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International equity investing: What is the best measure for country selection in the medium term?

By Sailesh Radha

International stocks make investing more complex. Unlike in domestic equity investing, where we examine only the U.S., we must scrutinize more than 45 countries and their underlying equity financials. There's also the burden of analyzing those countries' complex economic, financial, and political interrelationships, which affect international returns overall. In our experience, this makes some advisors reluctant to recommend international investments to their clientele.

To reduce the complexities that advisors face in international equity investing, Borealis Global Advisory (BGA) has developed the Cyclically Adjusted Country Yield (CACY™). CACY is a simple measure of medium-term equity performance expectations at the country level that builds on concepts that advisors already know from the cyclically adjusted price-to-earnings ratio. This article shows how to apply CACY in country selection using CY-M™, a medium-term country yield forecast that incorporates information from CACY and a cyclically adjusted real exchange rate.

Why is medium term the sweet spot?

You may wonder why we focus on the medium term. We believe that advisors have to approach country selection from the medium-term perspective to get the most out of investing internationally on their clients' behalf. At BGA, we generally divide investment horizons into three categories – short term (one to three years), medium term (three to 10 years), and long term (greater than 10 years).

Country selection using short-term perspectives typically doesn't work as advisors intend. Why? In the short term, many known and unknown factors affect the country risk premium. While institutional-level sophisticated models could capture those factors, most individual advisors lack the resources to develop and monitor them. As a result, advisors using short-term investment views on countries typically hurt their buy-and-hold clients, as transaction costs begin to nibble away at the excess returns, if any exist.

Long-term perspectives also fall short. During a long stretch of time, the investment and economic regimes of countries change. Also, your clients' circumstances may change. It is not possible to efficiently model these changes in the country selection process. Accordingly, we believe that advisors can only model effectively a country selection process reflecting market views over a period ranging from five to eight years.

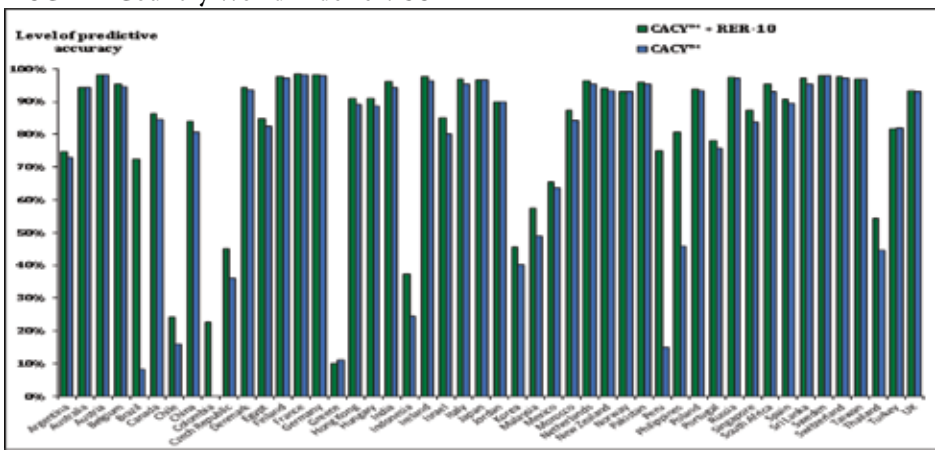
With the recent proliferation of single-country ETFs, country selection has become more important for advisors and retail investors because it allows them to express their international market views through country outlooks, without getting bogged down in selecting individual stocks. Single-country ETFs are nothing but baskets of equity securities passively tracking their respective country indexes. Single-country ETFs afford easy, cost-effective, modular access to international country markets.

Cyclically Adjusted Price-to-Earnings Ratio (CAPE)

To develop a sound, robust measure that captures the medium-term return expectations of a country, we started with the cyclically adjusted price-to-earnings ratio (also known as CAPE or PE 10 or Shiller's PE). We introduced this measure in our previous article in the *NAPFA Advisor* (August 2016) as the price of, for example, the S&P 500 index divided by its 10-year average earnings, adjusted for inflation. Robert Shiller of Yale University famously used it to predict the tech bubble in the U.S. market in the closing days of the last millennium. Since the late 1990s, advisors have largely used CAPE as a tool to forecast the long-term returns of the U.S. market.

Until now, international country markets lacked a measure similar to CAPE. To fill the gap, we created an international version of CAPE. We departed from the usual price-multiple expression of CAPE by inverting it to its yield expression form as the latter is more intuitive for investors to grasp. We call this yield expression the **Cyclically Adjusted Country Yield** (CACY).

