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EMERGING MARKETS COMMENTARY

Emerging Markets Currency Funds: Time to Hitch a Ride on the Local?

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Investors in emerging markets cash funds have historically enjoyed a smooth ride given high local interest rates; those investing in today's low-rate environment will depend more on currency appreciation.

We have seen growing investor interest in emerging markets (EM) local currency or "EM cash" products of late. Indeed, in recent years, investors in such funds have had their cake and eaten it too. These funds have generated attractive risk-adjusted returns, added diversity to investor portfolios, and offered additional exposure to EM economies. An analysis of historical performance, however, raises some questions about the outlook for future returns. Given that the high interest rates on offer in the past are not available in the present, investors are now more reliant on currency appreciation.

In this commentary, we will examine some key features of EM cash funds, their historical returns, and how they relate to other asset classes. We will also discuss the various rationales cited for investing in these products, as well as the potential drivers of future returns. Overall, while we certainly see a role for EM cash funds in diversified portfolios, investors need to have a clear understanding of exactly what they are buying and how these products will perform in different circumstances.

What Are EM Local Currency Funds?

EM cash funds are not new—J.P. Morgan launched its first index tracking this strategy in 1996. However, the asset class remains niche compared to the US$-denominated EM debt products that many investors are more familiar with. EM cash funds seek exposure to short-term interest rates in EM on an unhedged basis, thereby offering exposure to EM currencies as well.[1] Total returns, therefore, are calculated as the income return (yield) plus the impact from currency appreciation/depreciation.

The preferred benchmark for EM cash funds is the J.P. Morgan Emerging Local Markets Index Plus (ELMI+), though many use three-month $Libor. The ELMI+ Index tracks the performance of investing in 23 different EM currencies via investments in forward agreements, and has an average maturity of less than 60 days. Eligibility requirements exclude those countries classified as high-income Organisation for Economic Co-operation and Development (OECD) countries by the World Bank, and index weights are assigned to each country based on trade flows and the liquidity offered by its local money markets. Given these criteria, the ELMI+ Index is heavily concentrated, with the currencies of Hong Kong, Mexico, Poland, Singapore, and Turkey accounting for almost 50% of the index (Exhibit 1).

In practice, the composition of EM cash products often differs considerably from the ELMI+ Index. Managers stray significantly from index weights and choose from a much larger universe of potential currencies. They often choose to exclude currencies such as the Singapore and

[1] In addition to EM cash funds, there are also EM bond funds that invest on an unhedged basis in longer-duration sovereign and corporate debt securities with maturities well over one year. Subject to investment rationale, which may include trying to benefit from an appreciation of EM currencies, investors may also be interested in these longer-duration funds. However, investors should understand the manager's views on interest rate curves and credit risks across various countries, as well as the manager's take on currencies.

Hong Kong dollars, both of which effectively offer zero yield, with the latter explicitly pegged to the U.S. dollar. For example, Exhibit 1 contains the recent composition of two representative EM cash funds. WisdomTree includes an 8.9% allocation to the Chinese *yuan* and a 9.3% allocation to the Brazilian *real*, which are cumulatively less than 5% of the ELMI+ Index. It also includes a 9.1% allocation to the Korean *won*, which is no longer included in the index, given its classification as a high-income OECD country.

EM cash funds also contain a broader variety of exposures to EM currencies than the index, and the composition of different funds varies considerably. Some funds create exposure to EM currencies via currency forwards and currency swaps, and collateralize (or at least reserve funds for) the positions through holdings of US$-denominated high-quality money market instruments. Others purchase short-term government and corporate securities denominated in various currencies and use a combination of the above techniques. These products typically have short average durations, with some as short as 90 days and others up to one-and-a-half years, and thus remain more of a currency play than pure fixed income or credit. To the extent that these funds use derivatives to gain exposure to or invest in corporate credit (such as short-dated corporate bonds denominated in an EM currency), they may include counterparty exposure or credit risk.

There is significant diversity among fund structures. Several of the funds with which we are familiar are structured like traditional fixed income funds, charging a management fee for assets under management and expressing views on the relative valuation of currencies by the size of long positions relative to a benchmark. Others are structured more like alternative investments, using a fee structure that includes a performance incentive and employing techniques such as shorting currencies (typically by selling a forward contract) or leverage. These funds also may be less liquid than traditional funds, requiring advance notification to withdraw funds and/or charging penalties for early redemption.

These differences have important implications for performance, making it essential that investors understand the investment thesis of a given manager. For example, a portfolio that is overweight Asian currencies may generate less income return than one that is relatively overweight Latin American exposure. Furthermore, a fund that can invest in a range of securities could potentially add more value than funds that hug the benchmark.

Drivers of Return

As mentioned above, there are two components to EM cash fund returns—the yield/income return ("carry") and the currency return. The ELMI+ Index returned 11.7% in US$ terms in 2009, with 53% of this attributable to carry and 47% attributable to currency appreciation.[2] This follows a -3.8% return in 2008, when the 10.7% drop in EM currencies dwarfed the 7.6% return from yield. Year-to-date, the index has generated a -4.2% return through May 20, as the 1.2% return from carry was wiped out by the 5.3% loss from currency *depreciation*. Negative currency returns, far from unusual, have actually been the norm over the history of the index. Since the inception of the ELMI+ Index in 1994, the index has lost money from currency depreciation in 11 of its 16 years—almost 75% of the time (Exhibit 2). However, the high carry earned by the index has usually been more than enough to offset these losses—the average annual total return on the index has been 8.6%, despite an average annual -3.8% return from currency depreciation.

[2] The benchmark returns will obviously differ depending on an investor's base currency. We have chosen the U.S. dollar as the base currency for our analysis.

These statistics hide a large shift in the drivers of return. From 1994 to 2002, currency returns were persistently negative, as high inflation ravaged EM currencies, forcing many countries to break long-standing pegs to the U.S. dollar. However, this situation created very attractive high yields of between 12% and 23%, which more than offset currency weakness. The ELMI+ Index returned 7.5%, on average, during this period, despite an average annual 8.9% loss from foreign exchange. As inflation has fallen across the EM world, so have interest rates. As a result, currency appreciation now drives returns to a greater degree, accounting for an average of 1.7 percentage points of the 8.2% annual return of the ELMI+ Index since 2003.

With the index yielding only 2.8% at the end of May, it will need persistent positive returns from currency appreciation to generate anything close to the 8.6% average return since 1994. While individual EM cash managers may generate higher yields than the index by avoiding low-yielding markets (namely Hong Kong), in the absence of sharply higher interest rates, EM cash funds going forward will become more of a foreign exchange play than the yield play they historically were, with implications for returns.

While local interest rates in emerging markets are likely to be lower in the years ahead than in the mid-1990s, they still, of course, compare very favorably with the yield available on comparable US$ instruments. The spread of the ELMI+ Index over U.S. T-bills, which has historically averaged 893 basis points (bps), has declined to 320 bps as of May 20, leading some to argue that these products are overvalued. However, this decline should be seen in the context of near-zero yield in the United States. In other words, investors should not look at EM cash from a spread perspective, but rather from a relative yield perspective, as investors today are receiving no compensation to hold T-bills. Indeed, the ratio of EMLI+ index yields to six-month T-bills shows EM cash as very attractive. Since 1993, EM currencies have, on average, yielded about 5.4 times more than six-month T-bills; today, this ratio is 15.5 (Exhibit 3). Of course, this ratio will fall as U.S. yields rise from their miniscule levels, but it is unclear when interest rates in the Eurozone, the United Kingdom, or the United States will return to anywhere near their historical norms.

Overall, while it is clear that EM local currency products will offer more yield than comparable developed markets cash products, investors need to be keenly aware that the low level of current yields makes these strategies highly dependent on currency movements going forward. Thus, it is very important to understand the rationale and role that investors intend these strategies to play in their portfolios.

Rationale for Including EM Currencies in Portfolios

Numerous arguments have been put forward in support of investing in EM cash funds; below, we summarize several of the most common ones.

Attractive Risk-Adjusted Returns

The long-term performance of EM cash funds has been impressive on both an absolute and volatility-adjusted basis. Exhibit 4 charts the annualized return and volatility of several fixed income and equity indices. The ELMI+ Index has performed admirably over the past 16 years, returning over 8% annually with a lower volatility than most other asset classes. Exhibit 5 shows the cumulative wealth created for investors in this index. They would have seen a cumulative return of 345% (in U.S. dollars) if they invested at inception in early

1994,[3] well above the 241% return (in U.S. dollars) earned by investors in EM equities. The reduced volatility of EM cash is also highlighted by this data. EM equities returned -52.7% from January 2008 through the end of first quarter 2009; EM currencies, while also falling, returned a more muted -7.6%. During October 2008, the most dramatic month of losses, EM equities dropped 27.4%; EM cash returned a comparably benign -8.7%.

