



ABSTRACT

In this document we examine the rationale behind investments in emerging market debt, discuss opportunities for investment in the asset class, and review the various investment vehicles available to institutional investors. Meketa Investment Group believes that emerging market debt offers meaningful diversification benefits for most long-term portfolios.

BACKGROUND

Before the late 1980s, institutional investment in emerging market debt was virtually nonexistent; instead, international banks, local investors, hedge funds, and distressed loan buyers were the market's primary investors. However, the development of Brady bonds, which initially existed as restructured nonperforming emerging markets loans, paved the way for the expansion of the emerging market debt investor base to include high yield investors, dedicated mutual funds, and international bond funds. The asset class has continued to grow over time as emerging capital markets have developed, liquidity has increased, and credit quality has improved. Thus, current investors in emerging market debt now include institutional investors such as pension funds and endowments.

THE EMERGING MARKETS THESIS

The basic rationale behind investing in emerging market debt is twofold: first, emerging market economies are generally growing faster than developed market economies, and, second, emerging market economies have lower total government debt to output—both of which imply that the debt servicing capability of emerging markets is high. Proponents of emerging markets support the thesis that they will continue to grow rapidly for several reasons. First, these economies begin from a lower base and, therefore, even modest improvements result in large percentage increases. Second, much of the developed world appears willing to supply large amounts of capital to developing markets. Third, demographics tend to be favorable for growth in the majority of emerging market countries.

The main cause of the volatility in emerging markets over the past three decades has been the inability of the investor base to distinguish strong fundamental economic expansion from short-term run-ups based on temporary increases in export or commodity prices. Moreover, from liquidity, financial infrastructure, and economic contexts, local markets were generally not equipped to deal with large shifts in foreign cash flows. However, since the late 1990s, many emerging market economies have built up large foreign exchange reserves, primarily due to exports to developed market consumers. In addition, large increases in commodity prices in the 2000s added to government coffers in many commodity exporting countries.

In aggregate, emerging countries now have lower outstanding government debts than developed countries, and the gap is projected to widen in coming years. Because emerging economies are growing at a faster rate than developed economies, they have greater demand

for financing, and are expected to have greater resources with which to pay back debt. Many emerging market governments have strengthened their banking and economic policies, providing tools to combat financial crises—including the credit crisis of 2008. The table below shows the public debt and fiscal balance (surplus or deficit) to gross domestic product (GDP) ratio of the index constituents in the JPMorgan Government Bond Index - Emerging Markets Global Diversified (“JPMorgan GBI-EM Global Diversified”), a widely-used local currency emerging market debt benchmark. As can be seen from the table, emerging market countries have on average a lower public debt/GDP ratio and a healthier (less negative) fiscal balance than the major developed markets countries, implying a higher level of sovereign creditworthiness.