Exhibit 1: Explanatory power of CACY alone and CACY and RER 10 together, in predicting the forward six-year average annual real returns for the countries in the MSCI All Country World Index ex. USA



Source: BGA, MSCI, IMF, Australia Bureau of Statistics, New Zealand Statistics, OECD, and IADB.

Note: Returns are expressed in compound annual growth rate (CAGR) basis

Exhibit 2: Actual versus forecast returns: comparing actual versus CY-M measures for the forecast period 2010-15

	CY-M™ as of 12/31/2009 for the period 2010-15	2010-15 CAGR Actual Annual Real Returns	CY-M™ as of 12/31/2009 for the period 2010-15 Quintile Ranking	2010-15 CAGR Actual Annual Real Returns Quintile Ranking
Denmark	14.8%	17.9%	1	1
Thailand	9.9%	4.0%	1	2
Philippines	9.2%	8.9%	1	1
Japan	7.4%	8.1%	1	1
Sweden	6.9%	6.6%	1	1
Ireland	6.8%	11.1%	1	1
Indonesia	6.3%	1.3%	1	2
Belgium	6.1%	11.5%	1	1
South Africa	5.6%	4.6%	2	2
Germany	5.3%	6.2%	2	1
Malaysia	4.7%	1.3%	2	2
Switzerland	4.3%	5.5%	2	2
Mexico	4.0%	1.5%	2	2
New Zealand	4.0%	3.2%	2	2
Netherlands	3.6%	6.3%	2	1
Colombia	3.2%	-5.4%	2	4
Korea	2.8%	-0.4%	2	3
France	2.6%	2.6%	3	2
Finland	2.5%	3.8%	3	2
Canada	1.9%	-0.2%	3	3
Hong Kong	1.4%	0.4%	3	3
United Kingdom	1.3%	-0.1%	3	3
Turkey	0.9%	-3.1%	3	4
Norway	0.8%	-0.7%	3	3
Taiwan	-0.1%	-0.5%	3	3
Australia	-0.4%	-1.2%	3	3
Chile	-1.0%	-5.5%	4	5
Singapore	-1.4%	-3.7%	4	4
Poland	-1.7%	-4.7%	4	4
India	-1.8%	-2.0%	4	3
Peru	-2.3%	-9.6%	4	5
China	-2.5%	-4.1%	4	4
Egypt	-3.1%	-6.6%	4	5
Italy	-3.2%	-2.9%	4	4
Spain	-3.3%	-4.9%	4	4
Israel	-3.9%	-1.8%	5	3
Austria	-4.9%	-4.7%	5	4
Czech Republic	-5.0%	-8.1%	5	5
Hungary	-6.2%	-3.8%	5	4
Russia	-6.3%	-7.4%	5	5
Brazil	-9.7%	-12.9%	5	5
Portugal	-10.1%	-11.3%	5	5
Greece	-28.4%	-34.1%	5	5

Source: BGA, MSCI, IMF, Australia Bureau of Statistics, New Zealand Statistics, OECD, and IADB.
Note: CAGR is the compound annual growth rate.

Our research found that CACY is a valuable predictor of returns in the medium term. The blue bars in Exhibit 1 on page 24 display the average power of CACY, expressed in percent on the vertical axis, in predicting the average annual real (adjusted for inflation) return for successive six years, for all the countries in the MSCI All Country World Index ex. USA benchmark.[1]

Exhibit 1 shows that while CACY is a reasonably good predictor for the developed countries, it disappoints elsewhere. It is not a good predictor for emerging countries, including all commodity-based countries such as Brazil, Chile, Columbia, and Peru, as well as the purely export-oriented economies like South Korea and Taiwan.

To attempt to develop a more accurate predictor, we amended the CACY measure to include the effects of real exchange rate[2] on the cyclically adjusted reported earnings that goes into the computation of the measure. (The real exchange rate encapsulates a country's nominal exchange rate, inflation rate, and productivity into a single measure.) We applied the real exchange rate, figuring that it would better mirror the relative value of an exporting country's goods or services. For predictive purposes, we adopted the real exchange rate in the **Cyclically Adjusted Real Exchange Rate** (**RER 10**) form. RER 10 of a country is its real exchange rate divided by the trailing 10-year average of the exchange rate.

We found that CACY, when combined with RER 10, more accurately predicted medium-term returns for emerging countries. Furthermore, the combination marginally improved the predictions for the developed countries. The significant advantage of the combined measure is shown by the greater height of the green bars over the blue bars in Exhibit 1 for almost all the emerging countries. These measures together are the CAPE-equivalent measure that advisors have sought for evaluating the country markets outside the U.S.