As discussed earlier, past EM currency returns have been impressive. However, it remains to be seen whether they can continue to generate similar returns in an environment of (possibly) structurally lower EM interest rates. This has the potential to increase the volatility of the assets class, but it will depend on why currencies are fluctuating and how quickly local interest rates can adjust in response to capital inflows or outflows. During flights to quality, for example, currency movements can be sudden and dramatic; in contrast, adjustments based on more secular themes may be more gradual. Exhibit 6 gives a sense of the annual volatility in some EM currencies.

Diversification

Even with higher currency volatility, EM currencies can help diversify portfolios from several perspectives. First, EM currencies show low correlations with many other asset classes. While EM cash fund returns (in U.S. dollars) have a relatively high 63% correlation to EM equity returns (in local foreign exchange), they feature relatively low long-term correlations to other asset class returns (in U.S. dollars) such as those from U.S. fixed income (11%) and commodities (37%) (Exhibit 7). In recent years, correlations have increased with some assets such as commodities (Exhibit 8), but remain relatively low for others. It is worth pointing out that some EM currencies are more correlated to equity markets than others. For example, the Mexican peso on a trade-weighted basis is almost three times as correlated to equity market movements as the Russian *ruble*.

EM cash funds also help diversify portfolios by decreasing their concentration of non-base currencies. This could be particularly useful for investors with limited unhedged global equity exposure, or non-U.S. investors with substantial US$ exposure created via non-marketable or US$-denominated alternative investments.

Yield-Enhancing Cash Substitute

Some investors have placed EM cash funds in cash or fixed income buckets given the low yields on offer in most developed markets bonds and the desire to diversify currency exposures. Exhibit 9 highlights the differential between short- and long-term interest rates in several emerging and developed markets. Instruments such as Brazilian three-month T-bills, which yield nearly 10%, offer a significant yield pick-up compared to similar maturity U.S. T-bills, which yield less than 0.20%. While EM cash funds may appear to offer a bond-like combination of returns and volatility, investors placing EM cash funds in fixed income or cash buckets should recognize that these funds are less liquid and have a different risk profile than typical bond or money market instruments. For example, while a flight to quality would be expected to lower US$ interest rates and boost US$-denominated bond prices, it might also trigger a severe sell-off in EM currencies.

Lower Beta Exposure to EM Growth

Some investors view EM cash funds as a lower risk way than EM equities to gain exposure to EM economic growth, especially when equity valuations are stretched and EM currencies are used as a tactical substitute for overvalued

[3] While the ELMI+ Index was actually launched in 1997, historical data were supplied since the beginning of 1994, which allows these returns to be calculated.

equities. This should be considered a short-term bet that offers lower long-term growth potential than EM equities. Furthermore, investors should also be aware that given the different geographic breakdown in some EM cash funds versus some EM equity funds, significant basis risk could be created through this strategy. For example, Brazil, China, India, and Russia are about 48% of the MSCI Emerging Markets Index (Exhibit 10) but only just 8% of the ELMI+ Index.

Inflation Hedge

EM cash funds have also been used as a novel way to hedge inflation. The rationale is two-fold. First, continued EM growth and rising EM currencies have the potential to increase input and import costs in developed markets, helping to pressure domestic inflation. At the same time, EM demand for raw materials may continue to drive up the global price of natural resources. Exhibit 8 shows that while EM currencies and commodity spot prices had historically shown a low correlation, the rolling correlation doubled between June 2007 and December 2008 and remains elevated. Indeed, many EM currencies, especially in Latin America, are seen as direct plays on commodity prices.

Secular EM Currency Appreciation

A final rationale for EM cash funds is that EM currencies by themselves are an attractive asset class that will benefit from a secular appreciation versus developed markets currencies. There are several facets of this argument.

First, emerging markets have superior growth prospects, which will translate into stronger currencies. Recent events in Europe highlight the diverging fortunes of emerging and developed markets. As the developed world struggles to tackle its problem of excess leverage, economic growth and employment will be restricted in the years ahead. This in turn will keep developed world inflation under control, leading to lower interest rates and reducing the value of its currencies. This "two-speed world" argument suggests that growth in emerging markets will, in contrast, lead to inflationary pressures. Whether this in turn leads to stronger EM currencies, higher interest rates, or both, all outcomes would boost EM cash fund returns.

Exhibit 11 illustrates the strength of EM balance sheets. While the United Kingdom and the United States are expected to have government deficit to GDP ratios that exceed 10% this year, many EM countries will run deficits that are less than half this amount. Cumulative government indebtedness also leaves little room for error in developed markets. Eurozone countries are predicted to have an average gross debt to GDP ratio of 86% in 2010, with the United States topping 90% and Japan coming in at a whopping 227%.[4] EM countries such as Russia (with a forecast of 7.4% debt/GDP) and Mexico (with a forecast of 36% debt/GDP) look much healthier in comparison.

A second facet of this argument is that as EM currencies undertake this secular appreciation, they will become more attractive to institutional investors seeking to diversify their currency holdings. Large non-U.S. institutional investors, including central banks and sovereign wealth funds, have already been diversifying out of US$ holdings in recent years. Exhibit 12 shows the percentage of global central bank reserves held in different currencies. The U.S. dollar has experienced significant outflows, with the euro and "other" (including EM) currencies benefitting the most. Recent concerns about peripheral Europe have the potential to slow and possibly even reverse

[4] Japan's net indebtedness, which takes gross debt and subtracts government assets such as public pension fund reserves and foreign reserves, is "only" estimated to be 105% in 2010, more in line with other developed country averages (see "Q+A-Will Japan Face a Sovereign Debt Crisis?," Reuters, January 27, 2010).

future flows into the euro. In the United States, institutional demand for EM currencies may also be growing. Pension funds are required by new regulations to discount future liabilities at market interest rates, boosting demand for fixed income assets (rather than equities) as their valuations move more in sync with changes to this discount rate.[5] EM debt offers a higher interest rate than domestic bonds such as U.S. Treasuries, and thus is particularly attractive to help bridge the asset and liability management shortfall.[6] J.P. Morgan recently estimated that these changes alone could see another $90 billion of fresh investment into EM debt funds (both cash and long duration), a large sum considering that just $300 billion is currently benchmarked against these indices. Such demand is also being boosted by ratings upgrades to EM sovereigns, with the longer-duration EM sovereign bond index obtaining an investment grade rating from Moody's for the first time ever in January 2010.

The final element of the secular appreciation argument centers on the current undervaluation of EM currencies.[7] Exhibit 13 shows the valuation of several EM currencies versus the U.S. dollar using purchasing power parity (PPP) and fair value estimates. Most PPP measures show the majority of EM currencies as drastically under-valued versus the U.S. dollar, though fair value models show a more mixed picture. While PPP undervaluation largely reflects the secular trend of economic convergence and rising living standards *vis à vis* the developed markets, it is clear that EM currencies remain very depressed compared to their levels in the early 1990s. The scope for further appreciation certainly remains.

A few caveats should be mentioned when discussing these secular arguments. First, in order for EM currencies to exhibit broad-based strength, EM central banks have to allow their currencies to rise, instead of maintaining fixed, or pseudo fixed, exchange rates with the U.S. dollar. In this regard, China remains key. A revaluation of the *renminbi* is needed to allow other Asian currencies to strengthen without losing competitiveness to China. Given that the health of the global economy remains in doubt, it would seem the Chinese, and other EM policymakers, are in no rush to allow their currencies to rise. A second caveat is that while EM growth is likely to be much stronger than developed markets growth, there is the chance that developed nations will export to emerging economies at least some of the deflationary pressure that will be created via slower growth and reduced demand. If this occurs, local EM interest rates or currencies would not need to rise as fast, reducing some of the potential return from the strategy (though the carry could still look very attractive in relative terms). Finally, measures of currency valuation such as PPP, which suggest EM currencies will appreciate, have historically been ineffective for use in currency trading, as they can indicate currencies are undervalued or overvalued for extensive amounts of time.

Conclusion

EM cash funds have the potential to serve a variety of roles for investors, helping diversify portfolios and serving as a hedge for everything from US$ depreciation to commodity inflation. As an added bonus, they have generated attractive risk-adjusted returns, given structurally higher local EM interest rates. Looking ahead, returns from

[5] "Pensions Pour into Emerging Market Debt," *The Financial Times*, January 24, 2010.
[6] It is probably fair to say that while investing in higher coupon EM debt could help alleviate an asset/liability matching problem for pension funds from one perspective, it could also create basis risk from another. That is, although lower interest rates might boost the value of fixed income investments, if driven by a financial panic, they could also imply that EM debt would fall in value.
[7] For more information on this, please see our March 2010 Market Commentary *U.S. Dollar: The Cyclical Versus the Secular*.

carry will likely be lower, which will increase the importance of currency appreciation. Unfortunately, the track record of EM cash managers generating returns from pure currency appreciation is quite mixed. Therefore, the returns of the past may not be the returns of the future.

