

# Lazard Insights Conference Call Series

## Global Currencies: The Last Uncorrelated Asset Class?

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April 16, 2008

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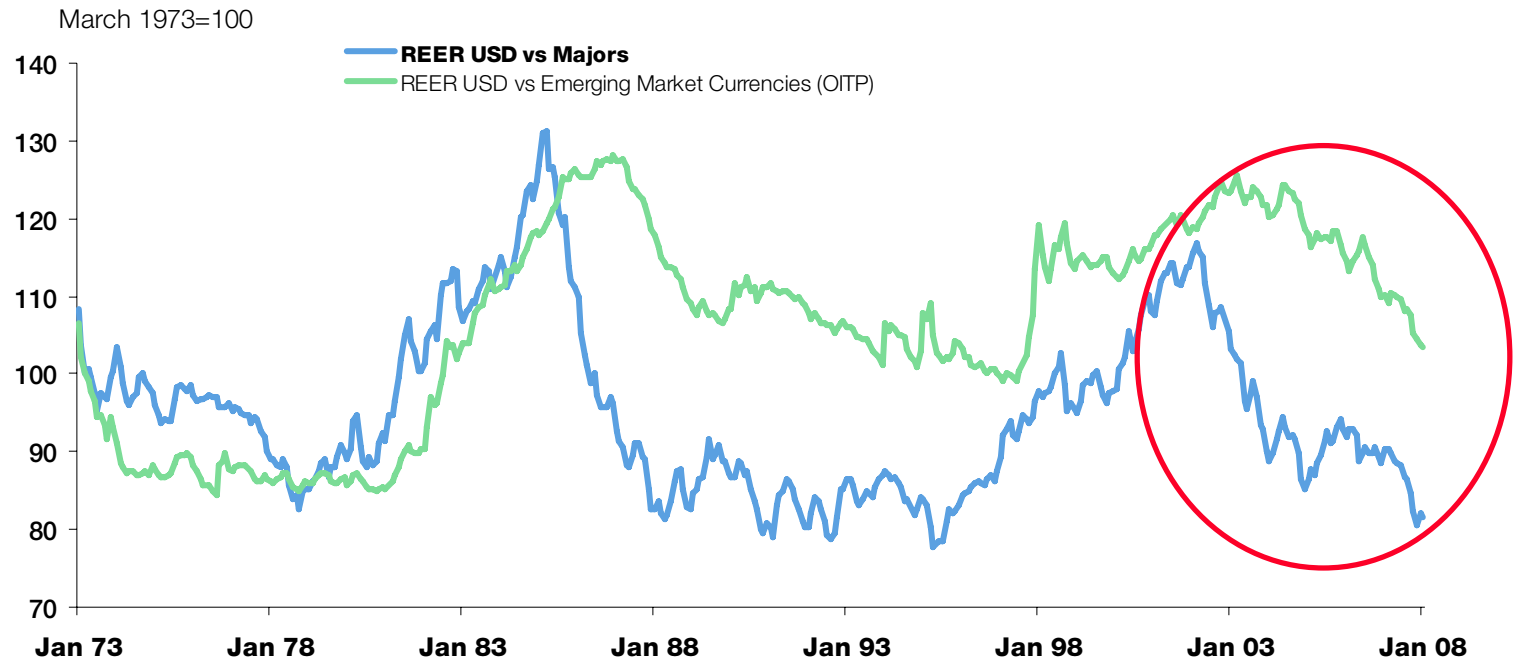
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# Outline

- Global currencies: perception vs. reality
- Sources of correlation
- Why country differentiation matters in EM currency markets (relative to G7 FX)
- FX as an asset class?

# Global Currencies vs. the USD

## EM currencies still have significant room to “Catch Up.”



As of 31 January 2008. Source: Bloomberg, Standard Chartered Bank, Federal Reserve  
Chart reflects Federal Reserve's "narrow" USD Real Effective Exchange Rate (REER – Real Effective Exchange Rates) against major currencies, and "broad" USD REER against Other Important Trading Partners (OITP) (EM currencies).

