# The Cross-Sectional Determinants of Emerging Equity Market Returns*

Geert Bekaert,
*Stanford University, Stanford CA, 94305*
*National Bureau of Economic Research, Cambridge, MA* 02138

Claude B. Erb
*First Chicago NBD Investment Management Co., Chicago, IL* 60670

Campbell R. Harvey
*Duke University, Durham, NC 27708*
*National Bureau of Economic Research, Cambridge, MA* 02138

Tadas E. Viskanta
*First Chicago NBD Investment Management Co., Chicago, IL* 60670

**ABSTRACT**

We explore the cross-sectional determinants of emerging equity market returns. We find that the behavior of emerging market returns differs substantially from the behavior of developed equity market returns and that these differences have persisted in the period ending June 1996. While there are some similarities between the cross-sectional determinants of emerging and developed market equity returns, emerging market strategies must take into account the special characteristics of these markets. In particular, the degree of integration of these markets with world equity markets has changed through time. This time-varying integration must be taken into account in asset allocation strategies.

* Version: August 15, 1996. Some of the results in this paper were presented at conference on *The Future of Emerging Capital Flows* at New York University, May 23-24, 1996.

## 1. Introduction

Regulatory changes, currency devaluations, failed economic plans, coups and other national financial "shocks" are notoriously difficult to predict and may have disastrous consequences for global portfolios. These features often define the difference between investment in the capital markets of developed versus emerging economies.

Research on emerging markets has suggested three market characteristics: high average returns, high volatility and low correlations both across the emerging markets and with developed markets. Indeed, the lesson of volatility was learned the hard way by many investors in December 1994 when the Mexican stock market began a fall that would reduce equity value in U.S. dollars by 80% over the next three months.

But, we have learned far more about these fledgling markets. First, we need to be careful in interpreting the average performance of these markets. Errunza and Losq (1985) and Harvey (1995) point out that the International Finance Corporation (IFC) backfilled some of the index data resulting in a survivorship bias in the average returns. In addition, the countries that are currently chosen by the IFC are the ones that have a proven track record. This selection of winners induces another type of selection bias. Finally, Goetzmann and Jorion (1996) detail a re-emerging market bias. Some markets, like Argentina, have a long history beginning in the last half of the 19th century. At one point in the 1920's, Argentina's market capitalization exceeded that of the U.K. However, this market submerged. To sample returns from 1976 (as the IFC does), only measures the "re-emergence" period. A longer horizon mean, in this case, would be lower than the one calculated from 1976. This insight is consistent with the out-of-sample portfolio simulations carried out by Harvey (1993) indicating that the performance of the dynamic strategy was affected by the initial five years. It must also be realized that exposure as measured by the IFC is not necessarily attainable for world investors because of investment restrictions, high transactions costs, poor liquidity, etc., [see Bekaert and Urias (1996)].

Second, we have learned that the emerging market returns are more predictable than developed market returns. Harvey (1995) details much higher explanatory power for

emerging equity markets than developed market returns. The sources of this predictability could be time-varying risk exposures and/or time-varying risk premiums, such as in Ferson and Harvey's (1991, 1993) study of U.S. and international markets. The predictability could also be induced by fundamental inefficiencies.

In many countries, the predictability is of a remarkably simple form: autocorrelation. For example, Harvey (1995) details 0.25 autocorrelation coefficient for Mexico in a sample that ends in June 1992. An investor who followed a strategy based on autocorrelation in this country would have lost 35% like everyone else in December 1994. However, the investor would have been completely out of the market in the next three months (or short if possible). Momentum appears to be important for many of these markets.

Third, we have learned that the structure of the returns distribution is potentially unstable. Bekaert, Erb, Harvey and Viskanta (1996) present evidence that the distribution of emerging equity market returns is different in the 1990s than in the 1980s. Ghysels and Garcia (1994) reject the structural stability of the prediction regressions presented in Harvey (1995). These regressions allow for the influence of both local and world information. Bekaert and Harvey (1995, 1996a) present a model which explains the results of Ghysels and Garcia. The Bekaert and Harvey model allows for the relative influence of local and world information to change through time. They hypothesize that as a market becomes more "integrated" into world capital markets, the world information becomes relatively more important. Bekaert and Harvey (1996a) find that the changing relative importance of world information also influences volatility.

Fourth, the Bekaert and Harvey (1996a) framework suggests that the increasing influence of world factors on emerging expected returns may manifest itself in increased correlation with developed market benchmarks.

The goal of this paper is to explore cross-sectional determinants of emerging markets market strategies. We begin by examining some of the issues involved in using emerging market equity data. These issues include investibility, survivorship and nonnormality. We then investigate a wide variety of cross-sectional strategies. We attempt to answer the question of

what matters in emerging equity market investing. We try to link the cross-section of expected returns to political, economic, and financial risk, as well as a number of fundamental attributes, such as price to book value. Some concluding remarks are made in the last section.

## 2. The Challenges of Emerging Market Data

### *2.1 Which emerging market benchmarks should be used?*

The three main sources of emerging market benchmarks are the International Finance Corporation (IFC), Morgan Stanley Capital International (MSCI) and ING Barings' Emerging Markets Indices (BEMI). All provide country benchmark indices which are based on a value weighted portfolio of a subset of stocks which account for a substantial amount of the market capitalization within each emerging market.

The IFC produces two types of indices: Global (IFCG) and Investable (IFCI). For nine countries, data exists back to 1976. Currently, the IFC provides data on 27 countries.[1] MSCI also produces both Emerging Markets Global (EMG) and Emerging Markets Free indices (EMF) which resembles the IFCI. ING Barings only focuses on investible indices. Our paper focuses on the global indices. Part of the interest in studying emerging markets is the impact capital market liberalizations have on the returns. Hence, we study markets before and after they are accessible to international investors.[2]

IFC, MSCI and ING Barings all use a different hierarchical processes in the company selection for their indices. MSCI follows the same technique that it uses in its popular developed country benchmarks. First, the market is analyzed from the perspective of capitalization and industry categories. Next, a target of 60% coverage of the total capitalization of each market, with industry weightings approximating the total market's

[1] The IFC announced June 20, 1996 that 17 new emerging markets will be added September 30, 1996.

[2] Over the January 1989-March 1996 period, the correlation between the IFCI and the MSCI EMF indices is 91.8%. Over the April 1991-March 1996 period, the correlation between the IFCI and the MSCI EMF is 97.2%. The correlation between the EMG (EMF) and the MSCI World-All Countries is 41% (49%).

weightings is established. Finally, companies are selected based on liquidity, float, and cross-ownership to fulfill these goals.

In contrast, the IFC's order of preference is: size, liquidity and industry. The IFC primarily targets the largest and most actively traded stocks in each market, with a goal of 60% of total market capitalization at the end of each year. As a second objective, the index targets 60% of the trading volume during the year. Industry is of tertiary priority.

ING Baring's indices focus on foreign institutional investibility for the global emerging markets. Their indices only contain the most accessible securities in the 20 markets they track. As a result, the number of securities tracked by BEMI is far less than MSCI and IFC.[3] Aside from investibility, the primary factor for both company and country selection is liquidity. ING Barings considers other factors, including frequent financial reporting and the availability of high quality data.

Although there is some hierarchical differences in the structure of construction, there is little difference in the behavior of the IFCG and the EMG. Panel A of Table 1 details the difference between the IFCG and the EMG returns over identical samples for each index. The data are available through June 1996. Of the 22 countries where there is MSCI and IFC data, the returns indices have greater than 94% correlation. The volatility differences are quite small - as is the tracking error of the two indices.[4]

The only country where substantial deviations occur is Argentina. The IFC index produced a 10.3% lower average return and an 20.8% lower volatility. For this country, the correlation between the IFC index and the MSCI index is only 76%. However, much of the tracking error is due to 1988-1989 data. When we redo the comparison for Argentina beginning in January 1990, the tracking error drops from 61.9% to 10.6%. The correlation increases from 76% to 99%. There is no difference in the mean returns and little difference in the volatilities. Hence, even for Argentina, there is does not appear to be a substantive difference between the MSCI and IFC indices.

[3] The IFCI index contains 1,116 securities, MSCI 868 and BEMI 417 as of May 1996.
[4] Tracking error, in this case, is the standard deviation of the difference between the index returns.

Panel B of Table 1 examines the differences between the MSCI free and the BEMI investible indices. The average tracking error is 9.6%. The countries with the highest tracking errors are Argentina, Brazil and Turkey. Nevertheless, the correlation of the indices averages 95% and is above 94% in 14 of the 17 countries.

Panel C of Table 1 measures the differences between the Barings and IFC investibles. The tracking error is slightly less than the BEMI - MSCI Free, at 9.4%. The average correlation of the indices is 96%. There are only three countries of 18 that have correlations less than 94%.

The IFC family of indices presents the longest history and, as a result, we choose to focus on the IFC. In addition, we study total market returns measured in U.S. dollars. The local currency returns are not, in general, available to international investors. Furthermore, hedged returns are not available either. Table 2 presents the total sample of emerging markets followed by the IFC and some summary measures of capitalization (in U.S. dollars) along with the number of countries in each index and the weight in the IFC Composite as of June 1996.

*2.2 Summary analysis of emerging market returns*

Some summary statistics for the emerging market returns over the common period of July 1991 to June 1996 are presented in Table 3 for the sample of 27 countries followed by the IFC Global indices. We examine the mean returns, volatility, skewness and kurtosis of the returns.

Consistent with the evidence in Harvey (1995) and Bekaert and Harvey (1996a), there are significant deviations from normality in the distributions of many of the emerging market returns. For the past five years, normality can be rejected by the Bera-Jarque (1982) test in 13 of 20 countries.

We also investigate how these summary statistics change from the 1980s to the 1990s. Figures 1 and 2 show the means and volatilities in the 1980s and 1990s. Most of the capital market liberalizations took place before 1992. The graph shows that the mean returns in many countries are much lower in the 1990s compared to the 1980s. For example, the four countries who had greater than 65% returns in the 1980s all had less than 25% returns in the 1990s. Volatility is also lower in many countries. These results support the idea presented in Bekaert and Harvey (1995, 1996a) that time-varying world market integration impacts the distribution of returns.

We also detail the skewness and kurtosis over the 1980s and 1990s. Figure 3 shows that the absolute value of the skewness parameter has shrunk for many (12 of 19) countries from the 1980s to the 1990s. For kurtosis, there is no particular pattern over the 1980s and 1990s as is clear from Figure 4.

We looked at the patterns in correlations following Bekaert and Harvey (1996a) present a model of conditional correlation where the means, volatilities and covariances are influenced by both local and world information. Their model predicts that as a market becomes more integrated with world capital markets, the relative influence of world and local information changes. Figure 5 shows that the correlations generally have increased over the longer horizon. Correlations have increased in 11 of 19 countries, remained the same in 6 countries and decreased in only 2 countries. This suggests that the benefits of diversification have decreased for many emerging markets. However, the correlations are still sufficiently low to attract most global portfolio investors.

The betas presented in Figure 6 mimic the correlations. For many countries, the beta with respect to the MSCI-All Countries index has increased from the 1980's to the 1990s. This suggests that country returns are more affect by world market returns and is consistent with the impact of degree of capital market integration detailed in Bekaert and Harvey (1995, 1996a).

## 3. Cross-Sectional Portfolio Strategies for Emerging Market Returns

3.*1 Asset pricing theory and emerging market returns*

Risk is notoriously difficult to measure in emerging market returns. A simple implementation of the Capital Asset Pricing Model (CAPM) of Sharpe (1964) and Lintner (1965) is problematic. In these markets, there is little relation between the risk measured by the CAPM and expected returns.

Consider Figure 7 which plots the average returns vs. beta against the World-All Countries index over the 1980s and the 1990s. The betas over the past five years, July 1991 to June 1996 are presented in Table 3. In the 1980s, there is a positive relation between beta and average returns, the t-statistic on the beta coefficient is 1.5 which is marginally significant at conventional levels.

The beta-average returns relation appears stronger over the 1990s. However, as is obvious from Figure 7, there is one influential observation -- Poland -- who had a high average return and very high beta. If the average returns are regressed on the betas, the t-statistic is 3.2 and the R-square measure is 27%. When Poland is removed from the analysis, the t-statistic drops to 0.4 and the R-square is 0%.

The failure of the CAPM to explain emerging market returns could be interpreted in a number of ways. First, following Roll and Ross (1994) and Kandel and Stambaugh (1995), the benchmark world portfolio may not be mean-variance efficient. Second, perhaps a multifactor representation, following Merton (1973), Ross (1976) and Chen, Roll and Ross (1986) is more appropriate for emerging markets. Third, following Ferson and Harvey (1991), an examination of average returns and average risk could be misleading if the risk and expected returns change through time. Finally, the CAPM is not the appropriate framework if these markets are not integrated into world capital markets. In integrated capital markets, the projects of identical risk command identical expected returns, irrespective of domicile [see Stulz (1981a,b), Solnik (1983), Campbell and Hamao (1992), Chan, Karolyi, and Stulz (1994), Heston, Rouwenhorst and Wessels (1995), Bekaert (1995), Harvey (1991, 1995), and Bekaert and Harvey (1995).]

It is likely that many of these markets are not fully integrated into world capital markets. As a result, the beta suggested by the CAPM may not be that useful in explaining the cross-section of average returns. Indeed, in completely segmented capital markets, the volatility is the correct measure of risk. The relation between average returns and volatility is detailed in Figure 8. Similar to the beta graph, there is a positive relation which is now significant at conventional levels of confidence (R-square is 33% in the 1980s and 36% in 1990s). However, it should be noted that even among the segmented markets, the relation between volatility and expected returns may appear weak because the premium accorded to volatility could vary across countries [see Bekaert and Harvey (1995)].

We examine two attributes based on asset pricing theory in our portfolio strategies: the trailing three-year beta against the MSCI-All Countries index and the trailing three year conditional volatility. If markets were perfectly integrated and a world version of the CAPM held, then higher beta countries should earn higher expected returns. If markets were perfectly segmented and a local version of the CAPM held, then higher volatility countries should have higher expected returns - assuming that risk aversion is the same across countries.

### *3.2 Alternative risk attributes*

Following Ferson and Harvey (1994), Erb, Harvey and Viskanta (1995a, 1996b) and others, we examine the relation between some country-specific risk attributes and the distribution of returns. We group these attributes into the following categories:

#### *3.2.1 Survey-based measures*

The first of these measures is *Institutional Investor's* Country Credit Rating (IICCR). *Institutional Investor* country credit ratings are based on a survey of leading international banks who are asked to rate each country on a scale from zero to 100 (where 100 represents the maximum creditworthiness). *Institutional Investor* averages these ratings, providing greater weights to respondents with higher worldwide exposure and more sophisticated country analysis systems. These ratings have appeared in the March and September issues of *Institutional*

*Investor* since 1979 and now cover over 135 countries, for additional details see Erb, Harvey and Viskanta (1996a).

Whenever a survey or expert panel is used to subjectively rate creditworthiness, it is hard to exactly define the parameters taken into account. At any given point in time an expert's recommendation will be based upon those factors the expert feels are relevant. In a recent survey of participants, the most important factors for assessing emerging markets' credit rating were (i) debt service, (ii) political outlook, (iii) economic outlook, (iv) financial reserves/current account and (v) trade balance/foreign direct investment.

The next four measures are from Political Risk Services' *International Country Risk Guide*. They include the Political Risk index (ICRGP), Economic Risk index (ICRGE), Financial Risk index (ICRGF) and the Composite Risk index (ICRGC). The political index is studied in Harlow (1993) and Diamonte, Liew and Stevens (1996). Erb, Harvey and Viskanta (1996b) examine the information in all four of the ICRG risk indices.

On a monthly basis, *ICRG* uses a blend of quantitative and qualitative measures to calculate risk indices for political, financial and economic risk, as well as a composite index. Five financial factors, thirteen political and six economic factors are used. Each factor is assigned a numerical rating within a specified range. A higher score represents lower risk, for additional details see Erb, Harvey and Viskanta (1996b).

The composite index is simply a linear combination of the three subindices. The political risk is weighted twice that of either financial or economic risk. *ICRG*, as well as many of the other providers, think of country risk as being composed of two primary components: ability to pay and willingness to pay. Political risk is associated with a willingness to pay, while financial and economic risk are associated with an ability to pay.

We also include *Euromoney*'s Country Credit Risk (EMCCR). *Euromoney*'s rating system is based on both qualitative and quantitative methods. The political component is a qualitative survey of experts. The economic component is quantitative and based on *Euromoney*'s global economic projections. The financial component is also quantitative and based on (i) debt

indicators, (ii) debt in default or rescheduled, (iii) credit rating (Moody's or Standard and Poors), (iv) access to bank finance, (v) access to short-term financing and (vi) access to international bond and syndicated loan markets.

*3.2.2 Macroeconomy*

The survey based measures indirectly gauge the future macroeconomic conditions in each country. One of the primary economic measures that influences these ratings is the inflationary environment. Ferson and Harvey (1993, 1994) argue that asset exposure versus world inflation helps explain both the cross-section and time-series of expected returns in 18 developed markets. Erb, Harvey and Viskanta (1995b) examine the interaction of inflation and asset returns in emerging markets. We use a trailing 6 month measure of inflation represented by the consumer price index reported in the International Financial Statistics database of the International Monetary Fund. In the case of Taiwan, whom is not a member of the IMF, we use inflation reported in their national accounts.

*3.2.3 Demographics*

Bakshi and Chen (1994) propose a life-cycle investment hypothesis. Younger investors have a higher demand for housing than for equities. As age increases, more investment is allocated to the stock market. As a result, a rise in average age should be accompanied by a rise in the stock market. Bakshi and Chen (1994) find support for this hypothesis using U.S. data. Erb, Harvey and Viskanta (1996c) find that average age growth explains the risk premiums in a number of developed countries. We examine three variables: population growth, average age and average age growth. All of these data are based on annual statistics compiled by the United Nations.

*3.2.4 Market integration*

Bekaert and Harvey (1996a) argue that the size of the trade sector to the total economy is a reasonable proxy for the openness of both the economy and the investment sector. They use exports plus imports divided by GDP as an instrument for market integration. This variable, along with other proxies for market integration, is used in a function which assigns time-varying weights to world versus local information. Bekaert and Harvey find that increases in

this ratio are associated with the increased importance of world relative to local information for both the mean and the volatility of the country's stock returns.

Bekaert and Harvey (1996a) also suggest that the size of the stock market proxies for the degree of financial integration. Larger market size suggests that the country is more likely to be integrated into world capital markets. We specify this variable as the ratio of market capitalization to the previous year's GDP.

*3.2.5 Persistence*

A number of researchers have pointed to momentum as an important firm specific attribute [see Jegadeesh and Titman (1993), Conrad and Kaul (1996), Asness, Liew and Stevens (1996), Ferson and Harvey (1996)]. We examine two measures of momentum: the lagged monthly return and the lagged quarterly return from four months ago to one month ago, i.e. the quarterly return lagged by an extra month

*3.2.6 Size*

We follow a number of papers beginning with Banz (1981) that document a relation between firm size and expected returns. Recently, Berk (1995, 1996) has argued that size measured by market capitalization should proxy for risk. This attribute has recently been studied on a country level basis by Keppler and Traub (1995) and Asness, Liew and Stevens (1996) who find that size helps explain the cross-section of expected returns in a sample of developed markets.

*3.2.7 Fundamental valuation measures*

Following a number of papers that link "fundamental attributes" to asset valuation [see, for example Chan, Hamao and Lakonishok (1991), Keppler (1991), Fama and French (1992) and Ferson and Harvey (1994)], we use three valuation ratios: price to book value, price to earnings and price to dividend. Value-weighted indices of company level data are produced by the IFC. Ferson and Harvey (1996) show that some of these ratios, most notably price to book, appear to capture information regarding changing risk in a sample of 21 developed countries. In addition, sudden changes in these ratios may also reflect changes in the degree of market integration [see Bekaert and Harvey (1996b). A change in the marginal investor

from domestic to international could lead to a change in the fundamental valuation ratios and a change in the riskiness.

*3.2.8 Summary statistics*

Some summary measures for many of these attributes are included in Table 4. The March 1996 value of the attribute is reported. In the lower panel, the rank-order correlation of all of the attributes is reported. Most of the correlations follow from intuition. Consider the ICRG indices. These indices are highly correlated with the *Euromoney* and *Institutional Investor* Country Credit Risk measures. All of the survey measure are negatively correlated with inflation (high inflation means low rating). The most negative correlation with inflation is found for the ICRG Economic risk index. Average age is positively correlated with the survey risk indices, indicating that low average age is associated with a low rating. Size is positively related to the ICRG ratings (smaller markets appear riskier). There is also a positive relation between the size of the trade sector and the ICRG ratings. The lowest correlations are found for the ICRG indices and the fundamental attributes.

## 4. What matters in choosing an emerging market for portfolio investment?

*4.1 Portfolio approach*

A commonly used technique in examining the cross-sectional importance of a fundamental variable is to form unique portfolios based on their ranking. We will examine the country risk variables by forming portfolios based on the risk level itself. These portfolios are investible with respect to the attribute. That is, lagged attribute information is used to determine which countries are in the portfolios and the analysis is conducted out of sample. Given the small number of emerging markets, we examine only three portfolios: high, middle and low attribute. In each case, we track the returns to portfolios that are equally weighted by country, those that are weighted by each country's equity market capitalization and those that are weighted by value of trading volume. To reduce potential transactions costs, the minimum holding period that we consider is quarterly. We also examine strategies that have semi-annual rebalancing.

Panel A of Table 5 presents the results of the quarterly portfolio strategies over the January 1985-June 1996 period. This portfolio includes all the countries in the IFC - Global database. However, for much of this period, many of the returns were not attainable due to investment restrictions [see Bekaert and Urias (1996)]. To address this problem, Panel B examines the same strategies evaluated over the past five years. In the late 1980's and early 1990's, most of these market experienced substantial liberalizations. Panel C and D display the same strategies with semi-annual rebalancing. Panels E and F examine quarterly and semiannual strategies over the past five years using only the investible indices. The very last column in each of the panels reports the abnormal return with respect to the MSCI-AC portfolio. The annualized abnormal returns are large in absolute magnitude for many of the attributes.

*4.2 ICRG*

Consider the results for the ICRG Composite index (ICRGC). With equal weighting, the low rating portfolio averaged 30.8% annual return with 30.3% volatility. The high rating portfolio had both higher returns, 34.1%, and lower volatility of 27.6%. The alpha measure is 6.5% on an annual basis. The results are even more impressive with the capitalization weights. The alpha increases to 12.1%. The most impressive results occur over the past 5 years (Panel B) where the alpha is 29.6% for the ICRGC. Similar results are documented for the semiannual holding periods in Panels C and D. The investible strategies detailed in Panels E and F also indicate that there is information in the risk ratings. In all three portfolio weighting schemes and over both rebalancing rules, the ICRG earns positive abnormal returns. Interestingly, the ICRGC composite is not even the most successful attribute. The ICRG economic risk and political risk attributes consistently produce higher abnormal returns. These results are consistent with those presented in Erb, Harvey and Viskanta (1996b).

