Value in Portfolio Globalization Using Depositary Receipts

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Overview

- Investment in non-U.S. equities by U.S. investors has increased dramatically over the past several years.
- The practice of investing in non-U.S. equities is generally perceived to produce high returns, but at the cost of high risk.
- In determining whether this notion is accurate, we compared the risk-adjusted returns of the S&P 500 and Citi Liquid Depositary Receipt Indices (CLDRs) from 2003 to 2009, with the former serving as a proxy for U.S. domestic equities and the latter serving as a proxy for non-U.S. equities.
- Our analysis indicated that since 2003, CLDRs have significantly outperformed the S&P 500 on a risk-adjusted basis.

Purpose of Study

- International investment has garnered much attention in the recent decade:
  - As per the Federal Reserve, U.S. investment in non-U.S. equities increased from $1.4T in 2002 to $2.4T in Q1 2009, after reaching an all-time high of $5.2T in 2007, prior to the subprime crisis
  - Since 2005, the Global Emerging Market Equity Funds (GEMS) saw a net inflow of $24.7B; in particular, high-growth BRIC economies have been attracting significant interest[1]
  - According to the Economic Intelligence Unit, Foreign Direct Investment (FDI) into BRIC economies is currently over $150B (up 24.7% from its 2005 level of $115B) and expected to grow at a CAGR of 11.17% over the next five years
  - GDP for BRIC nations is expected to grow at a CAGR of up to 6% over the next five years
- International investment is generally perceived to produce high returns but at the cost of high risk; the purpose of this study is to understand how international investments have performed after adjusting for risk
- In particular, we are trying to understand how depositary receipt indices compare with the S&P 500 on a risk-adjusted basis

Methodology

International and Domestic Investment Indices

- We use Citi Liquid Depositary Receipt Indices (CLDRs) as proxies for international investments, as we believe they offer an excellent way to gauge the performance of international equities markets. CLDRs are unique in that they:
  - Are free-float market-cap weighted
  - Include only those DR programs that are actively traded
  - Allow for direct comparison to domestic stock indices because prices are listed in American dollars
- We use the S&P 500 as a proxy for domestic investments as it is a leading and widely accepted indicator of U.S. equities and is meant to reflect the risk and return characteristics of the large-cap universe

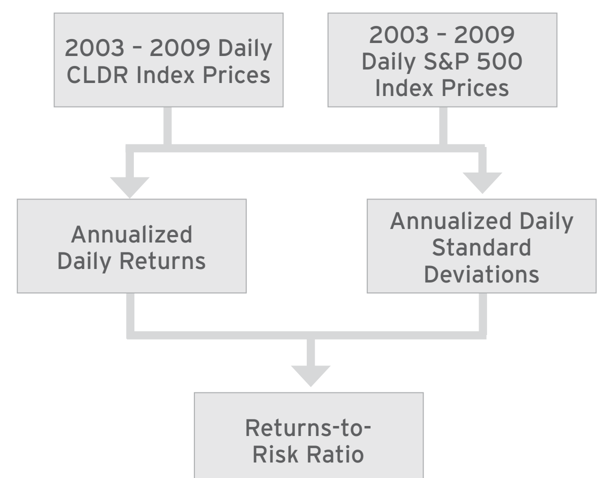
Index	Description
SPX	S&P 500
CLDRWXUS	World ex-U.S. Liquid DR Index
CLDRAPAC	AsiaPac ex-Japan Liquid DR Index
CLDREAS	AsiaPac Growth Economies Liquid DR Index
CLDREPAC	EuroPac Liquid DR Index
CLDRLAT	LatAm Liquid DR Index
CLDREMEA	CEEMEA Liquid DR Index

Returns-to-Risk Ratio

- To gauge the performance of these indices, we use daily price returns from 2003 to 2009
- Holding-period returns (HPR) can be misleading as they do not capture the underlying risk; we therefore use a returns-to-risk ratio to analyze the performance of CLDRs versus that of the S&P 500

$$\text{Returns-to-Risk Ratio} = \frac{\text{Annualized average daily returns}}{\text{Annualized daily standard deviations}}$$

- This ratio measures returns per unit of risk, providing a comprehensive understanding of risk-adjusted returns



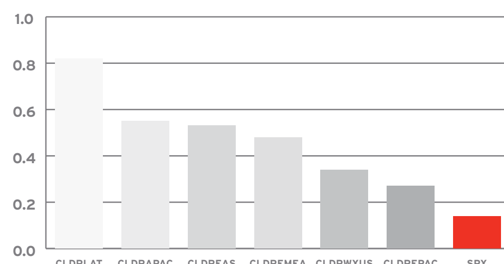
[1]Source: Citi Investment Research

Results

International equities have historically earned more return per unit of risk than domestic equities

2003–2009 Returns-to-Risk Ratio Overview

- Our analysis of the returns-to-risk ratio from 2003 to 2009 indicates that all CLDR indices significantly outperformed the S&P 500 on a risk-adjusted basis
- LatAm and Asia had the most favorable returns-to-risk ratio from 2003 to 2009

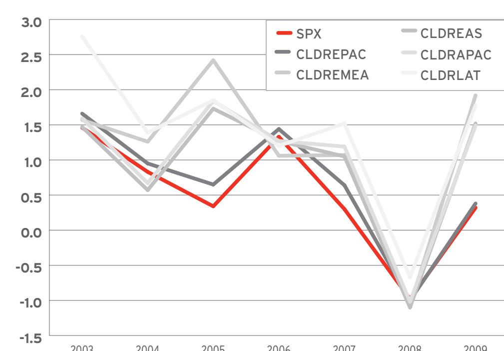


2003–2009 Returns-to-Risk Ratio by Year

- Since 2003, the S&P 500 generated lower returns than the CLDR World ex-U.S. in five out of six years; during the same period the S&P 500 remained consistently less volatile than the CLDR World ex-U.S.
- However, on a risk-adjusted basis, the CLDR World ex-U.S. outperformed the S&P 500 in all years except 2008
- We believe 2008 to be an exceptional data point, as the unprecedented subprime crisis caused market dislocation

2003–2009 Regional Returns-to-Risk Ratio by Year

- All regions outperformed the S&P 500 on a returns basis every year except 2008, with LatAm and CEEMEA being consistently better performers
- All regions also exhibited consistently higher volatility, with LatAm and CEEMEA having the highest standard deviations which peaked in 2008
- LatAm and CEEMEA had significantly higher ratios in all years except 2006 and 2008; all DR indices except EuroPac (EPAC) followed similar trends
- On a risk-adjusted basis, EuroPac (EPAC) consistently, but narrowly, beat the S&P 500 except for in 2008; EPAC closely followed the trends of the S&P 500



Conclusions

- Developed regions closely followed trends of the S&P 500 with slightly higher risk-adjusted performance; emerging regions significantly outperformed the S&P 500 on a risk-adjusted basis
- As BRIC nations are positioned to grow at a predicted CAGR of up to 6% over the next five years, these regions offer opportunities for investors to experience portfolio value appreciation, making the depositary receipt a valuable investment vehicle
- This study reinforces the value proposition for investing in international equities (via depositary receipts), as they earn higher risk-adjusted returns than domestic equities

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