Representative index	Sector Dividend Dogs	International Sector Dividend Dogs	Emerging Sector Dividend Dogs
Universe	S&P 500	S-Network Developed Markets Index (ex-Americas)	S-Network Emerging Markets Index
Selection criteria	• Highest yielding 5 stocks from each of 10 sectors (excluding REITs)	• Highest yielding 5 stocks from each of 10 sectors (excluding REITs) • Liquidity screen	• Highest yielding 5 stocks from each of 10 sectors (excluding REITs) • Liquidity screen
Weighting	Equal stock and sector	Equal stock and sector	Equal stock and sector
Constituents	50	50	50
Reconstitution	Annual	Annual	Annual

Source: AltaVista Research

[1] Until recently there were ten sectors according to the Global Industry Classification Standard ("GICS") maintained by Standard & Poor's and MSCI. In August 2016, Real Estate Investment Trusts ("REITS") and related shares were removed from the Financial sector and placed in a newly created Real Estate sector, increasing the number of GICS sectors to eleven. However, since the Sector Dividend Dogs Strategy excludes REITs, index provider S-Network states that Real Estate will not become a sector in these indices.

Composition Analysis

Sector Allocation

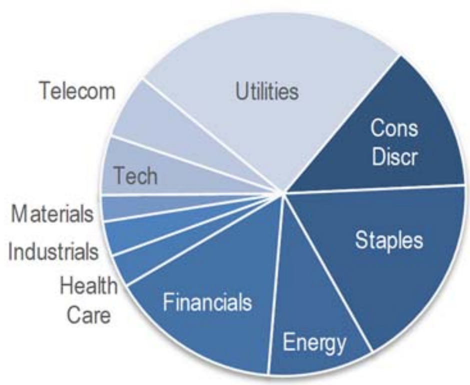
Differences in index construction methodology can have dramatic implications for the composition of an index. One of the biggest consequences of yield-based dividend strategies is the concentration of assets in a few relatively high-yielding sectors. For example, as of this writing Utilities comprise about 25% of the Dividend Achievers 50 Index, followed by Consumer Staples (18%), Financials (15%), and Consumer Discretionary (13%) as shown in Figure 4. This isn't necessarily problematic as long as investors understand what they own and that it should not be viewed as a buy-and-forget investment like broad index funds. This became abundantly clear during the Global Financial Crisis.

In September 2008, the domestic yield-driven index was about 75% Financials

Because the Dividend Achievers 50 had no diversification requirements with respect to sector allocation, in September 2008 it was extremely concentrated in Financials, to the tune of 75%! (Revised rules currently limit each sector to 25% at rebalancing). Investors had correctly anticipated that dividends would be cut for many stocks and fled the sector, sending prices down and yields up, before the cuts actually occurred. As a result, the Dividend Achievers 50 increasingly "bought in" to the financial sector as things got worse.

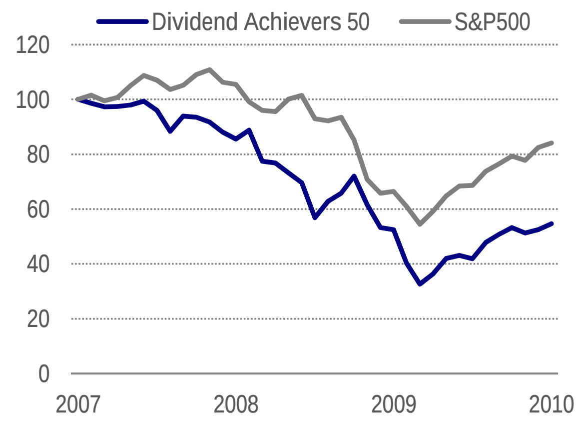
That might have made for a great investment had the crisis eased without bankruptcies and bailouts, and stocks rebounded, but as it happened it resulted in devastating losses for the index (Figure 5). A similar situation played out in Energy to a lesser extent in recent years, where share prices are down pushing yields higher, partly in anticipation that dividend cuts would be necessary.

Figure 4: Sector breakdown
Dividend Achievers 50 Index



Source: AltaVista Research as of 12/31/17.
Note: Sector allocations are subject to change.

Figure 5: Relative performance*
Dividend Achievers 50 vs. S&P500



Source: Bloomberg.
**Note: Monthly total returns, 12/31/06-12/31/10*

Past performance does not guarantee future results.

In developed foreign markets, the yield-driven strategy also has fairly high sector concentrations. Although not as dramatic as the sector imbalances for the domestic yield-driven strategy, the S&P International Dividend Opportunities Index nonetheless has outsized exposure to the typically high-yielding Telecom and Utilities sectors, which together account for about 28% of the index (Figure 6), compared with 7% for the MSCI EAFE Index; as well as 13% in the Real Estate sector, versus 3% exposure in the EAFE Index.

In contrast, the market cap-driven weighting of the Dividend Achievers Select Index, representing the growth strategy for domestic stocks, severs the relationship to yield and therefore avoids the pitfall of concentration in a few relatively high yielding sectors. Nonetheless it has its own concentrations in sectors which have seen good dividend growth in recent years, including 29% in Industrials (vs. 11% for the S&P 500) and 17% in Consumer Staples (vs. 8%). Meanwhile the index is underweight Technology at 14% (vs. 24%) and offers zero exposure to Energy (vs. 6%).

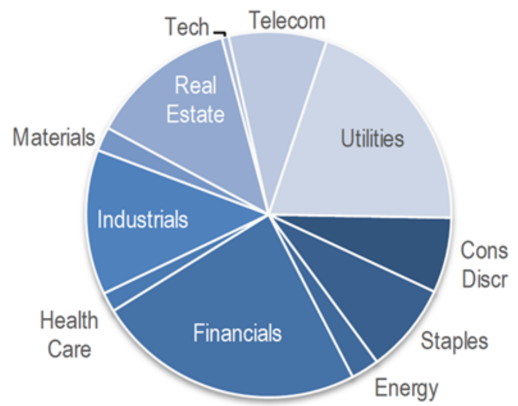
Similarly, the NASDAQ International Dividend Achievers Index, representing our dividend growth strategy in developed foreign markets, is somewhat concentrated in typically Telecoms and Utilities at a combined 18%, but it remains most overweight in Energy—a big growth sector until a few years ago—at 23% of exposure compared with just 5% in the benchmark MSCI EAFE Index. It may well be that most of these firms can maintain or grow their dividends even with relatively low global prices for oil—we make no prediction either way—but investors should at least be aware of their exposure in this area.

Meanwhile, by definition each of the Sector Dividend Dogs indices are equally-weighted by sector at the time of rebalancing, so they do not have the kind of concentration risk that can affect yield-driven indices. Equal sector weight means of course that the allocation of the Sector Dividend Dogs index varies from that of the cap-weighted benchmark in each market.

Sector Dogs have less sector "skew" than other dividend strategies, resulting in higher correlation to their benchmark

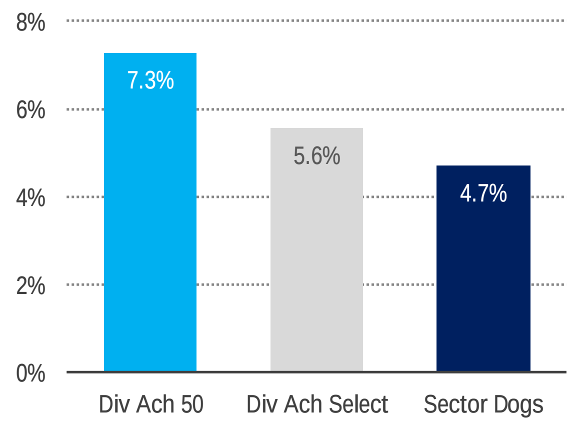
But surprisingly, in domestic and foreign developed markets, the representative Sector Dividend Dogs indices have less sector "skew," meaning that the average absolute difference in exposures to each sector versus the cap-weighted benchmark is smaller on average for the Sector Dogs indices than it is for the other dividend strategies (Figure 7). Partly as a result, the domestic Sector Dividend Dogs and the International Sector Dividend Dogs indices tend to be highly correlated to the cap-weighted benchmark in their respective markets, as we'll demonstrate later.

Figure 6: Sector breakdown
S&P Int'l Dividend Opportunities Index



Source: AltaVista Research as of 12/31/2017.
Note: Sector allocations are subject to change.