For those who believe that EM currencies are approaching a period of secular appreciation versus developed market currencies, the shift in drivers of return may be irrelevant, as it is precisely exposure to the currencies, and not the yield, they are seeking. Yet it is far from certain how quickly the secular rise in EM foreign exchange will happen and what bumps might occur along the way.

Therefore, investors contemplating EM cash funds need to be acutely aware of the type of product they are buying and what role they hope these products will serve in the portfolio. EM cash products are not a risk-free asset, nor do they have the same risk profile as developed country sovereign bonds. When risk markets fall, EM currencies are likely to fall alongside them. Investors that choose to "ride the local" should be prepared to be patient and expect some twists and turns. ■

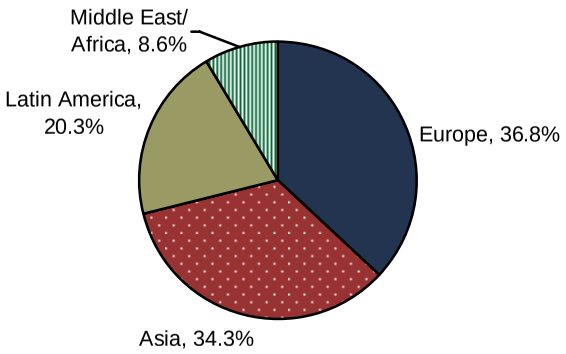
Exhibit 1

Market Capitalization Weights

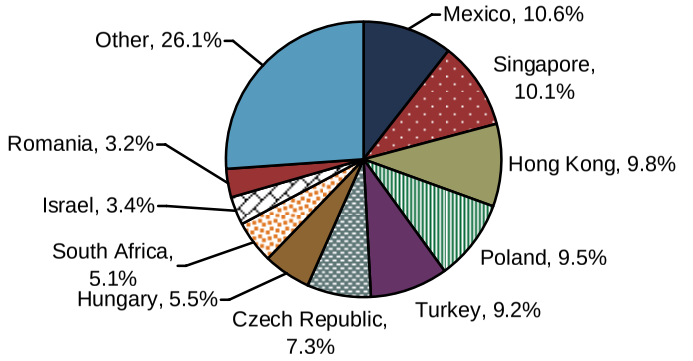
April 30, 2010

J.P. Morgan Emerging Local Markets Index Plus

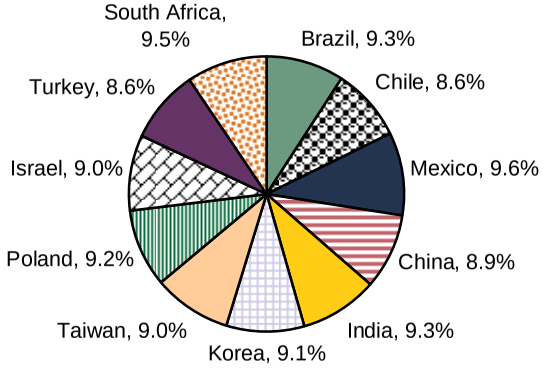
By Region



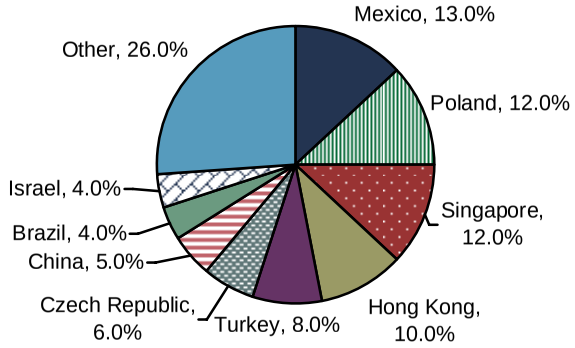
By Country



WisdomTree Dreyfus Emerging Currency Fund



PIMCO Developing Local Markets Fund



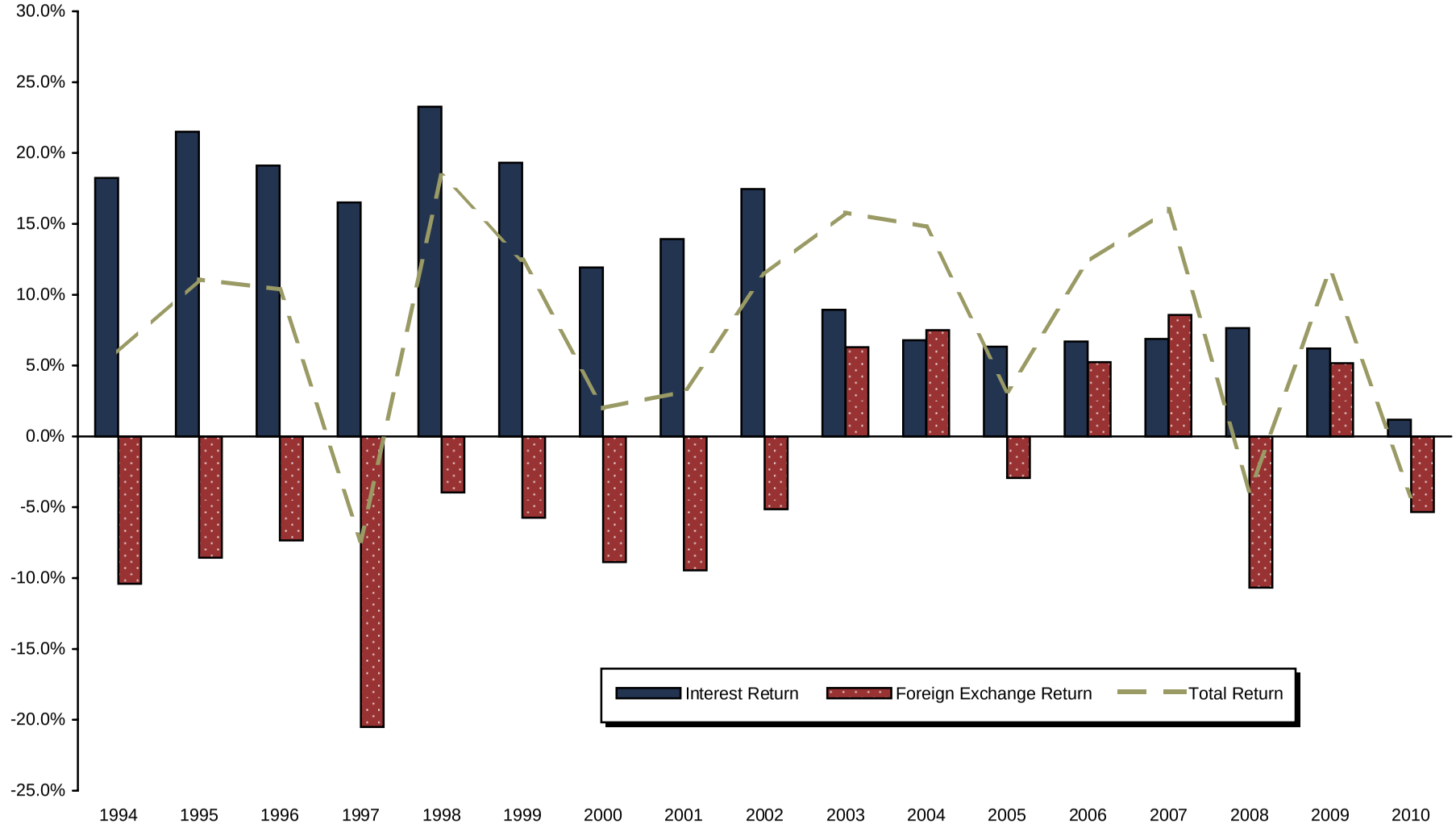
Sources: Allianz Global Investors, J.P. Morgan Securities, Inc., and WisdomTree.

Note: Breakdowns for the WisdomTree Dreyfus Emerging Currency Fund and the PIMCO Developing Local Markets Fund are as of March 31, 2010.

