Exploring Global Infrastructure

Daniel Ung, CFA, CAIA, FRM
Research & Design Group

1. Introduction

After more than two decades of relative price stability, concerns over inflation have been growing since the 2008 financial crisis. Rebounding commodity prices, monetary easing by central banks, and excessive government debt have all played a role in heightening such concerns. Faced with these adverse conditions, investors are increasingly favoring real assets, which maintain their purchasing power and serve as portfolio diversifiers. The most frequently tracked real assets are often those deemed essential to the economy over the long term and include assets such as commodities, real estate, and infrastructure.

Across real assets, infrastructure investments have recently attracted the most interest among investors, partly due to their cash-generative capacity. In addition to this appealing investment characteristic, infrastructure investments also tend to be uncorrelated with the broader vagaries of the business cycle. Even while the global economy remains mired in malaise, governments have continued to increase their investments in major projects. According to a recent report[1], global infrastructure expenditure is expected to reach USD 40 trillion over the next two decades, as the developing world is experiencing unprecedented urbanization and the developed world is grappling with aging assets. In additon, there is a growing recognition that infrastructure investments can boost employment and enhance a country's economic performance, as evidenced by the British government's recent decision to underwrite infrastructure projects, despite its unwavering determination to reduce public expenditure[2].

While infrastructure investments may offer benefits to an investment portfolio, it is essential to consider the properties of the specific infrastructure assets in which you are investing:

1. Infrastructure assets include roads, bridges, seaports, airports, and power generation facilities. This diversity means that performance will vary markedly from one investment to another.
2. Infrastructure projects often incur a high level of risk at the outset, which gradually declines over time, ceteris paribus.
3. Fiscal incentives proffered by governments can substantially change the attractiveness of infrastructure investments. For instance, master limited partnerships (MLPs) in the U.S. do not generally have to pay any corporation taxes.
4. Another important consideration is whether the investment should be made directly through investment funds or indirectly through infrastructure-related securities, for example, equities. Direct investments invariably carry idiosyncratic risks specific to the assets underlying the fund and their performance depends greatly on the quality of these assets and the skill of the investment manager[3]. For this reason, it is difficult to make meaningful and representative observations about the general performance of direct investments.

The analysis provided in this paper appraises indirect investments, with a particular focus on the relevant S&P Dow Jones indices. Exhibit 1 highlights the principal differences between the indirect and direct approaches to investing in infrastructure. In the following sections we will discuss the definition of infrastructure, the salient investment features of infrastructure indices, the performance of infrastructure indices compared to core

Exhibit 1 Exposure to Infrastructure Assets

Features	Indirect Investments (e.g., Equities)	Direct Investments
Underlying investments	Equities of companies engaged in infrastructure activities	Funds investing in tangible assets
Liquidity	High	Low – usually subject to a lock-up period
Transparency	High	Medium/Low
Investor Access	High	Low – eligibility restricted to qualified
Ownership of Assets	Indirect via equities	Direct via ownership of infrastructure
Diversification	High – consists of companies in an array of different infrastructure businesses	Moderate/Low – subject to asset-specific risks
Exposure to Equity	High	Low
Underlying Risks	Mainly equity risks	Liquidity, operational, duration, agency risks, etc.
Ongoing Expenses	Low	High – annual management fees, carried interests and other fees

equities and in inflationary environments, the potential diversification benefits of an allocation to infrastructure, and provide a review of S&P Dow Jones Infrastructure Indices.

2. Infrastructure Defined

There is no single, universally agreed upon definition of infrastructure, but Dieter Helm, an authority on the subject at Oxford University, describes it as "*what lies between companies and markets, and between consumers and essential services. It incorporates the core network utilities – like transport, energy, water, and communications. But it also extends further – into social infrastructure – the educational networks, the health services, broader social supports, and law and order*."[4] In other words, economic infrastructure supports commerce and a fee is normally charged for its use whereas social infrastructure consists of social service facilities, such as medical and correctional facilities, designed primarily to cater to the needs of society at large.

While all infrastructure enterprises operate under the auspices of a well-defined regulatory framework, certain businesses, in particular those in the economic infrastructure sector, attract less government intervention and are generally more competitive. This may explain why most equities-based indices mainly consist of companies engaged in building economic infrastructure rather than social infrastructure.

Regardless of the nature of the business in which a company is involved, infrastructure companies share some common attributes, notably:

- They often operate as "natural monopolies" and as such, their activities are regulated and not determined on a purely market basis.
- They have high capital requirements, creating significant barriers to entry.
- Their assets have a long lifespan. Roads, bridges, and tunnels may last 50 years or more.
- Final user demand for their output is less responsive to the broader business environment.

3. Salient Investment Features of Infrastructure Indices

While infrastructure indices can diverge in some respects, they are also united by basic properties. This section outlines some of the characteristics they have in common.

Highly profitable companies. Infrastructure companies enjoy substantial pricing power not only because the services they offer are essential to daily life, but also because they have few competitors. This may partly explain why infrastructure companies have posted a notably higher median operating margin than the "average" global company. A high operating margin means that the company runs less financial risk and is more profitable (see Exhibit 2).

High dividend yield. Since 2007, infrastructure companies have consistently distributed more cash to their shareholders than the "average" global company, making them particularly suitable for investors seeking high-income stocks (see Exhibit 3).

Highly cash-generative. The development of infrastructure assets can take a long time and requires substantial capital investment. That said, once the assets are in service, they generate a good, stable source of cash and their ongoing operating expenses are relatively low.

Their assets have a long lifespan. Infrastructure assets generally have long economically useful lives, often lasting more than 50 years. This makes them particularly attractive to investors with a long investment horizon, such as pension funds that have to meet long-term liabilities.

4. A Performance Comparison of Infrastructure versus Core Equities Indices

Compared to core equity indices, infrastructure indices have outperformed on both an absolute and risk-adjusted basis (see Exhibits 4a and 4b).