Looking at the Medium-term Country Yield Forecast (CY-M)

How can you get from the CACY and RER 10 to information that you can use to create country allocations? At BGA, we combine CACY and RER 10 in a simple model to predict the average annual real returns of a country (nominal returns adjusted for inflation) for the successive six calendar years. We call this model the **Country Yield Forecasting Mechanism** (CY-FOREM™)[3] and the predicted average annual real return the **Medium-term Country Yield Forecast (CY-M)**.[4] However, we use the CY-M measure purely to rank countries in our investment universe on a relative basis, rather than to produce specific point-in-time forecasts for them.

The Actual versus Forecast table (Exhibit 2) compares the countries' actual average annual real returns[5] for the period 2009-15 with the corresponding CY-M average annual forecasts made for the same period at the end of calendar year 2009. As the table shows, the accuracy of the forecasts is good enough that, for almost all countries, their forecast and actual returns coexist in the same quintile categories.

We recommend using the rolling monthly values of each country's CY-M measure to assess the monthly trend of its average medium-term return expectations. In addition, we calculate the number of countries in a group with upside values of the CY-M measure, which are above the average for the group, to arrive at the group diffusion index. A diffusion index created for a group of commodity-based countries, for example, would reveal the strength of their upside performance expectations. At BGA, we refer to grouping of countries by investment or economic characteristics as "tranching."

Two examples will explain the CY-M measure, as well its applications in international investing. In Exhibit 3 on page 26, we plot the trend of Brazil's CY-M measure over time. Along the bottom of the chart, the time periods advance on a monthly basis and the dates reflect the starting points of six-year forecast time horizons, while the dates along the top reflect their respective endpoints. Beginning in September 2011, CY-M began to turn higher and carried momentum until early 2016. This indicated that Brazil's return prospects would begin improving in mid-to-late 2017 and continue into early 2021.

Exhibit 4 on page 26 shows the diffusion index of the commodity-based and export-oriented countries that make up the BGA middle tranche, of which Brazil is a part. It plots the three-month moving average of the diffusion index and depicts the average strength of the upside performance expecta-

1. This benchmark is made up of 22 developed countries and 23 emerging countries. We have excluded Qatar and UAE from our study, due to limited data history.

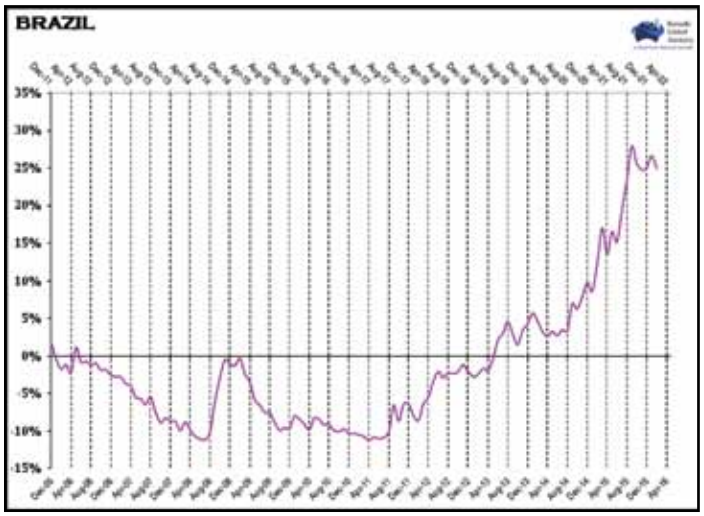
2. The real exchange rate of a country is its nominal exchange rate adjusted for the inflation rate of the country.

3. Radha, Sailesh, Multi-pillar Approach to Constructing Global Equity Portfolios Using Single-Country ETFS. Borealis Global Advisory Publication, September 2016. Available at http://borealisga.com/wp-content/uploads/2016/10/BGA-Marketing-whitepaper.pdf.

4. CY-M measure is always expressed in compound annual growth rate (CAGR) terms.

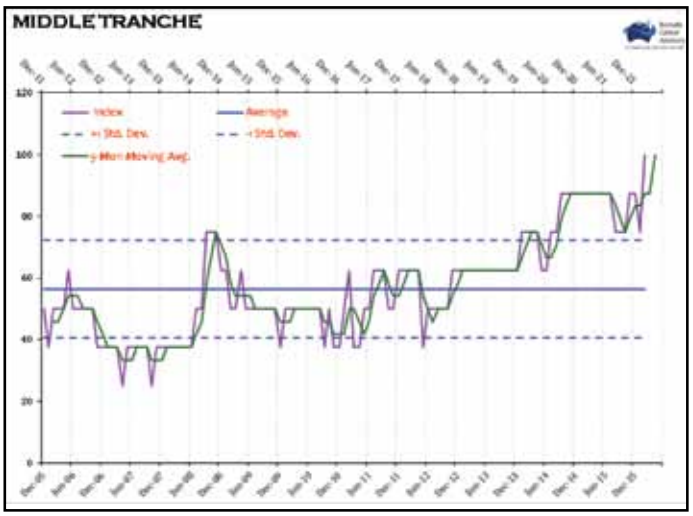
5. The actual returns are expressed in CAGR terms.