Table 1. JPMorgan GBI-EM Global Diversified Index
Constituents as of June 2014

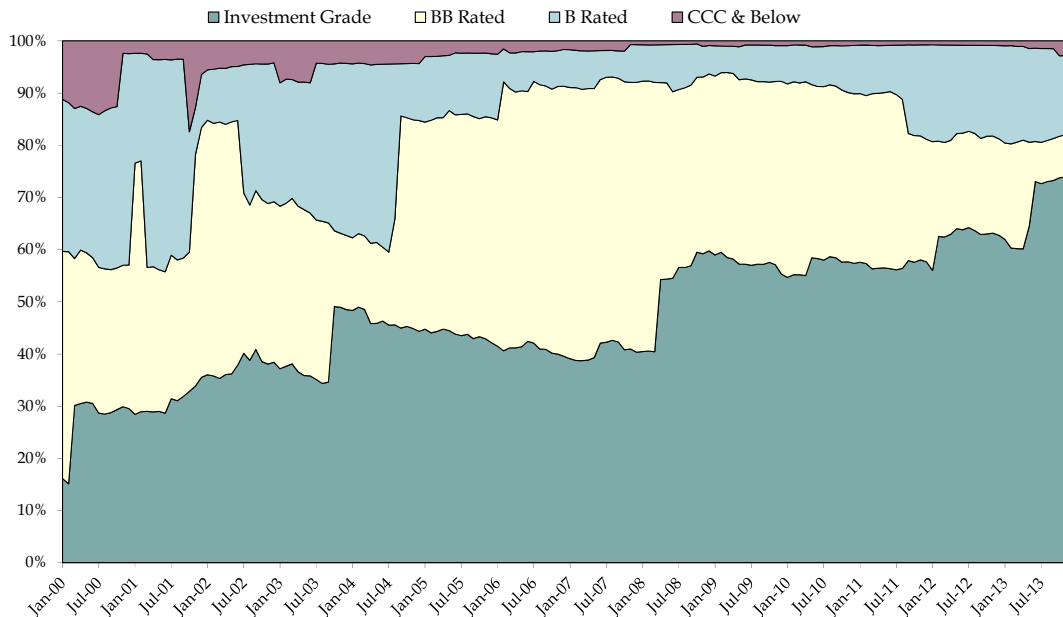
	Index Weighting (%)	Public Debt to GDP ¹ (%)	Fiscal Balance to GDP ¹ (%)
Brazil	10.0	59.2	1.6
Chile	0.1	13.9	-1.0
Colombia	4.2	39.6	0.4
Hungary	5.7	79.8	-2.9
Indonesia	7.7	24.2	-3.3
Malaysia	10.0	54.6	-4.4
Mexico	10.0	37.7	-2.5
Nigeria	1.7	19.3	-1.5
Peru	1.7	14.9	1.0
Poland	10.0	48.2	0.0
Romania	2.0	38.2	-2.5
Russia	9.4	7.9	-0.5
South Africa	10.0	45.4	-4.8
Thailand	7.0	45.9	-4.0
Turkey	9.9	36.6	-2.1
<i>Index Average</i>	<i>NA</i>	<i>42.0</i>	<i>-2.0</i>
<i>United States</i>	<i>NA</i>	<i>71.8</i>	<i>-4.0</i>
<i>United Kingdom</i>	<i>NA</i>	<i>91.1</i>	<i>-3.6</i>
<i>Germany</i>	<i>NA</i>	<i>79.9</i>	<i>0.1</i>
<i>Japan</i>	<i>NA</i>	<i>226.1</i>	<i>-8.2</i>

Furthermore, emerging market debt has also seen improvements in credit quality. More than 70% of emerging market debt is now rated investment grade by the credit rating agencies, meaning that based on credit quality, emerging market debt should be less risky than high yield bonds. The average credit rating of the JPMorgan GBI-EM Global Diversified is BBB+ (i.e., investment grade), while the average rating of the Barclays High

¹ Public Debt to GDP and Fiscal Balance to GDP are estimates based on 2014 data from the CIA Factbook. Table 1 shows four-quarter average values for emerging markets countries.

Yield Index is B (i.e., below investment grade). The chart below shows the credit quality of the JPMorgan Emerging Markets Bond Index Global Diversified Index (“JPMorgan EMBI Global Diversified”), which represents hard currency debt, from December 1993 through June 2014.

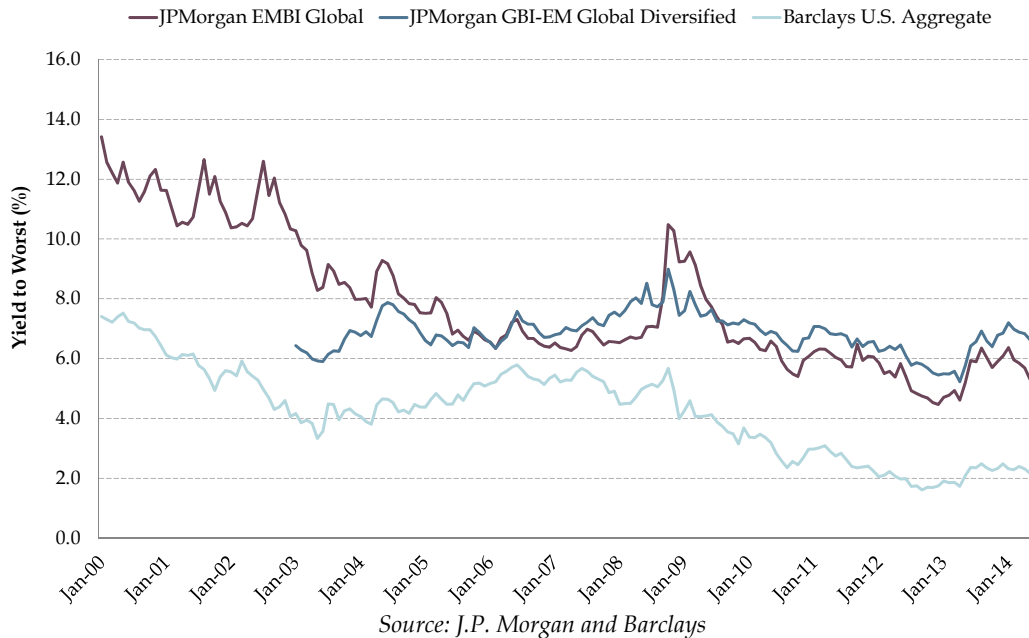
Figure 1. Emerging Market Debt Credit Quality
January 2000 - December 2013