Exhibit 2

J.P. Morgan Emerging Local Markets Index Plus Return Attribution

December 31, 1994 – May 20, 2010

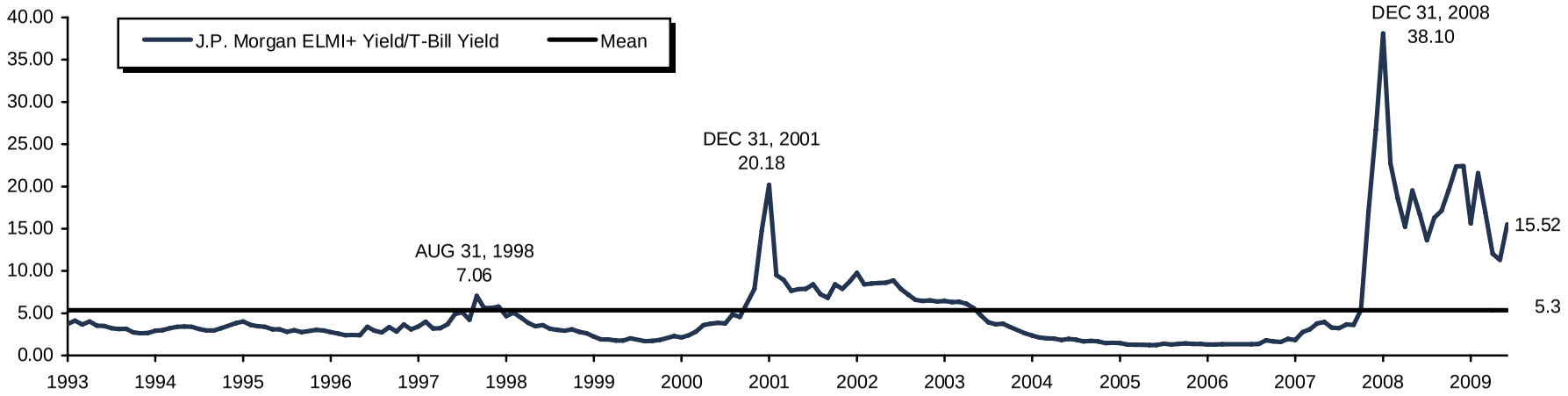


Source: J.P. Morgan Securities, Inc.
Note: Graph represents annual data, with data for 2010 as of May 20.

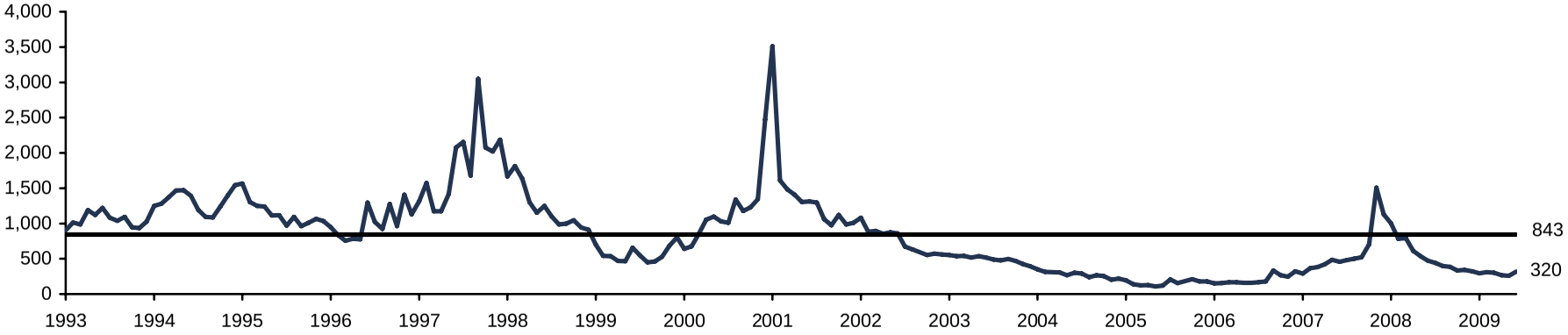
Exhibit 3

Ratio and Spread of J.P. Morgan Emerging Local Markets Index Plus Yields to Yields of T-Bills

December 31, 1993 – May 20, 2010



Yield Spread Between Emerging Local Markets Index Plus and T-Bills

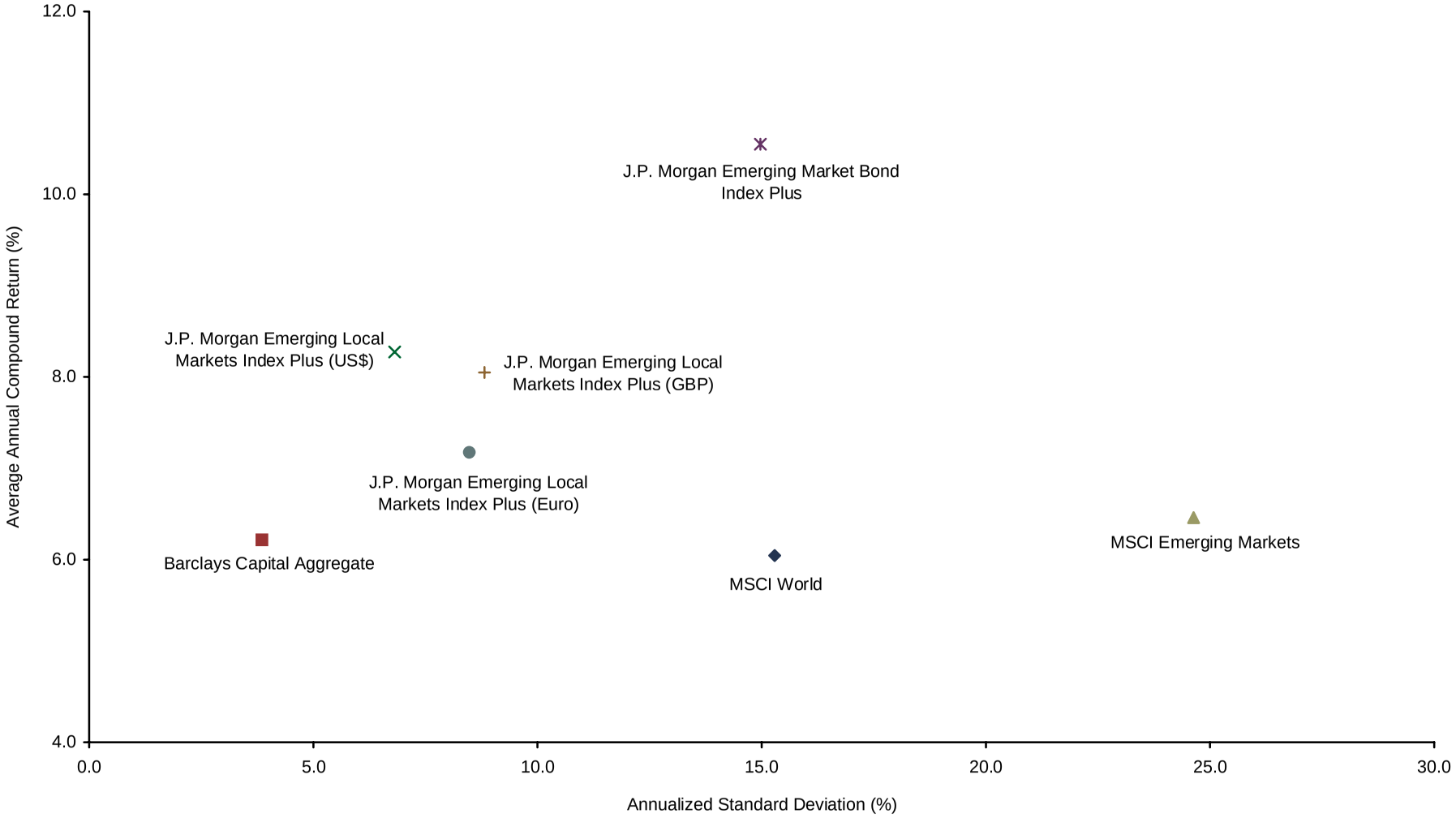


Sources: J.P. Morgan Securities, Inc. and Thomson Datastream.
Notes: Data are monthly. T-bills represent the six-month Treasury bill yield.
384m (modified)