# Hidden Sources of Correlation

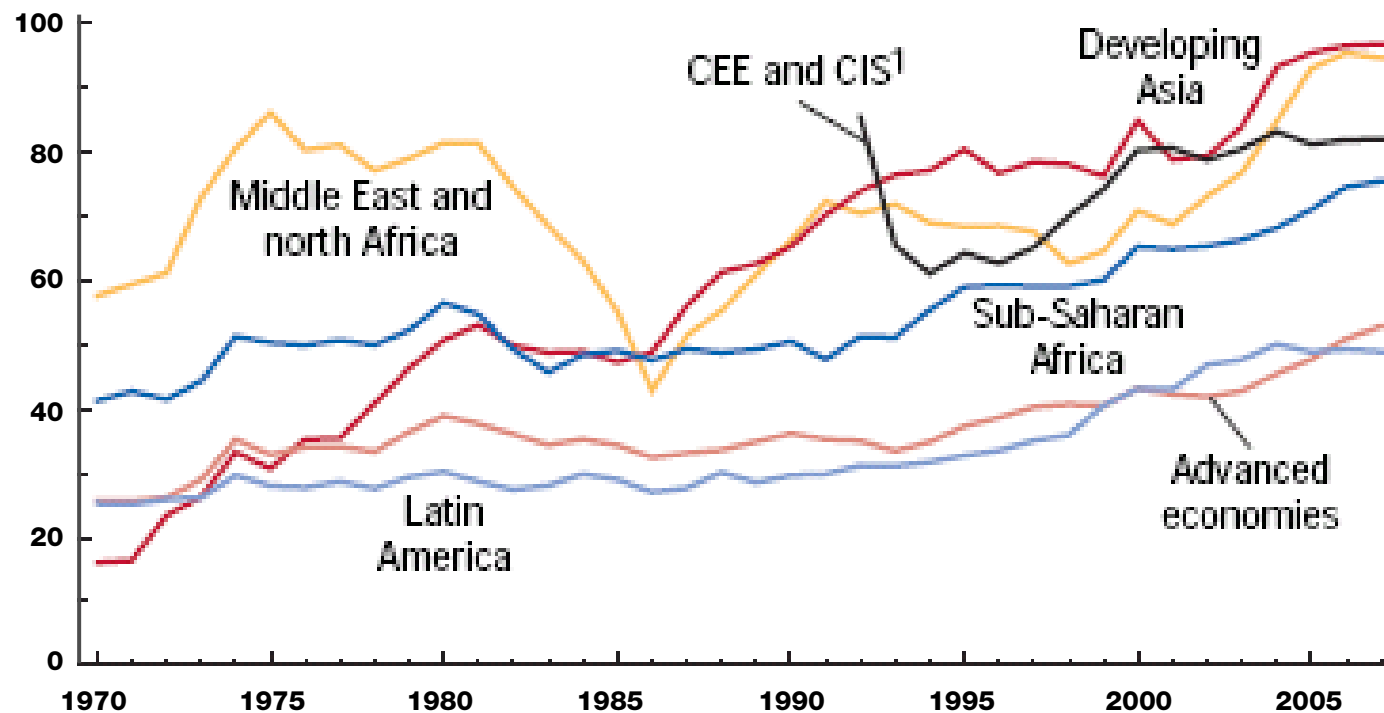
- Direct economic and trade ties
- Financial flow / market links
- Similarities in Central Bank policy
- Closed vs. open economies
- Risk appetite
- Balance of payments
- Carry trades
- Commodities exporters vs. importers
- Currency beta to equities
- Beta vs. global risk trends

# International Trade and Capital Flow

Over the past two decades, international trade has become substantially more important to most developing economies

## Trade in Goods and Services

(% of regional GDP)



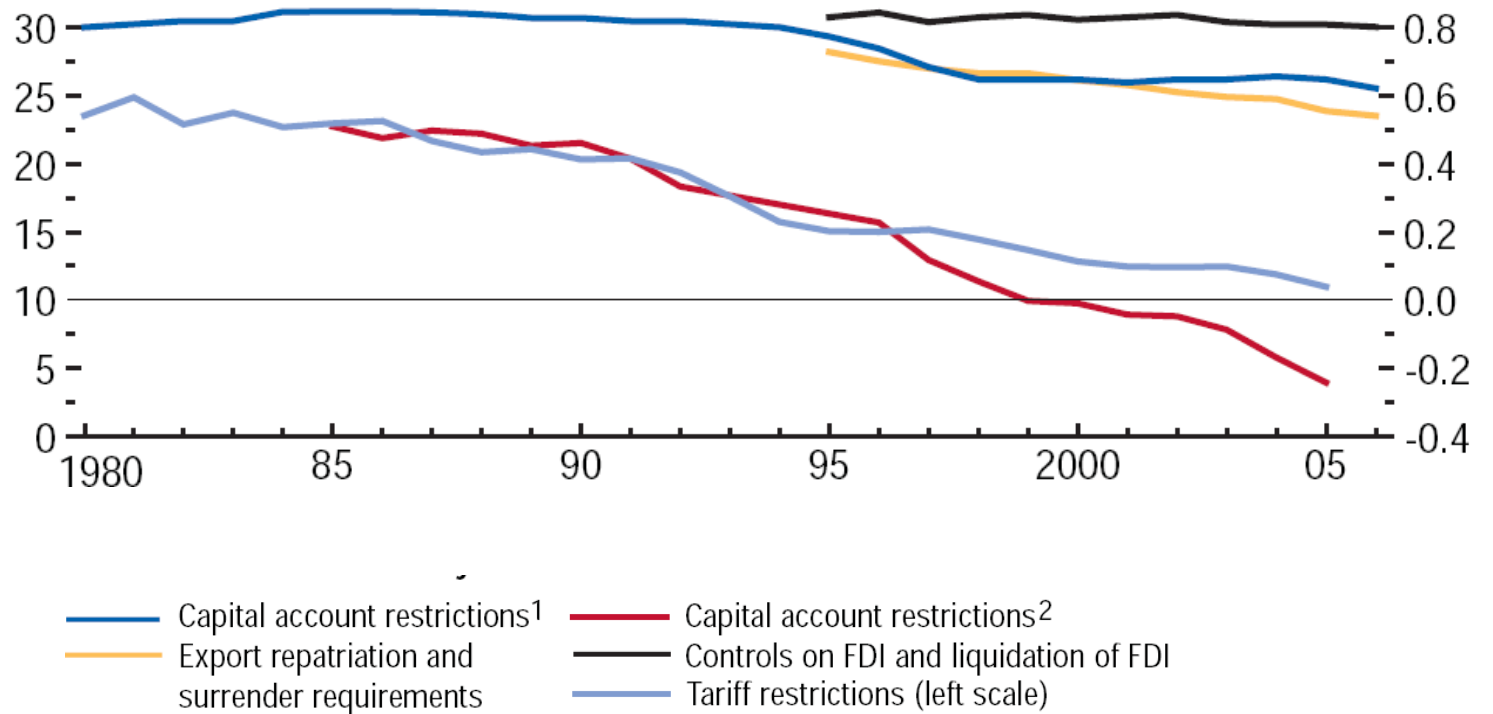
As of April 2008

Source: International Monetary Fund

<sup>1</sup> CEE and CIS: Central and Eastern Europe and Commonwealth of Independent States.