Source: J.P. Morgan and Neuberger Berman

The increasing credit quality is reflected in the decreasing yields of emerging market bonds, especially relative to U.S. investment grade bonds. The following chart shows yields for domestic investment grade bonds and emerging market sovereign bonds (both external and local).

Figure 3. Historical Yield Comparison

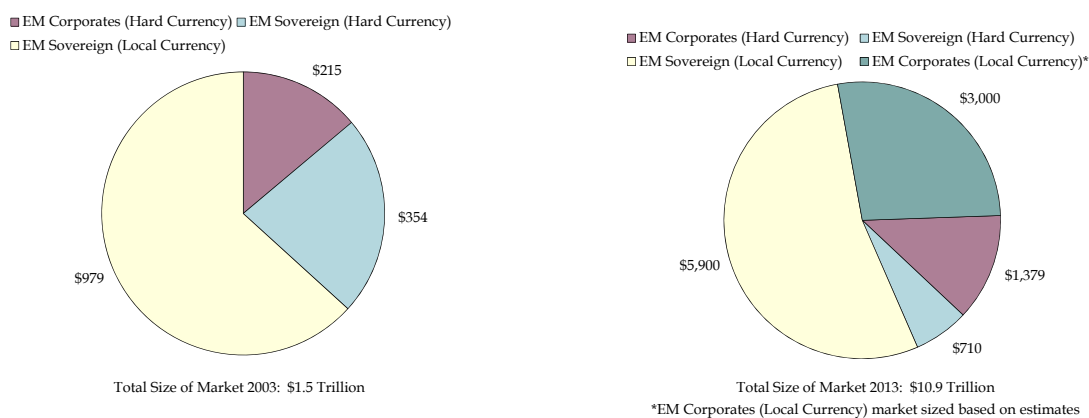


TYPES OF EMERGING MARKET DEBT

Emerging market debt can be divided into two broad categories based on the currency the bond is denominated in: external and local. External currency debt², also known as hard currency debt, is issued in a currency other than the country's home currency (usually in U.S. Dollars or Euros). Local debt is issued in the local currency of the issuing country or company. Another way of segmenting emerging market debt is into sovereign debt, which is issued by governments, and corporate debt, which is issued by companies located in emerging markets countries. As of 2014, emerging markets corporate debt available to institutional investors was almost always external debt rather than local debt.

Since the late 1990s, emerging country governments have increasingly turned to local currency debt, motivated by a desire to alleviate the currency mismatch of borrowing in external debt markets and receiving government revenues in local currency. Many investment managers offering emerging market debt strategies segment their offerings into either local or external debt strategies. Countries issuing local bonds tend to have more advanced capital markets that can support local debt issuance. In total, local currency denominated bonds represented more than 80% of all emerging market debt outstanding at the end of 2013.

² Hereafter, "external currency debt" and "external debt" will be used interchangeably.

Figure 2. Emerging Market Debt³

Despite the shift toward local debt, the external debt market remains an important source of funding for countries. Emerging countries with less developed local bond markets are still more likely to obtain financing through external debt.