Figure 7: Sector skew
Domestic dividend indices vs. S&P500



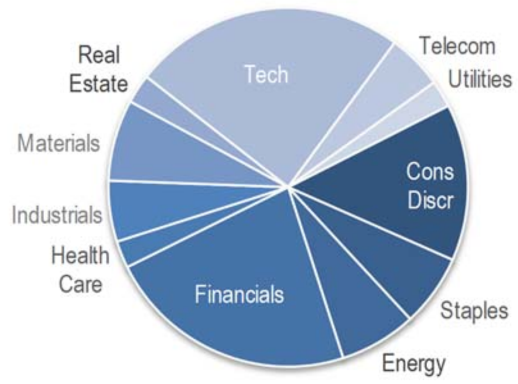
Source: AltaVista Research as of 12/31/2017

Among Emerging Market indices the story is a bit different. Emerging markets tend to be less diversified than their developed market counterparts to begin with, which is reflected by the sector breakdown of the MSCI Emerging Markets index. This cap-weighted benchmark for emerging market stocks has its biggest exposures in Technology (23%) and Financials (21%) but offers very little exposure to Health Care, for example (Figure 8).

The yield-based index strategy also has a large allocation to Financials at 25% and only about 3% in Health Care. Historically it also offered relatively little exposure to the Consumer Discretionary and Staples sectors that likely benefit over time from rising incomes and an expanding middle class in emerging markets, but that has changed as of recent rebalancing, while exposure to Telecom and Utilities shares has come down (Figure 9).

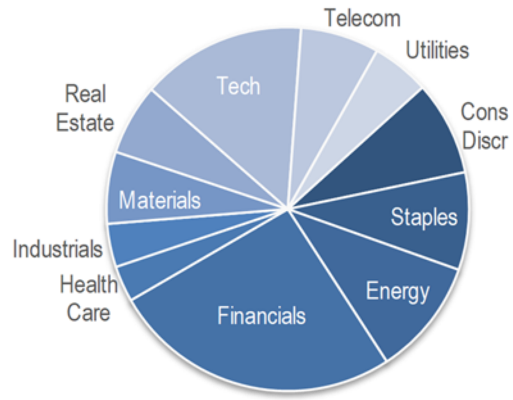
Meanwhile, the historically well-balanced WisdomTree Emerging Market Dividend Growth index our growth strategy in Emerging Markets, recently developed its own peculiar sector skews, with considerable concentration in the Consumer sectors and far less exposure to Financials versus the MSCI Emerging Markets index (Figure 10). But like the benchmark it has little exposure to Health Care.

Figure 8: Sector breakdown
MSCI Emerging Markets



Source: AltaVista Research as of 12/31/2017.
Note: Sector allocations are subject to change.

Figure 9: Sector breakdown
S&P Emerging Market Dividend Opportunities

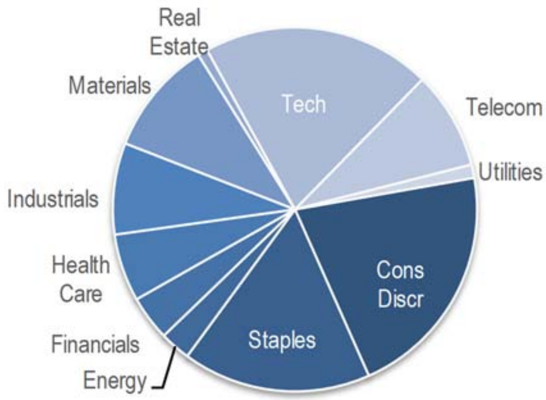


Source: AltaVista Research as of 12/31/2017.
Note: Sector allocations are subject to change.

In contrast, the Emerging Sector Dividend Dogs methodology cuts down on the concentration in Financials and Technology while bringing significant exposure to Health Care. But by altering the more pronounced sector biases of the MSCI Emerging Markets index, here the Sector Dogs methodology produces a higher "skew" versus the cap-weighted benchmark, whereas in both the domestic and developed-market Sector Dogs indices, the Dogs methodology produces less skew compared to the relevant benchmark (Figure 11).

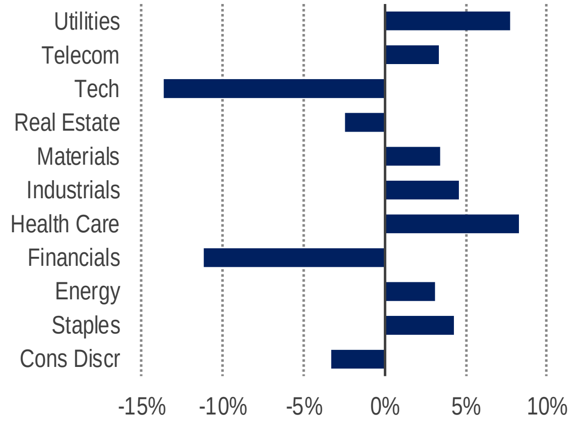
During periods when a particular sector is driving market activity, this will either work to investors' benefit or detriment. Investors should at least be aware of this tendency.

Figure 10: Sector breakdown
WisdomTree EM Dividend Growth



Source: AltaVista Research as of 12/31/2017.
Note: Sector allocations are subject to change.

Figure 11: Skew by sector
Emerging Sector Dogs vs. MSCI Emg. Mkts.



Source: AltaVista Research as of 12/31/2017.
Note: Sector allocations are subject to change.

Geographic Allocation

Geographic concentration is another factor to consider when evaluating index construction in foreign markets. For the S&P International Dividend Opportunities Index, representing the yield-driven strategy in developed markets, Canada, Britain and Australia top the list of countries (Australia is down from 24% at the start of last year). Dividends enjoy favorable tax treatment in Australia, and as a result Australian firms pay some of the highest dividends in the world. Naturally, this means they are likely to be heavily represented in a yield-based global index, and that weight could certainly rise again.

At the opposite end of the spectrum, Japanese firms generally pay out lower dividends, and as a result our yield-driven index offers only 6% exposure (up from zero historically), compared with 22% for the MSCI EAFE Index. A list of the top ten country allocations in each of the three representative dividends indices as well as the MSCI EAFE Index, is presented in Table 5.

It should be stated that the objective of the S&P International Dividend Opportunities Index is not to mimic the exposures of the EAFE index. One key difference is that S&P includes some emerging market exposure, currently at about 10%, with a maximum of 15% set by index rules at the time of rebalancing. Our highlighting the differences in makeup between the two indices isn't criticism of either, but rather to illustrate the impact that a yield-driven construction methodology has on overall index exposures. As always, investors who purchase ETFs tracking any of these indices need to be cognizant of what they own.

Like the high-yielding index, the International Dividend Achievers, representing the dividend growth strategy, has some exposure to emerging markets, at 17%; and nearly one-third of assets in Canada whereas EAFE has none. It is has no exposure to Japan, but also notable is its 6% allocation to the U.S. via Bermuda and other U.S.-listed companies (not shown below) that now have foreign headquarters (likely for tax purposes), meaning some investors may be duplicating exposure they already have from a domestic index fund.

Country allocation changes along with opportunities for yield, but remains well diversified

The International Sector Dividend Dog Index's largest country allocations are to Australia (21%), Britain (18%) and Sweden (10%), while Japan is only 9%. However, these weightings vary considerably over time. For example, back in November 2014 Japan was the largest allocation at about 17%; more recently Australia and Britain had even larger allocations at nearly half of the index combined—spread across all ten sectors—prior to the annual rebalancing that took effect in December 2016. Thus we see an index that responds to changes in valuation by shifting allocation to countries where opportunities for yield are abundant.

Table 5: Top 10 Country Allocations by Index – Developed Foreign Markets

S&P Int'l Dividend		NASDAQ Int'l Div		Int'l Sector Dogs		MSCI EAFE	
CANADA	14.6%	CANADA	31.3%	AUSTRALIA	20.8%	JAPAN	21.7%
BRITAIN	12.7%	BRITAIN	21.2%	BRITAIN	18.1%	BRITAIN	14.7%
AUSTRALIA	11.8%	RUSSIA	7.1%	SWEDEN	9.7%	FRANCE	9.9%
SWITZERLAND	9.9%	BERMUDA	6.2%	JAPAN	8.8%	GERMANY	9.5%
HONG KONG	6.5%	ISRAEL	4.4%	FRANCE	5.9%	SWITZERLAND	8.6%
GERMANY	5.9%	HONG KONG	4.4%	FINLAND	5.9%	AUSTRALIA	6.8%
JAPAN	5.8%	MEXICO	3.0%	SPAIN	5.8%	NETHERLANDS	6.0%
SPAIN	5.0%	SWITZERLAND	2.7%	GERMANY	3.9%	SPAIN	3.1%
SWEDEN	3.2%	AUSTRALIA	2.6%	ITALY	3.9%	HONG KONG	2.8%
SINGAPORE	3.1%	NETHERLANDS	2.4%	ISRAEL	2.5%	SWEDEN	2.7%

Source: AltaVista Research as of December 31, 2017. Country allocations are subject to change.

One of the debates swirling around the topic of emerging market indices is whether countries like Taiwan and South Korea still qualify as emerging markets, or should be promoted to developed market status. While index provider MSCI still counts those countries among emerging markets, FTSE has come down on the opposite side.