# Capital Mobility

## Policy Barriers to Globalization – Emerging and Developing Economies



As of April 2008

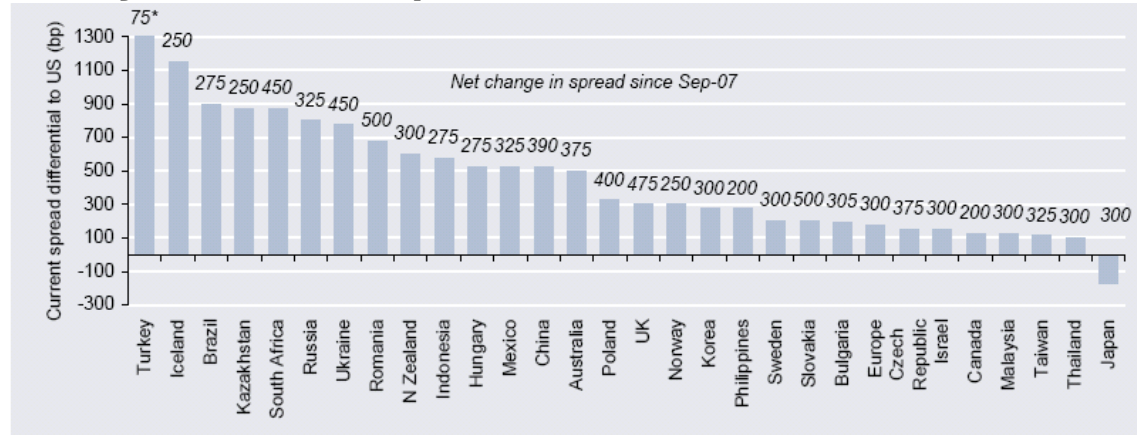
Source: International Monetary Fund

<sup>1</sup> As measured by Grilli and Milesi-Ferretti

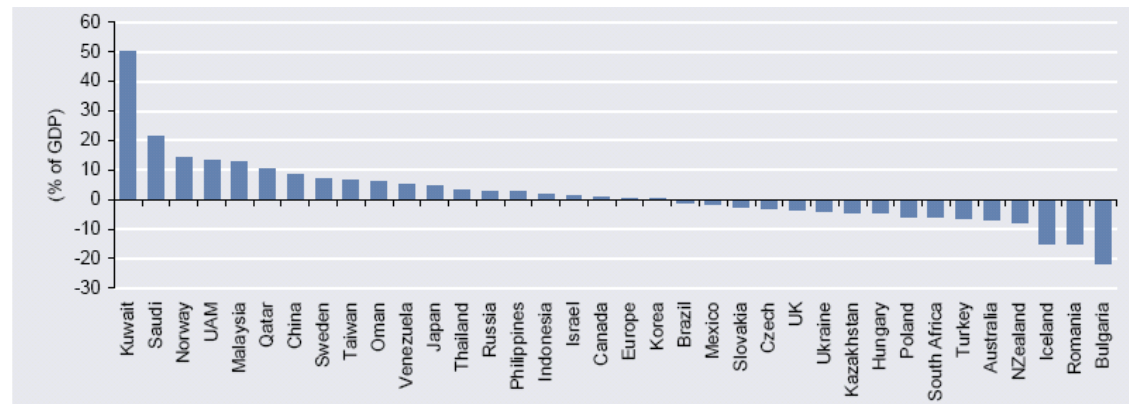
<sup>2</sup> As measured by Chinn and Ito