Historically, sovereign debt has been the primary investment option for investors, but emerging markets corporate bonds represent a growing segment of the asset class, a trend which should continue over time. The reduction of sovereign issuance in external currencies (in favor of local currencies) has presented an opportunity for emerging markets corporations that recognize the demand for bonds issued in U.S. Dollars and Euros. Emerging market corporate bonds normally pay higher yields than their sovereign counterparts. Corporations are often “ratings constrained” by the countries in which they are located, potentially leading to a “structural underrating” that can be exploited by investors. These investors may be able to identify strong corporate borrowers regardless of the country in which they are domiciled.⁴

Each portion of the emerging market debt opportunity set has its own merits, and a specific sector of the market may be more appropriate for one investor than for another. Returns between the sectors are positively correlated, but each also has a unique set of return drivers.

HISTORICAL PERFORMANCE

Since the inception of the JPMorgan Emerging Markets Bond Index Global (“JPMorgan EMBI Global”) in January 1994, emerging markets external sovereign debt has generated strong results. Through June 2014, emerging market debt has outperformed U.S. public equities and fixed income, as well as the equities of non-U.S. developed economies. In addition, emerging market debt has exhibited volatility between that of fixed income and equities. For the common time period since January 1994, the annualized standard deviation of the JPMorgan EMBI Global was 14.5%, higher than investment grade and high yield fixed

³ Source: Aberdeen Asset Management

⁴ A “ratings constraint” is defined as a factor that limits the credit rating of a bond issuer, such as the credit rating of the country in which a corporation is domiciled, or the amount of debt issued by a country.

income but lower than U.S. and non-U.S. equity indices (see the following table). These strong returns were primarily the result of initially high yields coupled with improving credit quality. Because yields are much lower today, we believe that external sovereign debt will not achieve the same level of performance in the future.

Table 2. Performance Characteristics⁵

January 1994 – June 2014

	Annualized Returns	Annualized Standard Deviation	Correlation with JPM EMBI Global
JPMorgan EMBI Global	9.8%	14.5%	NA
Barclays U.S. Aggregate	5.8	3.9	0.35
Barclays U.S. High Yield	7.8	9.6	0.53
Russell 3000	9.4	17.0	0.54
MSCI EAFE	5.8	17.8	0.50
MSCI Emerging Markets	5.7	25.8	0.66

The historical data available for emerging market debt denominated in local currency is more limited, as the JPMorgan Government Bond Index – Emerging Markets (“JPMorgan GBI-EM”) was not created until February 2002. Through June 2014, emerging markets local debt had outperformed investment grade U.S. fixed income, as well as U.S. and non-U.S. developed markets equities, while it had underperformed emerging markets equities. These historically strong results may be attributed almost equally to the weakness of the dollar and moderately high initial yields. In addition, yields have not compressed as much as in the external sovereign universe. Therefore, we expect that local currency debt will remain an attractive area. Volatility for emerging markets local debt since the inception of the GBI-EM index was comparable to that of high yield fixed income and was lower than various equity indices (see table below).

Table 3. Performance Characteristics

February 2002 – June 2014

	Annualized Returns	Annualized Standard Deviation	Correlation with JPM GBI-EM Global Diversified
JP Morgan GBI-EM Global Diversified	10.3%	13.1%	N/A
JP Morgan EMBI Global	10.2	9.6	0.80
Barclays Aggregate	4.7	3.7	0.39
Barclays High Yield	10.4	11.0	0.64
Russell 3000	10.0	16.3	0.65
MSCI EAFE	9.5	19.6	0.78
MSCI Emerging Markets	14.5	26.9	0.79

⁵ The table begins in January 1994 for purposes of comparison, because that month was the inception date of the MSCI Emerging Markets Index.

PORTFOLIO BENEFITS

Including emerging markets debt to a typical institutional portfolio should offer valuable diversification benefits without sacrificing portfolio return. As Tables 2 and 3 indicate, historical correlations between emerging markets debt—both in external and local currencies—and typical institutional asset classes have been moderate. Furthermore, we believe that emerging markets debt should continue to command a long-term risk premium over developed markets, both domestic and overseas.⁶ Using historical index returns, we constructed two hypothetical portfolios that demonstrate the effect of an emerging markets debt allocation.⁷

Table 4. Portfolio Diversification⁸

	Portfolio 1	Portfolio 2
Domestic Equities	45%	45%
Foreign Equities	20	20
Emerging Equities	5	5
Investment Grade Bonds	17	14
TIPS	6	6
High Yield Bonds	7	5
Emerging Market Debt	0	5
<i>Annualized Return</i>	6.73%	6.78%
<i>Standard Deviation</i>	12.87%	13.00%
<i>Sharpe Ratio</i>	0.58	0.58

As the table above shows, the addition of emerging market debt to an already well-diversified portfolio allowed for more efficient portfolios over the ten-year period. By adding an allocation to emerging market debt funded by investment grade and high yield bonds, a plan sponsor could have constructed a portfolio that had a higher return without a significant increase in risk. Emerging market debt appears to offer meaningful diversification benefits.