*4.3 Institutional Investor and Euromoney*

Both the *Institutional Investor* and the *Euromoney* credit ratings provide less impressive discrimination between high and low expected return securities. None of the abnormal

returns are significantly different from zero and the performance deteriorates in the past five years. For example, the EMCCR provided impressive abnormal performance in the overall period (14.4% alpha with equal weighting). In the past five years, the abnormal returns were negative. However, the negative returns are largely due to noninvestible countries. Panels E and F show that the EMCCR generates 18.8%, 13.8% and 22.0% alpha over the equally, capitalization and liquidity weighted strategies with quarterly rebalancing.

*4.4 Inflation*

Inflation appears to be an important instrument in portfolio selection. In this case, the high attribute portfolio has much higher expected returns than the low attribute portfolio. However, in contrast to some of the ICRG results, the high attribute portfolio has much higher volatility than the low attribute portfolio. The high minus low equally weighted portfolio results in an alpha of 36.3% over the full sample and 25.2% over the past five years. The alphas are smaller for the capitalization weighted portfolios but still large compared to other attributes. In addition, the results are robust to less frequent rebalancing. Finally, inflation is an important attribute in all of the investible strategies.

*4.5 Trade sector*

Trade to GDP has some ability to distinguish between high and low expected returns. Countries with small trade sectors have higher expected returns than countries with large trade sectors. This is consistent with Bekaert and Harvey (1996b) idea that the size of the trade sector proxies for market integration. In addition, the beta of the low attribute portfolio may be low because the market is not intregrated. The size of the trade sector attribute produces a 12.6% alpha in the full sample with the equally weighted portfolio and 18.9% over the last five years. The alphas are lower for the capitalization weighted portfolio strategies. The alphas are also low for the investible strategies in Panels E and F.

*4.6 Market size*

Market size to GDP provides significant information regarding portfolio performance. This is consistent with the arguments of Bekaert and Harvey (1996b) that the size of the equity market relative to economic activity is an important indicator of financial market integration.

For the equally weighted portfolios, the alpha is 26.6% in the overall period and 22.3% in the last five years. The value weighted portfolios produce equally impressive results. In the overall period, the alpha is 18.7% and in the last five years, 21.6%. With quarterly rebalancing, the investible alphas are 10.0%, 1.3% and 14.6% for the three weighting schemes.

Market size itself provides less information regarding portfolio performance. This contrasts with the results of Asness, Liew and Stevens (1996) for developed countries. For equally weighted portfolios, the low minus high size portfolio produced 21.2% alpha in the overall period but -2.6% in the last five years. Similarly, the capitalization weighted portfolios produced a 22.1% alpha over the full sample and only a 3.3% abnormal return in the last five years. Market capitalization has no information when the investible strategies are examined. For each of the three weighting schemes and over the two rebalancing strategies, capitalization always produces negative abnormal returns.

*4.7 Demographics*

The three demographic variables: population growth, average age growth and average age offer only limited ability to discriminate between high and low expected return countries. The demographic asset pricing theory presented in Chen and Bakshi (1994) is most appropriate for time-series analysis of developed countries. That is, holding other factors constant, an increasing average age will be associated with higher demand for equities. It is difficult, if not impossible, to hold other factors constant in emerging markets. For example, a changing degree of market integration could confound the relation between demographics and returns. In addition, given that the age dynamics are predictable, the demographic analysis is best directed at explaining long-horizon expected returns [see Erb, Harvey and Viskanta (1996c).]

For the equally-weighted portfolio strategy, low minus high average age growth produces an alpha of 10.9% in the overall period and 15.6% in the last five years. With capitalization weighting, the alpha is 9.3% in the overall period and 6.9% over the last five years. Examining the investible strategies, average age growth delivers 9.9%, 8.7% and 19.4% over the three quarterly weighting schemes. The other variables, average age and population

growth produce inconsistent results over the different portfolio formation techniques and time periods.

*4.8 Momentum*

The evidence for the momentum variables is inconsistent. For example, the capitalization weighted strategy which examines the previous month's return produces an alpha of -9.8% in the overall period and 10.3% in the last five years. The momentum strategies do better when the investible indices are examined. In the quarterly strategies, the relative lagged return produces 14.9%, 14.5% and 11.6% over the three weighting schemes. Importantly, this strategy induces dramatically more turnover than any of the other attributes.

*4.9 Valuation*

The final set of attributes involves the traditional accounting ratios. While dividend yields (DP) are available on all the indices one year after the market enters the IFC data, the price to book (PB) and price to earnings (PE) ratios are only available from January 1986. Hence, the evaluation of the PB and PE ratios is over a different sample than all of the other portfolio simulations.

Of the three accounting attributes, PE produces the most consistent results. For equally weighted strategies, the alpha for the overall period is 18.7% and 4.2% in the last five years. For the capitalization weighted strategies, the alpha for the overall period is 10.9% and 8.9% in the last five years. With the investibles, the quarterly strategies produced 14.9%, 16.2% and 25.0% over the three weighting methods. The portfolio results for PB and PD are inconsistent across portfolio weighting schemes using the global data. However, with the investible strategies, low minus high PB produces more impressive results than low minus high PE. As is expected, the portfolios strategy needs to be reversed for dividend yield. the high minus low PD produces consistently high abnormal performance over each of the investible strategies.

*4.10 Asset pricing theory*

Table 5 also presents results based on two risk attributes implied by asset pricing theory: the trailing three year beta and the trailing three year volatility. The beta is measured against the

MSCI-All countries world index and is only a valid risk measure if there markets are integrated into world capital markets. The results are intriguing. In the global strategies, the low minus high beta portfolio always earns a negative return -- which is what one would expect from asset pricing theory. However, it is important to note that the "beta" of the investment strategies (buy low beta portfolio or buy high beta portfolios) are not that different. At first, this appear puzzling. Remember, a trailing beta was used to form the portfolio. The beta of the portfolio is not the weighted sum of the individual country betas because the portfolio is based on
an out-of-sample use of the trailing betas. Similar results are observed in the investible strategies.

Volatility also has some ability to distinguish between high and low expected returns. In the global strategies, the high-minus low volatility strategies produce positive excess returns for the equally-weighted portfolios and negative excess returns for the capitalization weighted portfolios. In the investible strategies, the excess returns are positive for equal, capitalization and liquidity weighted strategies.

*4.11 Summary*

These results suggest that there are a number of useful attributes in discriminating between those countries which will experience high and low expected returns. It is likely, as argued in Ferson and Harvey (1994, 1996), that these attributes are related to risk. Unfortunately, determining the appropriate measure of risk is difficult in emerging markets.

*4.11 Trading emerging market portfolios*

The cost of trading is high in emerging markets. Table 6 presents estimates of transactions costs from Barings Securities. The percent spread calculation is the difference between the offer and bid price divided by the average of the offer and bid price. Barings uses the midpoint in the divisor in order to avoid the problems caused by large fluctuations in the current price.

The percent spreads in Table 6 are based on snapshots of individual stocks during the weeks of July 17 and July 24, 1995. The country spreads are calculated by capitalization weighting the percentage spreads of the individual firms within each country.

The percentage spreads are, in many countries, much larger than one would expect in developed markets. The spread in Chile is close to 400bp. In both Argentina and Turkey, the percentage spread is more than 150bp. These high transactions costs reinforce the need to minimize trading. Indeed, many investment managers do not practice active stock selection strategies in emerging markets because of the massive transactions costs. "Active" management in emerging markets is often interpreted in the context of country selection rather than stock selection.

While the portfolio analysis in Table 5 does not explicitly account for transactions costs, we do include a measure of average turnover. Approximate transactions costs can be estimated with the turnover data. Assume that one-way transactions costs are 200bp for each country. If a portfolio experienced 100% turnover, this would imply that the average return should be adjusted down by 400bp. The highest turnover is found with the momentum strategies. The turnover is so high that it is unlikely that these strategies could be successfully implemented in the form specified here. The lowest turnover is found with the demographic variables. This is not unexpected given that the data is only available annually and there is little variation over the years.

The most impressive ratios of low-high portfolio returns to turnover are found for the survey risk attributes, and the market integration measures, trade to GDP and market capitalization to GDP.

## 5. Conclusions

The idea of this paper is to explore what matters for emerging market investment. The traditional beta-risk paradigm is problematic in emerging markets because a number of the markets are unlikely fully integrated into world capital markets. Indeed, in a completely

segmented market, country variance (which is usually considered idiosyncratic) is the appropriate measure of risk. We explore a group of risk attributes that have been successfully applied in developed markets. These attributes include traditional risk attributes like beta and volatility as well as a wide range of country characteristics including political risk, inflation, demographics, market integration and fundamental values. We find that a number of these attributes such as the *International Country Risk Guide's* Composite Risk, trade to GDP and earnings to price are useful in identifying high and low expected return environments.

## References


Asness, Cliff S., John M. Liew and Ross L. Stevens, 1996, Parallels between the cross-sectional predictability of stock and country returns, Working paper, Goldman Sachs Asset Management, New York, 1996.

Bakshi, Gurdip S. and Zhiwu Chen, 1994, Baby boom, population aging, and capital markets", *Journal of Business* 67, 165-202.

Banz, Rolf W., 1981, The relationship between return and market value of common stocks, *Journal of Financial Economics* 9, 3-18.

Bekaert, Geert, 1995, Market integration and investment barriers in emerging equity markets, *World Bank Economic Review* 9, 75-107.

Bekaert, Geert, Claude Erb, Campbell R. Harvey and Tadas Viskanta, 1996, The behavior of emerging market returns, in *The Future of Emerging Market Capital Flows*, Edward Altman, Richard Levich and Jianping Mei, Eds., forthcoming.

Bekaert, Geert and Campbell R. Harvey, 1995, Time-varying world market integration, *Journal of Finance* 50, 403-444.

Bekaert, Geert and Campbell R. Harvey, 1996a, Emerging equity market volatility, *Journal of Financial Economics*, forthcoming.

Bekaert, Geert and Campbell R. Harvey, 1996b, Speculators and emerging capital markets, Working paper, Duke University and Stanford University.

Bekaert, Geert and Michael Urias, 1996, Diversification, integration and emerging market closed end funds, *Journal of Finance* 51, 835-868.

Bera, Anil and Carlos Jarque, 1982, Model specification tests: A simultaneous approach, *Journal of Econometrics* 20, 59-82.

Berk, Jonathan, 1995, A critique of size related anomalies, *Review of Financial Studies* 8, 275-286.

Berk, Jonathan, 1996, An empirical re-examination of the relation between firm size and return, Unpublished manuscript, University of British Columbia.

Black, Fischer, 1972, Capital market equilibrium with restricted borrowing, *Journal of Business* 45, 444-455.

Brennan, M. J., 1993, Agency and asset pricing, Unpublished manuscript,UCLA and London Business School.

Campbell, John Y., and Yasushi Hamao, 1992, Predictable bond and stock returns in the United States and Japan: A study of long-term capital market integration, *Journal of Finance* 47, 43-70.

Chan, K. C., G. Andrew Karolyi, and Rene Stulz, 1992, Global financial markets and the risk premium on U.S. equity, *Journal of Financial Economics* 32, 137-168.

Chan, K. C., Yasushi Hamao, and Josef Lakonishok, 1991, Fundamentals and stock returns in Japan, *Journal of Finance* 46, 1739-1744.

Chen, Nai-fu, Richard R. Roll, and Stephen A. Ross, 1986, Economic forces and the stock market, *Journal of Business* 59, 383-403.

Christie, A. A., 1982, The stochastic behavior of common stock variances: value, leverage, and interest rate effects, *Journal of Financial Economics*, 23, 407-432.

Diamonte, Robin, John M. Liew and Ross L. Stevens, 1996, Political risk in emerging and developed markets, *Financial Analysts Journal*, forthcoming.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1994, Forecasting international equity correlations, *Financial Analysts Journal,* November-December, 32-45.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1995a, Country risk and global equity selection, *Journal of Portfolio Management*, 21, Winter, 74-83.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1995b, Inflation and world equity selection, *Financial Analysts Journal,* November-December, 28-42.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1996a, Expected returns and volatility in 135 countries, *Journal of Portfolio Management*, 32-48. Also in http://www.duke.edu/ ~charvey/Country_risk/couindex.htm.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1996b, Political risk, economic risk and financial risk, *Financial Analysts Journal,*November-December, 29-46 . Also in http://www.duke.edu/ ~charvey/Country_risk/couindex.htm.

Erb, Claude B., Campbell R. Harvey and Tadas E. Viskanta, 1996c, Demographics and international investment, *Financial Analysts Journal*, forthcoming. Also in http://www.duke.edu/ ~charvey/Country_risk/couindex.htm.

Errunza, Vihang R., 1994, Emerging markets: Some new concepts, *Journal of Portfolio Management,* Spring 82-87.

Errunza, Vihang R., and Etienne Losq, 1985, The behavior of stock prices on LDC markets, *Journal of Banking and Finance* 9, 561-575.

Fama, Eugene F. and Kenneth French, 1992, The cross-section of expected stock returns, *Journal of Finance* 59, 427-465.

Ferson, Wayne E. and Campbell R. Harvey, 1991, The variation of economic risk premiums, *Journal of Political Economy* 99, 285-315.

Ferson, Wayne E., and Campbell R. Harvey, 1993, The risk and predictability of international equity returns, *Review of Financial Studies* 6, 527-566.

Ferson, Wayne E., and Campbell R. Harvey, 1994, An exploratory investigation of the fundamental determinants of national equity market returns, in Jeffrey Frankel, ed.: *The Internationalization of Equity Markets*, (University of Chicago Press, Chicago, IL), 59-138.

Ferson, Wayne E., and Campbell R. Harvey, 1996, Modeling the fundamental determinants of national equity market returns, Working paper, Duke University, Durham, NC.

Garcia, Rene and Eric Ghysels, 1994, Structural change and asset pricing in emerging markets, Unpublished working paper, Universite de Montreal.

Goetzmann, William N. and Philippe Jorion, 1996, Re-emerging markets, Working paper, Yale University.

Hansen, Lars P., 1982, Large sample properties of generalized method of moments estimators, *Econometrica* 50, 1029-1054.

Harlow, W. Van, 1993, Political Risk and Asset Markets, Fidelity Investments Monograph, Boston: MA.

Harvey, Campbell R., 1991, The world price of covariance risk, *Journal of Finance* 46, 111-157.

Harvey, Campbell R., 1993, Portfolio enhancement using emerging markets and conditioning information, in Stijn Claessens and Shan Gooptu, Eds., *Portfolio investment in developing countries* (Washington: The World Bank Discussion Series, 1993, pp. 110-144).

Harvey, Campbell R., 1995, Predictable risk and returns in emerging markets, *Review of Financial Studies* 8, 773-816.

Harvey, C. R., and A. Siddique, 1995, Conditional skewness in asset pricing tests, Working paper, Fuqua School of Business, Duke University.

Heston, Steven L, K. Geert Rouwenhorst and Roberto E. Wessels, 1995, Capital market integration and the international cost of funds, *Journal of Empirical Finance* 2, 173-198.

Jegadeesh, Narasimhanand Sheridan Titman, 1993, Returns to buying winners and selling losers: Implications for stock market efficiency, *Journal of Finance* 48, 65-92.

Jorion, Philippe, 1991, The pricing of exchange rate risk in the stock market, *Journal of Financial and Quantitative Analysis* 26, 363-376.

Keppler, A. Michael, 1991, The importance of dividend yields in country selection, *Journal of Portfolio Management,* Winter, 24-29.

Keppler, A. Michael and Heydon D. Traub, 1993, The small country effect: Small markets beat large markets, *Journal of Investing*, Fall, 17-24.

Lintner, John, 1965, The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *Review of Economics and Statistics* 47, 13-37.

Longin, Francois and Bruno Solnik, 1995, Is the correlation in international equity returns constant: 1960 - 1990?, *Journal of International Money and Finance*, 14, 3-26.

Merton, Robert C., 1973, An intertemporal capital asset pricing model, *Econometrica* 41, 867-887.

Nelson, Daniel B., 1991, Conditional heteroskedasticity in asset returns, *Econometrica* 59, 347-370.

Roll, Richard and Stephen A. Ross, 1994, On the cross-sectional relation between expected returns and betas, *Journal of Finance* 49, 101-121.

Schwert, G. William, 1989, Why does stock market volatility change over time? *Journal of Finance* 44, 1115-1154.

Sharpe, William, 1964, Capital asset prices: A theory of market equilibrium under conditions of risk, *Journal of Finance* 19, 425-442.

Solnik, Bruno, 1983, International arbitrage pricing theory, *Journal of Finance* 38, 449-457.

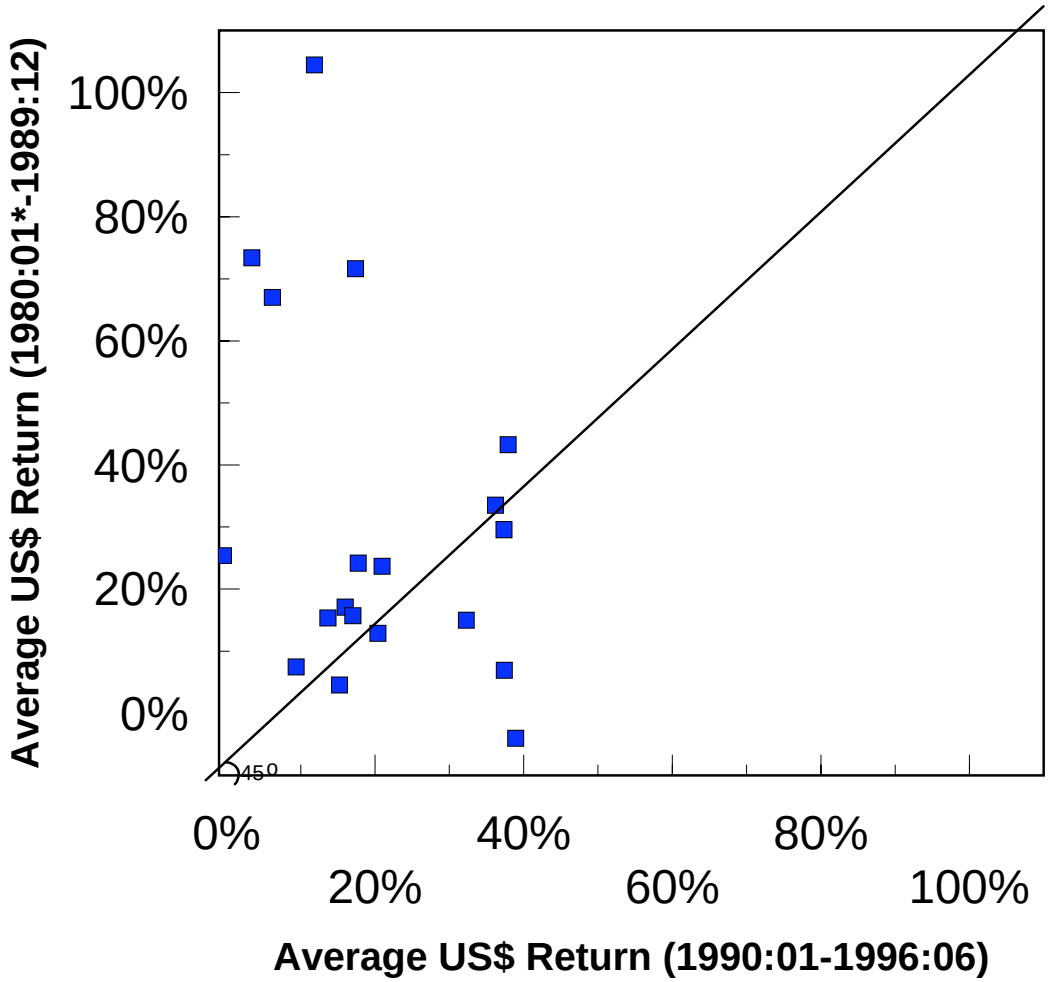
Stulz, Rene, 1981a, On the effects of barriers to international investment, *Journal of Finance* 36, 923-934.

Stulz, Rene, 1981b, A model of international asset pricing, *Journal of Financial Economics* 9, 383-406.

**Figure 1**

# Emerging Market Returns
# 1980s vs. 1990s

## IFC Global Indices - Total Returns US$

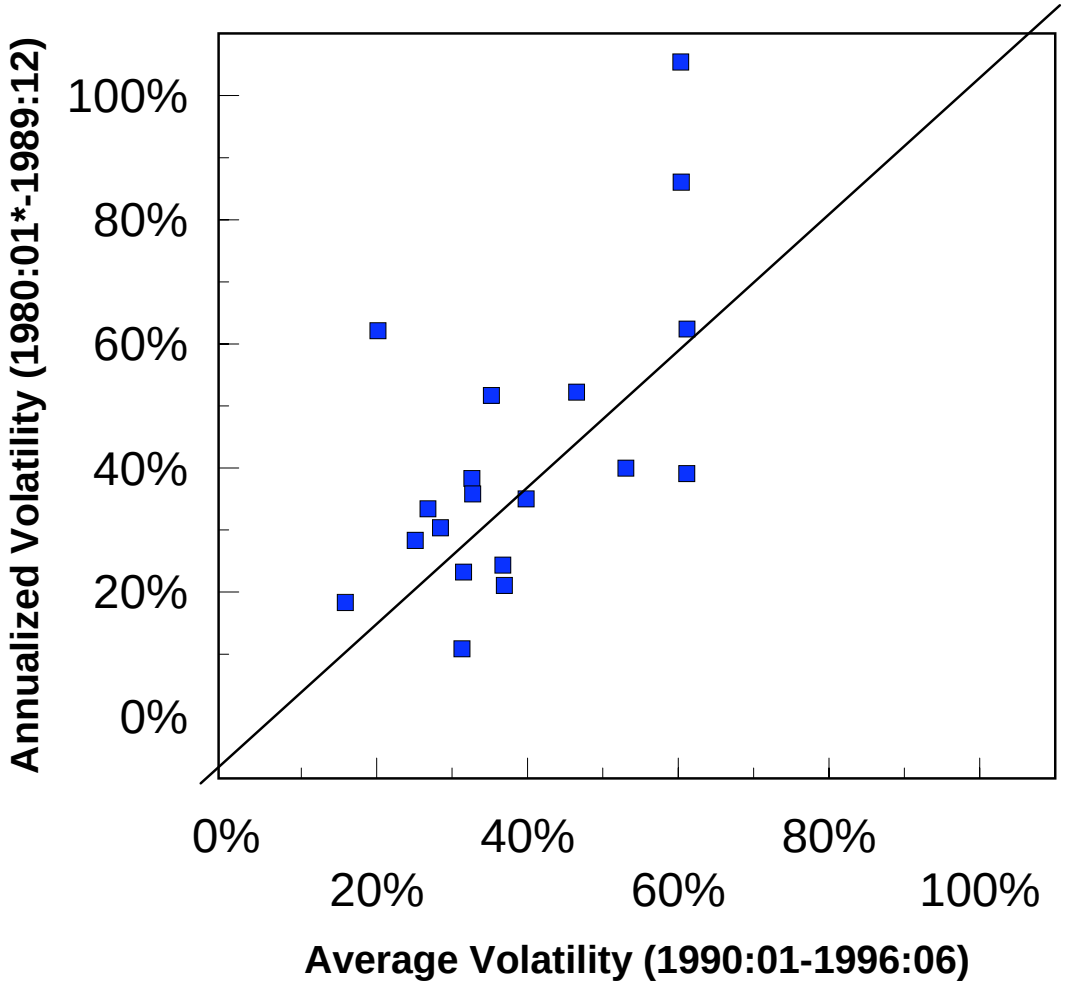



*Or inception, if later.