5. Performance of Infrastructure Indices in Inflationary Environments

Unlike many other real assets, infrastructure assets do not drive inflation per se, as they generally do not form part of the basket of goods from which the Consumer Price Index (CPI) is calculated. Nevertheless, the revenues they generate are very often tied to some measure of inflation. An example of this is the pricing structure that

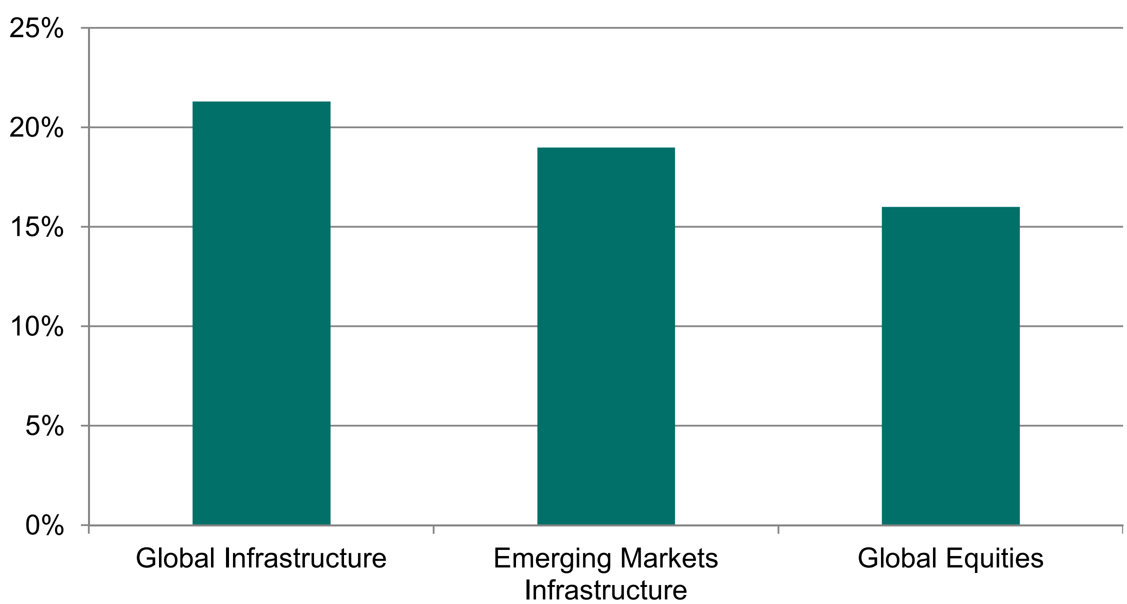

Exhibit 2 Operating Margin in the Fiscal Year of 2012
Source: FactSet, Diagram created by S&P Dow Jones Indices based on information from FactSet and is provided for illustrative purposes only. Emerging Market Infrastructure is represented by the S&P Emerging Market Infrastructure Index; Global Infrastructure is represented by the S&P Global Infrastructure Index and Global Equities are represented by the S&P Global 1200 Index. Only available data are included in the analysis. Owing to data incompleteness, the S&P Global 1200 Index is used in lieu of the S&P Global BMI Index for this part of the analysis.

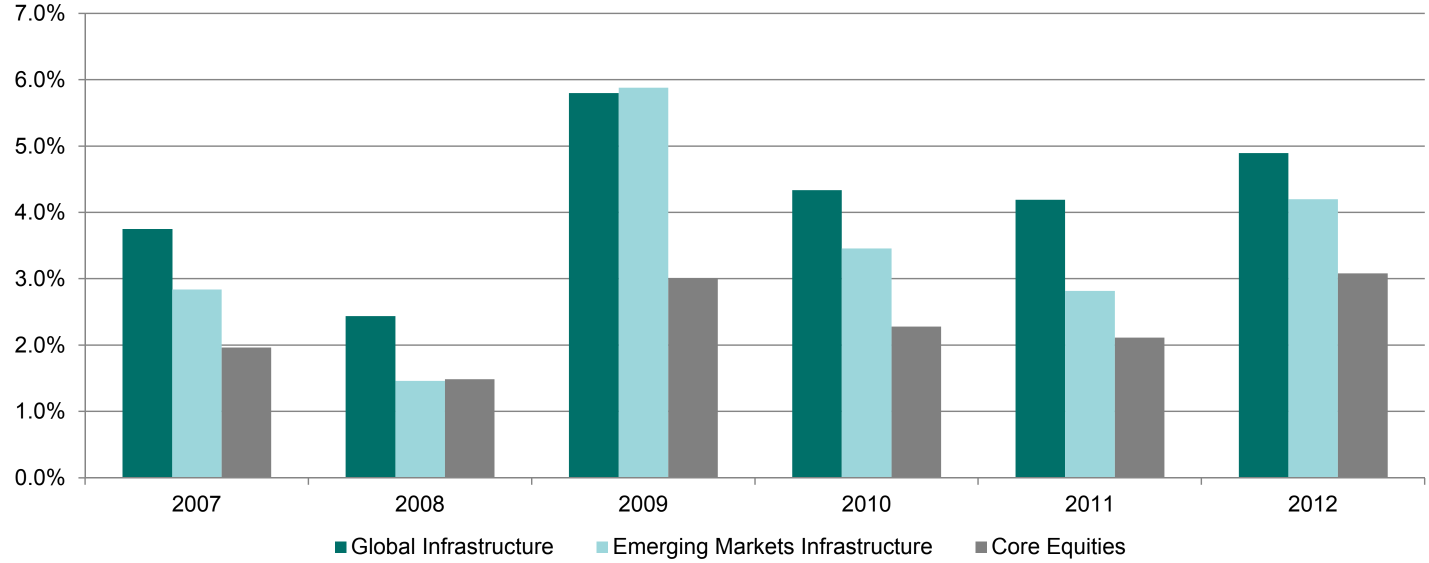

Exhibit 3 Realized Dividend Yield

Source: S&P Dow Jones Indices. Data from 2007-2012. Emerging Market Infrastructure is represented by the S&P Emerging Market Infrastructure Index; Global Infrastructure is represented by the S&P Global Infrastructure Index and Global Equities are represented by the S&P Global BMI. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations ssociated with back-tested performance.