Exhibit 4

Annualized Return and Risk

January 1, 1994 – April 30, 2010 • U.S. Dollar



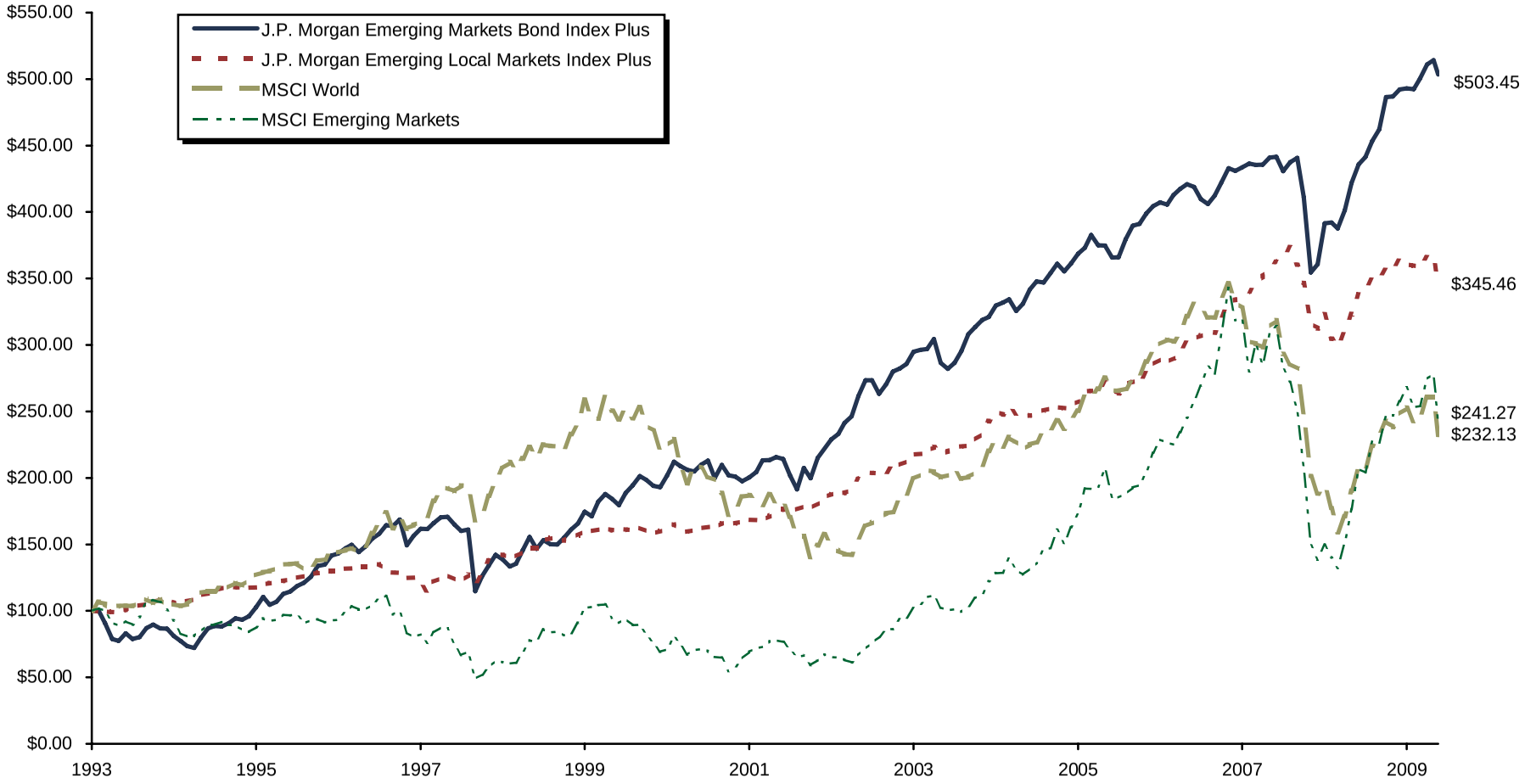
Source: Thomson Datastream.

Notes: Total returns for the MSCI World Index are net of dividend taxes. Total returns for the MSCI Emerging Markets Index are gross of dividend taxes.

Exhibit 5

Emerging Markets Debt Cumulative Wealth

December 31, 1993 – May 20, 2010 • U.S. Dollar

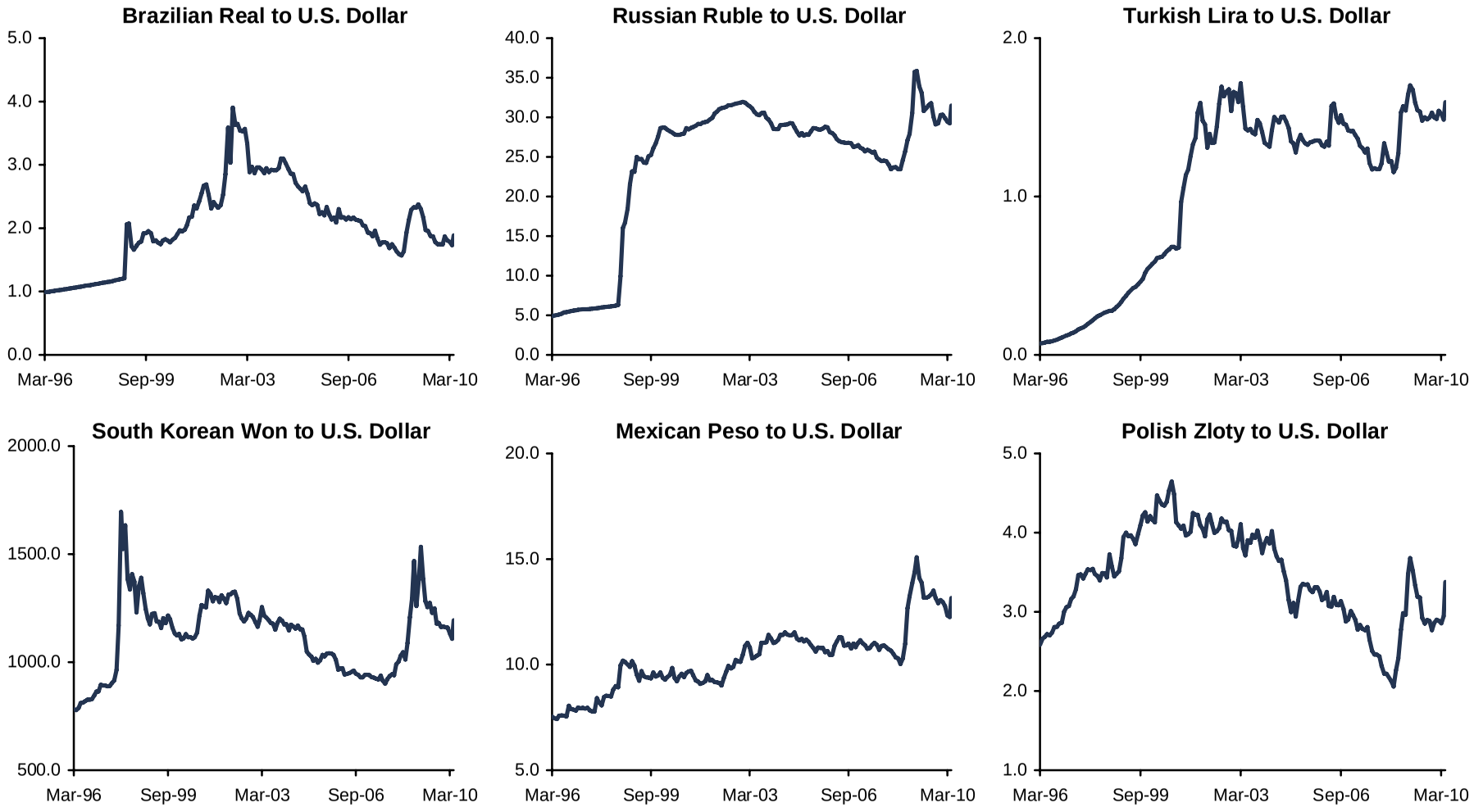


Sources: J.P. Morgan Securities, Inc., MSCI Inc., and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.
Notes: Cumulative wealth data are rebased to $100 as of December 31, 1993. Total returns for the MSCI World Index are net of dividend taxes. Total returns for the MSCI Emerging Markets Index are gross of dividend taxes. Data are monthly.

Exhibit 6

Exchange Rate Movements

March 31, 1996 – May 20, 2010



Source: Thomson Datastream.
Note: Data are monthly.

Exhibit 7

Correlation Matrix: EM Cash Indices and Trade-Weighted Currencies Versus Various Asset Class Indices

January 1, 1995 – April 30, 2010 • Local Currency

	J.P. Morgan ELMI+ (Euro)	J.P. Morgan ELMI+ (GBP)	J.P. Morgan ELMI+ (US$)	J.P. Morgan ELMI+	Russian Ruble	Brazilian Real	Turkish Lira	Singapore Dollar	Mexican Peso	Polish Zloty
MSCI All Country World Index	0.43	0.38	0.55	0.16	0.16	0.37	0.31	0.25	0.42	0.44
MSCI World Index	0.43	0.38	0.53	0.17	0.16	0.36	0.30	0.24	0.41	0.43
MSCI Emerging Markets Index	0.42	0.40	0.63	0.16	0.18	0.34	0.34	0.29	0.43	0.44
MSCI U.S. Index	0.37	0.34	0.55	0.23	0.06	0.30	0.25	0.25	0.32	0.40
MSCI Europe ex U.K. Index	0.48	0.35	0.39	0.12	0.25	0.39	0.30	0.16	0.41	0.43
MSCI U.K. Index	0.33	0.45	0.42	0.10	0.15	0.36	0.27	0.21	0.36	0.38
MSCI All Country Asia ex Japan Index	0.39	0.39	0.63	0.13	0.02	0.34	0.32	0.30	0.35	0.37
MSCI Emerging Markets Asia Index	0.36	0.37	0.56	0.10	0.06	0.33	0.34	0.23	0.33	0.38
MSCI Emerging Markets Latin America Index	0.40	0.39	0.60	0.18	0.19	0.31	0.26	0.30	0.43	0.42
MSCI Emerging Markets Europe Index	0.36	0.28	0.54	0.18	0.22	0.25	0.30	0.20	0.42	0.42
MSCI South Africa Index	0.27	0.35	0.49	0.11	0.15	0.19	0.18	0.29	0.30	0.38
S&P GSCI™ Commodity Spot Price Index	-0.09	-0.07	0.28	-0.06	-0.02	0.15	0.10	0.19	0.16	0.21
Dow Jones-UBS Commodity Spot Price Index	-0.09	-0.02	0.37	-0.07	-0.01	0.20	0.14	0.24	0.19	0.25
Gold Bullion Spot Price	-0.24	-0.06	0.27	-0.04	-0.09	0.02	0.06	0.10	-0.03	0.08
Barclays Capital U.S. Aggregate Bond Index	-0.23	-0.01	0.11	0.15	-0.20	-0.08	-0.05	0.03	-0.12	-0.04
J.P. Morgan Global Government Bond Index	-0.23	0.00	-0.05	0.17	-0.24	-0.18	-0.14	0.00	-0.19	-0.10