We won't argue for one position or the other. Instead, we simply note that as emerging markets, these two countries loom large, together accounting for about one quarter of the MSCI Emerging Markets Index geographic exposure.

In emerging markets, the Sector Dogs index is less top-heavy in terms of country exposure

The Emerging Sector Dividend Dogs index is constructed from a universe consisting of shares from countries on the World Bank Upper Middle Income countries. As a result it does not have any exposure to South Korea or Taiwan, which are classified as High Income countries by the World Bank (meaning they would be included in the International Sector Dividend Dogs index for developed market stocks if they otherwise qualify under the Sector Dogs methodology).

The exclusion of the two Asian tigers, along with the 10%-cap on exposure to any single country at time of rebalancing has the practical effect of elevating exposure to smaller markets such as Turkey and Indonesia that have much less exposure in the other strategies; as well as markets like Poland, Hungary and the Czech Republic (not shown) that are often absent from other Emerging Market strategies altogether.

The result is an index that is a little bit less top-heavy. The top five countries represented under the Sector Dogs methodology together account for 50% of exposure, compared with figures for the yield and growth strategies of 77% and 55%, respectively (Table 6).

Also importantly, the Emerging Sector Dogs' geographic exposure tends to be more stable than that of other strategies, insulating it somewhat from the roller coaster ride sometimes typical of individual emerging markets. For example, the commodity-driven markets of Brazil and South Africa were the "dogs" of 2015 and the "darlings" of 2016. Yet since 12/31/14 the combined exposure to these two markets has varied less than five percentage points from the 20.2% allocation today. The other two strategies and the cap-weighted benchmark all saw larger swings of as big as ten percentage points, as those two markets cratered and then rebounded.

Table 6: Top 10 Country Allocations by Index – Emerging Markets

S&P Emg Mkt Dividend		WT EM Dividend Growth		Emerging Sector Dogs		MSCI Emerging Markets	
SOUTH AFRICA	27.1%	INDIA	15.6%	SOUTH AFRICA	11.5%	CHINA	22.9%
TAIWAN	19.5%	RUSSIA	10.4%	TURKEY	10.0%	SOUTH KOREA	13.6%
THAILAND	16.4%	TAIWAN	10.3%	RUSSIA	9.8%	TAIWAN	10.3%
HONG KONG	8.6%	SOUTH AFRICA	10.1%	BRAZIL	9.7%	INDIA	8.5%
RUSSIA	5.8%	CHINA	8.3%	THAILAND	9.4%	SOUTH AFRICA	6.9%
MALAYSIA	5.8%	INDONESIA	8.2%	INDONESIA	7.9%	BRAZIL	6.6%
INDONESIA	4.2%	SOUTH KOREA	7.2%	MALAYSIA	7.9%	HONG KONG	5.3%
CHINA	2.7%	MEXICO	5.4%	CHINA	7.7%	MEXICO	2.9%
INDIA	2.0%	HONG KONG	5.4%	INDIA	6.1%	RUSSIA	2.5%
POLAND	0.8%	BRAZIL	5.1%	CHILE	4.7%	INDONESIA	2.2%

Source: AltaVista Research as of December 31, 2017. Country allocations are subject to change.

Looking Back: Back Test Analysis

We regressed monthly returns data—back test results obtained from the index provider—for each Sector Dividend Dogs index against the relevant cap weighted benchmark in each market, and analyzed returns, volatility, correlation and information ratios over five different time periods: 1 year, 3 years, 5 years, 10 years, and during the Global Financial Crisis period, from October 2007 thru February 2009, which coincided with the peak-to-trough period for most indices.

We conducted the same analysis for the other dividend strategies to the extent history was available, and show results alongside those for the Sector Dividend Dogs index in each market. Importantly, because investors cannot invest directly in an index, we subtracted the expense ratios of the exchange traded fund tracking each index, to more closely simulate the returns an investor might have received over the period examined.

Domestic Dividend Indices

Figure 12 compares returns from our three dividend indices as well as the S&P500 for the ten-year period starting April 30, 2002. The two relatively high-yielding indices, the Dividend Achievers 50 and Sector Dividend Dogs, maintained a lead over the S&P500 through the first half of the last decade until the onset of Financial Crisis. Then their fates began to diverge.

Because the Dividend Achievers 50 was so heavily exposed to the financial sector at the time (approximately 75% in September 2008), it began to turn downwards before the other indices and underwent the steepest overall decline during the crisis of 65% from peak to trough. It did not recover to previous highs like the other indices, and lagged the S&P500 in total returns for the ten year period examined.

The unfortunate concentration in Financials swamped the benefits that investors would otherwise expect from high yields, such as lower volatility and downside protection. *Since* the financial crisis, these stocks have been less volatile than the S&P500; but when that stability was needed most during the crisis they could not provide it (Table 8).

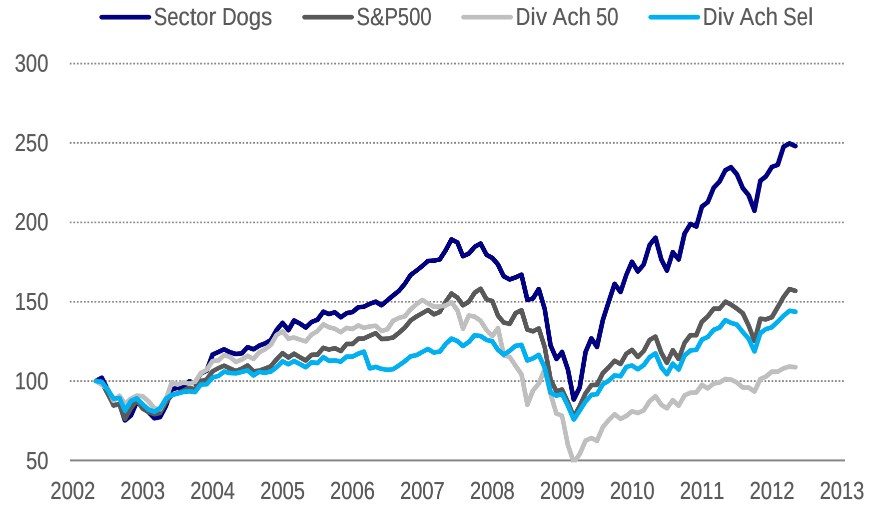
The yield-based index's concentration in Financials negated the defensive benefits normally associated with dividends

What stands out about the Dividend Achievers Select index is how closely its performance has tracked that of the S&P500. The only time were performance deviated substantially was in the months leading up to the financial crisis, when it did not keep pace with the S&P. On the flipside it also experienced the smallest decline, peak-to-trough, or 41%. The Dividend Achievers Select index was also the most highly correlated of the three to the S&P500.

The Sector Dividend Dogs index obviously fares well in this analysis—the fact of which prompted us to conduct more in-depth research in the first place. While its decline during the financial crisis was on par with that of the S&P500 as mentioned, it started from a high level after several years of better returns. As a result, at its worst an investor who bought at the start of 2002 had a loss of only 12%, compared to a loss of about 23% for an investor in the S&P500.

However, the index's performance since the financial crisis is where it really stands out. This is owed to the powerful combination of broad exposure to sectors that would bounce back and reach new highs—like the S&P500 and Dividend Achievers Select—but with yields at that point which were *very* high, based on dividends that ultimately were proven safe (Figure 2 & Figure 3). That helped add a few compounding percentage points to total returns in addition to the share price appreciation from the market rebound.

Figure 12: Ten Year Performance Returns (rebased)
Domestic Dividend Indices, April 30, 2002 – April 30, 2012



Note: Monthly total returns, rebased, April 30, 2002 = 100. Figures subtract expenses of applicable ETF from index data quoted on Bloomberg as follows: Sector Dogs (40bp); Div. Achievers 50 (57bp); Div. Achievers Select (10bp) and S&P500 (9.5bp). ***Returns for the Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.***

Past performance does not guarantee future results.