# Carry Trade and Current Account Balances

## “Carry Trade” Participants



## Current Account Balances (2008e)

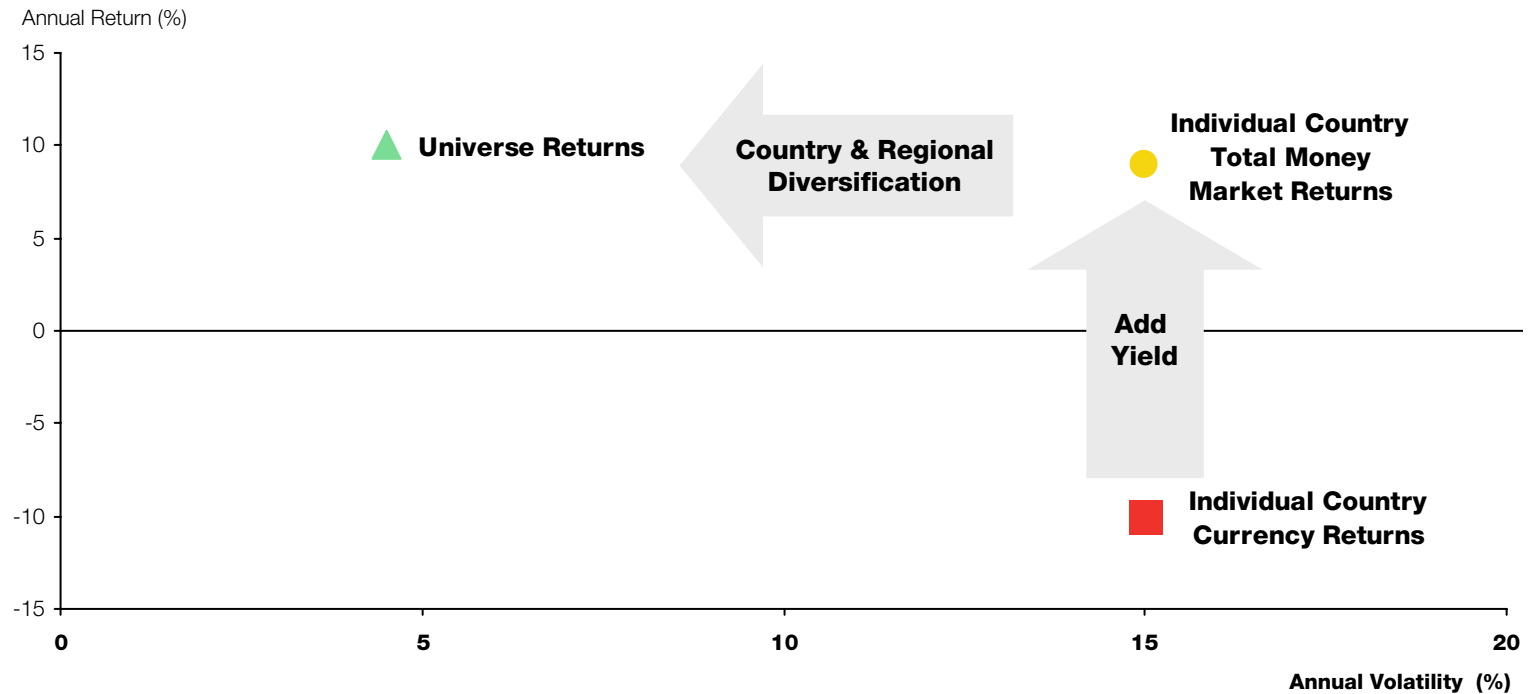


As of 31 March 2008

Source: ING

# Constructing a Local Currency Portfolio

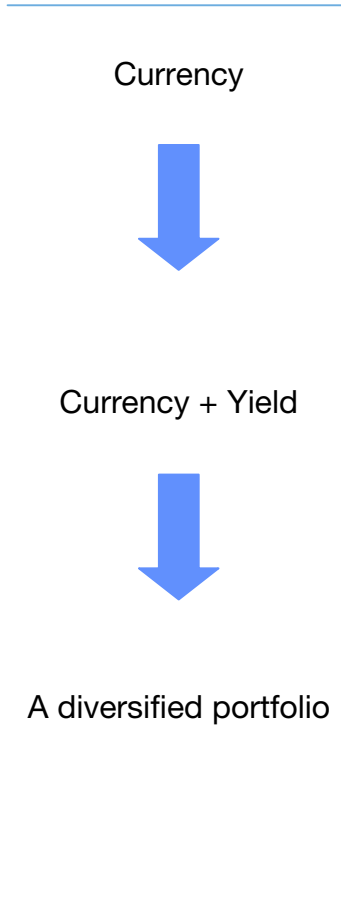
A diversified portfolio of currencies can dramatically reduce risk while capturing the high returns available in emerging markets.



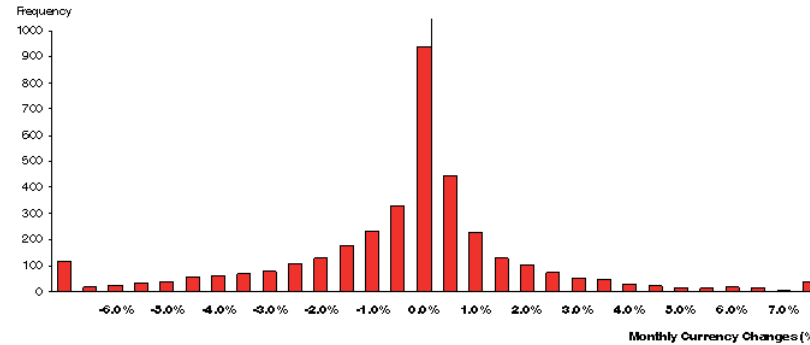
- Individual EM currency risk/returns (in USD)
- Individual EM currency + Yield risk/returns (in USD)
- ▲ Well-diversified local currency portfolio risk/returns (in USD)

From January 1993 – June 2002, Lazard Asset Management LLC conducted a study of emerging markets local currency debt. The data above is provided to show results obtained during that study. For additional information on the study, refer to the “Lazard’s Emerging Market Local Currency Study” in the Appendix.