⁶ Although, this premium may decline as the creditworthiness of emerging markets improves over time.

⁷ Investment Grade Bonds returns represented by the Barclays Aggregate Index, TIPS returns by the Barclays U.S. TIPS Index, High Yield Bonds returns by the Barclays High Yield Index, and emerging market debt by a 50/50 blend of the J.P. Morgan Emerging Markets Bond Index Global and the J.P. Morgan GBI-EM.

⁸ The table begins in February 2002 for purposes of comparison, because that month was the inception date of the J.P. Morgan GBI-EM.

CURRENCY RISK AND HEDGING

Investors in any security denominated in a foreign currency are subject to the risk of the foreign currency declining relative to the investor's domestic currency. Should the U.S. dollar strengthen relative to emerging markets currencies, emerging market debt strategies may lag their domestic counterparts. In local currency debt, currency moves are the primary driver of shorter-term returns, so it is important for investment managers to be able to manage currency risk.

The effect of currency movements can be mitigated or even eliminated by purchasing the appropriate hedging instruments, such as forward contracts, futures contracts, or options. While currency hedges eliminate the currency portion of a foreign security's return volatility, the cost of even partially hedging exposure to a particular currency will diminish the investment's return. Generally, the hedger pays both a bid/ask spread and an implicit interest cost, depending on the currency pair traded. Typical bid/ask spreads average around 7 bps, and implicit interest costs can be significantly higher.⁹ Given the traditionally large interest rate differential between US and emerging markets, these costs make a full currency hedge unappealing for most institutional investors. In addition, hedging eliminates a portion of the diversification benefit of international investing.

Because the cost of a full hedge in emerging markets will significantly diminish long-term returns, we do not believe that fully hedged portfolios are appropriate for most plans with a long-term investment horizon. We do recommend, however, that active managers be allowed to hedge currency exposure opportunistically and in limited circumstances. If the manager believes that a particular bond is very attractive, but that the underlying currency is highly volatile or unattractive, then the manager should be allowed to buy the bond and hedge to eliminate the currency risk.

OTHER RISKS

In addition to the currency risk discussed above, all fixed income investors are exposed to *credit risk*, which includes the risk of not being repaid by a borrower (*default risk*) and the risk that spreads will widen (*credit spread risk*). While debt issued by developed market governments is often considered to be virtually risk-free, debt issued by emerging market governments has historically been considered to have greater credit risk.

The ratings agencies assign two types of ratings to sovereign debt: a local currency debt rating and a foreign currency debt rating. The reason for the two ratings is that default frequencies have differed in the past based on the currency denomination of sovereign debt. Historically, debt denominated in a foreign (external) currency has been more likely to default, primarily because a country can raise taxes and lower spending to satisfy their local

⁹ Managers will engage in hedging forwards multiple times per year, so the total bid/ask spread cost may be any multiple of 7 bps. In addition, the implicit interest rate cost depends on the interest rate differential between the two currencies. If the currency to be hedged is yielding 6% and the domestic currency is yielding 1%, then the implicit interest rate costs will be on the order of 5% annually.

currency debt burden, but must purchase foreign currency at the prevailing exchange rate to satisfy their external currency debt burden.

As noted above, the credit quality of emerging markets bonds has increased over time. Now, the majority of bonds included in the J.P. Morgan Emerging Markets Bond Index are rated investment grade. The investment grade ratings of most emerging markets countries indicate that emerging markets bonds are considered to be at a lower risk of default than high yield bonds, which many institutional investors have already embraced.