**Figure 2**

# Emerging Market Volatility
# 1980s vs. 1990s

## IFC Global Indices - Total Returns US$

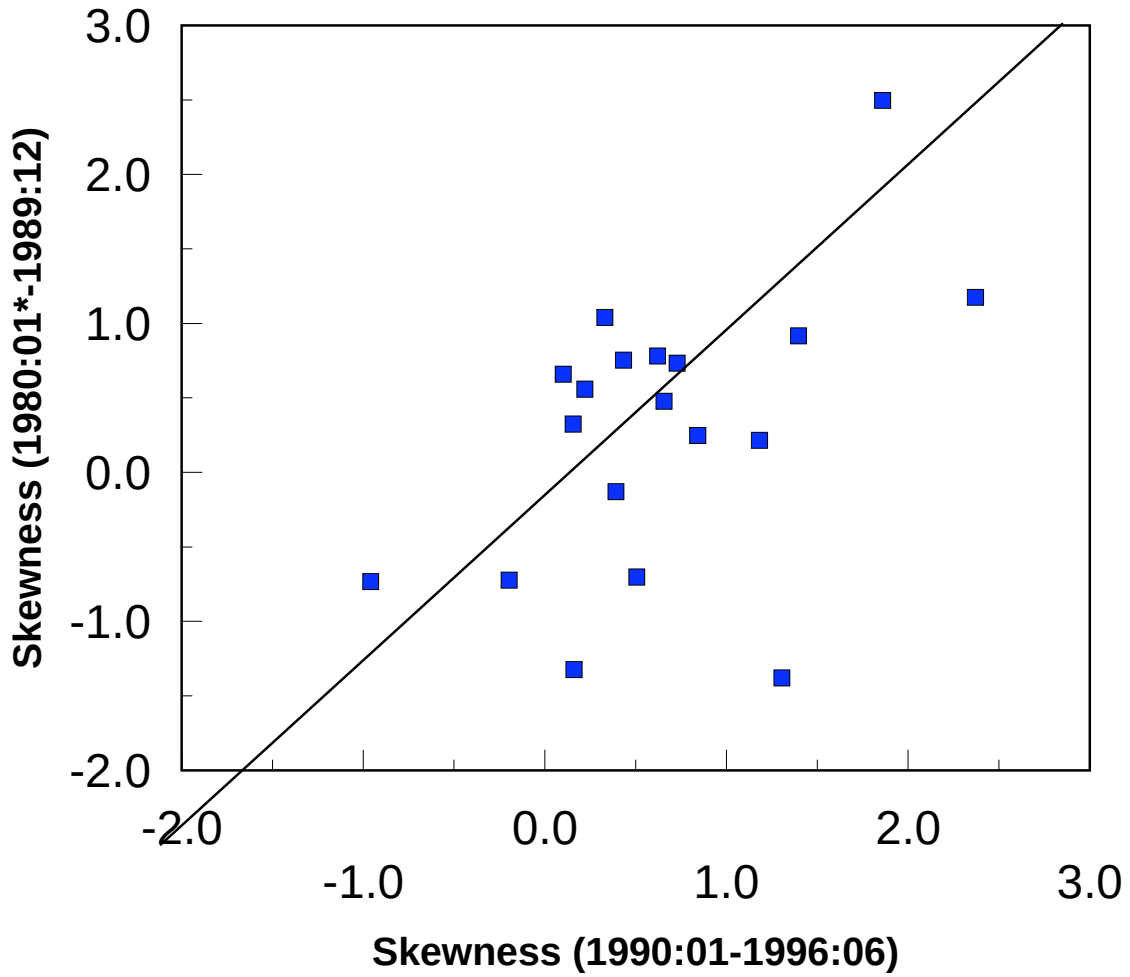



*Or inception, if later.

**Figure 3A**

# Emerging Market Skewness
# 1980s vs. 1990s

**IFC Global Indices - Total Returns US$**

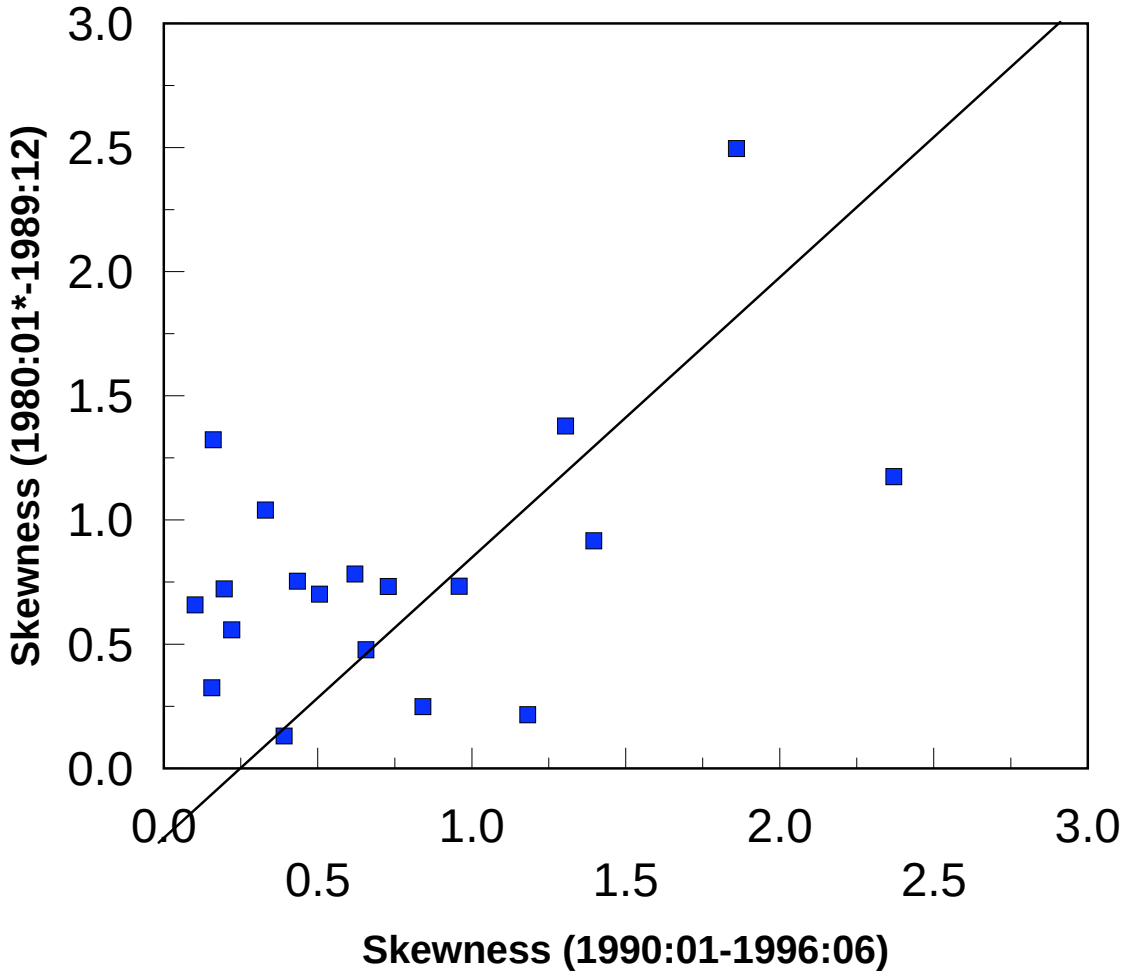



*Or inception, if later.

**Figure 3B**

# Emerging Market Absolute Skewness
# 1980s vs. 1990s

**IFC Global Indices - Total Returns US$**

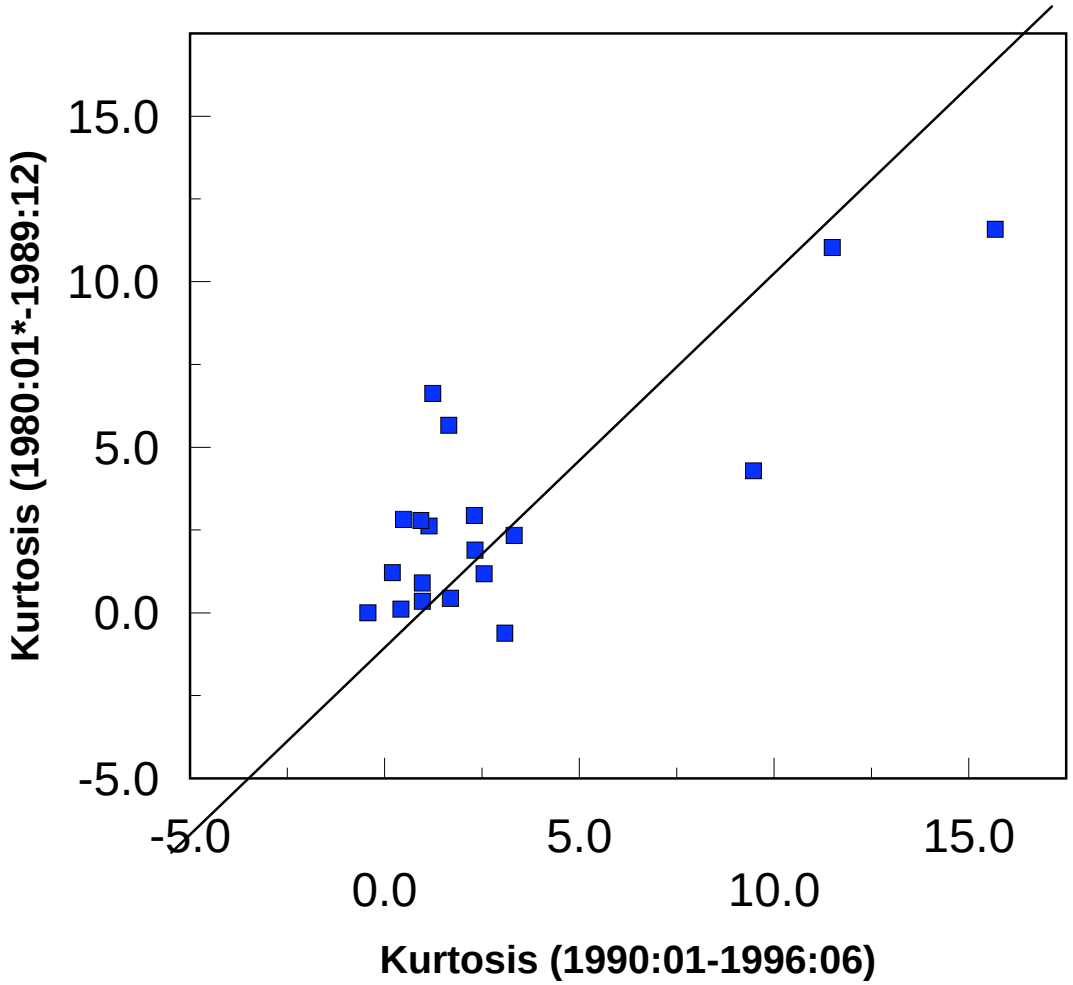



*Or inception, if later.

**Figure 4**

# Emerging Market Kurtosis
# 1980s vs. 1990s

## IFC Global Indices - Total Returns US$

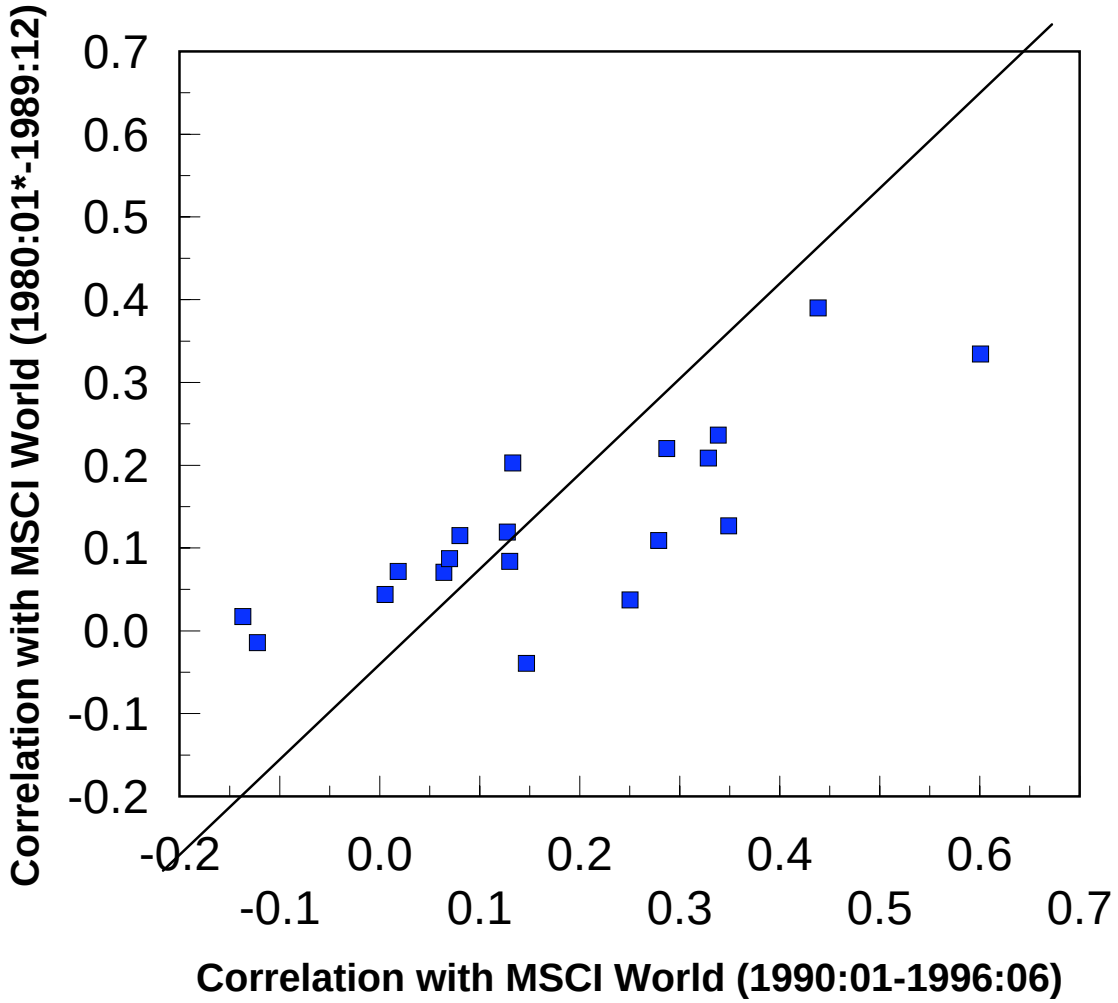



*Or inception, if later.

**Figure 5**

# Emerging Market Correlations
# 1980s vs. 1990s

## IFC Global Indices - Total Returns US$

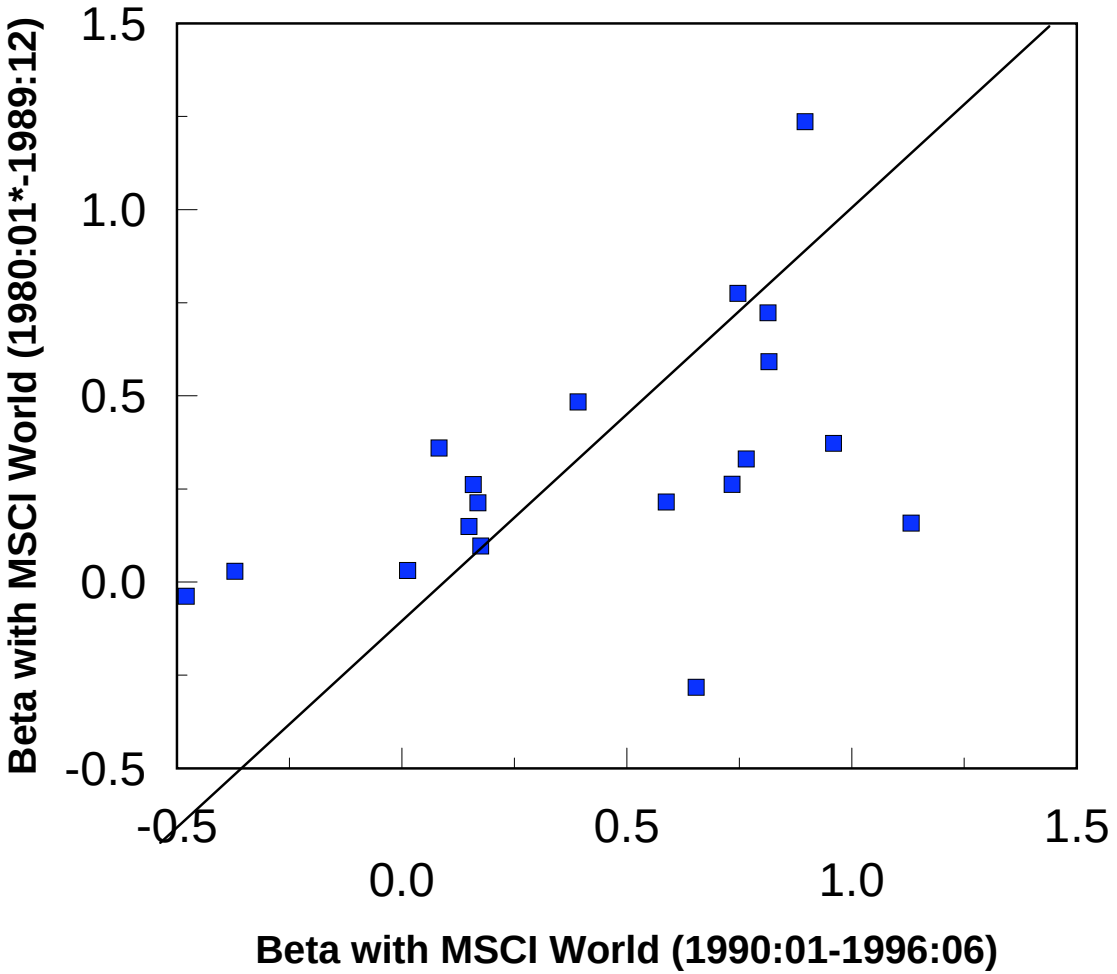



*Or inception, if later.

**Figure 6**

# Emerging Market Betas
# 1980s vs. 1990s

**IFC Global Indices - Total Returns US$**



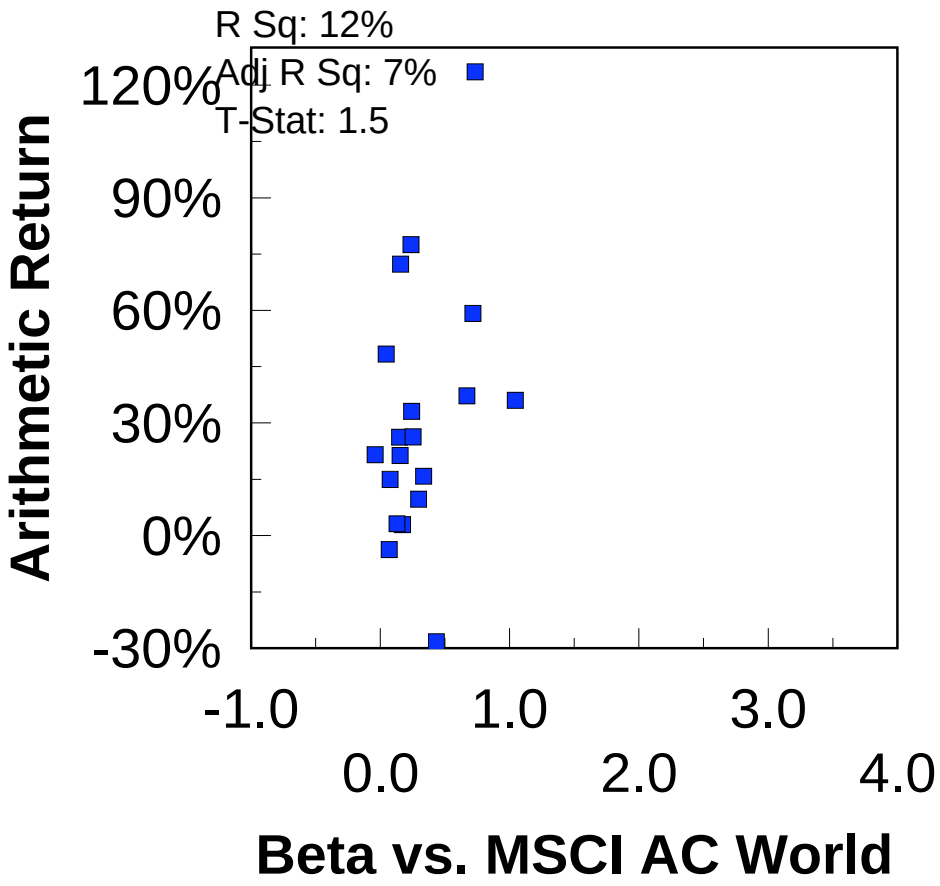

*Or inception, if later.

**Figure 7**

# Risk and Return

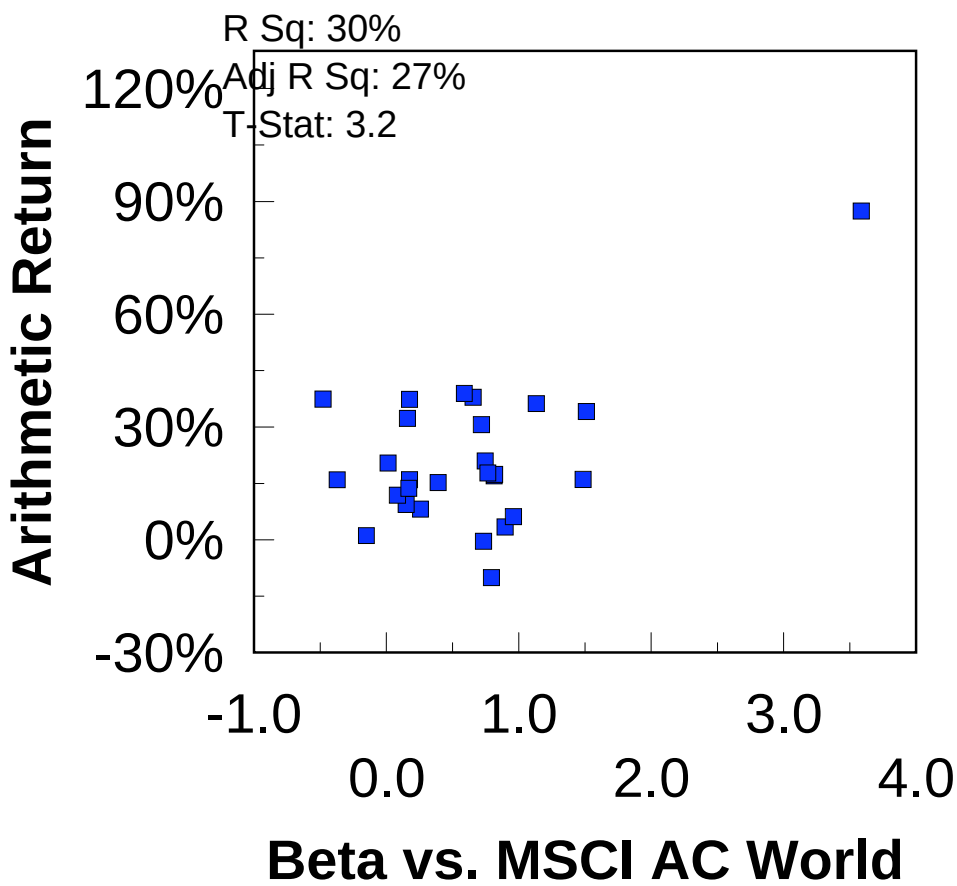
## IFCG Indices

### Sample: 1980:01*-1989:12




*Or inception, if later.