Exhibit 7 (continued)

Correlation Matrix: EM Cash Indices and Trade-Weighted Currencies Versus Various Asset Class Indices

January 1, 1995 – April 30, 2010 • Local Currency

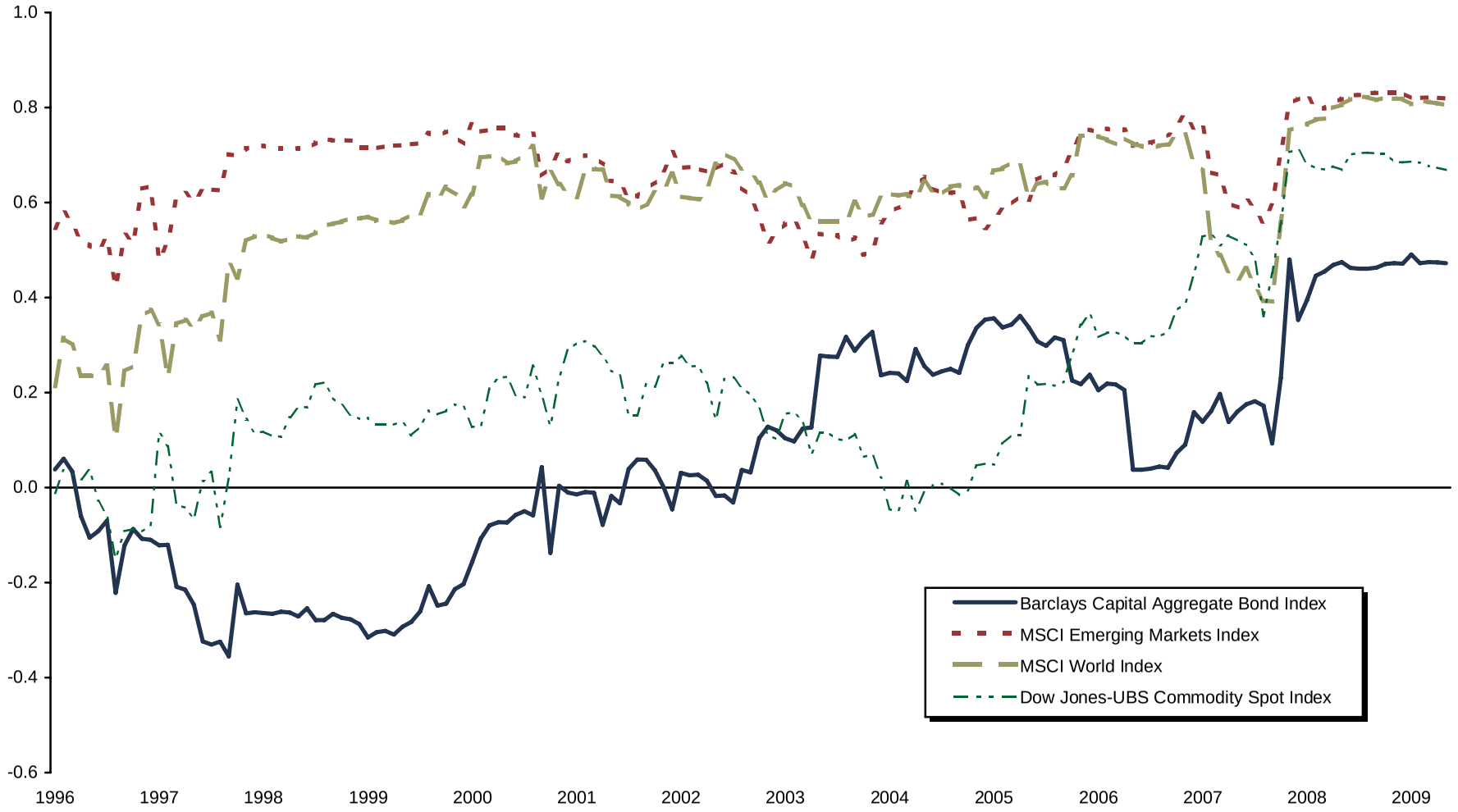
	J.P. Morgan ELMI+ (US$)	J.P. Morgan ELMI+ (GBP)	J..P. Morgan ELMI+ (Euro)
U.S. Dollars			
MSCI All Country World Index	**0.65**		
MSCI World Index	**0.64**		
MSCI Emerging Markets Index	**0.72**		
MSCI U.S. Index	**0.55**		
U.K. Sterling			
MSCI All Country World Index		**0.66**	
MSCI World Index		**0.65**	
MSCI Emerging Markets Index		**0.64**	
MSCI U.K. Index		**0.45**	
Euros			
MSCI All Country World Index			**0.68**
MSCI World Index			**0.68**
MSCI Emerging Markets Index			**0.66**
MSCI Europe ex U.K. Index			**0.48**

Sources: MSCI Inc. and Thomson Datastream. MSCI data are provided "as is" without any express or implied warranties.
Notes: Correlations are based on monthly total returns. Exchange rates are based on the price return of each currency versus a trade-weighted basket of currencies. The S&P GSCI™ Commodity, Dow Jones-UBS Commodity, and Gold Bullion indices represent price returns. Total returns for the MSCI developed markets indices are net of dividend taxes. Total returns for the MSCI Emerging Markets and All Country Indices are gross of dividend taxes.

Exhibit 8

Rolling 36-Month Correlations Versus the J.P. Morgan Emerging Local Markets Index Plus

December 31, 1996 – April 30, 2010 • U.S. Dollar

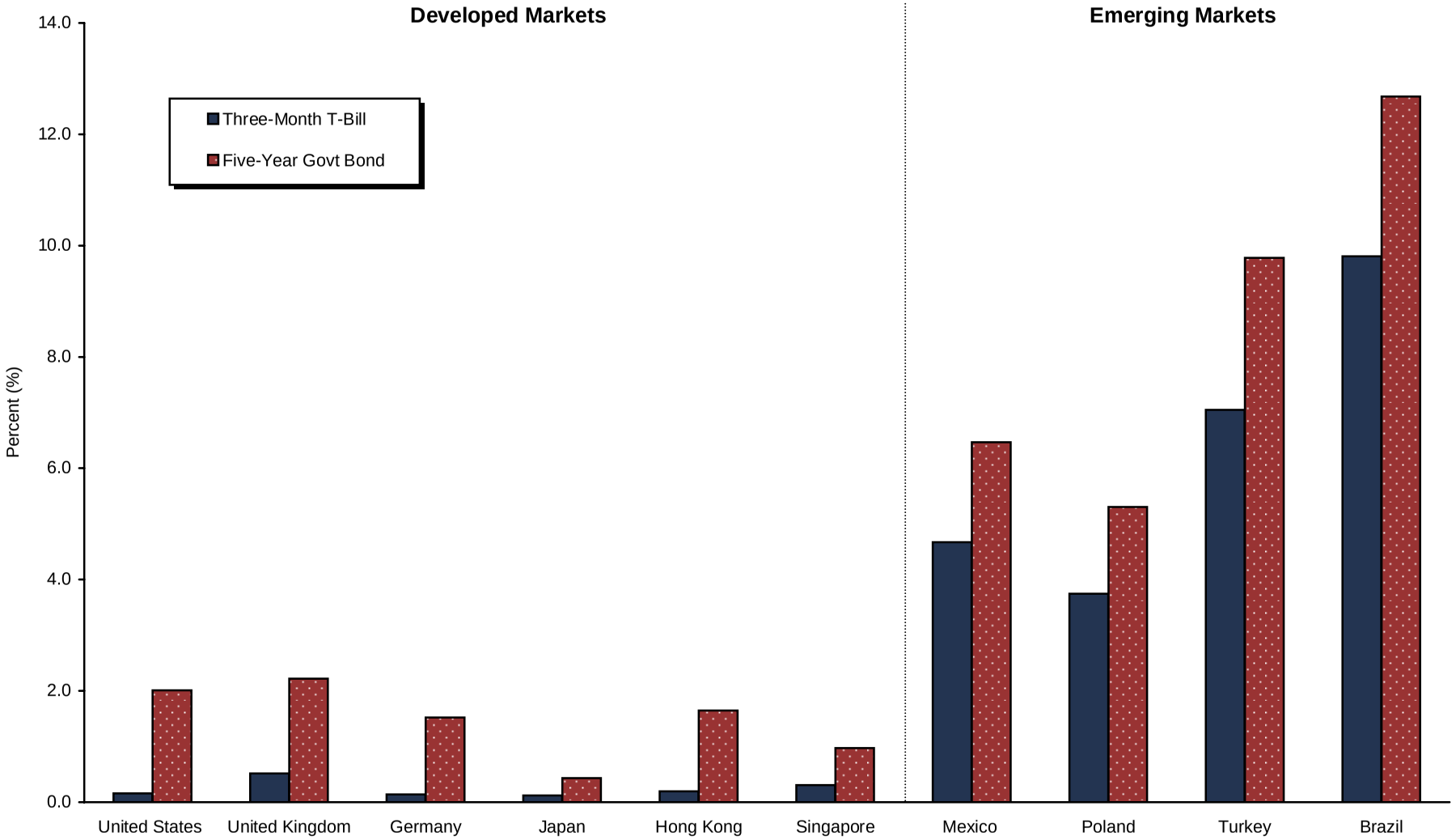


Sources: Barclays Capital, J.P. Morgan Securities, Inc., MSCI Inc., and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Exhibit 9