When the borrower is a government, credit risk also includes *sovereign risk*. Investors in all sovereign debt, whether developed or emerging, must contend with the risk of a regulatory or policy change by the issuing government. However, this risk is arguably greater in emerging markets due to political structures that are often less stable. Emerging market debt managers must evaluate both the *ability* and *willingness* of a foreign government to pay its debts.

Event risk is also relevant for emerging market debt as their returns have historically been volatile and have been occasionally subject to extreme negative results. During the Asian financial crisis of 1997, investors were reminded of the harsh reality of the emerging markets investment environment.

Events such as these led to massive investment losses and the virtual economic collapse of several developing economies. For emerging market corporate debt, event risk includes the risk of corporate restructurings or government takeover. All securities are also subject to *liquidity risk*, or the risk that investors will have to sell a bond below its fair value as a result of a specific event or an adverse market environment. At least in the 2008-2009 crisis (the only crisis for which we have complete benchmark data), emerging market debt rebounded quickly. Future crises—especially those originating in the emerging market world—may not be as easily weathered.

In recent years, the governments of many emerging countries have strengthened their legal and regulatory infrastructure in order to better endure adverse market environments. This increased economic stability was evident during the credit crisis of late 2008 and early 2009, when the returns of emerging market debt did not suffer as greatly as they had during past crises.

When assets are invested outside developed markets, civil insurrection, repudiation of debts, and the state seizure of private assets are *political risks* that must be considered. Even in a less extreme context, new legislation may alter tax laws, place limits on foreign ownership of domestic assets, or introduce regulatory or accounting costs to businesses. These political risks are separate from ordinary market risks.

BENCHMARKS

The primary index provider used by most institutions for measuring the performance of emerging market debt is J.P. Morgan. The JPMorgan Emerging Markets Bond Index (“JPMorgan EMBI”), which focused on Brady Bonds, was formed in the early 1990s and became the most widely published and referenced emerging market debt index. In 2002, the JPMorgan EMBI was discontinued in favor of the JPMorgan Emerging Markets Bond Index Plus (“JPMorgan EMBI Plus”). The EMBI Plus tracks a wider range of external currency bonds, encompassing more of the market than just Brady bonds.

More recently, J.P. Morgan developed indices that focus on emerging market debt issued in local currencies and by corporations. The JPMorgan Government Bond Index – Emerging Markets (GBI-EM) series has become the standard for local debt, and the JPMorgan Corporate Emerging Markets Bond Index (CEMBI) series has become the standard for corporate debt. Most J.P. Morgan emerging market debt indexes are also available in a “Global” or “Global Diversified” version. The “Global” versions include a wider range of securities and countries, and the “Global Diversified” versions limit the weights of countries that would otherwise dominate the indexes with their debt issuance. J.P. Morgan also publishes data for “Broad” versions of the indexes, although those versions typically include what many investment managers consider uninvestable markets, so they are not widely used by investment managers. Selected features of these indexes are presented in Table 5, and an extended version is found in the Appendix.

Table 5. Selected J.P. Morgan Emerging Market Debt Benchmarks

As of June 2014

Name	Inception Date	Currency Denomination	Corporate or Sovereign	Number of Countries
EM Bond Index Plus	Dec. 1993	U.S. Dollar	Sovereign	18
EM Bond Index Global	Dec. 1993	U.S. Dollar	Sovereign	31
EM Bond Index Global Diversified	Dec. 1993	U.S. Dollar	Sovereign	31
Government Bond Index - EM	Jan. 2002	Local	Sovereign	14
Government Bond Index – EM Global	Jan. 2002	Local	Sovereign	16
Government Bond Index – EM Global Diversified	Jan. 2003	Local	Sovereign	16
Corporate EM Bond Index	Dec. 2001	U.S. Dollar	Corporate	39
Corporate EM Bond Index Diversified	Dec. 2001	U.S. Dollar	Corporate	39

Investors should view a portfolio’s adherence to a particular benchmark differently in the global debt markets than in the global equity markets. When a particular stock is weighted more highly in a value-weighted equity index such as the S&P 500, it is usually because the company has experienced growth over time. In the construction of a global debt benchmark, however, the countries that are weighted most heavily in the benchmark are those countries that have the most debt outstanding. Additionally, the high transaction costs (described later) involved in emerging markets make it more difficult for managers to closely track an index or to outperform an index that does not reflect transaction costs. Therefore, emerging market debt benchmarks should be used by investors as a means of measuring the

performance of investment managers, but should not necessarily dictate the manager's portfolio composition.