### Sample: 1990:01*-1996:06



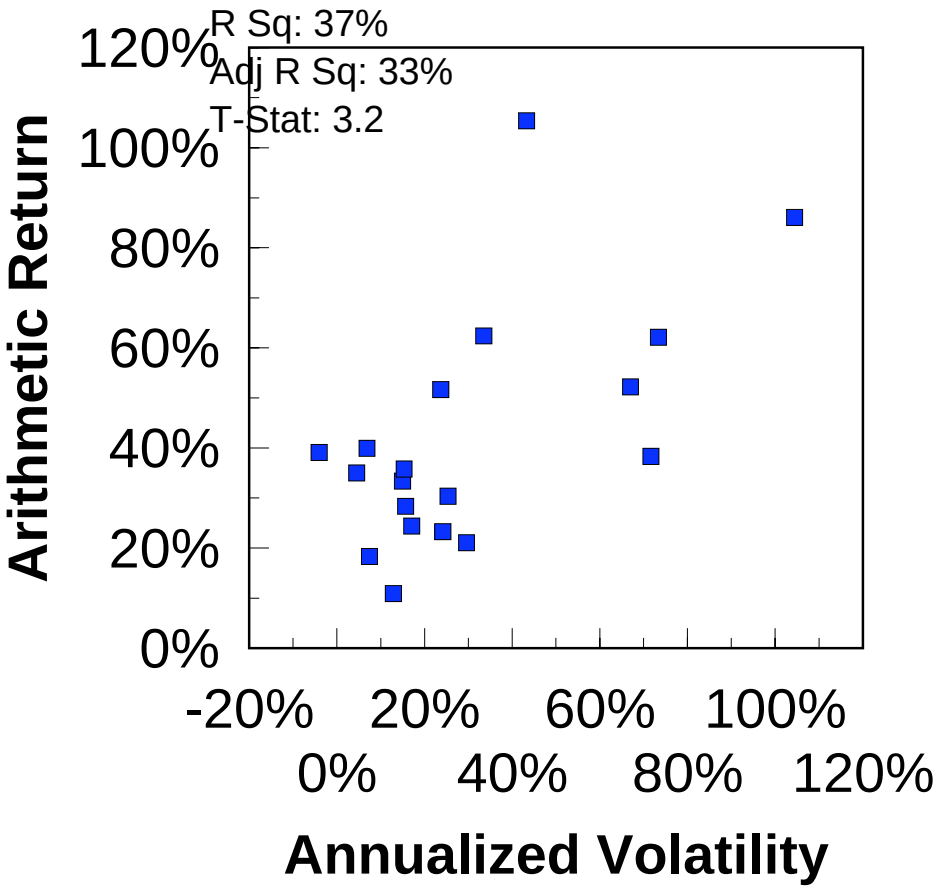

*Or inception, if later.

**Figure 8**

# Risk and Return

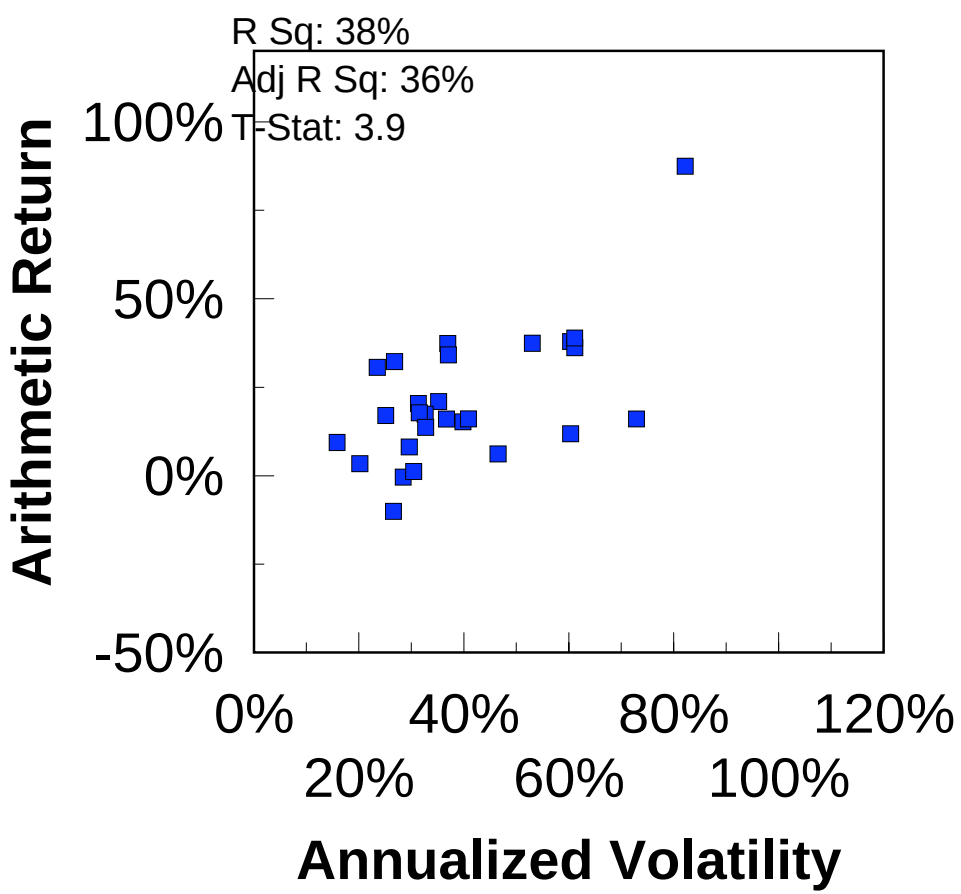
## IFCG Indices

### Sample: 1980:01*-1989:12




*Or inception, if later.

### Sample: 1990:01*-1996:06




*Or inception, if later.

**Table 1A**
*Comparison of IFC and MSCI Emerging Market Global Indices*

| Country | Start Date | Mean Difference IFC-MSCI | Volatility Difference IFC-MSCI | Tracking Error IFC-MSCI | Correlation IFC vs. MSCI |
|---|---|---|---|---|---|
| Argentina | Jan-88 | -10.3% | -20.8% | 61.0% | 0.76 |
| Brazil | Jan-88 | 1.9% | 2.3% | 19.1% | 0.96 |
| Chile | Jan-88 | 1.7% | -0.8% | 7.5% | 0.96 |
| Colombia | Jan-93 | -3.2% | -1.6% | 7.8% | 0.96 |
| Greece | Jan-88 | 6.6% | 0.8% | 11.8% | 0.96 |
| India | Jan-93 | 4.5% | -1.7% | 6.5% | 0.98 |
| Indonesia | Jan-90 | -1.0% | 2.2% | 8.9% | 0.96 |
| Jordan | Jan-88 | -4.4% | 0.0% | 11.7% | 0.76 |
| Malaysia | Jan-88 | 0.6% | 0.1% | 4.7% | 0.98 |
| Mexico | Jan-88 | 1.2% | -1.3% | 10.8% | 0.96 |
| Pakistan | Jan-93 | -0.1% | 2.1% | 4.4% | 0.99 |
| Peru | Jan-93 | -0.5% | 2.6% | 6.8% | 0.99 |
| Philippines | Jan-88 | 1.4% | -0.1% | 9.7% | 0.95 |
| Poland | Jan-93 | -8.7% | 3.2% | 14.6% | 0.99 |
| Portugal | Jan-88 | -0.2% | 0.5% | 6.3% | 0.96 |
| South Africa | Jan-93 | -1.2% | -0.2% | 3.1% | 0.99 |
| South Korea | Jan-88 | -0.2% | 0.3% | 6.6% | 0.97 |
| Sri Lanka | Jan-93 | 1.3% | -0.4% | 5.8% | 0.98 |
| Taiwan | Jan-88 | 1.1% | -1.1% | 7.1% | 0.99 |
| Thailand | Jan-88 | 0.8% | 0.5% | 5.2% | 0.98 |
| Turkey | Jan-88 | 2.8% | -2.6% | 21.8% | 0.94 |
| Venezuela | Jan-93 | -3.0% | -2.0% | 9.1% | 0.98 |
| Average | | -0.4% | -0.8% | 11.4% | 0.95 |

-Source: IFC Global Indices, MSCI EM Indices. Monthly returns in US Dollars.
-Data through June 1996.

**Table 1B**

*Comparison of Barings and MSCI Emerging Market Global Indices*

| Country | Start Date | Mean Difference BEMI-MSCI | Volatility Difference BEMI-MSCI | Tracking Error BEMI-MSCI | Correlation IFC vs. BEMI-MSCI |
|---|---|---|---|---|---|
| Argentina | Jan-92 | -2.1% | 4.0% | 13.7% | 0.93 |
| Brazil | Jan-92 | 5.7% | 3.2% | 19.5% | 0.90 |
| Chile | Nov-93 | 1.4% | -0.9% | 8.7% | 0.94 |
| Colombia | May-95 | 1.6% | -0.4% | 6.1% | 0.97 |
| Greece | Jan-92 | -5.6% | -1.7% | 6.3% | 0.97 |
| Indonesia | Jan-92 | 5.5% | 3.9% | 8.5% | 0.96 |
| Malaysia | Jan-92 | -3.0% | 1.6% | 6.3% | 0.97 |
| Mexico | Jan-92 | 1.9% | 0.3% | 11.9% | 0.95 |
| Pakistan | Jun-93 | -11.7% | 0.0% | 9.9% | 0.94 |
| Peru | Jun-93 | 3.2% | 0.3% | 11.5% | 0.96 |
| Philippines | Jan-92 | -2.6% | -4.1% | 9.2% | 0.97 |
| Portugal | Jan-92 | -0.4% | 0.8% | 5.8% | 0.96 |
| South Africa | Jun-95 | -6.0% | 5.2% | 9.8% | 0.85 |
| South Korea | Jan-92 | 3.4% | -0.6% | 7.3% | 0.96 |
| Taiwan | Jan-92 | -4.4% | -4.5% | 7.1% | 0.99 |
| Thailand | Jan-92 | -2.6% | -0.7% | 7.9% | 0.96 |
| Turkey | Jan-92 | -6.7% | -2.6% | 15.4% | 0.96 |
| Average | | -1.3% | 0.2% | 9.7% | 0.95 |

-Source: Barings Emerging Market Indices, MSCI EM Indices. Monthly returns in US Dollars.
-Data through June 1996.

**Table 1C**
*Comparison of Barings and IFC Emerging Market Global Indices*

| Country | Start Date | Mean Difference BEMI-IFC | Volatility Difference BEMI-IFC | Tracking Error BEMI-IFC | Correlation IFC vs. BEMI-IFC |
|---|---|---|---|---|---|
| Argentina | Jan-92 | 4.3% | 3.0% | 13.0% | 0.93 |
| Brazil | Jan-92 | 6.4% | 4.8% | 20.3% | 0.90 |
| China | Feb-96 | -2.1% | -6.6% | 7.1% | 0.99 |
| Chile | Nov-93 | 1.8% | 0.0% | 8.4% | 0.95 |
| Colombia | May-95 | -3.2% | -2.1% | 5.0% | 0.98 |
| Greece | Jan-92 | -7.0% | 0.5% | 3.6% | 0.99 |
| Indonesia | Jan-92 | 9.1% | 3.7% | 7.9% | 0.96 |
| Malaysia | Jan-92 | -1.3% | 2.9% | 7.7% | 0.96 |
| Mexico | Jan-92 | 1.4% | -0.3% | 8.7% | 0.97 |
| Pakistan | Jun-94 | -4.2% | -0.5% | 8.5% | 0.96 |
| Peru | Jun-94 | -1.1% | -3.3% | 12.0% | 0.95 |
| Philippines | Jan-92 | -3.6% | -1.4% | 8.9% | 0.97 |
| Portugal | Jan-92 | 0.8% | 0.5% | 5.8% | 0.96 |
| South Africa | Jun-95 | -5.7% | -4.1% | 9.2% | 0.89 |
| South Korea | Jan-92 | -4.5% | -3.1% | 7.7% | 0.96 |
| Taiwan | Jan-92 | -5.2% | -2.6% | 5.4% | 0.99 |
| Thailand | Jan-92 | -6.9% | 1.1% | 8.1% | 0.97 |
| Turkey | Jan-92 | -1.6% | 3.4% | 21.0% | 0.94 |
| Average | | -1.3% | -0.2% | 9.4% | 0.96 |

-Source: Barings Emerging Market Indices, IFC EM Indices. Monthly returns in US Dollars.
-Data through June 1996.

**Table 2**
*Market Weights in the IFC Indices - June 1996*

| | *IFC Global Indices* | | | *IFC Investable Indices* | | |
|---|---|---|---|---|---|---|
| Market | No. of Stocks | Market Capitalization (US$ Mil) | Weight in IFC Composite | No. of Stocks | Market Capitalization (US$ Mil) | Weight in IFC Composite |
| **Latin America** | | | | | | |
| Argentina | 35 | 25647 | 2.1 | 31 | 25461 | 3.8 |
| Brazil | 86 | 113553 | 9.4 | 68 | 76216 | 11.3 |
| Chile | 47 | 43085 | 3.6 | 43 | 42655 | 6.3 |
| Colombia | 28 | 6875 | 0.6 | 15 | 5519 | 0.8 |
| Mexico | 81 | 70922 | 5.9 | 65 | 63547 | 9.4 |
| Peru | 37 | 8423 | 0.7 | 21 | 7811 | 1.2 |
| Venezuela | 16 | 3814 | 0.3 | 5 | 2576 | 0.4 |
| **East Asia** | | | | | | |
| China | 172 | 46186 | 3.8 | 24 | 3534 | 0.5 |
| Korea | 151 | 110558 | 9.2 | 145 | 20580 | 3.1 |
| Philippines | 46 | 46420 | 3.9 | 35 | 23430 | 3.5 |
| Taiwan, China | 83 | 154781 | 12.9 | 83 | 31561 | 4.7 |
| **South Asia** | | | | | | |
| India | 131 | 79987 | 6.7 | 76 | 16670 | 2.5 |
| Indonesia | 45 | 55767 | 4.6 | 44 | 28254 | 4.2 |
| Malaysia | 123 | 165530 | 13.8 | 123 | 138973 | 20.6 |
| Pakistan | 68 | 7153 | 0.6 | 25 | 5417 | 0.8 |
| Sri Lanka | 44 | 1071 | 0.1 | 5 | 372 | 0.1 |
| Thailand | 73 | 91149 | 7.6 | 72 | 29156 | 4.3 |
| **EMEA** | | | | | | |
| Czech Republic | 69 | 13541 | 1.1 | 5 | 5653 | 0.8 |
| Greece | 53 | 10416 | 0.9 | 47 | 9899 | 1.5 |
| Hungary | 16 | 3592 | 0.3 | 8 | 3069 | 0.5 |
| Jordan | 51 | 3029 | 0.3 | 8 | 1022 | 0.2 |
| Nigeria | 35 | 2090 | 0.2 | 0 | 0 | 0.0 |
| Poland | 23 | 4935 | 0.4 | 22 | 4918 | 0.7 |
| Portugal | 30 | 13045 | 1.1 | 26 | 9634 | 1.4 |
| South Africa | 63 | 99577 | 8.3 | 63 | 99577 | 14.7 |
| Turkey | 54 | 19783 | 1.6 | 54 | 19783 | 2.9 |
| Zimbabwe | 23 | 1831 | 0.2 | 5 | 420 | 0.1 |
| **Regions** | | | | | | |
| Composite | 1683 | 1202760 | 100.0 | 1118 | 675707 | 100.0 |
| Latin America | 330 | 272319 | 22.6 | 248 | 223785 | 33.1 |
| Asia | 936 | 758603 | 63.1 | 632 | 297947 | 44.1 |
| EMEA | 417 | 171838 | 14.3 | 238 | 153976 | 22.8 |

**Table 3**

*Summary Statistics: July 1991-June 1996*

| Country | Start Date | Arithmetic Return | Geometric Return | Standard Deviation | Skewness | Kurtosis | First Order Autocorrel | Beta MSCI World | Beta MSCI AC World | Beta IFCG Composite |
|---|---|---|---|---|---|---|---|---|---|---|
| Argentina | Jul-91 | 38.6% | 29.5% | 56.6% | 3.08 | 16.94 | 0.06 | 1.54 | 1.71 | 0.89 |
| Brazil | Jul-91 | 36.0% | 28.3% | 48.6% | 0.79 | 1.72 | 0.11 | 1.12 | 1.36 | 1.31 |
| Chile | Jul-91 | 22.8% | 21.4% | 26.1% | 0.36 | -0.32 | 0.21 | 0.28 | 0.40 | 0.67 |
| China | Jan-93 | | | | | | | | | |
| Colombia | Jul-91 | 39.3% | 37.3% | 40.3% | 1.33 | 1.95 | 0.52 | 0.03 | 0.09 | 0.31 |
| Czech Republic | Jan-95 | | | | | | | | | |
| Greece | Jul-91 | 3.4% | 0.8% | 22.6% | -0.40 | 0.58 | 0.02 | 0.45 | 0.46 | 0.24 |
| Hungary | Jan-93 | | | | | | | | | |
| India | Jul-91 | 15.6% | 9.4% | 37.2% | 0.61 | 1.24 | 0.23 | -0.70 | -0.57 | 0.74 |
| Indonesia | Jul-91 | 12.9% | 9.3% | 28.6% | 0.14 | 0.18 | 0.16 | 0.48 | 0.64 | 1.02 |
| Jordan | Jul-91 | 8.3% | 7.6% | 14.3% | 0.36 | -0.72 | 0.07 | 0.14 | 0.15 | 0.10 |
| Malaysia | Jul-91 | 19.9% | 18.5% | 23.9% | -0.04 | 1.03 | -0.14 | 0.57 | 0.67 | 0.88 |
| Mexico | Jul-91 | 11.2% | 4.2% | 36.3% | -1.10 | 2.39 | 0.31 | 0.83 | 1.09 | 1.35 |
| Nigeria | Jul-91 | 42.1% | 17.7% | 69.5% | 1.13 | 11.78 | -0.03 | 1.15 | 1.13 | -0.07 |
| Pakistan | Jul-91 | 20.7% | 16.0% | 35.3% | 1.07 | 1.94 | 0.29 | 0.12 | 0.21 | 0.53 |
| Peru | Jan-93 | | | | | | | | | |
| Philippines | Jul-91 | 27.0% | 25.9% | 28.6% | 1.34 | 4.46 | 0.04 | 0.45 | 0.60 | 1.06 |
| Poland | Jan-93 | | | | | | | | | |
| Portugal | Jul-91 | 11.5% | 10.1% | 19.4% | 0.32 | 1.67 | 0.00 | 0.98 | 1.00 | 0.22 |
| South Africa | Jan-93 | | | | | | | | | |
| South Korea | Jul-91 | 7.2% | 3.6% | 27.5% | 0.85 | 1.07 | 0.03 | 0.50 | 0.62 | 0.75 |
| Sri Lanka | Jan-93 | | | | | | | | | |
| Taiwan | Jul-91 | 11.6% | 5.3% | 38.5% | 2.08 | 6.30 | 0.08 | 0.86 | 1.09 | 1.49 |
| Thailand | Jul-91 | 22.7% | 20.3% | 29.6% | 1.08 | 1.98 | 0.02 | 0.15 | 0.31 | 1.11 |
| Turkey | Jul-91 | 20.0% | 2.6% | 61.0% | 0.58 | 0.39 | 0.04 | -0.22 | -0.09 | 0.88 |
| Venezuela | Jul-91 | 4.1% | -7.7% | 47.7% | -0.45 | 1.53 | -0.17 | 0.46 | 0.57 | 0.63 |
| Zimbabwe | Jul-91 | 5.6% | -0.3% | 35.0% | 0.36 | 0.81 | 0.31 | 0.89 | 0.96 | 0.55 |
| MSCI World | Jul-91 | 12.4% | 12.5% | 10.2% | -0.23 | -0.37 | -0.25 | 1.00 | 1.01 | 0.19 |
| MSCI AC World | Jul-91 | 12.2% | 12.4% | 10.1% | -0.14 | -0.43 | -0.21 | 0.98 | 1.00 | 0.24 |
| IFCG Composite | Jul-91 | 12.1% | 11.3% | 16.7% | 0.89 | 3.15 | 0.38 | 0.51 | 0.67 | 1.00 |

-Source: IFC Global Indices, MSCI EM Indices. Monthly returns in US Dollars.