Interest Rates

May 20, 2010



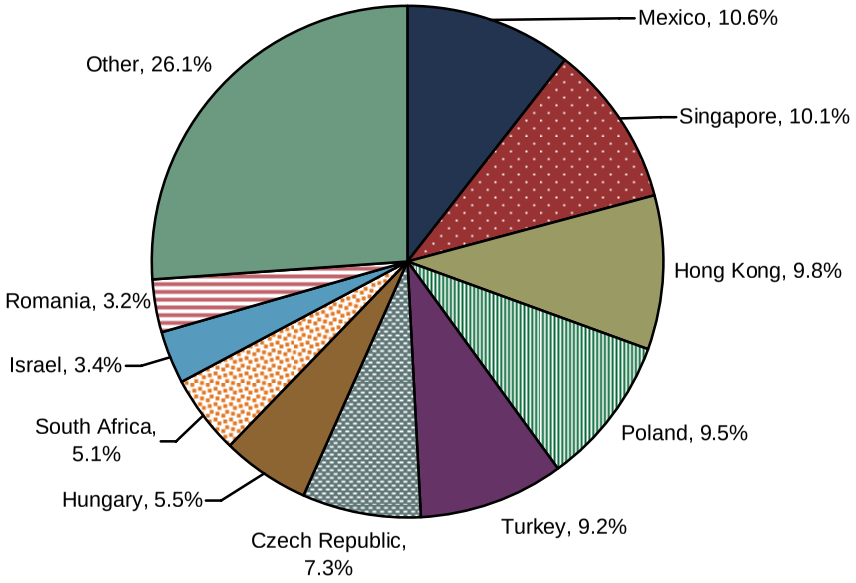
Source: Bloomberg L.P.

Exhibit 10

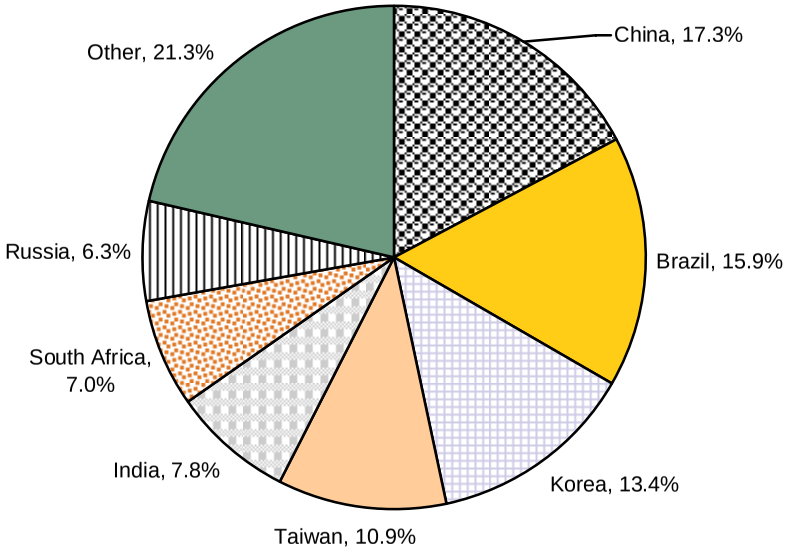
Market Capitalization Weights

April 30, 2010

J.P. Morgan Emerging Local Markets Index Plus



MSCI Emerging Markets Index

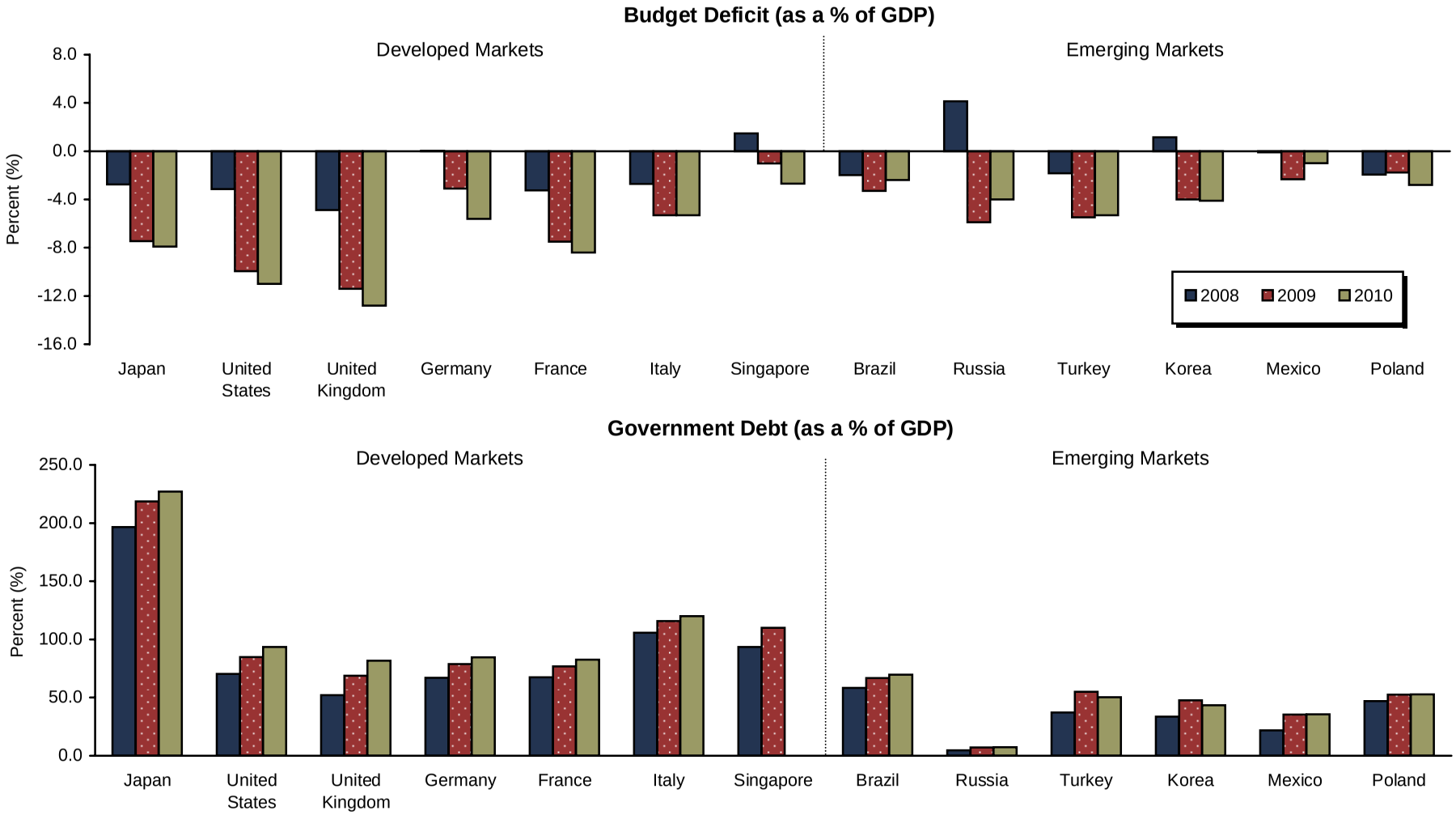


Sources: FactSet Research Systems, J.P. Morgan Securities, Inc., and MSCI Inc. MSCI data provided "as is" without any express or implied warranties.