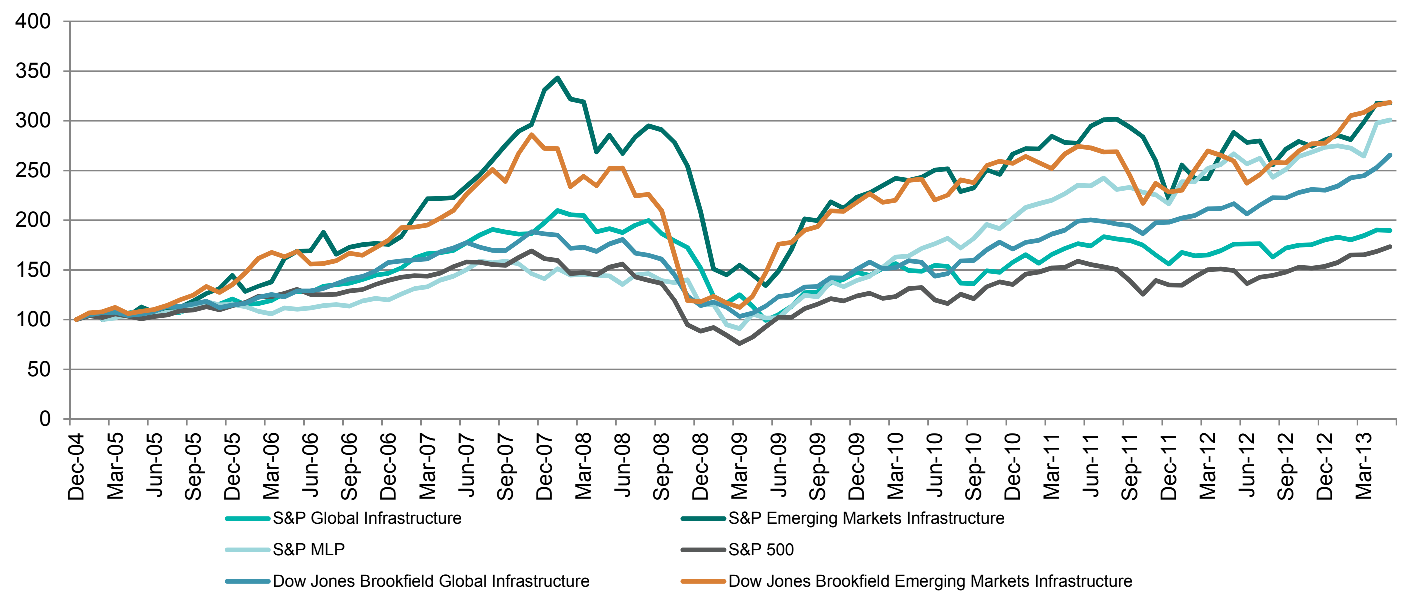

Exhibit 4a Performance of Infrastructure Indices versus Core Equities since 2004

Source: S&P Dow Jones Indices. Indices are normalized to 100 as of December 30, 2004. Data is current through May 31, 2013. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Transurban Group – a constituent of the S&P Global Infrastructure Index – adopts. On a quarterly basis, the company escalates its toll charge by either the quarterly CPI or 4.5% per annum (whichever is greater) for the privilege of using CityLink, the main road that joins the airport and Melbourne city centre in Australia. Given this, it would not be unreasonable to surmise a relationship between the performance of infrastructure indices and inflation.

Exhibit 4b Annualized Performance of Infrastructure Indices and

	S&P Global Infrastructure	Dow Jones Brookfield Infrastructure	S&P Emerging Markets Infrastructure	Dow Jones Brookfield Emerging Markets Infrastructure	S&P MLPs	S&P Global BMI
Annualized volatility	16.99%	14.23%	24.93%	23.37%	17.72%	17.88%
Annualized return	8.03%	11.47%	14.04%	14.17%	14.44%	4.06%
Return per unit	0.47	0.81	0.56	0.61	0.82	0.23

Source: S&P Dow Jones Indices. Data from November 30, 2004 through May 31, 2013 Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

A cursory inspection of the monthly correlation matrix in Exhibit 5, may lead to the conclusion that infrastructure investments have only a very weak, though positive, link to inflation. However, it is important to bear in mind that correlation measures can be highly volatile and cannot detect lead-lag relationships. Thus relying solely on them to define the relationship between different assets may lead to spurious conclusions. Furthermore, correlation analysis does not capture investors' experience over typical investment horizons. Therefore, we have opted to put more emphasis on the historical performance of different assets relative to inflation over a 5-year horizon (see Exhibit 6). Our results show that infrastructure indices have beaten inflation more frequently than core equities.

Exhibit 5 Monthly Pairwise Correlation between Assets

	Inflation	Global Equities	Global Bonds	U.S. REITs	Global Infrastructure	Emerging Market Infrastructure	MLPs	Commodities
Inflation	100%	7%	-11%	12%	7%	15%	37%	37%
Global Equities	7%	100%	26%	80%	90%	87%	52%	45%
Global Bonds	-11%	26%	100%	21%	46%	35%	3%	22%
U.S. REITs	12%	80%	21%	100%	76%	83%	48%	71%
Global Infrastructure	7%	90%	46%	76%	100%	84%	53%	50%
Emerging Market Infrastructure	15%	87%	35%	83%	84%	100%	47%	61%
MLPs	37%	52%	3%	48%	53%	47%	100%	34%
Commodities	37%	45%	22%	71%	50%	61%	34%	100%

Source: S&P Dow Jones Indices. Data for S&P Emerging Markets Infrastructure Index from December 30, 2004 and all other indices from December 30, 2001 through May 31, 2013. Inflation is represented by U.S. CPI Non-seasonally adjusted index; Global Equities are represented by the S&P Global BMI Index; U.S. REITs are represented by S&P U.S. REITs Index; Global Infrastructure is represented by the S&P Global Infrastructure Index; EM Infrastructure is represented by S&P Emerging Markets Infrastructure Index; MLPs are represented by S&P MLP Index and Commodities are represented by S&P GSCI Total Return Index. Tables are provided for illustrative purposes. Past performance is no guarantee of future results. This table may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

6. The Portfolio Diversification Potential of Infrastructure

Owing to the relatively high correlation between an equally weighted basket of infrastructure equities, and the broad equities market, an allocation to infrastructure equities has historically resulted in only a very modest reduction in volatility, but the overall return has been enhanced (see Exhibit 7). Clearly, the degree of risk reduction and return enhancement of infrastructure indices depends on the precise make-up of the index in question and facile generalizations cannot be made in this regard.