Exhibit 3: CY-M measure predicts improved outlook for Brazil in the coming years.



Source: BGA calculations, MSCI, and IMF.
Note: The vertical lines indicate the forecast horizons, starting from the dates listed on the x- axis at the bottom and ending on the dates listed on the x-axis at the top. Real returns are nominal returns adjusted for inflation. Data through February 2016.

Exhibit 4: Diffusion Index predicts improved outlook for countries in the Middle Tranche



Source: BGA calculations, MSCI, and IMF.
Note: Data through February 2016. Middle Tranche is composed of Brazil, China, India, Korea, Mexico, Russia, South Africa, and Taiwan.

tions of the countries constituting the BGA's middle tranche. Along the bottom of the chart, the time periods are advanced on a monthly basis and the dates reflect the starting points of six-year forecast time horizons, while the dates along the top reflect their respective endpoints. The index began to rise from the lows in December 2010 to the strength recorded currently. By looking at the top of the chart for the corresponding six-year forward dates, you will have a sense of when this group of markets was expected to begin showing strength, which was around late 2016. As of January 2017, all the countries in this group, except Mexico, had posted ample gains on a year-over-year basis.

How you might use CY-M measure in your practice

Now let's look at how advisors can use CY-M for selecting countries in their international portfolios. Exhibit 5 lists the CY-M measure for all the countries[6] in the MSCI ex-USA benchmark as of the end of calendar year 2015. We rank the measures in the descending order, and then categorize them on a quintile basis.

We recommend choosing the countries in the upper quintiles one and two, and then allocating to them equally. Alternatively, advisors may allocate to the countries in proportion to their percentile ranking, with higher percentile countries receiving higher weights in the portfolio. At the end of 2015, advisors using this approach would have chosen exposures to Peru, Colombia, Brazil, Indonesia, Thailand, Chile, Egypt, China, Turkey, Israel, Malaysia, Russia, Korea, Singapore, Canada, and South Africa.

This country selection approach is very simple. Therefore, advisors can easily implement it. Also, because the CY-M measure is a slow-moving indicator, users may track it quarterly rather than daily. It also limits turnover of countries in international portfolios.

Another advantage is that this approach can be implemented inexpensively using single-country ETFs to create international portfolios. This may make it particularly appropriate for use with low net-worth clients, primarily millennials, who are eager to obtain low-cost international equity exposure.

CY-M measures for the countries in the MSCI All Country World Index ex-USA are available to advisers in a table format via our chart books, published quarterly on our website.

6. Qatar and UAE are excluded due to limited data history.

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Exhibit 5: Forecast Average Annual Real Returns for the period - 2016-21

	CY-M™ as of 12/31/2009 for the period 2010-15	CY-M™ as of 12/31/2009 for the period 2010-15 Percentile ranking	CY-M™ as of 12/31/2009 for the period 2010-15 Quintile ranking
Peru	32.3%	100%	1
Colombia	25.1%	97%	1
Brazil	25.1%	95%	1
Indonesia	21.1%	92%	1
Thailand	18.3%	90%	1
Chile	15.8%	87%	1
Egypt	14.4%	85%	1
China	13.6%	82%	1
Turkey	12.0%	79%	2
Israel	12.0%	77%	2
Malaysia	11.7%	74%	2
Russia	11.0%	72%	2
Korea	9.8%	69%	2
Singapore	9.7%	67%	2
Canada	9.2%	64%	2
South Africa	8.4%	62%	2
Poland	8.3%	59%	3
India	8.2%	56%	3
Norway	8.1%	54%	3
Japan	7.4%	51%	3
Sweden	6.0%	49%	3
Mexico	5.6%	46%	3
Philippines	5.1%	44%	3
Australia	4.1%	41%	3
Hong Kong	3.7%	38%	4
United Kingdom	2.8%	36%	4
Taiwan	2.8%	33%	4
Germany	1.7%	31%	4
Spain	0.7%	28%	4
Switzerland	-0.2%	26%	4
France	-0.4%	23%	4
Austria	-1.0%	21%	4
Greece	-1.1%	18%	5
Portugal	-2.7%	15%	5
New Zealand	-3.7%	13%	5
Denmark	-4.4%	10%	5
Italy	-8.8%	8%	5
Netherlands	-10.6%	5%	5
Belgium	-16.8%	3%	5
Ireland	-30.4%	0%	5

Source: BGA, MSCI, IMF, Australia Bureau of Statistics, New Zealand Statistics, OECD, and IADB.