**Table 4**
*Country Attributes - March 1996*

| Country | ICRGC | ICRGP | ICRGF | ICRGE | IICCR | EMCRR | INFLATE | TRDGDP | MKCPGDP | POPGR | AAGEGR | AVEAGE | MKTCAP | BETA | VOL | P/E | P/B | P/D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Argentina | 72.5 | 76.0 | 35.0 | 34.0 | 38.4 | 57.2 | 0.7% | 0.13 | 0.08 | 1.2% | 0.3% | 30.9 | 22308 | 1.9 | 35% | 16.7 | 1.4 | 29.2 |
| Brazil | 65.5 | 64.0 | 34.0 | 33.0 | 35.8 | 55.4 | 29.2% | 0.14 | 0.23 | 1.7% | 0.8% | 27.1 | 93940 | 0.6 | 43% | 40.3 | 0.5 | 28.9 |
| Chile | 80.5 | 76.0 | 43.0 | 41.5 | 59.2 | 79.8 | 7.6% | 0.42 | 0.88 | 1.6% | 0.6% | 29.0 | 39421 | 1.0 | 27% | 15.9 | 1.9 | 26.1 |
| China | 72.0 | 68.0 | 38.0 | 38.0 | 56.4 | 70.8 | | | 0.07 | 1.0% | 0.9% | 29.6 | 29495 | 0.8 | 72% | 31.8 | 2.0 | 37.6 |
| Colombia | 66.0 | 58.0 | 39.0 | 35.0 | 46.7 | 62.6 | 19.1% | 0.61 | 0.12 | 1.6% | 0.9% | 26.2 | 6659 | 0.1 | 28% | 12.0 | 1.0 | 36.8 |
| Czech Republic | 82.5 | 82.0 | 42.0 | 40.5 | 60.1 | 74.6 | 8.6% | | 0.29 | | | | 12346 | | | 13.4 | 1.0 | 87.7 |
| Greece | 75.0 | 76.0 | 38.0 | 36.0 | 49.8 | 73.3 | 8.5% | 0.60 | 0.11 | 0.3% | 0.6% | 38.9 | 11200 | 0.9 | 18% | 10.8 | 2.1 | 24.6 |
| Hungary | 76.0 | 79.0 | 40.0 | 32.5 | 43.6 | 67.7 | 29.6% | 0.50 | 0.02 | -0.5% | 0.2% | 37.3 | 2957 | 1.9 | 43% | 21.4 | 1.1 | 125.0 |
| India | 67.0 | 62.0 | 36.0 | 36.0 | 45.8 | 66.7 | 9.7% | 0.17 | 0.19 | 1.9% | 0.5% | 26.0 | 71141 | 0.4 | 29% | 14.3 | 2.3 | 65.8 |
| Indonesia | 70.5 | 65.0 | 39.0 | 37.0 | 51.8 | 73.2 | 10.5% | 0.44 | 0.22 | 1.5% | 0.8% | 26.2 | 54571 | 1.1 | 30% | 26.6 | 3.5 | 112.4 |
| Jordan | 74.5 | 73.0 | 38.0 | 38.0 | 30.5 | 54.3 | 7.0% | 1.30 | 0.58 | 4.6% | 0.3% | 21.4 | 3276 | 0.2 | 15% | 15.6 | 1.7 | 50.0 |
| Malaysia | 79.5 | 75.0 | 43.0 | 41.0 | 68.4 | 84.5 | 3.3% | 1.66 | 1.97 | 2.3% | 0.6% | 24.8 | 162134 | 1.1 | 29% | 28.4 | 3.7 | 83.3 |
| Mexico | 69.5 | 66.0 | 40.0 | 33.0 | 41.2 | 58.8 | 43.8% | 0.37 | 0.25 | 2.0% | 0.9% | 24.8 | 65162 | 1.6 | 42% | 18.6 | 1.7 | 117.6 |
| Nigeria | 50.5 | 54.0 | 23.0 | 24.0 | 14.8 | 32.3 | 69.9% | 0.41 | 0.04 | 3.0% | 0.0% | 21.5 | 1712 | 1.4 | 81% | 12.2 | 3.3 | 23.3 |
| Pakistan | 60.0 | 54.0 | 34.0 | 31.5 | 29.5 | 50.7 | 9.8% | 0.35 | 0.13 | 2.8% | 0.3% | 21.9 | 6647 | 0.1 | 29% | 16.4 | 2.1 | 45.7 |
| Peru | 64.0 | 59.0 | 34.0 | 34.5 | 27.2 | 47.5 | 11.6% | 0.20 | 0.14 | | | | 7422 | 1.6 | 38% | 13.8 | 2.7 | 90.1 |
| Philippines | 68.5 | 63.0 | 37.0 | 36.5 | 38.1 | 63.5 | 12.3% | 0.54 | 0.46 | 2.1% | 0.6% | 24.0 | 39729 | 1.2 | 32% | 21.2 | 3.8 | 153.8 |
| Poland | 77.5 | 77.0 | 41.0 | 37.0 | 40.2 | 56.5 | 20.4% | 0.38 | 0.02 | 0.1% | 0.6% | 34.3 | 3893 | 4.0 | 88% | 8.5 | 1.8 | 84.7 |
| Portugal | 83.5 | 83.0 | 43.0 | 41.0 | 68.8 | 81.9 | 2.5% | 0.56 | 0.13 | -0.1% | 0.6% | 36.6 | 11405 | 1.0 | 19% | 14.8 | 1.5 | 35.1 |
| South Africa | 76.0 | 75.0 | 41.0 | 35.5 | 46.3 | 64.9 | 6.8% | 0.38 | 1.28 | 2.2% | 0.2% | 25.0 | 105981 | 0.9 | 25% | 19.2 | 2.7 | 49.0 |
| South Korea | 82.0 | 77.0 | 46.0 | 41.0 | 72.0 | 85.0 | 4.5% | 0.54 | 0.32 | 1.0% | 1.0% | 30.5 | 125037 | 0.6 | 20% | 21.0 | 1.3 | 54.3 |
| Sri Lanka | 66.5 | 61.0 | 36.0 | 35.5 | 32.5 | 50.6 | 11.8% | 0.81 | 0.11 | 1.3% | 0.9% | 28.2 | 1315 | 0.0 | 32% | 8.9 | 1.5 | 39.8 |
| Taiwan | 83.0 | 75.0 | 48.0 | 43.0 | 78.9 | 91.5 | 3.0% | 0.87 | 0.48 | | | | 114475 | 1.2 | 38% | 21.6 | 2.8 | 85.5 |
| Thailand | 76.5 | 69.0 | 43.0 | 41.0 | 63.4 | 82.1 | 5.4% | 0.65 | 0.66 | 1.0% | 1.2% | 27.9 | 95036 | 1.2 | 33% | 20.5 | 3.1 | 55.9 |
| Turkey | 60.5 | 55.0 | 36.0 | 30.0 | 40.4 | 58.4 | 78.9% | 0.32 | 0.14 | 1.9% | 0.6% | 26.5 | 20641 | 0.6 | 64% | 12.2 | 3.7 | 40.2 |
| Venezuela | 64.5 | 65.0 | 33.0 | 31.0 | 30.1 | 44.7 | 78.1% | 0.40 | 0.05 | 2.2% | 0.8% | 25.1 | 2652 | 0.1 | 49% | 16.3 | 2.6 | 63.3 |
| Zimbabwe | 63.5 | 66.0 | 28.0 | 32.5 | 32.2 | 50.5 | 25.8% | 0.75 | 0.16 | 2.4% | 0.2% | 21.4 | 1677 | 0.4 | 33% | 8.2 | 1.4 | 21.1 |

*Rank Correlations*

| | ICRGC | ICRGP | ICRGF | ICRGE | IICCR | EMCRR | INFLATE | TRDGDP | MKCPGDP | POPGR | AAGEGR | AVEAGE | MKTCAP | BETA | VOL | P/E | P/B | P/D |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ICRGC | 1.00 | 0.89 | 0.90 | 0.84 | 0.82 | 0.82 | -0.70 | 0.40 | 0.38 | -0.59 | 0.25 | 0.57 | 0.47 | 0.36 | -0.38 | 0.28 | -0.17 | 0.23 |
| ICRGP | | 1.00 | 0.68 | 0.59 | 0.61 | 0.61 | -0.55 | 0.24 | 0.13 | -0.59 | 0.04 | 0.61 | 0.23 | 0.40 | -0.27 | 0.15 | -0.36 | 0.09 |
| ICRGF | | | 1.00 | 0.83 | 0.88 | 0.88 | -0.59 | 0.43 | 0.50 | -0.50 | 0.42 | 0.44 | 0.58 | 0.28 | -0.38 | 0.31 | -0.03 | 0.30 |
| ICRGE | | | | 1.00 | 0.79 | 0.81 | -0.76 | 0.52 | 0.55 | -0.39 | 0.43 | 0.33 | 0.54 | 0.15 | -0.47 | 0.29 | 0.03 | 0.17 |
| IICCR | | | | | 1.00 | 0.97 | -0.61 | 0.39 | 0.41 | -0.58 | 0.54 | 0.53 | 0.66 | 0.16 | -0.36 | 0.36 | -0.02 | 0.13 |
| EMCRR | | | | | | 1.00 | -0.65 | 0.38 | 0.48 | -0.54 | 0.44 | 0.48 | 0.71 | 0.22 | -0.40 | 0.45 | 0.06 | 0.21 |
| INFLATE | | | | | | | 1.00 | -0.31 | -0.49 | 0.24 | -0.10 | -0.27 | -0.50 | -0.14 | 0.66 | -0.28 | 0.02 | 0.06 |
| TRDGDP | | | | | | | | 1.00 | 0.30 | 0.02 | 0.18 | -0.11 | -0.06 | -0.19 | -0.43 | -0.02 | 0.06 | -0.01 |
| MKCPGDP | | | | | | | | | 1.00 | 0.35 | 0.11 | -0.38 | 0.69 | -0.05 | -0.50 | 0.38 | 0.24 | 0.21 |
| POPGR | | | | | | | | | | 1.00 | -0.47 | -0.95 | -0.09 | -0.37 | -0.04 | -0.05 | 0.35 | -0.07 |
| AAGEGR | | | | | | | | | | | 1.00 | 0.39 | 0.36 | -0.14 | -0.04 | 0.26 | -0.12 | 0.11 |
| AVEAGE | | | | | | | | | | | | 1.00 | 0.07 | 0.30 | 0.02 | 0.02 | -0.36 | -0.09 |
| MKTCAP | | | | | | | | | | | | | 1.00 | 0.23 | -0.21 | 0.68 | 0.26 | 0.27 |
| BETA | | | | | | | | | | | | | | 1.00 | 0.35 | 0.22 | 0.20 | 0.38 |
| VOL | | | | | | | | | | | | | | | 1.00 | 0.05 | 0.13 | 0.18 |
| P/E | | | | | | | | | | | | | | | | 1.00 | 0.15 | 0.37 |
| P/B | | | | | | | | | | | | | | | | | 1.00 | 0.27 |
| P/D | | | | | | | | | | | | | | | | | | 1.00 |

Legend:

| | |
|---|---|
| ICRGC | Political Risk Services: International Country Risk Guide - Composite |
| ICRGP | Political Risk Services: International Country Risk Guide - Political |
| ICRGF | Political Risk Services: International Country Risk Guide - Financial |
| ICRGE | Political Risk Services: International Country Risk Guide - Economic |
| IICCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | Trade Openness: (Exports+Imports)/GDP |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Total Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Global Market Capitalization (Millions of US$) |
| BETA | IFC Global Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Global Volatility - 36 months trailing |
| P/E | IFC Global Price/Earnings Ratio |
| P/B | IFC Global Price/Book Ratio |
| P/D | IFC Global Price/Dividend Ratio |

**Table 5A**
*Emerging Market Risk Level Portfolio Strategy*
IFCG Indices - Quarterly Rebalancing: January 1985-June 1996

| | *High Tritile* | | | | | | | *Low Tritile* | | | | | | | *Low-High Attribute* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 30.8% | 30.3% | 0.82 | 16.3% * | 1.59 | 6.53 | 56% | 34.1% | 27.6% | 0.03 | 28.4% *** | 1.46 | 4.28 | 64% | 3.3% | 36.5% | 6.5% |
| ICRGP | 31.6% | 31.9% | 0.94 | 15.8% * | 0.72 | 4.32 | 69% | 28.0% | 20.4% | 0.07 | 21.7% *** | 0.03 | -0.12 | 51% | -3.6% | 33.7% | 0.3% |
| ICRGF | 26.5% | 29.0% | 0.76 | 12.6% | 1.76 | 8.38 | 52% | 36.7% | 34.0% | 0.05 | 30.8% *** | 2.16 | 8.54 | 74% | 10.2% | 43.2% | 12.6% |
| ICRGE | 28.0% | 28.7% | 0.80 | 13.6% * | 1.26 | 5.30 | 64% | 40.5% | 32.3% | 0.44 | 30.3% *** | 0.20 | -0.28 | 93% | 12.6% | 32.3% | 11.1% |
| II CCR | 28.3% | 28.0% | 0.84 | 13.7% * | 1.37 | 5.71 | 32% | 38.7% | 28.3% | 0.46 | 28.2% *** | 0.37 | 0.52 | 45% | 10.5% | 30.7% | 9.0% |
| EMCRR | 27.6% | 27.9% | 0.82 | 13.2% * | 1.41 | 5.89 | 40% | 45.2% | 31.6% | 0.62 | 32.9% *** | 0.44 | 0.16 | 57% | 17.6% * | 34.7% | 14.1% |
| INFLATE | 52.4% | 35.9% | 0.54 | 41.2% *** | 0.31 | 0.35 | 68% | 21.3% | 20.2% | 0.48 | 10.5% * | 0.71 | 1.93 | 64% | -31.1% *** | 32.5% | -36.3% *** |
| TRDGDP | 28.6% | 28.4% | 0.85 | 13.7% * | 1.40 | 5.67 | 37% | 37.4% | 30.7% | 0.25 | 29.2% *** | 0.47 | -0.08 | 40% | 8.8% | 33.0% | 9.8% |
| MKCPGDP | 23.8% | 32.1% | 0.84 | 9.0% | 1.83 | 9.74 | 62% | 46.6% | 28.4% | -0.01 | 41.2% *** | 0.26 | 0.63 | 76% | 22.8% ** | 38.2% | 26.6% ** |
| POPGR | 23.9% | 19.1% | -0.02 | 18.6% *** | 0.03 | 0.55 | 27% | 36.9% | 33.7% | 0.87 | 22.0% ** | 1.07 | 2.29 | 41% | 13.0% | 36.1% | -2.2% |
| AAGEGR | 37.8% | 30.9% | 1.03 | 21.0% ** | 0.47 | 1.96 | 38% | 22.0% | 25.2% | 0.07 | 15.8% ** | 1.13 | 1.94 | 32% | -15.7% | 35.8% | -10.9% |
| AVEAGE | 43.2% | 35.9% | 0.95 | 27.7% *** | 1.14 | 2.14 | 43% | 27.5% | 20.2% | 0.49 | 16.6% *** | -0.23 | 0.72 | 25% | -15.7% | 33.1% | -16.6% |
| MKTCAP | 24.9% | 26.4% | 0.79 | 10.7% | -0.36 | 2.96 | 49% | 44.2% | 27.1% | 0.11 | 37.5% *** | -0.25 | -0.32 | 69% | 19.3% * | 34.9% | 21.2% ** |
| BETA | 37.8% | 32.8% | 0.40 | 28.0% *** | 1.40 | 3.74 | 103% | 29.1% | 25.3% | 0.44 | 18.9% ** | 0.20 | -0.16 | 104% | -8.7% | 37.0% | -14.7% |
| VOL | 27.8% | 39.8% | 0.50 | 17.0% | 1.40 | 5.32 | 69% | 28.2% | 21.0% | 0.46 | 17.6% *** | 0.98 | 2.21 | 67% | 0.5% | 42.4% | -5.0% |
| MOM-1 | 38.3% | 30.1% | 0.84 | 23.9% *** | 0.20 | 0.15 | 272% | 24.3% | 27.2% | 0.48 | 13.3% | 1.12 | 2.69 | 277% | -13.9% | 31.5% | -16.1% |
| MOM-2-4 | 37.8% | 38.0% | 0.79 | 23.8% ** | 1.21 | 5.92 | 269% | 29.7% | 27.1% | 0.25 | 21.5% ** | 0.71 | 1.13 | 267% | -8.0% | 44.2% | -7.9% |
| P/E* | 19.6% | 28.6% | 0.87 | 8.0% | 0.17 | 2.84 | 102% | 38.9% | 25.3% | 0.19 | 32.1% *** | -0.32 | 0.13 | 107% | 19.3% * | 31.7% | 18.7% * |
| P/B* | 19.8% | 28.0% | 0.87 | 8.0% | 0.75 | 1.98 | 96% | 47.4% | 27.5% | 0.38 | 39.4% *** | 0.34 | 0.16 | 112% | 27.6% *** | 30.4% | 25.9% *** |
| P/D | 29.6% | 36.9% | 0.58 | 17.9% | 1.26 | 3.09 | 110% | 28.4% | 22.5% | 0.54 | 16.9% ** | 0.22 | -0.51 | 88% | -1.2% | 39.5% | -6.5% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 22.5% | 34.8% | 0.67 | 9.5% | 0.32 | 1.50 | 22% | 31.4% | 34.0% | -0.31 | 29.3% *** | 1.40 | 3.02 | 46% | 8.9% | 43.6% | 14.2% |
| ICRGP | 20.1% | 39.4% | 0.73 | 6.5% | 0.17 | 1.17 | 41% | 26.5% | 28.9% | -0.29 | 23.8% *** | 1.17 | 3.05 | 36% | 6.4% | 44.4% | 11.8% |
| ICRGF | 20.5% | 37.9% | 0.70 | 7.3% | 1.01 | 4.00 | 21% | 29.1% | 40.2% | 0.05 | 23.2% * | 1.50 | 5.88 | 61% | 8.6% | 55.4% | 10.3% |
| ICRGE | 20.9% | 34.5% | 0.69 | 7.7% | 0.21 | 1.51 | 24% | 30.6% | 44.4% | 0.76 | 16.7% | 0.06 | 0.41 | 55% | 9.7% | 45.1% | 3.4% |
| II CCR | 19.9% | 32.4% | 0.66 | 7.1% | 0.32 | 1.37 | 17% | 31.8% | 41.2% | 0.89 | 16.4% | -0.33 | 1.08 | 39% | 12.0% | 37.1% | 3.7% |
| EMCRR | 19.7% | 32.7% | 0.64 | 7.1% | 0.33 | 1.30 | 20% | 39.2% | 43.0% | 1.18 | 20.7% * | -0.11 | -0.35 | 69% | 19.5% | 42.7% | 8.0% |
| INFLATE | 31.9% | 42.8% | 0.82 | 17.4% | -0.17 | 0.47 | 32% | 19.9% | 34.5% | 0.62 | 7.5% | 0.08 | 0.65 | 25% | -12.0% | 45.3% | -15.5% |
| TRDGDP | 24.2% | 39.3% | 0.77 | 10.1% | 0.23 | 1.27 | 15% | 23.3% | 34.3% | 0.45 | 12.9% | -0.50 | 0.38 | 20% | -0.9% | 42.4% | -2.7% |
| MKCPGDP | 20.2% | 39.8% | 0.88 | 4.9% | 0.33 | 2.31 | 31% | 34.0% | 31.6% | -0.09 | 29.7% *** | 1.01 | 2.83 | 59% | 13.9% | 46.2% | 19.2% |
| POPGR | 18.8% | 21.4% | 0.35 | 9.3% | -0.11 | 1.90 | 14% | 22.0% | 28.5% | 1.01 | 5.5% | 0.91 | 2.33 | 16% | 3.2% | 27.9% | -9.5% |
| AAGEGR | 23.8% | 34.4% | 1.08 | 6.5% | -0.05 | 0.95 | 17% | 12.0% | 20.0% | 0.31 | 3.0% | 0.04 | 1.20 | 16% | -11.8% | 31.8% | -9.1% |
| AVEAGE | 25.2% | 32.5% | 1.08 | 8.1% | 0.93 | 1.74 | 21% | 30.7% | 35.8% | 1.03 | 14.0% | -0.86 | 3.10 | 13% | 5.5% | 34.4% | 0.3% |
| MKTCAP | 18.0% | 32.9% | 0.66 | 5.2% | -0.23 | 1.23 | 23% | 43.5% | 29.9% | 0.05 | 37.5% *** | 0.41 | 0.39 | 54% | 25.5% ** | 41.0% | 26.8% ** |
| BETA | 34.1% | 47.9% | 0.15 | 27.0% * | 1.88 | 7.65 | 69% | 29.2% | 35.4% | 0.23 | 21.3% * | 0.48 | -0.26 | 88% | -4.9% | 52.5% | -11.4% |
| VOL | 13.5% | 49.7% | 0.57 | 1.9% | -0.15 | 0.09 | 32% | 30.2% | 28.6% | 0.40 | 20.3% ** | 0.27 | 0.18 | 47% | 16.7% | 52.5% | 12.8% |
| MOM-1 | 27.2% | 31.8% | 0.69 | 14.4% | -0.46 | 0.98 | 283% | 24.1% | 43.4% | 0.70 | 10.7% | 1.37 | 4.60 | 272% | -3.1% | 44.4% | -9.2% |
| MOM-2-4 | 16.9% | 48.6% | 0.79 | 2.8% | 1.42 | 7.18 | 177% | 24.6% | 32.6% | 0.29 | 16.0% | 0.70 | 0.41 | 194% | 7.7% | 54.3% | 7.7% |
| P/E* | 14.4% | 34.7% | 0.97 | 1.9% | -0.50 | 0.87 | 53% | 28.9% | 36.4% | 0.64 | 18.8% | 0.25 | 1.04 | 78% | 14.5% | 43.4% | 11.4% |
| P/B* | 12.5% | 40.7% | 0.79 | 1.2% | 0.10 | 0.84 | 55% | 29.7% | 31.2% | 0.79 | 18.6% ** | 0.66 | 1.32 | 54% | 17.2% | 39.1% | 11.9% |
| P/D | 20.6% | 41.1% | 0.71 | 7.3% | 0.00 | 1.08 | 64% | 22.5% | 24.6% | 0.59 | 10.5% | 0.38 | 0.04 | 73% | 1.8% | 40.9% | -2.4% |
| IFC Composite | 19.3% | 29.6% | 0.60 | 7.1% * | 0.04 | 1.17 | | | | | | | | | | | |
| MSCI AC World | 16.4% | 15.4% | 1.00 | | -0.56 | 2.43 | | | | | | | | | | | |

-Significance level: * 10%, ** 5%, *** 1%.
-IFC Global and MSCI World Indices in US dollars: Unhedged.
-From January 1985-December 1987 the MSCI World Index was substituted for the MSCI All Country (AC) World Index.
-Price/Earnings and Price/Book ratios are unavailable until January 1986.
-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.
-Portfolios were reformed quarterly.

| Legend | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Global Market Capitalization |
| BETA | IFC Global Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Global Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E* | IFC Global Price/Earnings Ratio |
| P/B* | IFC Global Price/Book Ratio |
| P/D | IFC Global Price/Dividend Ratio |