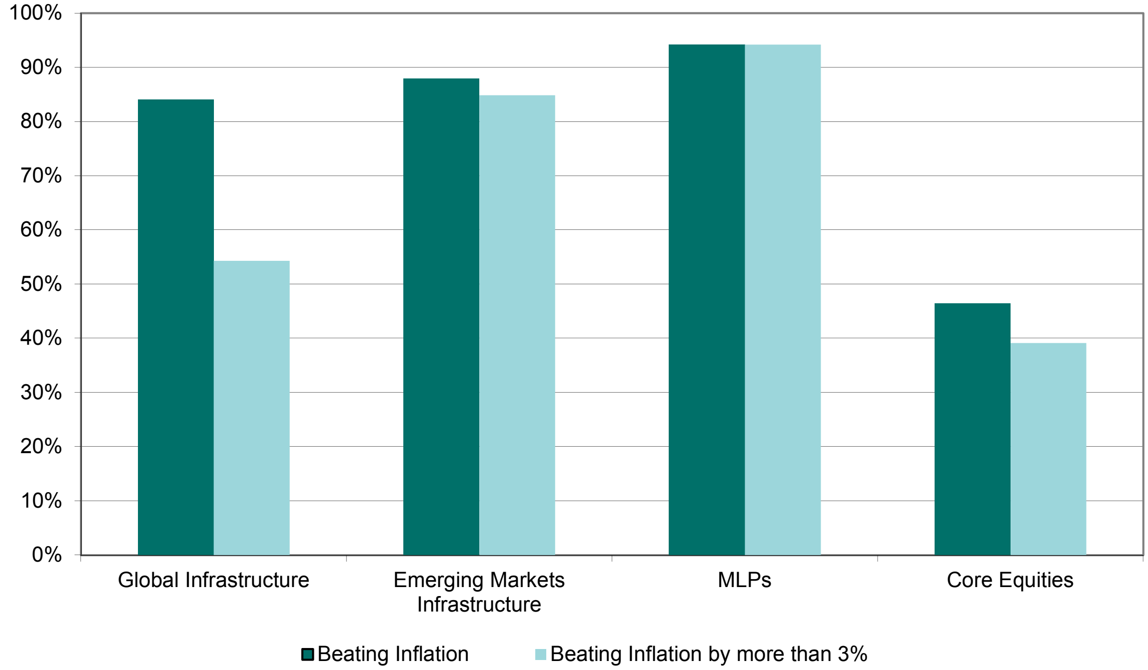

Exhibit 6 Frequency of Beating Inflation over a Rolling 5-Year Period
Source: S&P Dow Jones Indices. Emerging Market Infrastructure is represented by the S&P Emerging Market Infrastructure Index; Global Infrastructure is represented by the S&P Global Infrastructure Index; MLPs are represented by the S&P MLP Index and Global Equities are represented by the S&P Global BMI. Data for S&P Emerging Markets Infrastructure Index from December 30, 2004 and all other indices from December 30, 2001 through May 31, 2013. Charts are provided for illustrative purposes. Past performance is no guarantee of future results.

7. Summary of Infrastructure Performance

Historically, infrastructure equities have not only outperformed global equities (see Exhibit 8), but also performed well in inflationary environments. An allocation to infrastructure equities in an investment portfolio has also tended to help investors achieve a better risk-return trade-off than core equities.

8. S&P Dow Jones Indices Tracking Infrastructure

S&P Dow Jones has a wide array of infrastructure-themed indices on its platform including the S&P Global Infrastructure Index, the Dow Jones Brookfield Global Infrastructure Index, S&P Emerging Markets Infrastructure Index, and the S&P MLP Index.

8.1 S&P Global Infrastructure Index

The S&P Global Infrastructure Index has 75 constituents and comprises the largest publicly listed infrastructure companies globally in both developed and emerging countries. To create diversified exposure, the index includes three distinct infrastructure clusters: utilities, transportation, and energy. Every six months, the index is rebalanced such that utilities, transportation, and energy maintain a weighting of 40%, 40% and 20% respectively and no single stock exceeds 5%. Exhibit 9 shows the sectoral exposure changes over time and Exhibit 10 shows the sectoral exposure of the index on May 31, 2013.

Unsurprisingly, because of the rebalancing mechanism in the index and the application of individual stock caps, the exposure in the three industries has remained relatively stable over time. However, on a sectoral level, there have been relatively more fluctuations. Between 2007 and 2013, the index had an average representation of 26% in electric utilities, followed by 19% in oil storage and transportation, and 17% in highways and tracks. Over the same period, European- and U.S.-based companies together made up about 60% of the index, in terms of

Exhibit 7 Portfolios with Exposures to Infrastructure Equities

	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
Global Equities	70%	65%	60%	50%
Fixed Income	30%	30%	30%	30%
Infrastructure Equities	-	5% infrastructure equities	10% infrastructure equities	20% infrastructure equities
Annualized Volatility	*13.88%*	13.78%	13.69%	13.54%
Annualized Return	*5.35%*	5.73%	6.11%	6.86%

Source: S&P Dow Jones Indices. Data from November 30, 2004 through May 31, 2013. Charts are provided for illustrative purposes. Global Equities are represented by the S&P Global BMI Index; Fixed Income is represented by the JP Morgan Global Aggregate Index and Infrastructure Equities are being represented by an equally-weighted basket of S&P Global Infrastructure Equities, S&P Emerging Markets Infrastructure Equities and S&P MLP Index. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 8 Absolute Outperformance of Infrastructure Indices over Core Equities

	S&P Global Infrastructure	Dow Jones Brookfield Global Infrastructure	S&P Emerging Markets Infrastructure	Dow Jones Brookfield Emerging Markets	S&P MLP
Annualized	2.66%	6.10%	9.44%	8.28%	8.59%

Source: S&P Dow Jones Indices. Data from November 30, 2004 through May 31, 2013. Charts are provided for illustrative purposes. Global Equities are represented by the S&P Global BMI Index; Fixed Income is represented by the JP Morgan Global Aggregate Index and Infrastructure Equities are being represented by an equally-weighted basket of S&P Global Infrastructure Equities, S&P Emerging Markets Infrastructure Equities and S&P MLP Index. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested

market capitalization.

8.2 Dow Jones Brookfield Global Infrastructure Index

The Dow Jones Brookfield Global Infrastructure Index aims to measure the stock performance of global companies that own and operate infrastructure assets. The index is comprised of the largest publicly listed companies from a wide variety of industries, including airports, ports, communications, electricity transmission and distribution, oil and gas storage and transportation, diversified and water. For companies to qualify for inclusion in the index, they must have generated 70% of their cash flows, using EBITDA[5] as a proxy, from infrastructure.