Exhibit 11

Budget Deficit and Debt as a Percentage of GDP

2008–10

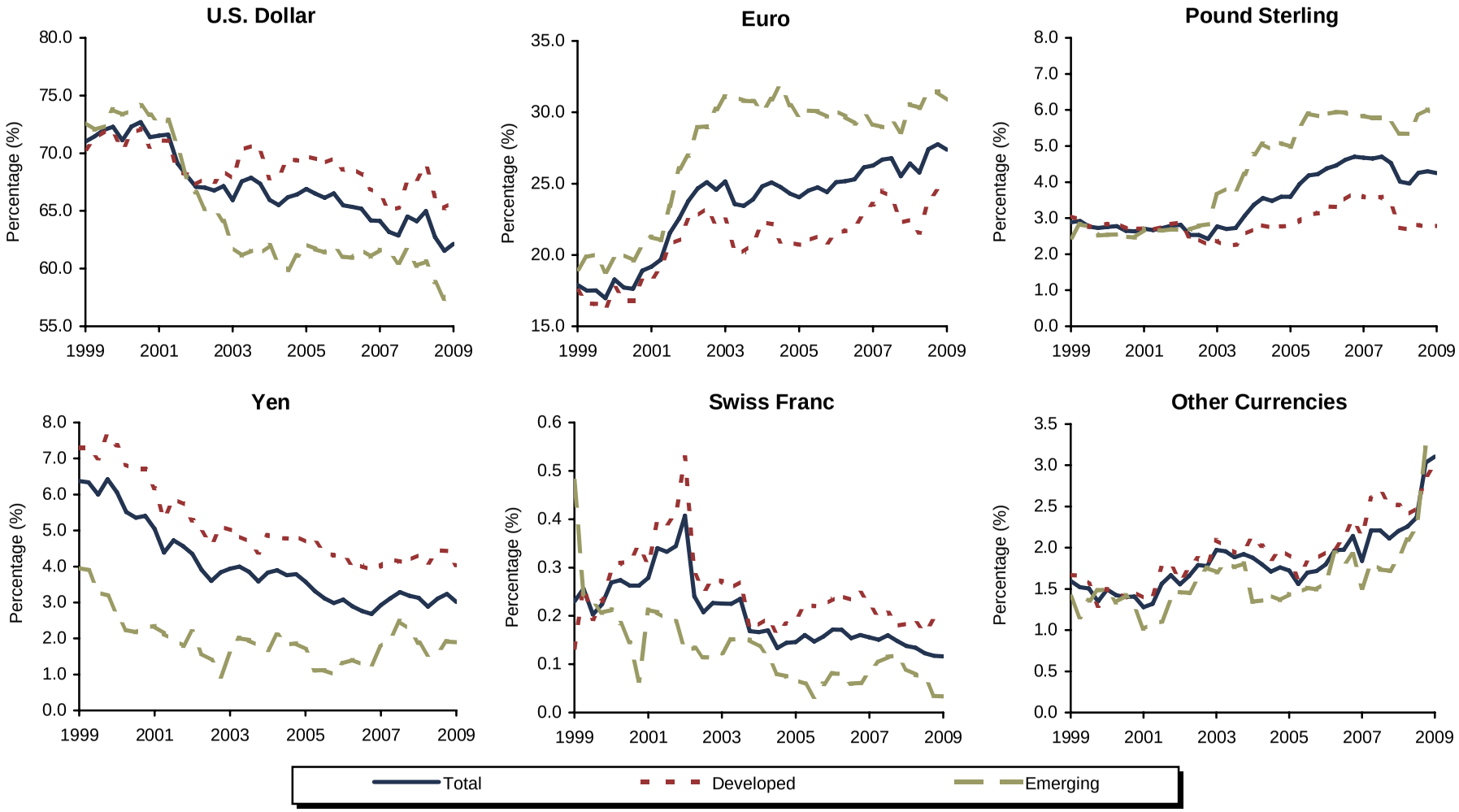


Sources: Bloomberg L.P., International Monetary Fund, J.P. Morgan Securities, Inc., Statistics Singapore, and Thomson Datastream.
Notes: Data for 2009 and 2010 are forecasts. Singapore government debt forecasts are unavailable for 2010.

Exhibit 12

Share of Global Foreign Reserves

December 31, 1999 – December 31, 2009 • U.S. Dollar

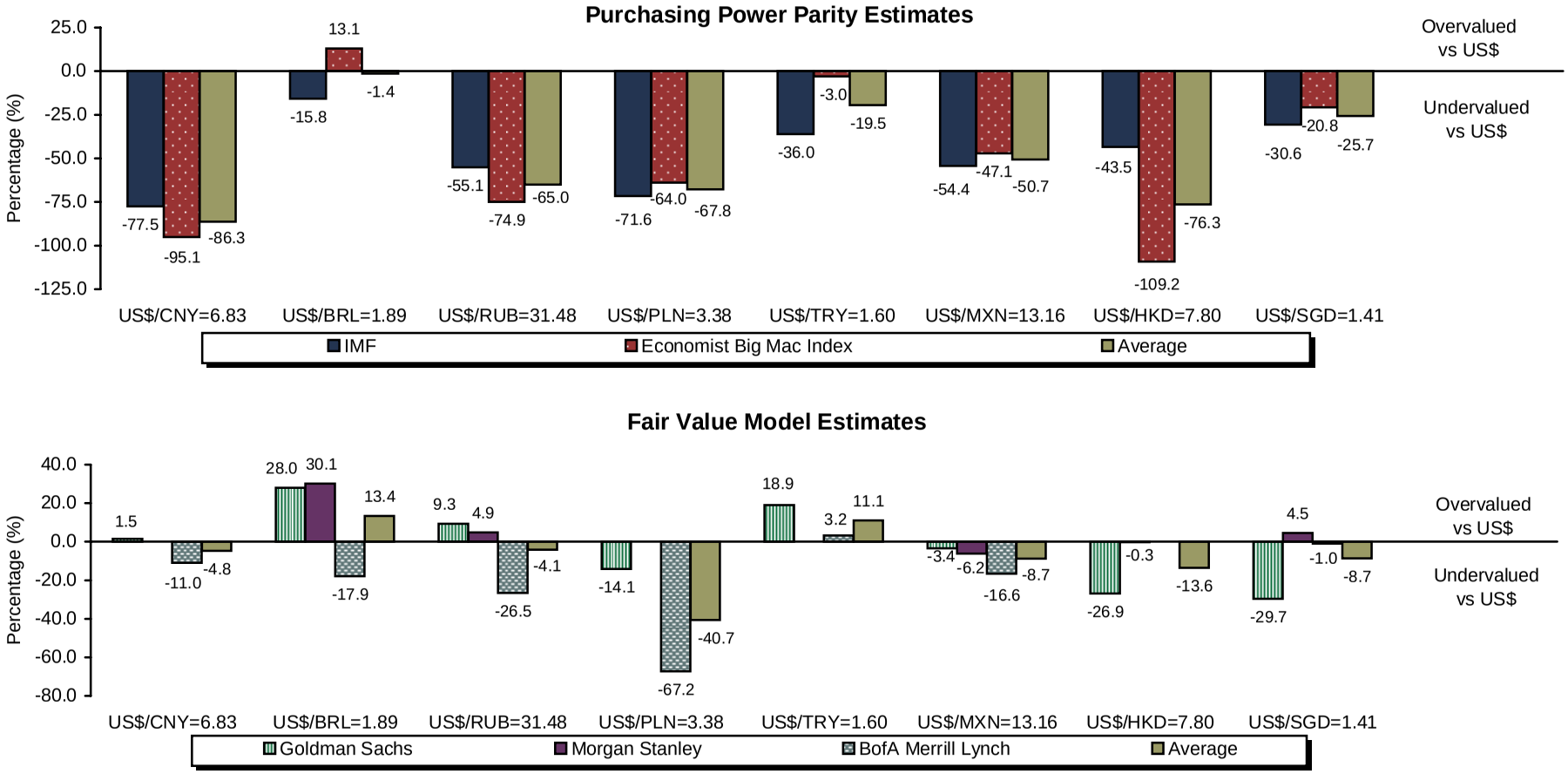


Sources: International Monetary Fund - COFER database and Thomson Datastream.
Note: Data cover only countries that declare the composition of their local currency reserve holdings.

Exhibit 13

Valuation Versus the U.S. Dollar: Emerging Markets Currencies

As of May 20, 2010



Sources: Bloomberg L.P., BofA Merrill Lynch, The Economist, Goldman, Sachs & Co., International Monetary Fund (IMF), J.P. Morgan Securities, Inc., Morgan Stanley, and the Organisation for Economic Co-operation and Development (OECD).

Notes: Purchasing power parity (PPP)–implied exchange rates are based on relative price levels between countries, with the assumption that a basket of identical goods should cost the same across countries. OECD and IMF PPP estimates are based on consumer prices, while IMF PPP estimates are based on 2010 forecasts. Fair value model estimates are derived from econometric models that take into account several variables such as PPP, interest rate differentials, fund flows, etc., to produce an equilibrium exchange rate. These fair value estimates differ from currency forecasts, as it is not always assumed that currencies revert to fair value over the forecast horizon.

3402q (modified)