**Table 5B**
*Emerging Market Risk Level Portfolio Strategy*
IFCG Indices - Quarterly Rebalancing: July 1991-June 1996

| | *High Tritile* | | | | | | | *Low Tritile* | | | | | | | *Low-High Attribute* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 22.0% | 22.6% | 0.83 | 10.5% | 1.51 | 3.75 | 41% | 25.3% | 26.2% | 0.56 | 16.1% | 0.25 | -0.89 | 74% | 3.3% | 22.1% | 1.5% |
| ICRGP | 17.2% | 24.0% | 1.13 | 3.3% | 0.78 | 1.11 | 74% | 23.3% | 25.2% | 0.06 | 18.2% | 0.13 | -0.53 | 67% | 6.1% | 21.1% | 10.8% |
| ICRGF | 14.2% | 20.1% | 0.18 | 7.9% | 1.25 | 3.32 | 45% | 27.6% | 27.7% | 0.74 | 17.3% | -0.03 | -0.18 | 60% | 13.4% | 25.9% | 5.3% |
| ICRGE | 17.7% | 20.0% | 0.66 | 7.5% | 1.86 | 4.75 | 61% | 32.5% | 30.4% | 0.16 | 26.7% | -0.14 | -1.15 | 77% | 14.9% | 27.4% | 15.1% |
| II CCR | 12.1% | 19.3% | 0.51 | 3.3% | 1.34 | 2.05 | 25% | 30.7% | 30.2% | 1.51 | 13.8% | -0.02 | -0.60 | 37% | 18.7% | 27.0% | 6.3% |
| EMCRR | 22.0% | 19.2% | 1.09 | 8.5% | 0.80 | 0.21 | 7% | 36.6% | 49.8% | 2.37 | 9.4% | 0.00 | -0.92 | 12% | 14.6% | 43.0% | -4.8% |
| INFLATE | 39.7% | 36.3% | 1.23 | 25.3% | 0.07 | -1.07 | 53% | 14.6% | 20.9% | 0.66 | 4.3% | 1.90 | 5.97 | 51% | -25.0% | 35.0% | -25.2% |
| TRDGDP | 14.2% | 23.7% | 0.80 | 2.6% | 2.05 | 5.74 | 31% | 39.2% | 34.1% | 1.14 | 25.6% | 0.32 | -0.47 | 40% | 25.0% | 30.2% | 18.9% |
| MKCPGDP | 11.2% | 22.1% | 0.60 | 1.6% | 2.31 | 7.45 | 45% | 37.3% | 30.6% | 0.66 | 27.9% * | -0.07 | -0.49 | 74% | 26.1% | 33.5% | 22.3% |
| POPGR | 19.4% | 24.6% | 1.35 | 4.0% | 0.13 | -0.06 | 28% | 21.4% | 23.1% | 1.23 | 7.1% | 0.08 | -0.91 | 35% | 2.0% | 20.5% | -1.1% |
| AAGEGR | 23.4% | 25.8% | 0.28 | 16.4% | 0.46 | 0.03 | 34% | 20.7% | 24.7% | 1.44 | 5.0% | -0.15 | -1.00 | 32% | -2.7% | 24.1% | -15.6% |
| AVEAGE | 23.6% | 23.4% | 1.18 | 9.9% | 0.06 | -0.93 | 30% | 18.4% | 25.4% | 1.08 | 5.1% | 0.11 | 0.18 | 29% | -5.2% | 22.0% | -8.9% |
| MKTCAP | 17.5% | 23.9% | 0.08 | 12.0% | 1.07 | 1.84 | 43% | 32.8% | 33.9% | 1.85 | 13.4% | -0.06 | -1.07 | 69% | 15.4% | 35.8% | -2.6% |
| BETA | 24.7% | 20.6% | 0.14 | 19.0% * | -0.35 | 0.21 | 84% | 17.0% | 24.9% | 1.54 | 0.4% | 0.71 | -0.12 | 69% | -7.6% | 25.9% | -22.7% * |
| VOL | 25.4% | 25.2% | 1.23 | 11.4% | -0.52 | -0.83 | 62% | 22.3% | 26.3% | 0.99 | 9.6% | 1.63 | 2.37 | 70% | -3.1% | 26.9% | -5.9% |
| MOM-1 | 13.5% | 22.8% | 0.90 | 1.7% | 0.79 | 0.80 | 265% | 27.0% | 24.9% | 0.68 | 16.8% | 0.13 | -0.42 | 282% | 13.5% | 18.4% | 11.0% |
| MOM-2-4 | 20.1% | 27.9% | 1.02 | 8.1% | 0.67 | -0.45 | 271% | 23.3% | 21.9% | 0.71 | 12.9% | 0.22 | -0.06 | 266% | 3.2% | 22.0% | 0.6% |
| P/E* | 12.6% | 22.0% | 0.45 | 5.0% | 0.74 | -0.09 | 94% | 31.8% | 32.5% | 1.67 | 13.3% | -0.06 | -0.82 | 108% | 19.2% * | 29.9% | 4.2% |
| P/B* | 16.1% | 24.2% | 0.17 | 10.0% | 1.61 | 3.97 | 76% | 32.2% | 27.4% | 1.49 | 15.3% | 0.06 | -0.56 | 94% | 16.2% | 29.6% | 1.2% |
| P/D | 16.6% | 25.5% | 0.54 | 7.8% | 0.73 | 1.34 | 99% | 20.3% | 24.4% | 1.63 | 2.8% | 0.00 | -0.71 | 68% | 3.8% | 25.8% | -9.1% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 13.5% | 25.2% | 0.43 | 5.2% | 1.94 | 5.78 | 23% | 30.1% | 37.3% | -0.97 | 33.6% * | 1.38 | 2.54 | 51% | 16.6% | 36.3% | 24.3% |
| ICRGP | 11.0% | 24.6% | 0.47 | 2.4% | 1.58 | 4.15 | 49% | 32.3% | 38.9% | -2.01 | 43.8% ** | 1.14 | 0.87 | 53% | 21.4% | 34.7% | 37.3% ** |
| ICRGF | 9.9% | 25.0% | 0.55 | 0.5% | 1.74 | 4.70 | 15% | 19.3% | 33.1% | -1.35 | 26.0% | 0.18 | -0.49 | 26% | 9.4% | 39.8% | 21.4% |
| ICRGE | 13.5% | 23.8% | 0.62 | 3.5% | 1.84 | 5.10 | 26% | 34.3% | 40.0% | -0.92 | 37.0% * | 0.72 | 0.99 | 54% | 20.8% | 38.0% | 29.3% |
| II CCR | 11.1% | 24.2% | 0.66 | 0.9% | 1.84 | 5.07 | 12% | 30.6% | 36.8% | 0.73 | 20.0% | 0.30 | 0.72 | 18% | 19.5% | 35.9% | 14.9% |
| EMCRR | 10.7% | 24.1% | 0.65 | 0.5% | 1.88 | 5.20 | 15% | 28.9% | 37.8% | 0.81 | 17.7% | 0.29 | 0.64 | 84% | 18.3% | 37.4% | 13.0% |
| INFLATE | 28.7% | 39.0% | 0.90 | 16.8% | 0.62 | 0.91 | 36% | 10.8% | 26.1% | 0.85 | -1.1% | 1.90 | 5.51 | 18% | -17.9% | 39.9% | -22.0% |
| TRDGDP | 14.7% | 32.0% | 0.70 | 3.8% | 2.08 | 6.83 | 10% | 22.1% | 29.4% | -0.24 | 19.5% | 0.02 | -0.48 | 15% | 7.4% | 30.8% | 11.6% |
| MKCPGDP | 10.0% | 24.5% | 0.44 | 1.7% | 2.05 | 6.20 | 26% | 23.5% | 30.7% | -0.39 | 22.8% | 0.75 | 0.25 | 40% | 13.5% | 29.2% | 17.0% |
| POPGR | 20.8% | 22.1% | 0.72 | 10.3% | 0.96 | 3.51 | 21% | 10.1% | 21.5% | 0.76 | -0.5% | 1.25 | 1.44 | 18% | -10.7% ** | 19.6% | -15.0% |
| AAGEGR | 14.7% | 26.7% | 0.31 | 7.4% | 0.31 | 0.05 | 15% | 12.0% | 20.7% | 0.65 | 2.5% | 0.33 | 1.64 | 23% | -2.7% | 22.9% | -9.1% |
| AVEAGE | 10.6% | 18.5% | 0.48 | 2.4% | 0.78 | -0.36 | 14% | 18.6% | 31.7% | 0.34 | 11.2% | 0.33 | 0.36 | 17% | 8.0% | 23.4% | 4.7% |
| MKTCAP | 13.0% | 24.0% | 0.34 | 5.4% | 1.29 | 2.60 | 21% | 28.9% | 31.0% | 1.54 | 12.3% | 0.09 | -0.69 | 52% | 15.9% | 34.0% | 2.8% |
| BETA | 22.1% | 26.7% | 0.33 | 14.6% | 1.53 | 2.31 | 69% | 22.5% | 31.7% | 0.10 | 17.7% | 0.55 | -0.57 | 77% | 0.4% | 28.4% | -1.1% |
| VOL | 11.0% | 27.2% | 1.00 | -1.8% | 0.95 | 1.25 | 42% | 17.5% | 30.0% | -0.30 | 14.7% | 1.09 | 1.82 | 57% | 6.6% | 29.4% | 12.4% |
| MOM-1 | 7.8% | 21.1% | 0.14 | 2.3% | 0.53 | 1.04 | 295% | 24.1% | 31.5% | 0.20 | 17.1% | 0.76 | 2.82 | 267% | 16.3% | 23.5% | 10.6% |
| MOM-2-4 | 2.7% | 25.2% | -0.43 | 2.1% | 0.56 | 0.41 | 200% | 19.5% | 28.7% | 1.00 | 7.0% | 1.29 | 2.13 | 225% | 16.8% * | 21.7% | 0.8% |
| P/E* | 4.7% | 23.4% | 0.13 | -0.7% | 1.33 | 3.12 | 62% | 23.6% | 32.4% | 0.69 | 13.1% | -0.37 | 0.47 | 76% | 18.9% | 28.9% | 9.7% |
| P/B* | 8.2% | 25.0% | 0.20 | 1.8% | 1.04 | 2.42 | 44% | 18.7% | 25.0% | 1.03 | 5.7% | 0.43 | 0.82 | 49% | 10.5% | 26.6% | -0.3% |
| P/D | 6.4% | 26.6% | -0.05 | 1.9% | 1.14 | 1.42 | 71% | 14.4% | 22.7% | 1.20 | 0.4% | -0.16 | -1.16 | 76% | 8.0% | 27.1% | -5.7% |
| IFC Composite | 13.3% | 23.6% | 0.37 | 5.5% ** | 1.23 | 2.66 | | | | | | | | | | | |
| MSCI AC World | 12.1% | 6.8% | 1.00 | | -1.28 | 3.17 | | | | | | | | | | | |

-Significance level: * 10%, ** 5%, *** 1%.
-IFC Global and MSCI World Indices in US dollars: Unhedged.
-From January 1985-December 1987 the MSCI World Index was substituted for the MSCI All Country (AC) World Index.
-Price/Earnings and Price/Book ratios are unavailable until January 1986.
-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.
-Portfolios were reformed quarterly.

| Legend | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Global Market Capitalization |
| BETA | IFC Global Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Global Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E* | IFC Global Price/Earnings Ratio |
| P/B* | IFC Global Price/Book Ratio |
| P/D | IFC Global Price/Dividend Ratio |

**Table 5C**
*Emerging Market Risk Level Portfolio Strategy*
IFCG Indices - Semi-Annual Rebalancing: January 1985-June 1996

| | *High Tritile* | | | | | | | *Low Tritile* | | | | | | | *Low-High Attribute* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 26.4% | 25.9% | 1.20 | 11.8% | 1.29 | 1.33 | 42% | 34.6% | 27.4% | 0.77 | 22.2% *** | 0.74 | 0.78 | 49% | 8.3% | 24.1% | 4.8% |
| ICRGP | 32.9% | 30.5% | 1.05 | 16.6% * | 0.80 | 0.26 | 53% | 29.2% | 22.6% | 0.74 | 17.3% ** | 0.33 | -0.43 | 44% | -3.7% | 31.3% | -5.0% |
| ICRGF | 28.1% | 22.7% | 0.77 | 17.2% ** | 0.46 | -0.23 | 45% | 37.2% | 29.8% | 0.84 | 22.3% ** | 0.43 | -0.30 | 59% | 9.1% | 25.0% | -0.6% |
| ICRGE | 27.6% | 26.7% | 0.93 | 14.5% * | 1.06 | 1.08 | 48% | 38.7% | 34.2% | 1.00 | 23.1% ** | 0.00 | -0.74 | 70% | 11.1% | 28.5% | 2.9% |
| II CCR | 25.9% | 24.6% | 0.95 | 12.5% * | 0.54 | -0.19 | 28% | 39.9% | 30.2% | 1.08 | 24.3% *** | 0.35 | -0.66 | 43% | 14.1% | 29.4% | 6.2% |
| EMCRR | 27.0% | 25.1% | 0.94 | 13.4% * | 0.48 | -0.40 | 34% | 43.0% | 33.2% | 1.55 | 22.3% ** | 0.03 | -1.42 | 52% | 16.0% * | 30.6% | 3.2% |
| INFLATE | 57.3% | 35.1% | 1.09 | 40.8% *** | -0.08 | -0.97 | 64% | 21.4% | 22.2% | 0.77 | 9.3% | 1.47 | 2.27 | 52% | -35.9% *** | 29.2% | -37.2% *** |
| TRDGDP | 26.9% | 28.2% | 1.19 | 11.7% | 1.36 | 1.99 | 34% | 37.3% | 34.9% | 0.82 | 23.8% ** | 0.83 | -0.36 | 37% | 10.4% | 33.0% | 6.5% |
| MKCPGDP | 22.7% | 23.0% | 0.95 | 8.2% | 1.15 | 0.60 | 43% | 52.2% | 30.9% | 0.61 | 40.8% *** | -0.04 | -0.21 | 70% | 29.6% *** | 29.9% | 26.9% *** |
| POPGR | 25.7% | 24.0% | -0.40 | 21.6% *** | 0.80 | -0.11 | 27% | 36.8% | 27.8% | 0.91 | 23.2% *** | 0.01 | -0.85 | 37% | 11.0% | 33.7% | -4.1% |
| AAGEGR | 36.5% | 28.0% | 1.11 | 21.0% ** | 0.09 | -0.99 | 34% | 22.5% | 24.8% | 0.30 | 13.4% | 0.84 | -0.01 | 28% | -14.0% | 29.6% | -13.3% |
| AVEAGE | 41.6% | 31.8% | 1.21 | 24.3% *** | 0.55 | 0.01 | 39% | 30.0% | 24.1% | 0.86 | 15.3% ** | 0.55 | -0.36 | 24% | -11.5% | 27.3% | -14.6% |
| MKTCAP | 23.5% | 24.1% | 1.02 | 7.7% | 0.64 | -0.16 | 35% | 47.6% | 30.9% | 0.38 | 36.5% *** | 0.10 | -0.87 | 59% | 24.2% ** | 34.4% | 23.2% ** |
| BETA | 32.4% | 27.7% | 0.33 | 26.9% *** | 0.06 | -1.20 | 74% | 40.9% | 37.4% | 0.45 | 25.7% ** | 0.32 | -0.95 | 79% | 8.4% | 49.5% | -6.8% |
| VOL | 30.9% | 38.8% | 0.88 | 17.9% | 0.52 | -0.38 | 57% | 30.1% | 22.1% | 0.55 | 17.8% *** | 0.85 | 0.18 | 54% | -0.8% | 43.4% | -5.8% |
| MOM-1 | 37.9% | 33.9% | 1.75 | 13.9% * | 0.52 | -1.25 | 148% | 23.7% | 27.1% | 0.64 | 15.4% * | 0.84 | 0.05 | 142% | -14.2% | 36.3% | -4.2% |
| MOM-2-4 | 43.9% | 38.7% | 1.09 | 26.6% ** | 1.12 | 0.97 | 144% | 28.0% | 31.8% | 0.51 | 18.1% * | 1.24 | 1.79 | 141% | -15.8% | 51.1% | -14.2% |
| P/E* | 18.8% | 25.9% | 0.73 | 7.3% | 0.50 | 0.06 | 71% | 50.4% | 33.5% | 0.22 | 44.0% *** | 0.56 | 0.53 | 90% | 31.6% *** | 31.1% | 31.2% *** |
| P/B* | 15.5% | 28.2% | 1.08 | 3.5% | 0.93 | 1.67 | 61% | 50.4% | 32.4% | 0.52 | 43.4% *** | 0.06 | -0.93 | 85% | 34.9% *** | 39.6% | 34.4% *** |
| P/D | 25.1% | 29.6% | 0.81 | 8.9% | 0.79 | 0.70 | 76% | 39.1% | 30.1% | 1.19 | 25.0% *** | 0.13 | -0.56 | 72% | 14.0% | 37.8% | 10.4% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 19.5% | 16.9% | 1.18 | 5.4% | 0.92 | 0.51 | 10% | 27.0% | 27.3% | 0.47 | 17.9% ** | 1.08 | 1.58 | 35% | 7.5% | 25.9% | 6.8% |
| ICRGP | 18.2% | 14.5% | 1.23 | 2.4% | 0.45 | -0.22 | 26% | 23.7% | 23.1% | 0.35 | 14.9% * | 0.93 | 2.10 | 19% | 5.5% | 29.4% | 6.9% |
| ICRGF | 19.0% | 16.8% | 0.98 | 8.1% | 0.95 | 0.76 | 13% | 27.1% | 34.1% | 1.08 | 9.7% | 0.62 | -0.28 | 29% | 8.1% | 28.5% | -4.1% |
| ICRGE | 19.3% | 16.6% | 1.08 | 6.1% | 0.86 | 0.45 | 15% | 25.1% | 39.2% | 1.15 | 6.8% | 0.08 | -0.74 | 37% | 5.9% | 35.1% | -5.0% |
| II CCR | 17.8% | 15.3% | 1.07 | 6.1% | 0.87 | 0.55 | 8% | 29.7% | 37.0% | 1.44 | 12.5% | 0.27 | 0.66 | 10% | 11.9% | 32.3% | 0.9% |
| EMCRR | 18.9% | 16.3% | 1.05 | 5.8% | 0.83 | 0.38 | 7% | 35.4% | 49.4% | 2.35 | 8.1% | 0.03 | -0.96 | 12% | 16.5% | 41.4% | -3.3% |
| INFLATE | 28.4% | 23.3% | 1.20 | 10.5% | 0.05 | -1.40 | 16% | 21.8% | 34.7% | 1.15 | 8.4% | 1.29 | 1.55 | 16% | -6.6% | 38.2% | -7.7% |
| TRDGDP | 21.5% | 17.6% | 1.26 | 7.0% | 0.95 | 0.82 | 8% | 22.0% | 33.1% | 0.68 | 7.9% | 0.18 | -0.67 | 10% | 0.5% | 34.1% | -4.7% |
| MKCPGDP | 19.0% | 15.3% | 1.33 | 1.1% | 0.75 | -0.10 | 16% | 34.7% | 24.0% | 0.77 | 21.8% *** | -0.69 | -0.19 | 32% | 15.7% ** | 27.1% | 15.0% * |
| POPGR | 19.3% | 17.7% | 0.37 | 10.0% | 0.83 | 1.79 | 9% | 21.4% | 22.4% | 1.02 | 5.8% | 0.58 | -0.89 | 9% | 2.0% | 28.8% | -9.8% |
| AAGEGR | 20.0% | 17.2% | 0.95 | 2.8% | 0.76 | -0.10 | 9% | 14.2% | 20.3% | 0.51 | 3.8% | 0.45 | 1.08 | 11% | -5.9% | 26.6% | -4.7% |
| AVEAGE | 23.2% | 20.8% | 1.10 | 5.5% | 0.83 | 1.49 | 14% | 30.5% | 38.2% | 1.16 | 12.3% | 0.57 | 1.05 | 9% | 7.4% | 44.5% | 1.2% |
| MKTCAP | 17.4% | 14.5% | 1.00 | 2.7% | 0.69 | 0.37 | 13% | 43.4% | 32.0% | 0.15 | 34.0% *** | 0.43 | -0.23 | 31% | 26.1% ** | 44.9% | 25.7% * |
| BETA | 25.1% | 19.1% | 0.70 | 15.3% | 0.63 | -0.23 | 37% | 36.4% | 36.8% | 0.88 | 17.8% * | 1.23 | 1.42 | 32% | 11.3% | 55.4% | -3.2% |
| VOL | 19.5% | 8.0% | 0.87 | 5.8% | 0.44 | -0.38 | 21% | 30.5% | 27.5% | 0.84 | 16.9% ** | 0.51 | -0.40 | 28% | 11.0% | 52.9% | 5.4% |
| MOM-1 | 22.8% | 19.2% | 1.74 | -0.1% | 0.28 | -0.31 | 155% | 17.4% | 38.1% | 0.83 | 9.7% | 0.95 | 1.52 | 142% | -5.4% | 43.0% | 4.2% |
| MOM-2-4 | 25.3% | 20.8% | 1.24 | 7.7% | 1.09 | 1.83 | 78% | 25.2% | 39.6% | 0.70 | 13.8% | 1.20 | 2.01 | 100% | -0.1% | 52.8% | 0.4% |
| P/E* | 13.0% | 7.9% | 1.26 | -1.0% | 0.50 | -0.18 | 31% | 36.3% | 41.0% | 0.95 | 27.4% ** | 1.03 | 0.63 | 37% | 23.3% ** | 33.7% | 22.9% ** |
| P/B* | 11.7% | 5.3% | 1.09 | 1.0% | 0.93 | 0.74 | 28% | 33.9% | 35.7% | 1.02 | 25.3% ** | 1.35 | 1.58 | 27% | 22.2% * | 39.3% | 18.7% |
| P/D | 19.1% | 14.7% | 1.41 | 0.5% | 0.41 | -0.11 | 32% | 27.2% | 28.4% | 1.15 | 13.7% | 0.30 | -0.68 | 42% | 8.1% | 33.6% | 7.5% |
| IFC Composite | 18.3% | 26.7% | 0.77 | 4.2% * | 0.74 | 0.29 | | | | | | | | | | | |
| MSCI AC World | 16.6% | 15.4% | 1.00 | | 0.13 | 0.02 | | | | | | | | | | | |

-Significance level: * 10%, ** 5%, *** 1%.
-IFC Global and MSCI World Indices in US dollars: Unhedged.
-From January 1985-December 1987 the MSCI World Index was substituted for the MSCI All Country (AC) World Index.
-Price/Earnings and Price/Book ratios are unavailable until January 1986.
-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.
-Portfolios were reformed semi-annually.