Between 2007 and 2013, the index had an average representation of 28% in oil & gas storage and transportation, followed by 20% in electricity transmission and distribution, and 17% in MLPs. Over the same period, U.S.-based companies made up in excess of 50% of the index, in terms of market capitalization. Exhibit 11 shows the sectoral exposure of the index on May 31, 2013.

8.3 S&P Emerging Markets Infrastructure Index

The S&P Emerging Markets Infrastructure Index is comprised of 30 of the largest publicly listed emerging market companies and is a subset of the S&P Global Infrastructure Index. For this reason, the rules pertaining to the construction of the two indices and the resultant sector exposure are closely linked. Between 2007 and 2013, 48% in the index were listed in Asia, followed by 37% in Latin America. Exhibit 12 shows the sectoral exposure of the index on May 31, 2013.

8.4 Dow Jones Brookfield Emerging Markets Infrastructure Index

The Dow Jones Brookfield Emerging Markets Infrastructure Index is constructed in a similar manner to its global counterpart, with one important exception. For a company to qualify as a member in the emerging markets

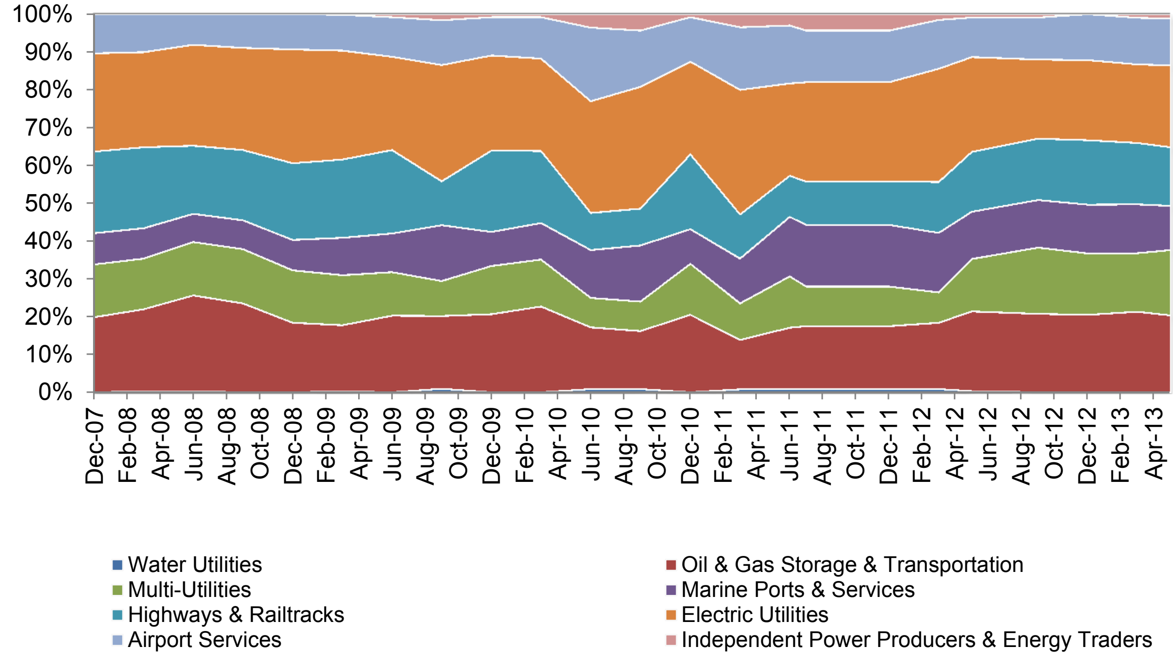

Exhibit 9 Changes in Sectoral Exposure of the S&P Global Infrastructure over time
Source: S&P Dow Jones Indices. Data as of February 29, 2007 through May 31, 2013. Charts are provided for illustrative purposes. Past performance is no guarantee of future results. This chart may reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

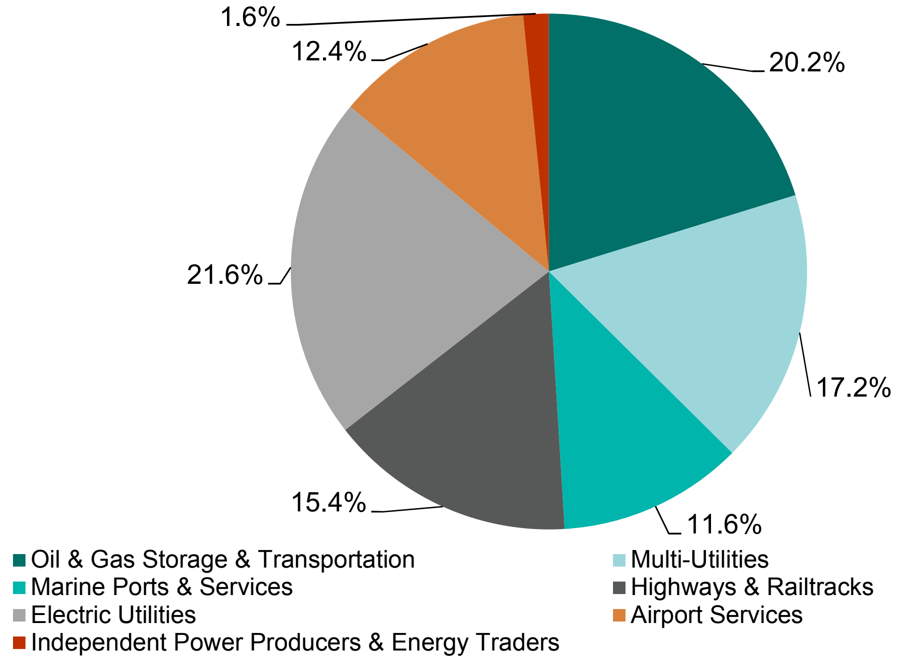

Exhibit 10 Sectoral Exposure of the S&P Global Infrastructure Index
Source: S&P Dow Jones Indices. Data as of May 31, 2013.

index, it is only required to generate 50% of its EBITDA from infrastructure.

Last year, the index had an average representation of 33% in oil and gas storage and transportation, followed by 19% in toll roads and 17% in ports. Over the same period, Chinese and Hong Kong companies made up 33% of the index, in terms of market capitalization. Exhibit 13 shows the sectoral exposure of the index on May 31, 2013.