Source: Bloomberg and AltaVista Research

Table 7: Pre-inception Performance Analysis: Domestic Dividend Indices

Index	S-Network Sector Div. Dogs	Dividend Achievers 50	Dividend Achievers Select	S&P500
Strategy	Sector Dogs	Yield-based	Dividend growth	Benchmark
Index ticker	SDOGXTR	DAYTR	DVGTR	SPXT
1 YEAR				
Total return	6.5%	7.4%	3.9%	4.7%
Ann. volatility	13.0%	10.7%	14.1%	16.7%
r-squared (r^2)	80.1%	66.5%	93.1%	100.0%
Information ratio	0.82	0.95	-0.55	
3 YEARS				
Total return	27.9%	20.3%	18.1%	19.4%
Ann. volatility	16.9%	14.2%	13.3%	15.6%
r-squared (r^2)	79.9%	68.4%	95.7%	100.0%
Information ratio	3.92	0.36	-1.10	
5 YEARS				
Total return	6.3%	-5.9%	3.1%	0.9%
Ann. volatility	22.8%	25.8%	16.0%	19.0%
r-squared (r^2)	82.6%	51.7%	95.3%	100.0%
Information ratio	1.94	-1.32	1.58	
10 YEARS				
Total return	19.9%	1.7%	7.5%	9.4%
Ann. volatility	19.0%	19.8%	13.5%	15.9%
r-squared (r^2)	82.2%	52.1%	89.1%	100.0%
Information ratio	4.49	-1.94	-1.21	
Financial Crisis Period (Oct. 2007 – Feb. 2009)				
Total return	-52.6%	-64.7%	-40.9%	-51.0%
Ann. volatility	6.4%	10.3%	5.1%	5.7%
r-squared (r^2)	83.9%	24.2%	91.9%	100.0%
Information ratio	-0.62	-1.53	6.12	

Note: *All measurements are based on monthly observations for the period ending April 30, 2012. Three, five and ten year return figures annualized; financial crisis period returns are simple returns for the peak-to-trough period specified. Return figures subtract annual expense ratios of the applicable fund from the index data quoted on Bloomberg as follows: Sector Dogs (40bp); Div. Achievers 50 (57bp); Div. Achievers Select (10bp) and S&P500 (9.5bp).* ***Returns for the Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.*** *"R-squared" (r^2) is a statistical measure of the strength of the relationship between the index being measured and the S&P500 Index. Information ratio is a measure of the risk-adjusted performance of the index being measured versus that of the S&P500 Index.* ***Past performance does not guarantee future results.***

Source: *Bloomberg and AltaVista Research*

Developed Market Dividend Indices

Likewise, we examined ten years of pre-inception (i.e., "back test") data for the International Sector Dogs Index, from June 2003 through June 2013, against the performance of the MSCI EAFE and International Dividend Achievers indices (Figure 13). The S&P International Dividend Opportunities index launched on January 25, 2008. Although back-tested performance data prior to that date has been published by the index provider, regulations do not allow us to present pre-inception performance with "live" performance as a continuous series. However, limited live performance statistics are presented in Table 8.

Immediately what stands out is that in the first half of the decade examined the International Sector Dogs, International Dividend Achievers and EAFE indices all closely track one another, although the International Sector Dividend Dogs opened up a slight lead in the run-up to the Global Financial crisis, as its relatively limited exposure to the financial sector mitigated the fallout.

While all indices suffered devastating losses in the peak-to-trough period October 2007 – February 2009 (based on monthly observations), the International Sector Dividend Dogs index had the best performance, losing "only" 51%, and bottoming at levels that still preserved approximately 33% of the gains since the start of our analysis period, compared with a decline of 57% for the EAFE Index, which ended just 9% higher than at the start of our analysis in June 2003.

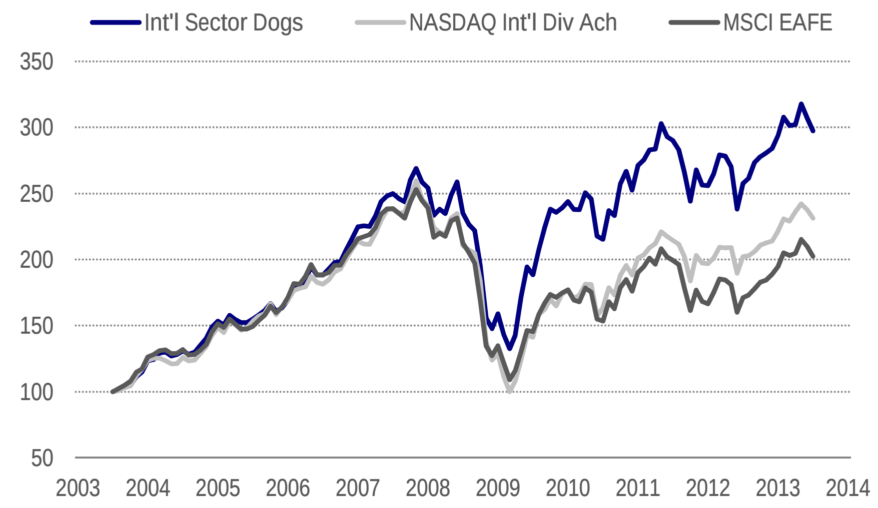
Somewhat surprisingly, the growth-oriented International Dividend Achievers index lost 64% of its value during the crisis, the worst of the three. That is because the index had quite a different composition than it does today. Prior to the GFC, most financial firms had excellent records of dividend growth, and the sector was much more heavily represented than it is today, at roughly 35% of the index back in April 2008. The index's inclusion criteria of five consecutive years of dividend increases simply wasn't a good predictor of *future* dividend actions in the wake of the crisis. In contrast, the financial sector is limited to 10% of the International Sector Dividend Dogs index as a matter of policy, so that the damage from that sector was mitigated.

Past dividend growth wasn't a good predictor of future dividend growth in the wake of the Financial Crisis

Since the end of the GFC, the International Sector Dogs and International Dividend Achievers indices have essentially returned to their pre-crisis performance pattern. That is, they performed largely in line with each other, with the International Sector Dividend Dogs returning 125% and the International Dividend Achievers returning 131% since the low in February 2009. Of course, not having declined as far during the financial crisis, the International Sector Dividend Dogs started the recovery from a higher base. Meanwhile the EAFE Index rebounded only 86% from its GFC lows.

The strategy of the International Sector Dogs provided downside protection when needed, but has kept up with growth-oriented strategies during bull markets. It is the only developed market index to have surpassed its pre-crisis high; an investor who had the misfortune to buy into any either the International Dividend Achievers or MSCI EAFE index in October 2007 would still be sitting on losses at the end of June 2013.

Figure 13: Ten Year Performance Returns (rebased)
Developed Market Dividend Indices, June 30, 2003-June 30, 2013



Note: Monthly total returns, rebased, June 30, 2003 = 100. Figures subtract expenses of applicable ETF from index data quoted on Bloomberg as follows: Int'l Sector Dogs (50bp); NASDAQ Int'l Div. Achievers (56bp); and EAFE (34bp). ***Returns for the Int'l Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.***

Past performance does not guarantee future results.

Source: Bloomberg and AltaVista Research

Turning our attention to statistical measures of risk and reward, the International Sector Dividend Dogs Index was also the most highly correlated to the MSCI EAFE (technically, it had the highest coefficient of determination, or "r-squared") in the one, three, five and ten-year periods ending June 2013, a function of the relatively low sector and geographic "skew" we identified earlier. While high correlation is not inherently advantageous—and in fact would be considered disadvantageous by hedge fund managers—we recognize this has a practical benefit for many Financial Advisors, who may not wish to deviate too much in any one period from the benchmark against which their performance may be measured.

One surprising finding from this analysis was that the high-yielding S&P International Dividend Opportunities Index was actually more volatile (as measured by annualized standard deviation of returns) than either of the other two dividend indices or the MSCI EAFE index in the one, three and five year periods for which we have sufficient history for analysis. Generally, higher-yielding stocks are less volatile than peers with lower or no dividend yields. But that doesn't always hold true for a *portfolio* of high-yielding stocks, or in our case, an index. There are two likely reasons for this:

- Relative concentration in 2-3 high yielding sectors can diminish the risk-reducing benefit of broadly diversified index strategies
- Exceptionally high yields are often a sign of distress, not dependable income. As we'll show in the following section, this is true of stocks in the S&P index, as well as the International Sector Dividend Dogs. Naturally, securities of firms in financial distress or "turnaround situations" tend to be more volatile than those of firms with prospects that are less in doubt.