# Constructing a Diversified Local Currency Portfolio

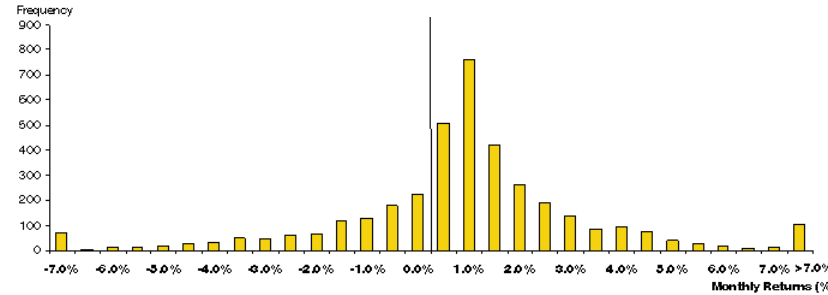


**Histogram of One-Month Currency Changes (US\$)**



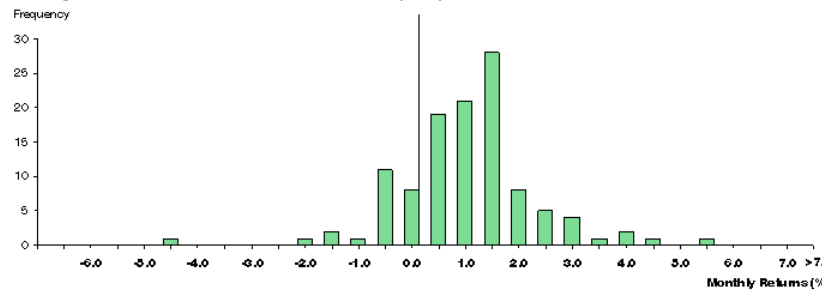
Annualized return: -10%  
 Annualized standard deviation: 15%  
 Monthly losses greater than -20%: 42  
 Worst monthly change: -78%

**Histogram of One-Month Total Returns (Currency + Yield, in US\$)**



Annualized return: 9%  
 Annualized standard deviation: 15%  
 Monthly losses greater than -20%: 16  
 Worst monthly change: -100%

**Histogram of One-Month Portfolio Returns (US\$)**



Annualized return: 10%  
 Annualized standard deviation: 4.5%  
 Monthly losses greater than -20%: 0  
 Worst monthly change: -4.5%

As of June 30, 2002. Data compiled from 1/93 to 6/02 during Lazard's internal study. Beginning with a universe of 16 countries in 1993, and growing to 40 in 2002, 3627 individual observations were made. Past performance does not guarantee future results.

Lazard Asset Management LLC conducted a study of emerging markets local currency debt. The data above is provided to show results obtained during that study. For additional information on the study, refer to the "Lazard's Emerging Market Local Currency Study" in the Appendix.

# Correlations Between EM Currencies are Surprisingly Low: Russia/LTCM Crisis

Even with the Russian default, a well-diversified local markets portfolio produced positive returns.

6-month return for:

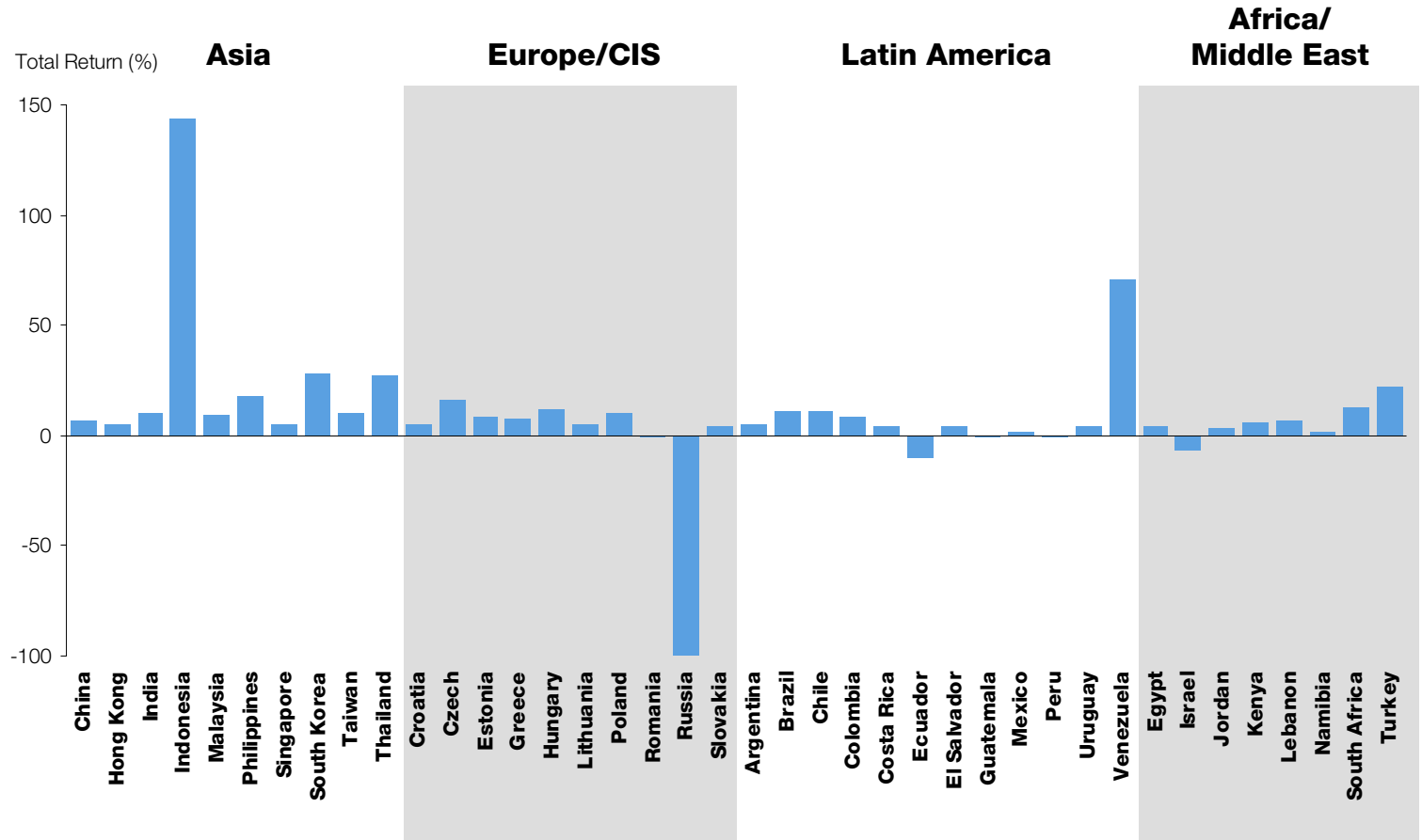
Russia: -100%

Global Equities (MSCI EAFE): 3.5%

JPM External Debt Index (EMBI+): -13.4%

JPM Local Currency Index (ELMI+): 16.2%

## Money Market Returns by Country, July – December 1998



\*Gross of fees

Returns are country returns of the JP Morgan ELMI+ where available; for other countries, returns are calculated by Lazard, for the instrument Lazard considers to be the sovereign benchmark instrument in each country, typically a 1m or 3m T-bill. Past performance does not guarantee future results.

Lazard Asset Management LLC conducted a study of emerging markets local currency debt. The data above is provided to show results obtained during that study. For additional information on the study and the methodology used, refer to the "Lazard's Emerging Market Local Currency Study" in the Appendix.

Source: JPMorgan, Lazard

# The Local Investor

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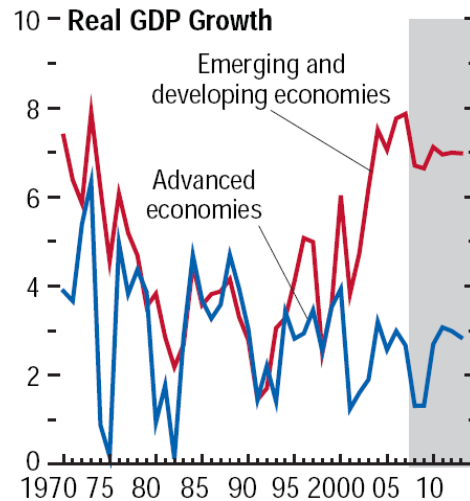
When the domestic investor base in each emerging market is the marginal price-setter, country-specific fundamental flows and local policy framework will drive FX risk/directionality

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- Is focused on local events
- Differs between countries
- Demands compensation for concentrated risk

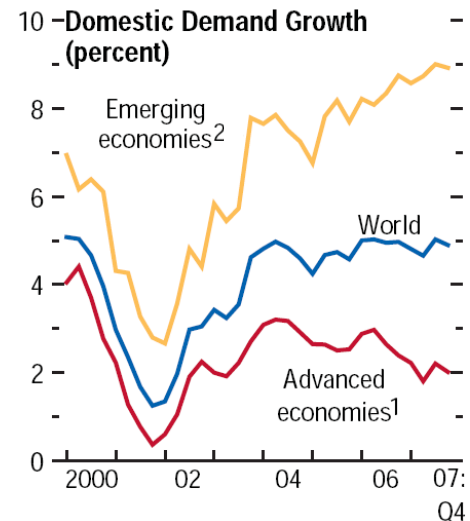
# Divergence Between EM and Developed Markets

## Economic Growth



Shaded area indicates International Monetary Fund staff projections. Aggregates are computed on the basis of purchasing power parity weights.

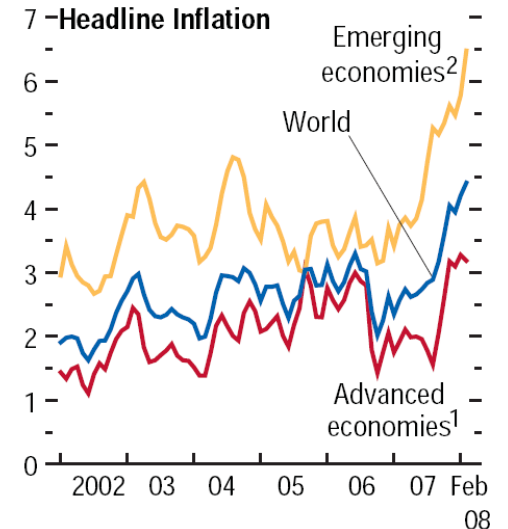
## Sources of Growth



<sup>1</sup> Australia, Canada, Denmark, Euro Area, Japan, New Zealand, Norway, Sweden, Switzerland, United Kingdom and United States

<sup>2</sup> Argentina, Brazil, Bulgaria, Chile, China, Colombia, Estonia, Hong Kong, Hungary, India, Indonesia, Israel, Korea, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Philippines, Poland, Romania, Russia, Singapore, Slovakia, South Africa, Taiwan, Thailand, Turkey, Ukraine, Venezuela.

## Inflation



<sup>1</sup> Australia, Canada, Denmark, Euro Area, Japan, New Zealand, Norway, Sweden, United Kingdom and United States

<sup>2</sup> Brazil, Bulgaria, Chile, China, Estonia, Hong Kong, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Poland, Singapore, South Africa, Taiwan and Thailand.