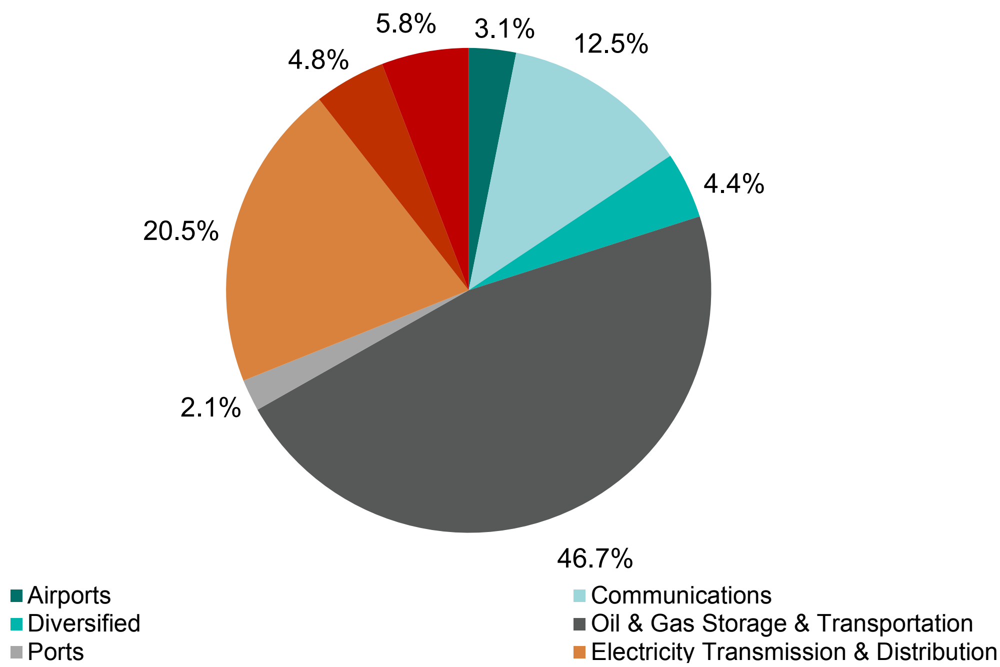

Exhibit 11 Sectoral Exposure of the Dow Jones Brookfield Global Infrastructure Index
Source: S&P Dow Jones Indices. Data as of May 31, 2013