Concentration in 2-3 high yielding sectors can diminish the risk-reducing benefit of broadly diversified index strategies

Table 8: Pre-inception Performance Analysis: Developed Market Dividend Indices

Index	S-Network Int'l Sector Div. Dogs	S&P Int'l Dividend Opportunity	NASDAQ Int'l Dividend Achievers	MSCI EAFE Index
Strategy	Sector Dogs	Yield-based	Dividend growth	Benchmark
Index ticker	IDOGXTR	SPGTDOUT	DATTR	NDDUEAFE
1 YEAR				
Total return	15.5%	6.9%	14.3%	18.2%
Ann. volatility	10.3%	12.2%	7.4%	9.5%
r-squared (r^2)	90.5%	79.3%	78.0%	100.0%
Information ratio	-3.03	-6.84	-2.95	
3 YEARS				
Total return	11.4%	5.7%	12.2%	9.7%
Ann. volatility	17.8%	20.7%	15.3%	18.3%
r-squared (r^2)	96.1%	91.7%	92.0%	100.0%
Information ratio	1.61	-2.25	1.55	
5 YEARS				
Total return	4.8%	-0.6%	1.9%	-1.0%
Ann. volatility	23.9%	29.5%	23.9%	23.0%
r-squared (r^2)	95.1%	92.2%	90.2%	100.0%
Information ratio	3.81	0.14	1.33	
10 YEARS				
Total return	24.4%	--	18.3%	15.2%
Ann. volatility	18.7%	--	18.9%	18.2%
r-squared (r^2)	94.6%	--	89.2%	100.0%
Information ratio	7.36	--	1.73	
Financial Crisis Period (Oct. 2007 – Feb. 2009)				
Total return	-50.7%	--	-61.5%	-56.9%
Ann. volatility	7.2%	--	7.7%	7.0%
r-squared (r^2)	96.8%	--	87.6%	100.0%
Information ratio	4.75	--	-1.68	

Note: *All measurements are based on monthly observations for the period ending June 30, 2013. Three, five and ten year return figures annualized; financial crisis period returns are simple returns for the peak-to-trough period specified. Return figures subtract annual expense ratios of the applicable fund from the index data quoted on Bloomberg as follows: Int'l Sector Dogs (50bp); NASDAQ Int'l Div. Achievers (56bp); S&P Int'l Div (45bp) and EAFE (34bp).* ***Returns for the Int'l Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.*** *"R-squared" (r^2) is a statistical measure of the strength of the relationship between the index being measured and the MSCI EAFE Index. Information ratio is a measure of the risk-adjusted performance of the index being measured versus that of the MSCI EAFE Index.* ***Past performance does not guarantee future results.***

Source: *Bloomberg and AltaVista Research*

Emerging Market Dividend Indices

In emerging markets, we examined ten years of pre-inception data for the Emerging Sector Dividend Dogs Index, from March 2004 through March 2014, against the performance of the MSCI Emerging Markets index. The S&P Emerging Dividend Opportunities index was launched November 30, 2009, and therefore we can present only limited history in Table 9, while the WisdomTree Emerging Markets index is omitted from this analysis altogether due to its short history.

Like the other markets, the emerging market group of indices performed largely in-line with each other leading up to the GFC, although the Dogs index opened up a small lead. During the downturn, however, the Emerging Sector Dividend Dogs index lost 54%, peak-to-trough, faring a little better than the MSCI Emerging Market indices which declined 62%.

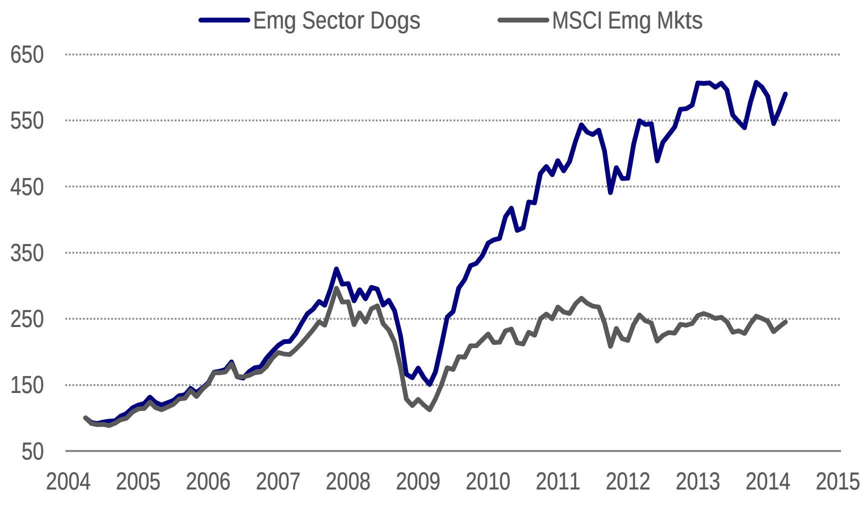
As emerging markets recovered following the GFC, the Dogs index roared ahead, but there the drivers were twofold: 1) limited exposure to the sluggish financial sector, like was the case with the Dogs index in developed markets; and 2) greater exposure to consumer sectors at a time when consumption in emerging markets was booming. One surprising finding was that despite the greater sector "skew" we identified previously, the Emerging Sector Dividend Dogs index was nonetheless highly correlated to the MSCI Emerging Markets Index, with a coefficient of determination, or "r-squared" of 90% of more.

Except for the most recent one-year returns examined, the Dogs index had about the same or slightly lower volatility than the benchmark; it also had lower volatility than the S&P Dividend Opportunities index for the one- and three-year periods for which history is available. In other markets the Dogs index was generally more volatile than the benchmark over longer periods.

The Emerging Sector Dogs index had the highest Information Ratio of any dividend strategy

As a result of higher returns without extra risk (if indeed volatility is equated to risk), the Emerging Sector Dividend Dogs index enjoys the highest *Information Ratio* of any Dogs index—or any of the other dividend strategies—over the three, five, and ten year periods examined. The Information Ratio measures whether a portfolio has beaten the benchmark by a lot in a few months or a little every month. The higher the IR the more consistent the performance.

Figure 14: Ten Year Performance Returns (rebased)
Emerging Market Dividend Indices, March 31, 2004-March 31, 2014



Note: Monthly total returns, rebased, March 31, 2004 = 100. Figures subtract expenses of applicable ETF from index data quoted on Bloomberg as follows: Emerging Sector Dogs (60bp); MSCI Emerging Markets (67bp). ***Returns for the Int'l Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.***

Source: Bloomberg and AltaVista Research

Table 9: Pre-inception Performance Analysis: Emerging Market Indices

Index	Emerging Sector Div. Dogs	S&P EM Dividend Opportunities	WisdomTree EM Dividend Growth	MSCI Emerging Markets
Strategy	Sector Dogs	Yield-based	Dividend growth	Benchmark
Index ticker	EDOGXTR	SPGTEDUN	WTEMDGTR	NDUEEGF
1 YEAR				
Total return	-1.7%	-10.9%	--	-2.1%
Ann. volatility	15.4%	17.3%	--	14.2%
r-squared (r^2)	94.6%	95.9%	--	100.0%
Information ratio	0.37	-6.87	--	
3 YEARS				
Total return	4.4%	-4.6%	--	-3.5%
Ann. volatility	17.6%	18.7%	--	19.5%
r-squared (r^2)	92.9%	86.7%	--	100.0%
Information ratio	5.15	-0.53	--	
5 YEARS				
Total return	28.3%	--	--	13.7%
Ann. volatility	21.8%	--	--	21.6%
r-squared (r^2)	89.7%	--	--	100.0%
Information ratio	7.14	--	--	
10 YEARS				
Total return	42.6%	--	--	19.6%
Ann. volatility	22.9%	--	--	24.0%
r-squared (r^2)	91.3%	--	--	100.0%
Information ratio	11.24	--	--	
Financial Crisis Period (Oct. 2007 – Feb. 2009)				
Total return	-53.8%	--	--	-62.0%
Ann. volatility	8.6%	--	--	9.4%
r-squared (r^2)	93.1%	--	--	100.0%
Information ratio	3.26	--	--	

Note: *All measurements are based on monthly observations for the period ending March 31, 2014. Three, five and ten year return figures annualized; financial crisis period returns are simple returns for the peak-to-trough period specified. Return figures subtract annual expense ratios of the applicable fund from the index data quoted on Bloomberg as follows: Emerging Sector Dogs (60bp); S&P EM Div. Opportunities (59bp) and MSCI Emerging Markets (67bp).* ***Returns for the Emerging Sector Dogs Index are based on pre-inception performance data as supplied by the index provider.*** *"R-squared" (r^2) is a statistical measure of the strength of the relationship between the index being measured and the MSCI EAFE Index. Information ratio is a measure of the risk-adjusted performance of the index being measured versus that of the MSCI Emerging Markets Index.* ***Past performance does not guarantee future results.***

Source: *Bloomberg and AltaVista Research*

Looking Back II: Live Performance Analysis

In addition to examining back test data, we can also look at the performance of each index since its inception date; that is, the date from which the index began live quotation by a third-party calculation agent. The chief advantage of actual performance data is that gives investors insight into how a strategy performs in the real world—to see if factors identified as having contributed to good performance in a back test have persisted since the strategy was put into practice.

The downside in the case of the Sector Dividend Dogs indices is that live performance data is fairly limited due to their relative youth. We don't yet have sufficient data for meaningful analysis of correlation and volatility, so we just present simple total returns (not annualized) side-by-side with the other dividend strategies and the cap-weighted benchmark, since the inception date for the Sector Dividend Dogs index in each market (Figure 15).