Legend

| | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Global Market Capitalization |
| BETA | IFC Global Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Global Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E* | IFC Global Price/Earnings Ratio |
| P/B* | IFC Global Price/Book Ratio |
| P/D | IFC Global Price/Dividend Ratio |

**Table 5D**
*Emerging Market Risk Level Portfolio Strategy*
IFCG Indices - Semi-Annual Rebalancing: July 1991-June 1996

| | *High Tritile* | | | | | | | *Low Tritile* | | | | | | | *Low-High Attribute* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 16.7% | 26.2% | 0.64 | 6.5% | 2.40 | 6.49 | 34% | 24.9% | 26.6% | 0.94 | 12.1% | 0.53 | 0.39 | 57% | 8.2% | 19.2% | 1.5% |
| ICRGP | 18.5% | 29.2% | 1.49 | 1.1% | 1.28 | 1.19 | 52% | 20.9% | 23.2% | 0.28 | 13.8% | 1.01 | 1.00 | 53% | 2.4% | 19.6% | 8.6% |
| ICRGF | 14.5% | 21.8% | 0.07 | 8.8% | 1.95 | 4.49 | 42% | 30.3% | 30.5% | 1.80 | 10.5% | 0.17 | -1.21 | 51% | 15.7% | 25.7% | -2.4% |
| ICRGE | 18.4% | 27.6% | 0.54 | 8.6% | 2.68 | 7.79 | 52% | 29.6% | 31.7% | 1.71 | 10.9% | -0.18 | -0.66 | 56% | 11.3% | 24.3% | -1.9% |
| II CCR | 11.8% | 21.3% | 0.27 | 4.7% | 1.33 | 1.93 | 22% | 33.3% | 34.6% | 2.25 | 9.5% | 0.72 | -0.36 | 37% | 21.5% | 27.5% | 0.6% |
| EMCRR | 11.4% | 25.0% | 0.59 | 1.3% | 1.93 | 4.33 | 6% | 29.2% | 33.0% | 1.34 | 12.9% | -0.09 | -1.70 | 16% | 17.8% | 26.9% | 7.5% |
| INFLATE | 43.1% | 39.8% | 2.68 | 16.0% | 0.28 | -1.56 | 49% | 16.5% | 25.9% | 0.63 | 5.8% | 2.44 | 6.39 | 47% | -26.6% | 33.7% | -14.3% |
| TRDGDP | 15.4% | 32.6% | 0.69 | 4.2% | 2.65 | 7.56 | 31% | 39.6% | 43.9% | 2.88 | 10.9% | 0.88 | -0.73 | 40% | 24.1% | 37.1% | 2.6% |
| MKCPGDP | 12.8% | 24.1% | 0.60 | 2.6% | 2.35 | 6.18 | 34% | 35.4% | 36.5% | 2.15 | 13.7% | 0.85 | 0.62 | 63% | 22.6% | 37.5% | 6.9% |
| POPGR | 20.0% | 25.4% | 1.51 | 2.9% | 0.87 | 0.80 | 27% | 24.2% | 30.0% | 1.66 | 5.7% | 0.79 | 0.04 | 36% | 4.2% | 18.0% | -1.3% |
| AAGEGR | 20.7% | 24.0% | 0.71 | 9.9% | 1.08 | 0.77 | 29% | 23.7% | 31.2% | 1.66 | 5.7% | 0.74 | -0.70 | 30% | 3.0% | 20.5% | -8.4% |
| AVEAGE | 26.0% | 27.7% | 1.61 | 8.2% | 0.50 | -1.24 | 30% | 19.6% | 25.7% | 1.15 | 5.4% | 1.25 | 1.46 | 24% | -6.3% | 15.5% | -6.9% |
| MKTCAP | 16.5% | 22.7% | 0.40 | 8.1% | 1.94 | 4.67 | 29% | 38.4% | 38.6% | 2.68 | 11.4% | 0.60 | -1.00 | 58% | 21.9% | 31.7% | -0.8% |
| BETA | 24.3% | 23.7% | 0.52 | 15.3% | 0.68 | -0.27 | 55% | 23.9% | 39.7% | 2.83 | -3.7% | 0.71 | -0.39 | 64% | -0.4% | 34.5% | -23.0% |
| VOL | 26.7% | 31.4% | 2.00 | 5.8% | -0.47 | -1.22 | 52% | 23.5% | 28.7% | 1.51 | 6.3% | 1.34 | 0.68 | 57% | -3.2% | 30.3% | -3.6% |
| MOM-1 | 19.8% | 27.6% | 1.34 | 4.4% | 0.96 | -0.14 | 131% | 24.2% | 31.1% | 1.63 | 6.0% | 1.20 | 0.68 | 141% | 4.5% | 14.0% | -2.5% |
| MOM-2-4 | 21.2% | 32.8% | 1.56 | 4.4% | 1.00 | 0.35 | 132% | 20.6% | 25.0% | 1.31 | 4.6% | 0.52 | 0.03 | 133% | -0.6% | 26.1% | -3.9% |
| P/E* | 15.1% | 25.0% | 0.87 | 3.5% | 0.90 | 0.68 | 69% | 36.0% | 35.5% | 1.76 | 16.4% | 0.65 | 0.16 | 89% | 21.0% ** | 18.2% | 8.8% |
| P/B* | 16.6% | 30.1% | 0.23 | 10.0% | 1.70 | 3.82 | 51% | 31.7% | 30.9% | 2.11 | 9.1% | 0.10 | -2.01 | 76% | 15.0% | 34.1% | -5.0% |
| P/D | 18.0% | 25.5% | 0.96 | 5.6% | 0.77 | 0.23 | 62% | 23.2% | 29.1% | 2.23 | 0.3% | 0.06 | -1.27 | 58% | 5.3% | 15.7% | -9.4% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 11.1% | 23.2% | 0.53 | 1.7% | 2.67 | 7.87 | 9% | 26.2% | 27.4% | -0.47 | 25.9% | 0.41 | -0.42 | 43% | 15.0% | 24.5% | 20.1% |
| ICRGP | 11.7% | 23.6% | 0.51 | 2.6% | 2.02 | 4.63 | 32% | 28.4% | 31.6% | -1.06 | 32.3% * | 0.92 | 0.23 | 32% | 16.6% * | 18.3% | 25.6% *** |
| ICRGF | 9.8% | 24.6% | 0.41 | 1.2% | 2.50 | 7.07 | 11% | 17.5% | 27.1% | 0.03 | 13.1% | 0.40 | -0.91 | 14% | 7.6% | 25.8% | 7.7% |
| ICRGE | 13.6% | 25.8% | 0.59 | 3.4% | 2.03 | 4.69 | 22% | 24.1% | 29.3% | 0.47 | 15.8% | 0.31 | -0.81 | 43% | 10.5% | 21.7% | 8.2% |
| II CCR | 10.9% | 24.8% | 0.51 | 1.5% | 2.01 | 4.72 | 7% | 28.2% | 30.3% | 1.27 | 12.8% | -0.22 | -1.73 | 9% | 17.2% | 26.3% | 7.2% |
| EMCRR | 14.5% | 22.8% | 0.69 | 3.6% | 1.03 | 0.30 | 30% | 36.2% | 32.0% | 1.80 | 16.2% | 0.48 | -0.98 | 49% | 21.7% * | 25.9% | 8.4% |
| INFLATE | 27.4% | 33.0% | 1.57 | 9.6% | 0.15 | -1.58 | 21% | 11.1% | 27.4% | 0.70 | -0.1% | 2.41 | 6.44 | 12% | -16.3% | 33.3% | -13.8% |
| TRDGDP | 14.6% | 35.2% | 0.63 | 3.8% | 2.18 | 5.56 | 5% | 19.1% | 26.5% | 0.79 | 8.0% | 0.90 | 0.34 | 9% | 4.5% | 23.8% | 0.0% |
| MKCPGDP | 10.8% | 25.0% | 0.57 | 0.9% | 2.39 | 6.35 | 11% | 21.9% | 26.7% | 1.36 | 6.7% | -0.62 | -0.97 | 25% | 11.1% | 26.3% | 1.7% |
| POPGR | 19.8% | 24.5% | 0.61 | 9.8% | 2.32 | 6.70 | 17% | 9.5% | 18.8% | 0.56 | 0.0% | 2.05 | 5.32 | 12% | -10.4% ** | 10.3% | -13.9% ** |
| AAGEGR | 13.2% | 20.6% | 0.51 | 3.9% | 1.36 | 2.70 | 10% | 16.9% | 22.9% | 0.73 | 6.1% | 0.88 | 2.89 | 18% | 3.6% | 18.8% | -2.0% |
| AVEAGE | 9.8% | 11.1% | 0.27 | 3.0% | 1.28 | 2.11 | 10% | 18.4% | 33.2% | 0.97 | 5.4% | 1.47 | 2.72 | 15% | 8.5% | 25.9% | -1.7% |
| MKTCAP | 12.9% | 23.1% | 0.53 | 3.3% | 2.13 | 5.28 | 15% | 35.1% | 37.3% | 2.32 | 11.4% | 1.03 | 1.17 | 29% | 22.2% | 37.8% | 4.0% |
| BETA | 18.9% | 27.0% | 0.32 | 11.2% | 0.66 | -0.38 | 37% | 23.2% | 34.2% | 1.44 | 7.5% | 0.74 | -0.69 | 41% | 4.3% | 30.4% | -7.8% |
| VOL | 14.9% | 32.7% | 1.12 | 0.5% | 0.30 | -1.44 | 24% | 15.8% | 27.0% | 0.15 | 9.3% | 2.23 | 5.94 | 29% | 0.9% | 33.1% | 4.6% |
| MOM-1 | 12.7% | 23.8% | 0.42 | 4.2% | 1.79 | 3.83 | 161% | 11.7% | 28.1% | 1.17 | -3.3% | 0.92 | 0.95 | 144% | -1.0% | 18.4% | -11.7% |
| MOM-2-4 | 13.3% | 26.4% | 0.71 | 3.3% | 0.54 | -0.53 | 85% | 23.3% | 31.6% | 1.54 | 5.2% | 0.97 | -0.11 | 119% | 9.9% ** | 23.8% | -2.3% |
| P/E* | 8.2% | 27.4% | 0.69 | -2.6% | 1.55 | 3.38 | 35% | 26.1% | 30.8% | 0.15 | 19.7% | 1.17 | 3.11 | 45% | 18.0% ** | 16.4% | 18.1% * |
| P/B* | 11.2% | 33.9% | 0.39 | 2.6% | 2.14 | 5.45 | 24% | 17.0% | 18.9% | 0.93 | 4.1% | -0.33 | -1.03 | 29% | 5.7% | 31.2% | -2.6% |
| P/D | 8.3% | 23.7% | 0.24 | 1.2% | 0.91 | 0.86 | 44% | 11.9% | 26.0% | 1.33 | -3.5% | 0.35 | -0.81 | 56% | 3.7% | 14.6% | -8.8% |
| IFC Composite | 13.2% | 24.4% | 0.61 | 3.1% * | 2.10 | 5.26 | | | | | | | | | | | |
| MSCI AC World | 12.4% | 8.5% | 1.00 | | -0.56 | 0.52 | | | | | | | | | | | |

-Significance level: * 10%, ** 5%, *** 1%.
-IFC Global and MSCI World Indices in US dollars: Unhedged.
-From January 1985-December 1987 the MSCI World Index was substituted for the MSCI All Country (AC) World Index.
-Price/Earnings and Price/Book ratios are unavailable until January 1986.
-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.
-Portfolios were reformed semi-annually.

Legend

| | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Global Market Capitalization |
| BETA | IFC Global Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Global Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E* | IFC Global Price/Earnings Ratio |
| P/B* | IFC Global Price/Book Ratio |
| P/D | IFC Global Price/Dividend Ratio |

**Table 5E**

*Emerging Market Risk Level Portfolio Strategy*

IFCI Indices - Quarterly Rebalancing: July 1991-June 1996

| | *High Tritile* | | | | | | | *Low Tritile* | | | | | | | *Low-High Attribute* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Beta | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 21.3% | 24.5% | 1.11 | 7.8% | 1.41 | 2.65 | 55% | 36.9% | 29.7% | 1.58 | 19.6% | 0.29 | -0.92 | 83% | 15.6% | 20.0% | 7.7% |
| ICRGP | 21.0% | 26.6% | 1.53 | 3.8% | 0.77 | 0.36 | 77% | 28.6% | 29.8% | 0.54 | 19.4% | 0.96 | 0.19 | 79% | 7.6% | 20.1% | 11.5% |
| ICRGF | 16.1% | 22.4% | 0.29 | 8.7% | 1.63 | 4.91 | 49% | 32.2% | 28.4% | 1.51 | 15.8% | 0.43 | -0.64 | 88% | 16.1% | 26.4% | 2.9% |
| ICRGE | 17.8% | 21.9% | 0.43 | 9.6% | 1.57 | 3.63 | 72% | 36.5% | 30.4% | 1.11 | 23.0% | -0.23 | -1.48 | 76% | 18.7% | 26.7% | 9.3% |
| II CCR | 13.2% | 23.6% | 0.54 | 3.8% | 1.55 | 4.21 | 31% | 41.1% | 32.6% | 1.54 | 24.0% | 0.21 | -0.74 | 44% | 27.9% * | 29.2% | 16.1% |
| EMCRR | 12.2% | 21.5% | 0.64 | 2.1% | 1.51 | 3.81 | 46% | 41.3% | 33.7% | 1.47 | 25.0% | 0.67 | 0.22 | 57% | 29.2% * | 29.6% | 18.8% |
| INFLATE | 43.6% | 42.4% | 1.89 | 24.1% | 0.66 | 0.14 | 57% | 14.2% | 23.5% | 0.55 | 4.6% | 1.33 | 3.89 | 51% | -29.4% | 40.5% | -23.6% |
| TRDGDP | 20.1% | 24.3% | 0.26 | 12.6% | 1.57 | 3.68 | 38% | 37.2% | 34.4% | 1.81 | 18.2% | 0.70 | 0.51 | 45% | 17.1% | 27.4% | 1.4% |
| MKCPGDP | 15.0% | 23.5% | 0.48 | 6.3% | 2.28 | 8.00 | 59% | 38.7% | 38.5% | 1.75 | 20.5% | 1.23 | 2.89 | 89% | 23.7% | 38.3% | 10.0% |
| POPGR | 26.9% | 28.2% | 1.55 | 9.9% | 1.14 | 1.23 | 29% | 23.7% | 25.5% | 1.47 | 7.1% | 0.43 | -0.29 | 44% | -3.2% | 16.5% | -6.9% |
| AAGEGR | 24.1% | 30.2% | 0.60 | 14.4% | 1.21 | 1.91 | 41% | 26.6% | 26.6% | 1.70 | 8.6% | 0.59 | -0.49 | 40% | 2.5% | 19.8% | -9.9% |
| AVEAGE | 25.0% | 26.2% | 1.55 | 8.1% | 0.27 | -0.57 | 38% | 27.5% | 25.6% | 0.93 | 15.3% | 0.91 | 0.87 | 28% | 2.5% | 20.8% | 3.1% |
| MKTCAP | 22.5% | 25.0% | 0.55 | 13.8% | -0.01 | -1.08 | 46% | 31.3% | 30.6% | 1.33 | 15.4% | 0.97 | 0.25 | 86% | 8.7% | 24.6% | -2.6% |
| BETA | 25.2% | 26.4% | -0.33 | 23.2% | 0.19 | -0.65 | 87% | 33.4% | 36.9% | 1.94 | 13.6% | 1.21 | 1.39 | 97% | 8.2% | 43.5% | -13.8% |
| VOL | 30.4% | 32.8% | 1.54 | 14.0% | 0.13 | -1.50 | 81% | 17.4% | 17.2% | 0.49 | 8.6% | 1.77 | 3.86 | 53% | -12.9% | 30.7% | -9.5% |
| MOM-1 | 16.5% | 24.0% | 1.21 | 2.2% | 0.92 | 0.33 | 271% | 35.8% | 28.1% | 1.24 | 21.2% | 0.32 | 0.19 | 293% | 19.3% ** | 16.5% | 14.9% * |
| MOM-2-4 | 30.8% | 34.9% | 1.99 | 10.9% | 1.57 | 2.89 | 298% | 28.5% | 25.5% | 0.52 | 19.4% | 0.29 | 0.00 | 302% | -2.2% | 30.6% | 4.4% |
| P/E | 17.3% | 26.7% | 1.55 | 1.0% | 1.27 | 1.67 | 126% | 33.9% | 29.9% | 1.07 | 20.0% | 0.40 | -0.41 | 130% | 16.5% * | 26.1% | 14.9% |
| P/B | 11.6% | 27.3% | 1.03 | -1.7% | 1.33 | 3.09 | 91% | 44.2% | 32.1% | 1.21 | 30.0% * | 0.52 | -0.69 | 120% | 32.6% | 37.0% | 27.5% |
| P/D | 29.2% | 33.7% | 1.13 | 15.9% | 0.78 | 0.26 | 104% | 16.1% | 22.4% | 1.07 | 2.6% | 0.23 | -0.63 | 92% | -13.1% | 32.9% | -17.3% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 23.5% | 26.2% | 0.22 | 16.9% | 0.90 | 1.98 | 42% | 37.6% | 37.2% | 1.17 | 23.5% | 0.81 | 1.70 | 77% | 14.1% | 35.5% | 2.4% |
| ICRGP | 17.3% | 26.9% | 0.44 | 9.1% | 0.74 | 1.33 | 68% | 31.9% | 35.4% | 0.30 | 24.5% | 1.00 | 0.80 | 52% | 14.6% | 31.3% | 11.3% |
| ICRGF | 14.5% | 27.7% | 0.29 | 7.1% | 0.81 | 2.17 | 20% | 24.1% | 27.9% | 0.80 | 13.8% | 0.16 | -0.52 | 69% | 9.6% | 35.4% | 2.5% |
| ICRGE | 23.0% | 23.2% | 0.38 | 15.0% | 0.48 | 1.77 | 27% | 29.9% | 36.0% | 0.38 | 22.2% | 0.21 | 0.82 | 53% | 6.9% | 31.7% | 3.1% |
| II CCR | 19.3% | 26.1% | 0.47 | 10.5% | 0.70 | 2.76 | 10% | 36.0% | 40.1% | 0.73 | 25.6% | 0.27 | 0.40 | 25% | 16.7% | 39.5% | 11.0% |
| EMCRR | 18.1% | 25.2% | 0.55 | 8.7% | 0.74 | 2.67 | 21% | 37.0% | 39.3% | 0.75 | 26.6% | 0.43 | 0.35 | 45% | 18.9% | 38.3% | 13.8% |
| INFLATE | 27.7% | 38.2% | 1.31 | 12.8% | 0.60 | 0.40 | 42% | 15.6% | 29.6% | 0.64 | 5.2% | 0.50 | 1.74 | 24% | -12.1% | 35.1% | -11.7% |
| TRDGDP | 21.3% | 29.4% | 0.52 | 12.0% | 0.85 | 3.48 | 10% | 21.6% | 28.1% | 0.49 | 13.2% | -0.04 | -0.55 | 14% | 0.4% | 23.9% | -2.9% |
| MKCPGDP | 16.2% | 24.6% | 0.09 | 10.7% | 1.16 | 3.16 | 32% | 26.5% | 28.3% | 0.79 | 16.1% | 0.42 | -0.47 | 39% | 10.3% | 23.2% | 1.3% |
| POPGR | 20.7% | 25.9% | 0.52 | 11.8% | 0.52 | 0.96 | 17% | 16.0% | 24.7% | 1.07 | 3.1% | 0.78 | 1.63 | 33% | -4.7% | 13.4% | -12.8% * |
| AAGEGR | 17.9% | 34.0% | 0.19 | 11.6% | -0.02 | -0.38 | 22% | 19.6% | 21.8% | 0.98 | 7.0% | 0.68 | 1.84 | 20% | 1.7% | 26.9% | -8.7% |
| AVEAGE | 15.5% | 22.6% | 0.97 | 3.7% | 0.08 | 0.69 | 24% | 20.9% | 25.7% | 0.38 | 13.0% | 0.55 | 1.00 | 16% | 5.4% | 19.3% | 5.2% |
| MKTCAP | 18.7% | 29.1% | 0.48 | 10.2% | 0.02 | -0.48 | 14% | 22.9% | 23.9% | 1.15 | 8.9% | 0.84 | 0.86 | 37% | 4.2% | 25.9% | -5.4% |
| BETA | 25.5% | 31.6% | -0.11 | 21.8% | 0.92 | 2.07 | 67% | 35.7% | 45.8% | 2.78 | 9.6% | 1.44 | 3.57 | 63% | 10.2% | 54.9% | -16.3% |
| VOL | 26.6% | 35.1% | 1.03 | 14.1% | 0.28 | -0.36 | 23% | 19.2% | 26.3% | 0.48 | 10.1% | 1.10 | 2.67 | 43% | -7.4% | 32.5% | -8.1% |
| MOM-1 | 10.3% | 23.6% | 0.13 | 5.0% | 0.20 | -0.84 | 300% | 33.9% | 30.3% | 0.67 | 23.6% | -0.10 | 1.03 | 328% | 23.6% * | 24.0% | 14.5% |
| MOM-2-4 | 7.7% | 25.7% | 0.80 | -2.3% | -0.28 | -0.29 | 186% | 34.9% | 27.2% | 0.02 | 29.9% ** | 0.48 | 0.12 | 199% | 27.3% *** | 27.2% | 28.0% * |
| P/E | 15.0% | 25.9% | 1.47 | -1.1% | 0.02 | 1.29 | 72% | 25.7% | 31.9% | 0.20 | 19.3% | -0.30 | 0.44 | 85% | 10.7% | 26.6% | 16.2% |
| P/B | 12.3% | 27.5% | 1.35 | -3.5% | 0.35 | 1.56 | 46% | 31.1% | 31.4% | 0.70 | 21.1% | -0.23 | -0.58 | 63% | 18.8% | 35.8% | 20.5% |
| P/D | 30.8% | 36.7% | 0.19 | 24.6% | 0.19 | -0.41 | 89% | 10.7% | 25.0% | 1.13 | -3.2% | 0.01 | -0.54 | 66% | -20.1% | 40.2% | -31.9% |
| Liquidity Weighted | | | | | | | | | | | | | | | | | |
| ICRGC | 16.8% | 28.3% | 0.25 | 9.7% | 1.32 | 2.94 | 35% | 42.4% | 38.4% | 1.18 | 28.1% | 0.70 | 1.07 | 71% | 25.6% | 40.2% | 14.3% |
| ICRGP | 11.4% | 27.7% | 0.64 | 1.4% | 0.74 | 1.66 | 48% | 38.8% | 39.2% | 0.23 | 32.0% | 1.28 | 2.62 | 68% | 27.4% ** | 34.9% | 26.5% |
| ICRGF | 9.8% | 29.3% | 0.23 | 2.7% | 1.06 | 2.38 | 10% | 30.3% | 28.6% | 1.27 | 16.1% | -0.07 | -0.39 | 69% | 20.4% | 39.2% | 9.2% |
| ICRGE | 16.8% | 26.2% | 0.33 | 9.1% | 1.34 | 4.28 | 15% | 34.4% | 37.9% | 0.58 | 24.9% | 0.07 | 0.60 | 45% | 17.6% | 34.8% | 11.7% |
| II CCR | 14.9% | 26.4% | 0.30 | 7.4% | 1.35 | 4.38 | 9% | 42.5% | 46.7% | 0.82 | 31.7% | 0.26 | 0.04 | 14% | 27.5% | 49.6% | 20.2% |
| EMCRR | 15.2% | 26.2% | 0.45 | 6.4% | 1.33 | 4.21 | 29% | 45.8% | 45.8% | 1.12 | 32.6% | 0.31 | -0.13 | 42% | 30.6% | 48.6% | 22.0% |
| INFLATE | 29.8% | 39.0% | 1.56 | 12.9% | 0.65 | 0.79 | 31% | 11.0% | 29.5% | 0.49 | 1.7% | 0.94 | 2.76 | 26% | -18.8% | 38.1% | -15.3% |
| TRDGDP | 20.1% | 24.3% | 0.26 | 12.6% | 1.57 | 3.68 | 38% | 37.2% | 34.4% | 1.81 | 18.2% | 0.70 | 0.51 | 45% | 17.1% | 27.4% | 1.4% |
| MKCPGDP | 9.8% | 29.0% | 0.09 | 4.1% | 1.63 | 4.72 | 38% | 32.7% | 30.8% | 0.74 | 22.8% | 0.04 | -0.61 | 31% | 22.9% | 28.2% | 14.6% |
| POPGR | 17.2% | 33.2% | 0.79 | 6.2% | 0.13 | 0.17 | 5% | 15.8% | 25.4% | 0.60 | 6.4% | 1.29 | 3.08 | 33% | -1.4% | 14.8% | -4.0% |
| AAGEGR | 19.7% | 34.8% | 0.19 | 13.4% | -0.16 | -0.21 | 21% | 14.8% | 27.3% | 1.53 | -1.9% | 0.45 | 1.28 | 14% | -4.9% | 28.0% | -19.4% |
| AVEAGE | 12.8% | 22.3% | 0.76 | 2.3% | 0.02 | 0.59 | 23% | 17.6% | 33.5% | 0.43 | 9.4% | 0.15 | 0.09 | 5% | 4.9% | 20.1% | 3.0% |
| MKTCAP | 22.1% | 31.9% | 0.71 | 11.8% | -0.30 | -0.49 | 8% | 25.3% | 32.1% | 1.34 | 9.6% | 1.12 | 0.55 | 51% | 3.3% | 25.5% | -6.4% |
| BETA | 29.1% | 32.7% | -0.38 | 27.4% | 0.60 | 0.99 | 54% | 49.0% | 61.8% | 4.15 | 12.5% | 2.01 | 5.98 | 65% | 19.9% | 71.0% | -19.1% |
| VOL | 31.9% | 37.0% | 0.92 | 20.3% | 0.48 | 0.41 | 14% | 20.0% | 28.3% | 0.61 | 9.8% | 1.44 | 3.99 | 39% | -12.0% | 36.7% | -14.6% |
| MOM-1 | 7.5% | 25.6% | -0.12 | 4.2% | 0.25 | -1.30 | 319% | 32.1% | 32.5% | 0.88 | 19.9% | 0.15 | 1.87 | 323% | 24.6% * | 27.3% | 11.6% |
| MOM-2-4 | -1.3% | 28.1% | 0.69 | -11.0% | -0.23 | -0.58 | 184% | 35.0% | 28.3% | 0.27 | 27.9% * | 0.35 | -0.17 | 215% | 36.4% *** | 31.4% | 34.8% ** |
| P/E | 10.8% | 25.4% | 1.35 | -4.3% | 0.07 | 1.83 | 62% | 34.2% | 42.8% | 0.55 | 24.9% | 0.43 | 0.62 | 67% | 23.5% | 35.1% | 25.0% |
| P/B | 10.5% | 28.1% | 1.23 | -4.3% | 0.28 | 1.36 | 47% | 40.7% | 38.3% | 0.58 | 31.7% | 0.17 | -0.55 | 52% | 30.2% | 46.5% | 31.9% |
| P/D | 36.1% | 39.1% | 0.49 | 27.6% | 0.46 | -0.45 | 82% | 11.0% | 34.5% | 2.50 | -13.9% | 0.49 | -0.14 | 60% | -25.1% | 47.3% | -45.6% * |

| | | | | | | |
|---|---|---|---|---|---|---|
| IFC Composite | 17.3% | 26.5% | 0.66 | 7.3% ** | 0.41 | 0.12 |
| MSCI AC World | 12.1% | 6.8% | 1.00 | | -1.28 | 3.17 |

-Significance level: * 10%, ** 5%, *** 1%.