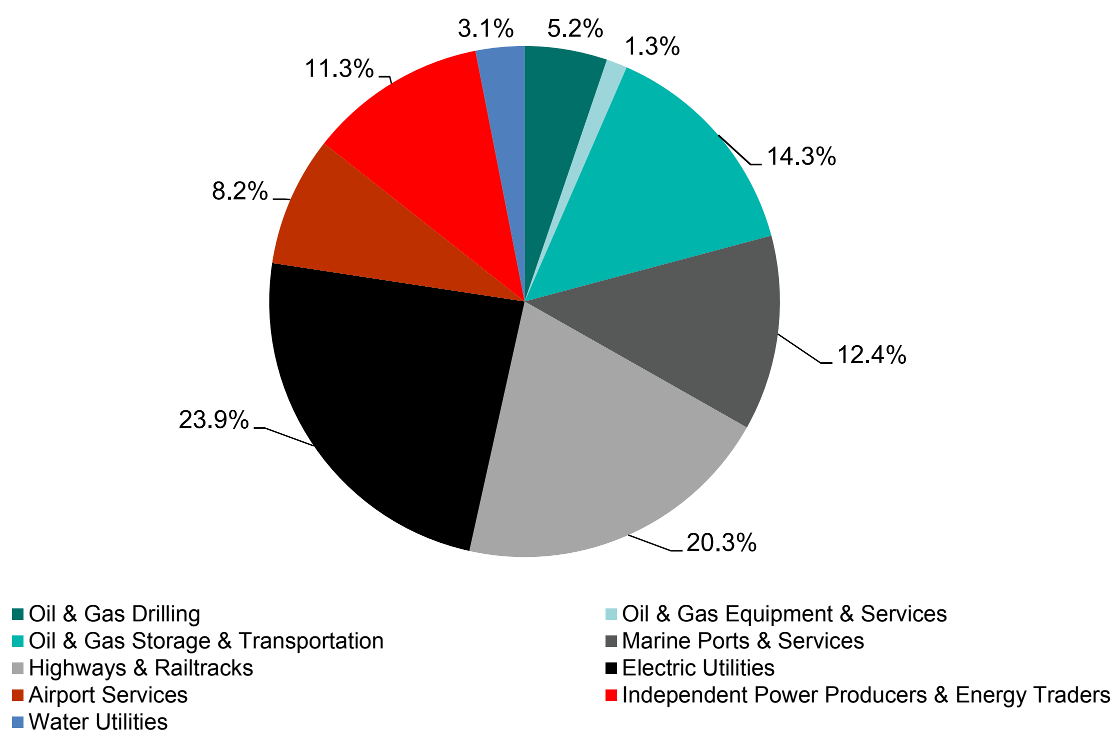

Exhibit 12 Sectoral Exposure of S&P Emerging Markets Infrastructure Index

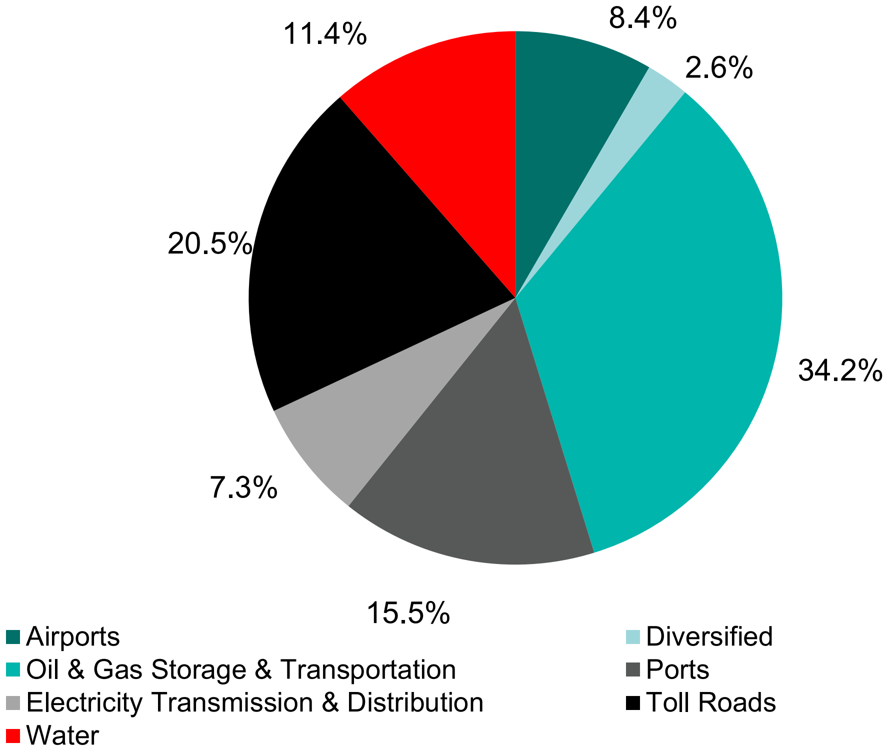

Exhibit 13 Sectoral Exposure of the Dow Jones Brookfield Emerging Markets Infrastructure Index
Source: S&P Dow Jones Indices. Data as of May 31, 2013.

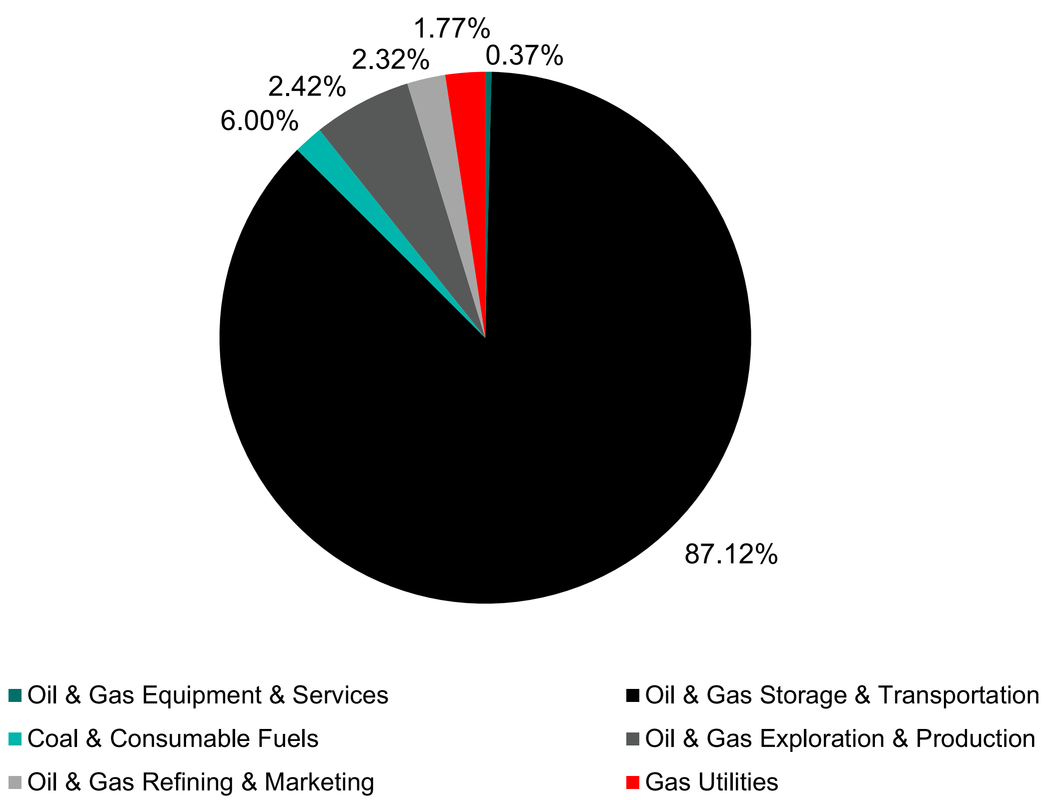

Exhibit 14 Sectoral Exposure of the S&P MLP Index
Source: S&P Dow Jones Indices. Data as of May 31, 2013.

8.5 S&P MLP index

Master Limited Partnerships (MLPs) are publicly traded limited partnerships that operate mainly in the natural resource industry. In the U.S. they are regarded as pass-through vehicles and do not pay any corporation taxes, thereby avoiding the double taxation generally applied to other companies. Revenues and deductions, such as depreciation and amortization from the partnerships, are passed on to investors (unit-holders), who are required to file their own tax return, known as Schedule K-1[6]. MLPs have grown in popularity because they allow investors to enjoy the liquidity of publicly-traded stocks while reaping the tax benefits of limited partnerships.

This popularity has led to the development of the S&P MLP index, which is designed to provide exposure to leading partnerships that trade on major U.S. exchanges. The index has 56 constituents with 95% of them operating in the energy industry. By far, the largest sector is oil and gas storage and transportation. All the companies included in the index are either master limited partnerships or traded limited liability companies, and they benefit from a preferential tax regime in the U.S. Two companies, Enterprise Products Partners and Kinder Morgan Energy Partners, represented about 20-25% of the index between 2007 and 2013. Exhibit 14 shows the sectoral exposure of the index on May 31, 2013.

The five infrastructure indices discussed above are only a sampling of the many indices that cover this asset class. While they are all categorized as infrastructure indices, they are by no means identical. Exhibit 15 underscores the

Exhibit 15 Comparison of Five S&P Dow Jones Infrastructure Indices

Parameters	S&P Global Infrastructure	Dow Jones Brookfield Global Infrastructure	S&P Emerging Markets Infrastructure	Dow Jones Brookfield Emerging Market	S&P MLP
Constituent Market Capitalization (USD	7,720.17	2,967.99	4,593.61	951.2	2,789.24
Geographical Coverage	Global (with tilt to Europe, U.S.)	Global (with tilt to U.S.)	Emerging markets	Emerging markets	U.S.
Universe	GICS	Stocks covered by Brookfield Asset Management	GICS	Stocks covered by Brookfield Asset Mgmt.	GICS
Industries Represented	Utilities, transportation and energy	Utilities, transportation, energy, communications	Utilities, transportation and energy	Utilities, transportation, energy, communications	Mainly energy (>95%)
Exposure to Utilities	Higher	Lower	Higher	Lower	N/A
Sectoral Diversification	Diversified	Diversified (including MLPs)	Diversified	Diversified	Mostly focus on mid-stream energy companies
Index Weight of the Three	14%	15%	24%	21%	33%
Summary of key Index Rules	•Rebalance to target weights of 40% in utilities, 40% in transportation and 20% in energy every six months •No single stock exceeds 5%	•70% of EBITDA[7] generated from infrastructure	•Rebalance to target weights of 40% in utilities, 40% in transportation and 20% in energy every six months •No single stock exceeds 10%	•50% of EBITDA generated from infrastructure	•Master limited partnerships traded in the U.S.