As of April 2008

Source: International Monetary Fund

# Emerging Markets Currencies as a Diversifier

## Comparative Indices (1 May 1995 – 31 March 2008)

<b>Asset Class Mandate</b>	<b>ELMI+ Beta</b>	<b>ELMI+ Correlation</b>
JPMorgan EMBI +	0.23	0.53
MSCI Emerging Market Index	0.18	0.66
Lehman Aggregate Index	-0.06	-0.03
Lehman B-Rated HY Index	0.20	0.24
Citigroup WGBI non-U.S. (hedged) Index	-0.19	-0.08
S&P 500 Index	0.19	0.44
MSCI EAFE	0.23	0.54
S&P Goldman Sachs Commodity Index	0.02	0.08

**Modest correlation and betas suggest that EM currencies are an attractive diversifier.**

Source: Bloomberg.  
Characteristics of monthly returns for JP Morgan ELMI+ Index.

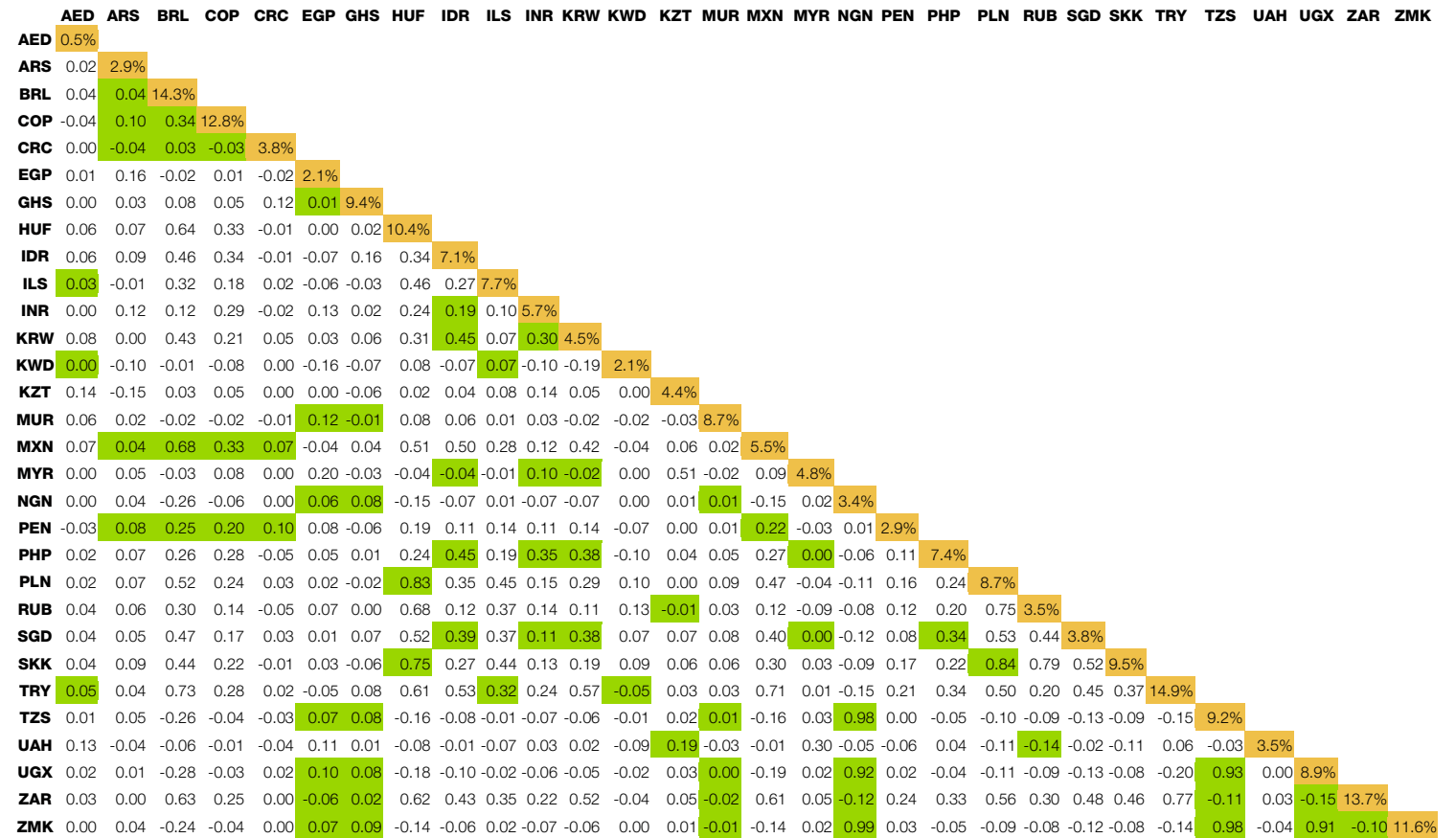
# Summary

- When fundamentals matter, diversification is more powerful
- Beware hidden sources of correlation
- EM Currencies: an uncorrelated asset class

**T A B**

# Correlation Matrix

UAE Dirham	AED
Argentine Peso	ARS
Brazilian Real	BRL
Colombian Peso	COP
Costa Rican Colon	CRC
Egyptian Pound	EGP
Ghana Cedi	GHS
Hungarian Forint	HUF
Indonesian Rupiah	IDR
Israeli Shekel	ILS
Indian Rupee	INR
South Korean Won	KRW
Kuwaiti Dinar	KWD
Kazakhstan Tenge	KZT
Mauritius Rupee	MUR
Mexican Peso	MXN
Malaysian Ringgit	MYR
Nigerian Naira	NGN
Peruvian New Sol	PEN
Philippines Peso	PHP
Polish Zloty	PLN
Russian Ruble	RUB
Singapore Dollar	SGD
Slovakia Koruna	SKK
New Turkish Lira	TRY
Tanzanian Shilling	TZS
Ukraine Hryvnia	UAH
Uganda Shilling	UGX
South African Rand	ZAR
Zambian Kwacha	ZMK



Annualized Volatility  
 Intra-regional Currencies

As of 14 April 2008.  
Source: Bloomberg.