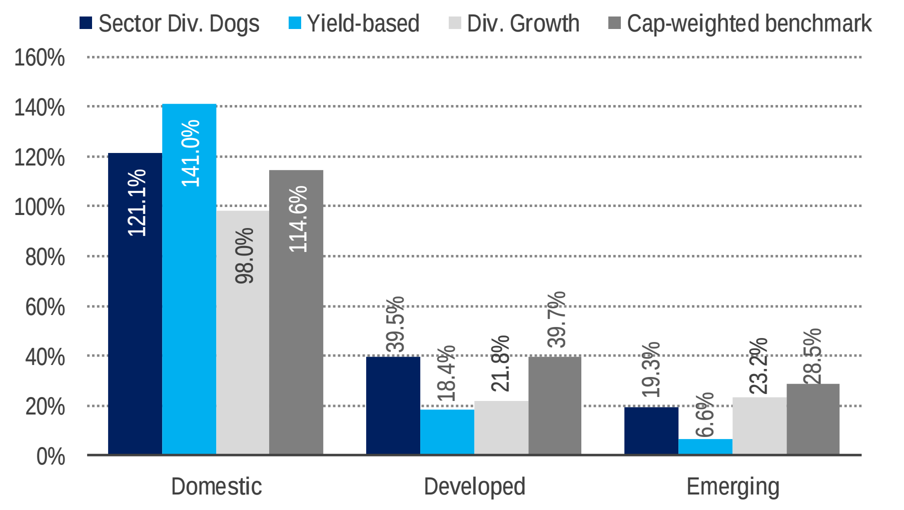
Results for the Sector Dividend Dogs indices are encouraging for their consistency

Results for the Sector Dividend Dogs indices are encouraging for their consistency near the top. As of September 30, 2017 the Sector Dogs indices took second place among domestic indices, nearly tied for first among developed markets and came in a third in emerging markets. In contrast, the yield-based strategy which had the best performance among our domestic indices came in last place in both developed and emerging markets.

Similarly, the dividend growth strategy came in last among domestic indices—a cumulative 43 percentage points behind the leader—and third and second places among developed and emerging market indices, respectively, finishing behind the benchmark in all cases.

Readers may be wondering why they should bother with dividend index strategies at all instead of a simpler cap-weighted index strategy. Performance for our cap-weighted benchmark indices was respectable in all three groups. However, the caveat is where it fared best and where it trailed other strategies. Performance in the domestic market—where many readers likely have a larger allocation—was a third place showing. Meanwhile the cap-weighted benchmark's best showing was in Emerging Markets, where investors were likely to have the least exposure (Emerging Markets accounted for just 9% of more than $2.7 trillion invested in U.S.-listed ETFs as of 12/31/2017).

Figure 15: Live performance returns since inception
By index strategy and type, through December 31, 2017



Note: Total returns (not annualized) since the inception date for the Sector Dividend Dogs index in each market: Domestic – May 1, 2012; Developed – June 10, 2013; Emerging – April 1, 2014. Source: Bloomberg

Past performance does not guarantee future results.

The Road Ahead: Fundamental Analysis

As investors are well aware, past performance is no guarantee of future results. Likewise, our analysis of construction methodologies and historical results only give investors a partial picture of an index or fund's investment potential.

One of the often overlooked and most important advantages of index investments is that they are transparent; their holdings are public information. As a result, it is possible to conduct a study using the traditional tools of security analysis. The advantage of this approach is that it is forward-looking.

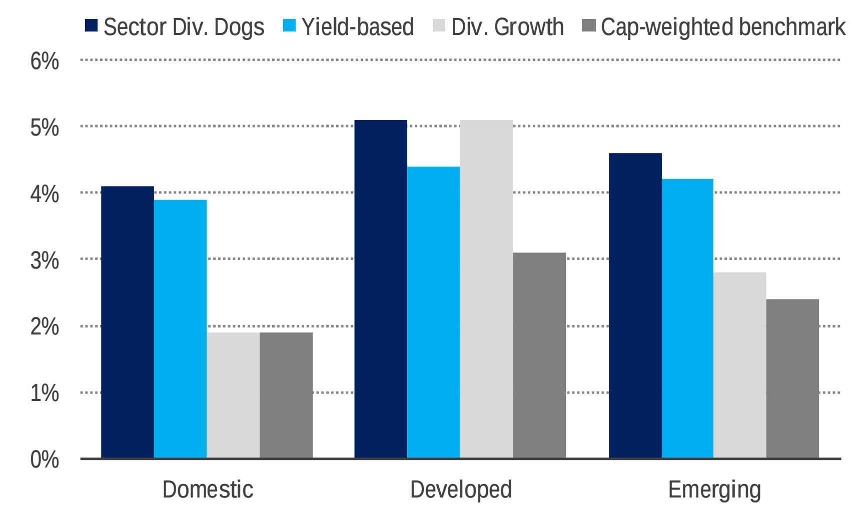
We begin our fundamental analysis with the focus of all income-oriented investors: yield. Figure 16 shows the trailing yield based on dividends paid last year by current constituents of each index, for each of three strategies across domestic, developed and emerging markets. For comparison purposes, we've also included the trailing yield for cap-weighted benchmarks in each market.

The Sector Dogs strategy raises yield considerably over that of the market…but avoids risky concentrations, maintaining the diversification benefits of indexing

Not surprisingly this is where the yield-based strategies in our study shine, raising an investor's yield significantly above that of the benchmark across all three categories. As we've seen however this is accomplished with risky sector and geographic concentrations that can have deleterious effects on performance, and it is still not the highest yield available.

Meanwhile, indices based on the dividend growth strategy sometimes lack the income producing qualities that dividend-oriented investors might expect, particularly with regard to domestic stocks where the strategy has a trailing yield of just 1.9%, on par with the S&P 500. It does a little bit better in emerging markets by raising the yield to 2.8%, from 2.4% for the benchmark, but still considerably lower than our other two dividend strategies. Developed markets seem to be a bit of an anomaly, where the dividend growth strategy is tied with the Sector Dogs strategy for highest yield at 5.1%. A word of caution however: remember these are *trailing* yields, meaning that an investor's realized yield going forward may be quite different.

Figure 16: Trailing Yields
Based on 2017 DPS, by index strategy and market



Note: Based on consensus figures for current constituents in each index as of 12/31/2017. Subject to change. The actual index used to represent each strategy across Domestic, Developed and Emerging Markets is detailed in Table 1 on page 3.

Past performance does not guarantee future results.

Source: AltaVista Research

Like the yield-driven strategy, the Sector Dogs strategy also raised yields considerably over those offered by the broader market—including doubling them in the U.S—but avoids the concentrations that can result from a singular focus on yield thanks to the sector overlay employed by the Dogs strategy. As a result, the strategy maintains the diversification benefits of index investing.

Valuations

Of course, even companies with the best fundamentals can be a bad investment if valuations are too rich, just as firms with poor fundamentals can still be great investments at the right valuations. Tables 11-13 have common valuation metrics for each of our three dividend strategies plus the cap-weighted benchmark for each market.

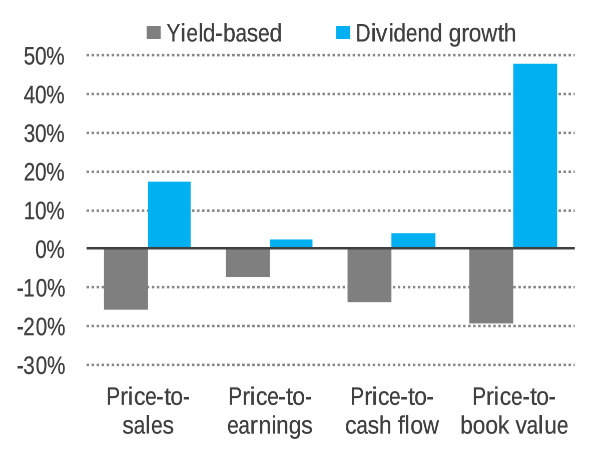
Yield-based strategies currently trade at a discount with the market while dividend growth strategies trade at premium multiples

Stocks in the yield-based strategies currently trade at a modest discount to those in the benchmark, as might be expected. Meanwhile stocks in dividend-growth index strategies trade at premium multiples on some valuation metrics, especially price-to-book value. Such premiums are perhaps justifiable given our characterization of these indices as growth stocks that pay dividends, but again may not be consistent with many dividend investors' desire for income and value.

On average, for example, stocks in the dividend growth indices trade at a price-to-book value (P/BV) premium of 48% versus the relevant market multiple and price-to-sales premium of 17%. The price-to-earnings and price-to-cash flow multiples trade at smaller premiums to the market multiple. (Figure 17).

The story is a bit more fluid for our three Sector Dogs indices. Currently, stocks in all three Sector Dogs indices trade at valuation discounts to their market cap-weighted benchmarks on most measures. On average, these discounts range from 5% for price-to-book value to 26% for price-to-sales (Figure 18). Like our other two strategies however, the Sector Dogs trade closer to the market with respect to the P/E multiple. As "Dogs," many of these firms have seen a decline in earnings recently, elevating their P/E ratio and explaining the large difference between it and price-to-sales, a measure which is typically more stable (since revenues don't usually fluctuate has much as earnings).