Source: S&P Dow Jones Indices. For illustrative purposes only. The market capitalization of the three largest holdings are as of March 29, 2013.

Exhibit 16 Investment Products Linked to S&P Dow Jones Infrastructure Indices

Index	Investment Product
S&P Global Infrastructure	iShares S&P Global Infrastructure ETF
	db x-trackers Global Infrastructure ETF
S&P Emerging Markets Infrastructure	iShares S&P Emerging Markets Infrastructure ETF
	iShares S&P Emerging Markets Infrastructure ETF
Dow Jones Brookfield Global Infrastructure	BMO Global Infrastructure Index ETF
	ETFX Dow Jones Brookfield Global Infrastructure Fund
Dow Jones Brookfield Emerging Markets Infrastructure	ETF Securities Dow Jones Brookfield Emerging Markets Infrastructure ETF

Source: S&P Dow Jones Indices. This is a complete list of all ETFs currently linked to the indices noted in the chart. While we have tried to include all ETFs we do not guarantee the completeness of such list. S&P Dow Jones Indices does not sponsor, promote or sell any product linked to our indices.

1. Moser, Joel H,, 2011, Global Infrastructure – Volume 1, Bingham McCutchen LLP
2. Infrastructure plan: U.K. to guarantee investments, 2012, BBC News (http://www.bbc.co.uk/news/business-18880354)
3. Like private equity, returns from infrastructure funds persist across different funds of the same manager, implying that skill is a key ingredient in determining success. A fuller discussion of the tradeability of indices across asset classes, authored by Xiao Wei Kang and Daniel Ung, can be found in Evaluating Index Tradability, Journal of Indexes, August/September 2012.
4. Investing in Infrastructure through Private Equity, Investment Insight, Segal, Rogerscasey, May 2011.
5. EBITDA is the abbreviation for Earnings Before Interest, Tax, Depreciation and Amortization.
6. S&P Dow Jones Indices does not give tax advice. Tax rules change frequently and you are advised to contact your tax advisor for further clarification.
7. EBITDA stands for Earnings before Interest, Tax, Depreciation and Amortization and is used as a proxy for cash-flow.

AUTHOR BIO

Daniel Ung is Daniel Ung is the Associate Director of the Index Research & Design group at S&P Dow Jones Indices. He is responsible for conducting research and developing index products across all asset classes. Prior to this, Daniel worked at Barclays Wealth and Investment Management in the Structured Products Group and at BNP Paribas Fortis Bank in the Commodities Investor Derivatives Group. He holds a master's degree from the Ecole Supérieure de Commerce de Paris (ESCP Europe) and is a CAIA and FRM charterholder.

Performance Disclosure

The launch date of the S&P Global Infrastructure Index was February 27, 2007 at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com/spindices.

The launch date of the S&P Emerging Markets Infrastructure Index was November 15, 2007, at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com/spindices.

The inception date of the Dow Jones Brookfield Global Infrastructure Index was December 31, 2002, at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com/spindices.

The inception date of the Dow Jones Brookfield Emerging Markets Infrastructure Index was December 31, 2002, at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spdji.com/spindices.

The launch date of the S&P MLP Index was September 6, 2007, at the market close. All information presented prior to the index inception date is back-tested. Back-tested performance is not actual performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index was officially launched. Complete index methodology details are available at www.spindices.com.

Past performance is not an indication of future results. Prospective application of the methodology used to construct the S&P Global Infrastructure Index, the S&P Emerging Markets Infrastructure Index, the Dow Jones Brookfield Global Infrastructure Index, and the Dow Jones Brookfield Emerging Markets Infrastructure Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the index. Please refer to the methodology paper for the index, available at www.spdji.com or www.spdji.com/spindices for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations. It is not possible to invest directly in an Index.

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

The index returns shown do not represent the results of actual trading of investor assets. S&P/Dow Jones

Indices LLC maintains the indices and calculates the index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor would pay to purchase the securities they represent. The imposition of these fees and charges would cause actual and back-tested performance to be lower than the performance shown. In a simple example, if an index returned 10% on a U.S. $100,000 investment for a 12-month period (or U.S. $10,000) and an actual asset-based fee of 1.5% were imposed at the end of the period on the investment plus accrued interest (or U.S. $1,650), the net return would be 8.35% (or U.S. $8,350) for the year. Over 3 years, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of U.S $5,375, and a cumulative net return of 27.2% (or U.S. $27,200).

Disclaimer

 This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, Dow Jones, S&P or their respective affiliates, parents, subsidiaries, directors, officers, shareholders, employees or agents (collectively "S&P Dow Jones Indices") do not have the necessary licenses. All information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties. Any returns or performance provided within are for illustrative purposes only and do not demonstrate actual performance. Past performance is not a guarantee of future investment results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other vehicle that is offered by third parties and that seeks to provide an investment return based on the returns of any S&P Dow Jones Indices index. There is no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other vehicle. A decision to invest in any such investment fund or other vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other vehicle. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice. Closing prices for S&P U.S. benchmark indices and Dow Jones U.S. benchmark indices are calculated by S&P Dow Jones Indices based on the closing price of the individual constituents of the Index as set by their primary exchange (i.e., NYSE, NASDAQ, NYSE AMEX). Closing prices are received by S&P Dow Jones Indices from one of its vendors and verified by comparing them with prices from an alternative vendor. The vendors receive the closing price from the primary exchanges. Real-time intraday prices are calculated similarly without a second verification.

These materials have been prepared solely for informational purposes based upon information generally available to the public from sources believed to be reliable. No content (including ratings, credit-related analyses and data, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and any third-party providers (collectively S&P Dow Jones Indices Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Dow Jones Indices keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.