STRATEGIES AND INVESTMENT VEHICLES

Passive and Active Management

Historically, active management has shown the ability to outperform the passive emerging market debt benchmarks. For example, for the ten-year period ended June 2014, the median emerging market debt manager returned 10.6% per year, versus 9.5% for the J.P. Morgan EMBI Global benchmark, gross of fees.¹⁰ The interquartile spread for the ten-year period was 1.4%, implying that the asset class was modestly inefficient. Furthermore, 80% of the active strategies outperformed the index gross of fees. While survivorship bias likely affected these results, it is arguably the case that emerging market debt—given its relative infancy—likely offers an opportunity for managers to add value.¹¹

Importantly, there are few options available for obtaining passive exposure to the asset class. As of June 2014, the only means of making a passive investment in emerging market debt is through exchange-traded funds (ETFs). The iShares J.P. Morgan U.S. Dollar Emerging Markets Bond Fund (ticker "EMB") seeks to match the performance of the J.P. Morgan EMBI Global Index. The Fund, which is sub-advised by BlackRock, invests in a representative sample of actively traded external debt instruments in emerging market countries contained in the index. Another passive ETF is the PowerShares Emerging Markets Sovereign Debt Portfolio (ticker "PCY"), which seeks to match the performance of the Deutsche Bank Emerging Market U.S. Dollar Liquid Balanced Index, which measures emerging markets U.S. Dollar-denominated government bonds issued by approximately 17 countries. The ETF's investment advisor is Invesco PowerShares Capital Management LLC. In July 2010, Van Eck Global introduced a local currency bond ETF ("EMLC"), which seeks to match the performance of the GBI-EM Core Index, which includes 13 countries. The expense ratios for these ETFs range from 0.49% to 0.60%.

Investment Vehicles

One mechanism for achieving an allocation to emerging market debt is to permit a "core plus" bond manager to allocate a portion of their portfolio to emerging market debt. Typically, the manager is limited to holding 5% to 20% of the portfolio in emerging market debt, while the balance remains in developed markets. This may, however, result in a sub-optimal amount of overall assets allocated to emerging market debt. There is also the risk that the manager has limited expertise in emerging market debt investing. For these reasons, Meketa Investment Group has a preference for dedicated emerging market debt investment managers.

On the other hand, some investors hire a manager to oversee a dedicated portfolio of emerging market debt securities through a separate account or a commingled fund. Total

¹⁰ Source: eVestment Alliance unhedged emerging market external debt universe as of June 2014.

¹¹ Over 50% of the funds that began the 10-year period went inactive during the period. This suggests that survivorship bias certainly influenced the results of this analysis.

operating costs are often lower for a commingled fund, which can be many times the size of a separate account for most institutional investors. Further, commingling smaller accounts also lowers transaction costs, as the netting of inflows and outflows from different mandates reduces the volume of securities that need to be traded. Therefore, for most plan sponsors that seek exposure to emerging market debt, a commingled fund should be the preferred choice.

INVESTMENT COSTS

The costs of investing in emerging market debt are higher than those of investing in developed fixed income markets, and much higher than the costs associated with investing domestically. First, emerging markets are relatively illiquid, which increases the transaction costs for any purchase or sale. Investment managers estimate transaction costs to generally range between 5 basis points and 150 basis points, depending entirely on the liquidity of the security. Second, the custody and accounting work required to maintain the investments is more complex and more expensive, and significant currency hedging costs may be incurred. Third, foreign governments sometimes levy withholding taxes on interest, thus increasing costs and reducing returns for local currency debt. Finally, portfolio management fees are relatively high, reflecting in part the higher cost of gathering useful information.

Combined management fees and expenses for emerging market debt generally range between 60 and 100 basis points per year.¹² The median cost in a comingled fund for a \$10 million investment was 73 basis points as of 2014, while the median commingled account cost for a \$100 million investment was 69 basis points. Separate account fees were lower (on the surface), as they do not include custodial and administrative expenses, and mutual fund fees were higher. Transaction-related costs, which represent the largest factor of the total cost of investing in emerging market debt, are not easily observable (i.e., they are hidden within the returns of the account). Therefore, when selecting an emerging market debt manager, strategies that minimize transaction costs are preferable.