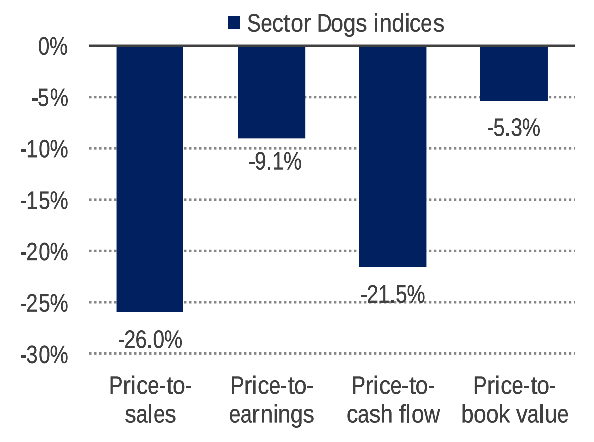
Figure 17: Average premium / discount
vs. cap-weighted benchmark in each market



Note: Based on consensus figures for current index constituents as of 12/31/2017. Subject to change.

Source: AltaVista Research

Figure 18: Average premium / discount
vs. cap-weighted benchmark in each market



Note: Based on consensus EPS estimates for current index constituents as of 12/31/2017. Subject to change.

Source: AltaVista Research

However, the magnitude of differences in valuation multiples between the Sector Dogs indices and their respective cap-weighted benchmarks can vary significantly over the course of the year. They change as market prices change of course, but also as a result of the annual index reconstitution which takes place each December.

In theory—again going back to the Dogs of the Dow concept—high-yielding stocks start the year as value stocks, but then rise in price as investors reassess their outlook over time. Stocks that have recovered in price, thereby pushing yields down, are subsequently jettisoned from the index upon reconstitution to make room for a new basket of high-yielding and generally lower-multiple stocks. Therefore it's reasonable to expect that index valuation metrics will be substantially cheaper shortly after a reconstitution than they were just prior.

Valuation multiples can change significantly upon index rebalancing and reconstitution

This paper is updated quarterly with recent data, but investors who want more frequent updates in order to stay on top of changing markets can reference the **ETF Research Center**. The website (owned by AltaVista Research, which authored this report) publishes daily updates of key valuation metrics for the ETFs tracking each of the indices mentioned in this paper.

Table 10: Valuation metrics: Domestic Dividend Indices

Index	S-Network Sector Dividend Dogs	NASDAQ Dividend Achievers 50	NASDAQ Dividend Achievers Select	S&P500 Index
Strategy	Sector Dogs	Yield-based	Dividend Growth	Benchmark
Price-to-sales (x)	1.1	0.8	1.6	2.1
Price-to-earnings (x)	14.6	17.0	19.7	18.2
Price-to-cash flow (x)	8.1	9.4	14.9	13.0
Price-to-book val. (x)	2.3	1.9	3.7	2.8

Note: Based on consensus 2018 per-share figures for individual constituents of each index and closing share prices as of December 31, 2017.

Source: AltaVista Research

Table 11: Valuation metrics: Developed Market Dividend Indices

Index	S-Network Int'l Sector Dividend Dogs	S&P Int'l Dividend Opportunity	NASDAQ Int'l Dividend Achievers	MSCI EAFE Index
Strategy	Sector Dogs	Yield-based	Dividend Growth	Benchmark
Price-to-sales (x)	1.0	1.5	1.4	1.2
Price-to-earnings (x)	13.7	14.3	11.3	14.8
Price-to-cash flow (x)	7.7	9.3	6.4	9.4
Price-to-book val. (x)	1.6	1.6	1.3	1.6

Note: Based on consensus 2018 per-share figures for individual constituents of each index and closing share prices as of December 31, 2017.

Source: AltaVista Research

Table 12: Valuation metrics: Emerging Market Dividend Indices

Index	S-Net. Emerging Sector Dividend Dogs	S&P Emg. Mkts. Dividend Opportunities	WisdomTree Emg. Mkts. Dividend Growth	MSCI Emerging Markets
Strategy	Sector Dogs	Yield-based	Dividend Growth	Benchmark
Price-to-sales (x)	1.0	1.1	1.9	1.2
Price-to-earnings (x)	12.3	10.9	15.1	12.3
Price-to-cash flow (x)	7.1	6.8	10.1	7.8
Price-to-book val. (x)	1.6	1.2	3.6	1.6

Note: Based on consensus 2018 per-share figures for individual constituents of each index and closing share prices as of December 31, 2017.

Source: AltaVista Research

Global Dogs

Greater than the sum of the parts

In March 2014 ALPS launched the emerging markets version of its Sector Dividend Dogs ETFs, following earlier offerings tracking domestic and developed foreign markets. As a result, investors now have a complete suite of products with which to construct a global equity portfolio benefitting from the Sector Dogs index strategy (Table 13).

Table 13: Sector Dividend Dogs index family and tracking ETFs

Index	Market	Tracking ETF (ticker)
S-Network Sector Dividend Dogs	Domestic equities	ALPS Sector Dividend Dogs ETF (**SDOG**)
S-Network International Sector Dividend Dogs	Developed foreign	ALPS International Sector Dividend Dogs ETF (**IDOG**)
S-Network Emerging Sector Dividend Dogs	Emerging markets	ALPS Emerging Sector Dividend Dogs ETF (**EDOG**)

Source: AltaVista Research

A "Global Dogs" portfolio may raise income significantly in a global equity portfolio without risky sector and geographic concentrations

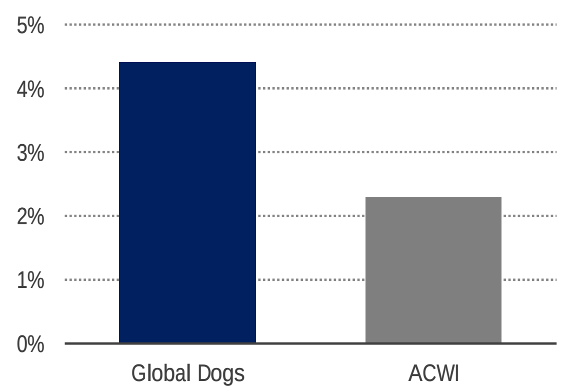
As an example, we created a simple "Global Dogs" portfolio by combining the three indices in weights reflecting their relative market size in the MSCI All Country World Index ("ACWI"): 51% in the domestic Sector Dogs index, 38% in the developed market version, and 11% in the emerging market flavor. Doing so, we increased the trailing yield on underlying securities from 2.3% to 4.4%[2] (Figure 19). Valuation-wise, the Global Dogs portfolio had trailing price-to-earnings, price-to-sales, and price-to-book valuation multiples that represent discounts of between 9-35% versus those of ACWI as of December 31, 2017.

Such a portfolio would have some sector differences versus ACWI of course, the biggest being that it is less concentrated in the Financial sector, at about 10% versus 19% in ACWI; as well as Technology at about 10% versus 17% for the benchmark. It is also overweight in the traditionally higher-yielding Utilities and Telecom sectors (+7.7% and +5.0%, respectively); as well as +5.5% in the Materials sector, compared with the relatively small exposure to these sectors in ACWI. Other sector exposures are within a few percentage points (Figure 20).

Different allocations may be appropriate for different investors, and some may choose to make tactical use of the funds, like investors who practice a sector rotation strategy with sector ETFs. But by using the Dogs ETFs across all three markets—domestic, developed and emerging—investors can raise their expected income significantly while avoiding unintended and risky sector and geographic concentrations that many other yield-oriented ETFs require.

[2] *Based on a weighted average trailing yield for each Sector Dividend Dogs index, using consensus 2016 dividends per share figures for current constituents in each index.*

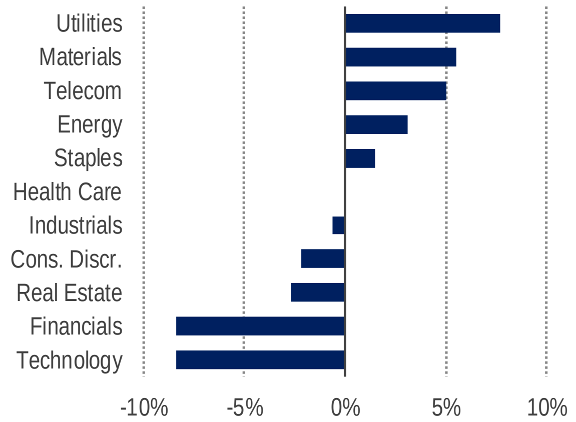
Figure 19: Trailing yields
"Global Dogs" vs. ACWI, on 2017 DPS*



**Based on a portfolio of the three Sector Dividend Dogs indices with the following weights: domestic (51%), developed (38%) and emerging (11%). As of 12/31/17. Subject to change.*

Source: AltaVista Research

Figure 20: Over/under-weights by sector
"Global Dogs" vs. ACWI*



**Based on a portfolio of the three Sector Dividend Dogs indices with the following weights: domestic (51%), developed (38%) and emerging (11%). As of 12/31/17. Subject to change.*

Source: AltaVista Research

Parting Thoughts

There is nothing sacred about traditional, market cap-weighted benchmark indices, and alternative strategies can hold plenty of appeal for investors. One of the great advantages of any index investment is the transparency with respect to underlying holdings, which makes it possible for investors to examine and decide for themselves which index best suits their individual objectives.