The information above represents the parallel relationship between select currencies in the Emerging Income Local Currency Debt universe over a rolling 1-year period. The currencies in this chart may not represent those currently held in the Lazard Emerging Income portfolio. Highlighted sections show correlation between countries within a specific emerging markets region.

# Appendix: Lazard's Emerging Market Local Currency Study<sup>1</sup>

In 1994, Lazard Asset Management began a study of emerging market local currency debt (EMLCD). As part of the study, Lazard calculated a historical series of monthly returns for benchmark securities (i.e., a 3-month T-bill) in emerging market countries considered “investable” according to internal criteria. To simulate a passive investment in these securities, individual country returns were combined into an “equally-weighted” universe. For example, if the universe contained 20 countries each country’s weighting in the universe would be 5%. Returns for this equally-weighted universe were calculated beginning in January 1993, with 16 countries at inception. Countries were added at our discretion, when they became “investable” according to our criteria; as of July 31, 2004, the universe included 46 countries in 4 regions designated as Africa/Middle East, Asia, Europe and Latin America.

For countries that peg their currencies to an official or unofficial basket of developed market currencies, such as euro or yen, a hedge return is incorporated in the country’s total return. The purpose of the hedge is to isolate the emerging market return by removing the effect of any movements in the developed currencies to which it is pegged. The hedge return is calculated assuming the developed currency is sold for dollars one month forward. The amount sold is determined by the announced or implied correlation between the emerging market currency and the developed currency. For example, Estonia pegs its currency 100% to the euro. In calculating the country return for Estonia, Lazard adds in the gain or loss that would have been incurred if euros had been sold against the Estonia position in a 1:1 ratio.

In June 1998, Lazard revised the methodology used to calculate returns of the equally-weighted universe. First, to take advantage of the introduction of a formal local currency data source, JPMorgan’s Emerging Local Markets Index Plus (ELMI+) in 1996, we replaced Lazard’s independently calculated country returns with ELMI+ returns whenever possible. The inception of the ELMI+ series is January 1994, so all returns prior to that are Lazard’s returns, calculated using foreign exchange rates and yields calculated from our internal databases. For countries included in Lazard’s, but not the ELMI+, Lazard’s returns are used. In addition, we revised the weighting scheme such that countries that are included in the investment universe, but which Lazard considers illiquid (i.e., foreign access is difficult or market volume is very limited), are constrained to 1% weights in the equally-weighted universe.

<sup>1</sup> The study was discontinued as of 30 June 2002.

<sup>2</sup> Countries in ELMI+ universe and the LEI universe as of 31 December 2007.

As of 31 December 2007 countries considered “illiquid” were: Argentina, Bahrain, Botswana, Bulgaria, Costa Rica, Croatia, Dominican Republic, Estonia, Ghana, Jamaica, Jordan, Kazakhstan, Latvia, Lebanon, Lithuania, Mauritius, Namibia, Nigeria, Oman, Peru, Qatar, Serbia, Tanzania, Tunisia, Uganda, Ukraine, Uruguay, Vietnam, Zambia. All other countries continue to be equally-weighted.

Countries in the JPMorgan ELMI+ local currency data source<sup>2</sup>:

<b>Asia</b>	<b>Latin America</b>	<b>Europe</b>	<b>Africa/ Mid East</b>
China	Argentina	Czech Republic	Israel
Hong Kong	Brazil	Hungary	South Africa
India	Chile	Poland	Turkey
Indonesia	Colombia	Russia	
Malaysia	Mexico	Slovakia	
Philippines			
Singapore			
South Korea			
Taiwan			

Countries in the Lazard Emerging Income universe<sup>2</sup>:

<b>Asia</b>	<b>Africa</b>	<b>Latin America</b>	<b>Europe</b>
China	Botswana	Argentina	Bulgaria
Hong Kong	Egypt	Brazil	Croatia
India	Ghana	Chile	Czech Republic
Indonesia	Kenya	Colombia	Hungary
Malaysia	Mauritius	Costa Rica	Poland
Philippines	Morocco	Dominican Republic	Romania
Singapore	Namibia	Jamaica	Serbia
South Korea	Nigeria	Mexico	Slovakia
Taiwan	South Africa	Peru	
Vietnam	Tanzania	Uruguay	
	Tunisia		
	Uganda		
	Zambia		
<b>Middle East</b>		<b>CIS/Baltics</b>	
Bahrain	Oman	Estonia	
Israel	Qatar	Kazakhstan	
Jordan	Saudi Arabia	Latvia	
Kuwait	Turkey	Lithuania	
Lebanon	United Arab Emirates	Russia	
		Ukraine	

Lazard expects the investable universe will continue to change as investment opportunities develop.

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