Nevertheless, the total increase in costs incurred by investing in emerging market debt is relatively small compared to the potential benefits of increased diversification and enhanced returns. Furthermore, as markets become more “globalized,” these costs should decline.

RECOMMENDATION

Meketa Investment Group believes that emerging market debt investing is appropriate for long-term portfolios as a tool for overall portfolio diversification. We recommend that plan sponsors with large, well-diversified portfolios allocate up to 10% of total assets to emerging market debt. Increasing levels above this amount may be warranted as the asset class matures, but currently we believe this level is prudent given the likely increase in currency risk this allocation will introduce at the portfolio level.

¹² Source: eVestment Alliance data for Comingled Fund Emerging Markets Debt, as of June 2014.

The allocation should be made to either a strategy where the manager can allocate opportunistically between local currency and external currency debt, or to a dedicated local currency emerging market debt strategy. With an opportunistic approach, the investor allows the manager to use their best ideas to invest in whichever sector of the emerging market debt market is more attractive at that time. If the investor chooses an opportunistic or blended debt strategy, Meketa Investment Group recommends the use of a customized, or blended, benchmark using a combination of the JPMorgan external debt, local debt, and corporate indices. Investments in corporate emerging market debt should be allowed opportunistically. We do not recommend a dedicated external debt allocation, as such an investment would unnecessarily limit the investment opportunity set. In addition, the issuance of external debt is likely to continue to decrease as a proportion of emerging market debt over time.

Meketa Investment Group recommends the use of active management in emerging market debt. The decision about hedging currency should be made by the plan sponsor in the context of their entire portfolio's exposure to foreign currencies. While we suggest that plan sponsors not explicitly hedge their emerging market debt portfolios, we believe that managers should be allowed to hedge currency opportunistically. Derivatives should be used primarily to control risk rather than as a speculative tool. We believe that constraints regarding country- or issue-specific weightings should be determined by the plan sponsor and the manager, rather than be dictated by the benchmark.

Only managers with proven experience in emerging market debt should be considered for any investment. Qualified managers should be able to demonstrate the in-depth analytic expertise necessary to track events in these potentially rapidly changing markets. In addition, any analysis should focus on a manager's ability to control downside risk, as this skill is crucial to generating consistent returns in emerging market debt over extended periods.

APPENDIX

Emerging Market Debt Benchmarks

As of June 30, 2014

JP Morgan Indices	Currency Denomination	Corporate or Sovereign	Average Credit Quality	Number of Countries	Number of Issues	Yield	Duration	Market Capitalization (\$ billion)
EM Bond Index Plus	U.S. Dollar	Sovereign	BB+	18	156	5.4	7.7	323
EM Bond Index Global	U.S. Dollar	Sovereign	BB+	61	445	5.3	7.2	654
EM Bond Index Global Diversified	U.S. Dollar	Sovereign	BB+	61	445	5.1	7.0	364
Government Bond Index - EM	Local	Sovereign	A-	14	152	7.0	4.4	868
Government Bond Index - EM Global	Local	Sovereign	A-	16	194	6.9	4.5	987
Government Bond Index - EM Global Diversified	Local	Sovereign	A-	16	194	6.6	4.7	987
Corporate EM Bond Index	U.S. Dollar	Corporate	BBB	39	459	5.4	6.0	379
Corporate EM Bond Index Diversified	U.S. Dollar	Corporate	BBB	39	458	5.1	5.9	213

Barclays Indices	Currency Denomination	Corporate or Sovereign	Average Credit Quality	Number of Countries	Number of Issues	Yield	Duration	Market Capitalization (\$ billion)
EM USD Aggregate	U.S. Dollar	Both ¹³	BBB	74	1,338	4.7	5.9	1,452
EM USD Corp and Quasi-Sov	U.S. Dollar	Corporate	BBB	43	991	4.5	5.2	909
EM Local Currency - Government	Local	Sovereign	A-	19	429	5.4	4.8	1,847
EM Local Currency - Government Universal	Local	Sovereign	A-	24	763	5.4	5.6	3,435

¹³ 71% Sovereign/29% Corporate.