We examined how differences in construction methodology affect composition, performance and investment fundamentals of several common approaches to dividend indices, including a yield-based index strategy and dividend-growth index strategy, as well as a newer, unique strategy called the "Sector Dividend Dogs." An index representing each strategy was selected in each of three market segments—domestic, developed and emerging markets—for a total of nine index studies. Finally, we also compared these indices to widely followed cap-weighted benchmarks in each market.

As with any investment, trade-offs are involved. The Yield-driven strategy, with a singular focus on maximizing yield, produces high current income but can result in risky sector and geographic concentrations that diminish the diversification benefits of indexing, while a dividend-growth strategy can better mirror diversified market exposure but loses the value and income benefits of dividend-based stock selection.

A new strategy in the form of the S-Network Sector Dividend Dogs family of indices aims to bridge the gap with a sector overlay that imposes diversification on a high-yielding group of stocks. Such diversification is critical with income-oriented investments since high yields can be a sign of distress, the consequences of which proved devastating during the financial crisis of 2008-09.

Only time will tell which approach ultimately delivers the best returns to investors over the long term. But for income-oriented investors not wanting to assume the extra risk entailed by a purely yield-driven approach to indexing, the Sector Dividend Dogs indices—and the ETFs which track them—could be at least a faithful companion, and might even prove to be an investor's best friend.

The Sector Dividend Dogs indices, and the ETFs which track them, might prove to be an investor's best friend

Table 14: Quarterly Performance as of 12/31/2017
ALPS Sector Dividend Dogs

Total Returns	Cumulative				Annualized			
Fund	**1 Mo.**	**3 Mo.**	**YTD**	**SI[1]**	**1 Yr.**	**3 Yr.**	**5 Yr.**	**SI1**
ALPS Sector Dividend Dogs ETF (Net Asset Value)	1.16%	4.70%	12.67%	123.33%	12.67%	10.10%	15.56%	15.71%
ALPS Sector Dividend Dogs ETF (Market Price)[2]	1.29%	4.84%	12.71%	123.57%	12.71%	10.14%	15.56%	15.73%
S-Net Sector Dividend Dogs TR Index (Benchmark)[3]	1.20%	4.84%	13.18%	129.33%	13.18%	10.61%	16.13%	16.27%
S&P 500® Total Return Index (Benchmark)	1.11%	6.64%	21.83%	120.53%	21.83%	11.41%	15.79%	15.44%
								Fund Net Expense Ratio: 0.40%

Performance data quoted represent past performance. Past performance is no guarantee of future results so that shares, when redeemed may be worth more or less than their original cost. The investment return and principal value will fluctuate. Current performance may be higher or lower than the performance quoted. Call 866.675.2639 for current month end performance.

1 Inception date of June 29, 2012
2 Market Price is based on the midpoint of the bid/ask spread at 4 p.m. ET and does not represent the returns an investor would receive if shares were traded at other times.
3 S-Network Sector Dividend Dogs Index is a portfolio of fifty stocks derived from the S&P 500 Index. An investor cannot invest directly in an index.

Table 15: Quarterly Performance as of 12/31/2017
ALPS International Sector Dividend Dogs

Total Returns	Cumulative				Annualized		
Fund	**1 Mo.**	**3 Mo.**	**YTD**	**SI[1]**	**1 Yr.**	**3 Yr.**	**SI[1]**
ALPS International Sector Dividend Dogs ETF (Net Asset Value)	2.16%	4.00%	25.81%	35.98%	25.81%	7.08%	7.05%
ALPS International Sector Dividend Dogs ETF (Market Price)[2]	1.62%	3.52%	25.71%	35.93%	25.71%	7.32%	7.04%
S-Net International Sector Dividend Dogs TR Index (Benchmark)[3]	2.27%	4.23%	26.37%	38.57%	26.37%	7.50%	7.50%
							Fund Net Expense Ratio: 0.50%

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1 Inception date of June 27, 2013
2 Market Price is based on the midpoint of the bid/ask spread at 4 p.m. ET and does not represent the returns an investor would receive if shares were traded at other times.
3 S-Network International Sector Dividend Dogs Index is a portfolio of fifty stocks derived from a universe of mainly large capitalization stocks domiciled in developed countries outside the U.S. (the "S-Network Developed Markets (ex-Americas) Index"). An investor cannot invest directly in an index.

Table 16: Quarterly Performance as of 12/31/2017
ALPS Emerging Sector Dividend Dogs

Total Returns	Cumulative				Annualized		
Fund	**1 Mo.**	**3 Mo.**	**YTD**	**SI[1]**	**1 Yr.**	**3 Yr.**	**SI[1]**
ALPS Emerging Sector Dividend Dogs ETF (Net Asset Value)	4.93%	4.03%	19.85%	15.67%	19.85%	4.62%	3.94%
ALPS Emerging Sector Dividend Dogs ETF (Market Price)[2]	4.13%	3.16%	19.35%	15.35%	19.35%	4.72%	3.87%
S-Net Emerging Sector Dividend Dogs TR Index (Benchmark)[3]	5.22%	4.37%	20.84%	19.84%	20.84%	5.59%	4.93%
							Fund Net Expense Ratio: 0.60%

Performance data quoted represent past performance. Past performance is no guarantee of future results so that shares, when redeemed may be worth more or less than their original cost. The investment return and principal value will fluctuate. Current performance may be higher or lower than the performance quoted. Call 866.675.2639 for current month end performance.

1 Inception date of March 28, 2014
2 Market Price is based on the midpoint of the bid/ask spread at 4 p.m. ET and does not represent the returns an investor would receive if shares were traded at other times.
3 S-Network Emerging Sector Dividend Dogs Index is a portfolio of fifty stocks derived from a universe of mainly large capitalization stocks domiciled in emerging markets (the "S-Network Emerging Markets Index" "SNEMX"). An investor cannot invest directly in an index.

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Additional Disclosures:

The S-Net Developed Markets Index (ex-Americas): The World Bank's methodology for identifying High Income Countries is based on the country's gross national income (GNI) per capita. The selection criteria for the universe also includes requirements for sector inclusion, primary exchange listing, minimum market capitalization, share price, average daily trading volume and other factors.

Dogs of the Dow Theory: an investment strategy which proposes that an investor annually select for investment the ten Dow Jones Industrial Average stocks whose dividend is the highest fraction of their price.

There are risks involved with investing in ETFs including the loss of money. Additional information regarding the risks of this investment is available in the prospectus. IDOG and EDOG are subject to foreign investing risks including currency fluctuations and political uncertainty. Investments in Emerging Markets accentuate these risks.

Pre-Inception performance (PIP) results are based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance, and cannot account for all financial risk that may affect the actual performance of the ETF. The actual performance of the ETF may vary significantly from the back-tested data. In addition, PIP does not account for factors such as transaction costs, liquidity and other market factors. Had these factors been accounted for, actual performance would have been lower.

ALPS Sector Dividend Dogs Series Shares are not individually redeemable. Investors buy and sell shares of the ALPS Sector Dividend Dogs Series on a secondary market. Only market makers or "authorized participants" may trade directly with the Fund, typically in blocks of 50,000 shares.

Dividends are not guaranteed and a company's future abilities to pay dividends may be limited. A company currently paying dividends may cease paying dividends at any time.

An investor cannot invest directly in an index.

An investor should consider the investment objectives, risks, charges and expenses carefully before investing. To obtain a prospectus which contain this and other information call 866.675.2639 or visit www.alpsfunds.com. Read the prospectus carefully before investing.

To obtain the Index Methodology of the Pre-inception Performance data, please visit http://sdogx.snetglobalindexes.com/pdf/idogx-RuleBook.pdf.

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The Fund Sponsor, ALPS Advisors, did pay S-Net and S&P for production of the index. All data for the index was maintained independently and we only assisted in the development of the methodology.

No material differences would exist given the transparent, rules-based methodology (i.e. no assumptions necessary). Major cost of creating portfolio is in the management fee which is included in the performance numbers. Other costs to manage are very immaterial and difficult to almost impossible to calculate

ALPS Portfolio Solutions Distributor, Inc. is the distributor for the ALPS International Sector Dividend Dogs ETF.

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