-IFC Investables and MSCI World Indices in US dollars: Unhedged.

-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.

-Portfolios were reformed semi-annually.

-Liquidity weighted portfolios based on IFC USD value traded - 12 month average.

Legend

| | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Investables Market Capitalization |
| BETA | IFC Investables Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Investables Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E | IFC Investables Price/Earnings Ratio |
| P/B | IFC Investables Price/Book Ratio |
| P/D | IFC Investables Price/Dividend Ratio |

**Table 5F**

*Emerging Market Risk Level Portfolio Strategy*

IFCI Indices - Semi-Annual Rebalancing: July 1991-June 1996

| | *High Tritile* | | | | | | | | | *Low Tritile* | | | | | | | | | *Low-High Attribute* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Risk Attribute | Average Annual Return | Standard Deviation | IFC Comp Beta | MSCI AC World Beta | IFC Comp Alpha | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | IFC Comp Beta | MSCI AC World Beta | IFC Comp Alpha | MSCI AC World Alpha | Skewness | Kurtosis | Average Annual Turnover | Average Annual Return | Standard Deviation | IFC Comp Alpha | MSCI AC World Alpha |
| Equal Weighted | | | | | | | | | | | | | | | | | | | | | | |
| ICRGC | 18.4% | 31.8% | 1.11 | 1.37 | -0.2% | 2.1% | 2.15 | 5.16 | 50% | 36.3% | 40.2% | 1.12 | 2.11 | 17.7% | 14.4% | 0.95 | 0.00 | 73% | 18.0% | 24.7% | 13.6% | 8.1% |
| ICRGP | 25.2% | 36.7% | 1.26 | 2.09 | 4.6% | 2.5% | 1.34 | 1.66 | 57% | 24.5% | 30.2% | 0.95 | 0.76 | 7.9% | 13.4% | 1.33 | 2.05 | 55% | -0.7% | 17.5% | -0.9% | 6.7% |
| ICRGF | 17.0% | 25.9% | 0.81 | 0.25 | 2.1% | 9.5% | 2.13 | 5.30 | 45% | 38.2% | 40.7% | 1.11 | 2.72 | 19.7% | 11.1% | 0.84 | -0.39 | 76% | 21.2% | 35.5% | 13.3% | -2.5% |
| ICRGE | 18.7% | 24.0% | 0.82 | 0.48 | 3.9% | 9.7% | 2.16 | 5.79 | 48% | 34.8% | 36.7% | 1.05 | 1.91 | 17.1% | 14.6% | 0.66 | -0.71 | 55% | 16.1% | 25.1% | 8.9% | 0.7% |
| II CCR | 12.9% | 26.0% | 0.82 | 0.39 | -2.1% | 4.4% | 2.03 | 5.00 | 28% | 44.7% | 45.8% | 1.40 | 2.59 | 22.4% * | 18.3% | 0.96 | -0.51 | 43% | 31.8% ** | 37.3% | 20.2% | 9.8% |
| EMCRR | 13.7% | 24.5% | 0.73 | 0.84 | -0.1% | 1.3% | 1.58 | 2.12 | 38% | 44.5% | 45.0% | 1.32 | 2.54 | 23.3% * | 18.8% | 1.06 | -0.15 | 57% | 30.8% ** | 38.4% | 19.2% | 13.3% |
| INFLATE | 49.5% | 53.0% | 1.40 | 3.48 | 27.3% | 16.3% | 0.95 | -0.18 | 55% | 17.1% | 28.6% | 0.88 | 0.63 | 1.4% | 6.3% | 2.21 | 5.50 | 46% | -32.4% | 49.8% | -30.2% | -14.2% |
| TRDGDP | 21.2% | 34.2% | 1.10 | 0.24 | 2.6% | 13.4% | 2.56 | 7.27 | 38% | 38.7% | 47.5% | 1.36 | 3.28 | 16.9% | 6.7% | 1.08 | -0.27 | 46% | 17.5% | 41.8% | 10.0% | -10.8% |
| MKCPGDP | 16.2% | 21.6% | 0.69 | 0.46 | 2.9% | 7.3% | 2.01 | 4.99 | 44% | 40.4% | 53.6% | 1.33 | 3.16 | 19.2% | 10.4% | 1.34 | 1.67 | 65% | 24.2% | 49.9% | 12.0% | -1.0% |
| POPGR | 28.3% | 36.5% | 1.13 | 2.31 | 9.5% | 4.6% | 1.25 | 0.16 | 30% | 27.1% | 36.4% | 1.25 | 2.20 | 6.8% | 3.7% | 1.15 | 0.76 | 45% | -1.2% | 15.3% | -7.0% | -5.0% |
| AAGEGR | 22.6% | 31.6% | 0.99 | 0.87 | 5.6% | 10.5% | 1.46 | 1.04 | 38% | 29.4% | 39.9% | 1.15 | 2.37 | 10.4% | 5.6% | 1.32 | 0.33 | 36% | 6.8% | 18.0% | 0.5% | -9.1% |
| AVEAGE | 28.1% | 34.9% | 1.12 | 2.11 | 9.3% | 5.8% | 0.76 | -0.62 | 39% | 28.1% | 30.4% | 1.04 | 1.35 | 10.4% ** | 12.1% | 1.28 | 1.01 | 28% | 0.1% | 10.2% | -3.2% | 2.2% |
| MKTCAP | 22.6% | 28.5% | 0.86 | 1.33 | 7.3% | 7.1% | 1.32 | 0.47 | 31% | 28.6% | 37.3% | 1.24 | 1.76 | 8.2% | 8.8% | 1.11 | 1.45 | 67% | 6.0% | 20.8% | -3.4% | -2.4% |
| BETA | 23.5% | 22.1% | 0.57 | 0.75 | 11.9% | 12.6% | 0.47 | -1.57 | 63% | 32.5% | 38.1% | 0.88 | 2.27 | 16.9% | 9.4% | 0.76 | -0.04 | 93% | 9.0% | 33.5% | 0.7% | -7.4% |
| VOL | 33.6% | 43.9% | 0.99 | 3.04 | 16.6% | 4.4% | 0.46 | -1.13 | 60% | 15.2% | 17.4% | 0.47 | 0.49 | 4.8% | 6.2% | 1.04 | 0.92 | 36% | -18.3% | 40.1% | -16.2% | -2.3% |
| MOM-1 | 24.4% | 38.3% | 1.01 | 2.33 | 7.2% | 1.0% | 1.34 | 1.23 | 144% | 31.5% | 39.8% | 1.28 | 1.96 | 10.9% | 10.7% | 1.03 | -0.11 | 152% | 7.2% * | 16.2% | -0.6% | 5.6% |
| MOM-2-4 | 25.9% | 38.9% | 1.32 | 1.98 | 4.8% | 4.9% | 1.56 | 1.90 | 154% | 29.3% | 38.5% | 1.16 | 2.37 | 10.1% | 4.8% | 0.96 | -0.45 | 158% | 3.4% | 14.2% | 1.0% | -4.2% |
| P/E | 20.4% | 31.0% | 0.94 | 1.66 | 4.1% | 2.4% | 1.41 | 0.57 | 93% | 41.9% | 34.4% | 1.13 | 1.48 | 23.0% *** | 24.5% | 0.77 | -0.01 | 101% | 21.4% *** | 15.7% | 14.6% * | 18.0% * |
| P/B | 11.6% | 32.3% | 1.02 | 0.47 | -5.9% | 2.6% | 1.98 | 4.81 | 66% | 52.1% | 57.1% | 0.98 | 2.90 | 35.5% | 24.4% | 2.31 | 6.06 | 93% | 40.6% | 62.1% | 37.1% | 17.7% |
| P/D | 33.3% | 43.8% | 1.17 | 2.24 | 14.0% | 10.3% | 1.43 | 1.46 | 74% | 17.7% | 30.4% | 0.76 | 1.48 | 3.6% | 0.6% | 0.27 | -0.89 | 67% | -15.6% | 42.3% | -14.7% | -13.8% |
| Capitalization Weighted | | | | | | | | | | | | | | | | | | | | | | |
| ICRGC | 16.6% | 29.6% | 0.96 | 1.04 | -0.1% | 2.7% | 2.02 | 5.52 | 23% | 31.8% | 34.1% | 0.79 | 1.64 | 17.4% | 13.8% | 0.00 | -1.86 | 45% | 15.3% | 37.6% | 13.2% | 6.9% |
| ICRGP | 21.8% | 30.5% | 1.03 | 0.71 | 4.2% | 11.0% | 1.67 | 4.50 | 42% | 25.3% | 32.3% | 0.90 | 0.22 | 9.4% | 18.6% | 1.79 | 3.28 | 36% | 3.6% | 17.0% | 0.9% | 3.5% |
| ICRGF | 14.9% | 30.1% | 0.94 | 0.17 | -1.5% | 8.1% | 2.15 | 5.74 | 16% | 22.1% | 30.6% | 0.72 | 1.43 | 8.7% | 6.6% | 0.37 | 0.20 | 61% | 7.1% | 35.7% | 5.9% | -5.7% |
| ICRGE | 24.9% | 29.7% | 0.94 | 0.55 | 8.4% | 14.9% | 1.89 | 4.69 | 21% | 26.0% | 29.4% | 0.89 | 0.97 | 10.3% | 13.3% | 0.53 | -0.71 | 44% | 1.1% | 24.4% | -2.4% | -5.7% |
| II CCR | 19.8% | 31.2% | 0.98 | 0.50 | 2.7% | 10.3% | 1.81 | 4.76 | 5% | 34.6% | 35.7% | 0.87 | 1.60 | 19.1% | 16.9% | 0.19 | -1.24 | 16% | 14.8% | 38.1% | 12.0% | 2.5% |
| EMCRR | 19.5% | 30.3% | 0.95 | 0.67 | 2.8% | 8.6% | 1.71 | 4.12 | 7% | 37.3% | 36.3% | 0.93 | 1.74 | 21.0% * | 18.4% | 0.34 | -1.24 | 17% | 17.8% | 36.0% | 13.9% | 5.7% |
| INFLATE | 30.1% | 32.0% | 0.79 | 1.74 | 15.7% | 11.1% | 0.13 | -2.06 | 24% | 18.1% | 34.6% | 1.11 | 0.62 | -0.6% | 7.2% | 1.97 | 4.80 | 14% | -12.0% | 37.4% | -20.6% | -8.1% |
| TRDGDP | 22.6% | 37.1% | 1.20 | 0.54 | 2.8% | 12.5% | 2.03 | 5.60 | 6% | 19.4% | 28.4% | 0.95 | 1.46 | 2.9% | 2.7% | 1.17 | 1.01 | 8% | -3.2% | 26.5% | -4.2% | -13.9% |
| MKCPGDP | 18.8% | 25.4% | 0.79 | 0.38 | 4.3% | 10.4% | 1.82 | 4.59 | 27% | 29.3% | 35.4% | 0.96 | 2.53 | 12.8% | 4.4% | 0.66 | -0.22 | 26% | 10.5% | 34.6% | 4.1% | -10.2% |
| POPGR | 20.8% | 25.8% | 0.90 | 1.08 | 4.9% | 6.8% | 1.70 | 4.12 | 13% | 17.4% | 30.7% | 1.02 | 1.40 | 0.0% | 1.3% | 1.41 | 1.99 | 28% | -3.3% | 15.5% | -9.2% | -9.6% |
| AAGEGR | 15.8% | 27.9% | 0.91 | 0.54 | -0.2% | 6.4% | 1.25 | 1.84 | 18% | 20.7% | 25.2% | 0.82 | 1.35 | 5.8% | 4.6% | 1.61 | 3.34 | 15% | 4.9% | 20.8% | 1.7% | -5.9% |
| AVEAGE | 16.3% | 26.4% | 0.78 | 1.18 | 2.1% | 2.4% | 0.73 | 0.35 | 19% | 20.9% | 25.4% | 0.88 | 0.89 | 5.2% | 8.4% | 1.78 | 4.67 | 13% | 4.6% | 20.1% | -1.2% | 1.8% |
| MKTCAP | 18.1% | 27.8% | 0.99 | 1.07 | 1.0% | 4.4% | 1.57 | 3.08 | 8% | 21.5% | 26.0% | 0.73 | 1.40 | 7.8% | 4.9% | 0.96 | 0.50 | 22% | 3.4% | 21.0% | 2.4% | -3.6% |
| BETA | 28.4% | 25.9% | 0.75 | 0.60 | 14.3% * | 18.1% | 1.00 | 0.22 | 49% | 36.7% | 52.9% | 1.22 | 3.19 | 17.0% | 6.6% | 1.10 | 1.46 | 34% | 8.3% | 50.4% | -1.7% | -15.7% |
| VOL | 26.9% | 34.0% | 0.89 | 2.13 | 11.2% | 4.9% | -0.02 | -1.95 | 15% | 17.3% | 32.3% | 0.98 | 0.54 | 0.2% | 7.2% | 1.81 | 4.45 | 42% | -9.6% | 35.2% | -15.2% | -1.8% |
| MOM-1 | 14.2% | 21.0% | 0.60 | 0.90 | 2.3% | 2.6% | 0.33 | -1.04 | 152% | 22.0% | 38.0% | 1.24 | 2.02 | 1.7% | 0.2% | 1.03 | 0.28 | 179% | 7.7% | 28.2% | -4.9% | -6.5% |
| MOM-2-4 | 15.6% | 31.4% | 0.99 | 1.45 | -1.4% | -0.5% | 0.79 | 0.64 | 92% | 18.2% | 32.4% | 1.05 | 1.71 | 0.3% | -1.3% | 1.57 | 2.93 | 78% | 2.6% | 25.1% | -2.6% | -4.9% |
| P/E | 16.2% | 32.4% | 1.10 | 1.73 | -2.2% | -3.0% | 1.42 | 3.15 | 30% | 29.4% | 29.1% | 0.86 | -0.06 | 14.0% * | 25.2% | 0.30 | 0.48 | 46% | 13.3% | 24.5% | 12.0% | 24.0% ** |
| P/B | 14.5% | 34.3% | 1.10 | 0.73 | -4.0% | 3.1% | 1.96 | 5.54 | 33% | 38.1% | 36.9% | 0.78 | 1.93 | 23.8% | 17.7% | 1.30 | 2.04 | 39% | 23.5% | 44.0% | 23.6% | 10.5% |
| P/D | 31.0% | 35.5% | 0.95 | 1.25 | 14.5% | 16.2% | 0.91 | 0.15 | 47% | 13.6% | 32.3% | 0.84 | 1.42 | -1.5% | -2.7% | 0.13 | -0.76 | 47% | -17.4% | 37.4% | -20.3% | -23.0% |
| Liquidity Weighted | | | | | | | | | | | | | | | | | | | | | | |
| ICRGC | 12.4% | 27.1% | 0.89 | 0.84 | -3.4% | 0.2% | 1.91 | 4.70 | 21% | 33.6% | 33.7% | 0.65 | 1.97 | 20.9% | 12.8% | -0.02 | -2.12 | 40% | 21.2% | 37.0% | 20.0% | 8.5% |
| ICRGP | 15.6% | 27.9% | 0.96 | 0.75 | -1.1% | 4.5% | 1.88 | 4.73 | 24% | 31.9% | 29.9% | 0.68 | 0.56 | 18.9% | 22.4% | 0.85 | -0.39 | 52% | 16.4% ** | 21.1% | 15.7% | 13.8% |
| ICRGF | 10.9% | 31.1% | 0.96 | 0.14 | -5.9% | 4.1% | 2.04 | 5.02 | 5% | 26.3% | 29.0% | 0.56 | 2.05 | 14.9% | 5.9% | -0.47 | 0.36 | 68% | 15.4% | 39.4% | 16.5% | -2.4% |
| ICRGE | 18.0% | 29.4% | 0.97 | 0.42 | 1.1% | 9.1% | 2.11 | 5.77 | 9% | 29.2% | 30.9% | 0.89 | 1.33 | 13.5% | 13.4% | 0.16 | -1.34 | 42% | 11.3% | 25.0% | 8.1% | 0.1% |
| II CCR | 16.0% | 30.6% | 0.95 | 0.33 | -0.6% | 7.8% | 1.95 | 5.00 | 4% | 39.6% | 42.9% | 0.84 | 2.07 | 24.6% | 18.5% | 0.94 | 0.96 | 12% | 23.6% | 49.2% | 20.9% | 6.6% |
| EMCRR | 17.9% | 30.9% | 0.95 | 0.69 | 1.3% | 6.5% | 1.65 | 3.40 | 13% | 47.7% | 45.0% | 0.99 | 2.81 | 30.6% * | 19.9% | 0.69 | -0.53 | 17% | 29.7% | 46.7% | 25.1% | 9.3% |
| INFLATE | 31.2% | 36.4% | 0.80 | 2.29 | 16.6% | 7.9% | 0.22 | -1.99 | 19% | 13.1% | 32.6% | 1.02 | 0.44 | -4.4% | 3.7% | 2.01 | 4.84 | 12% | -18.1% | 41.9% | -25.4% | -8.3% |
| TRDGDP | 17.1% | 30.7% | 0.95 | 0.40 | 0.5% | 8.7% | 1.50 | 5.39 | 13% | 20.3% | 36.9% | 1.27 | 1.19 | -0.5% | 6.1% | -0.60 | -0.02 | 8% | 3.1% | 32.5% | -5.2% | -6.7% |
| MKCPGDP | 12.5% | 31.0% | 0.96 | 0.24 | -4.2% | 5.2% | 1.96 | 5.05 | 28% | 34.3% | 39.3% | 1.12 | 2.74 | 15.8% | 7.6% | 0.78 | -0.24 | 19% | 21.8% | 39.2% | 15.7% | -1.6% |
| POPGR | 16.2% | 34.3% | 1.16 | 1.31 | -2.9% | 0.6% | 1.39 | 2.15 | 2% | 17.6% | 29.5% | 1.01 | 0.96 | 0.3% | 4.8% | 2.05 | 4.48 | 29% | 1.3% | 14.4% | -1.1% | 0.1% |
| AAGEGR | 16.3% | 27.2% | 0.87 | 0.48 | 0.7% | 7.3% | 1.05 | 1.72 | 18% | 16.8% | 34.8% | 1.16 | 1.92 | -2.4% | -3.6% | 1.61 | 3.94 | 9% | 0.5% | 24.8% | -7.4% | -15.0% |
| AVEAGE | 14.6% | 24.9% | 0.79 | 1.06 | 0.2% | 1.4% | 1.44 | 1.36 | 19% | 16.1% | 33.1% | 1.11 | 0.90 | -2.5% | 3.6% | 1.48 | 3.03 | 2% | 1.5% | 20.6% | -6.9% | -1.9% |
| MKTCAP | 19.7% | 29.0% | 1.02 | 1.41 | 2.3% | 3.1% | 1.16 | 1.33 | 4% | 27.3% | 39.3% | 1.30 | 2.13 | 6.2% | 4.4% | 1.32 | 1.91 | 13% | 7.6% | 18.6% | -0.3% | -2.9% |
| BETA | 26.4% | 27.8% | 0.73 | 0.62 | 12.5% | 15.7% | 0.43 | -0.84 | 41% | 61.6% | 82.7% | 1.58 | 5.98 | 37.2% | 8.4% | 1.50 | 2.12 | 39% | 35.2% | 79.8% | 20.4% | -11.4% |
| VOL | 31.4% | 36.0% | 0.92 | 2.07 | 15.3% | 9.7% | 0.02 | -2.15 | 11% | 17.8% | 33.2% | 1.03 | 0.66 | 0.2% | 6.7% | 1.94 | 4.94 | 39% | -13.6% | 37.8% | -19.5% | -7.1% |
| MOM-1 | 5.7% | 23.3% | 0.61 | 0.59 | -6.4% | -4.0% | 0.56 | -1.53 | 165% | 18.0% | 35.7% | 1.13 | 2.00 | -0.8% | -3.3% | 0.85 | -0.39 | 173% | 12.3% | 32.5% | 1.3% | -3.4% |
| MOM-2-4 | 5.3% | 31.5% | 1.11 | 1.19 | -13.2% *** | -9.2% | 1.16 | 2.52 | 98% | 25.3% | 41.4% | 1.37 | 2.01 | 3.3% | 2.9% | 1.70 | 3.57 | 91% | 19.9% ** | 21.5% | 12.1% | 8.0% |
| P/E | 13.2% | 29.2% | 0.94 | 1.63 | -3.2% | -5.2% | 1.02 | 1.21 | 24% | 34.7% | 34.4% | 0.96 | 0.23 | 18.1% * | 28.0% | 0.17 | -0.55 | 40% | 21.5% * | 23.4% | 17.0% | 29.1% ** |
| P/B | 11.6% | 38.8% | 1.22 | 1.18 | -8.4% | -3.4% | 1.70 | 3.70 | 27% | 42.9% | 45.3% | 0.80 | 2.39 | 28.5% | 19.0% | 1.80 | 4.09 | 17% | 31.3% | 56.2% | 32.6% | 18.3% |
| P/D | 37.8% | 45.4% | 0.96 | 1.99 | 21.3% | 17.2% | 1.41 | 2.44 | 43% | 12.5% | 43.8% | 1.13 | 2.85 | -6.3% | -16.2% | 0.45 | -1.10 | 30% | -25.4% | 53.8% | -31.9% | -37.5% |
| IFC Composite | 17.2% | 27.8% | 1.00 | 1.15 | | 2.7% * | 1.71 | 3.94 | | | | | | | | | | | | | | |
| MSCI AC World | 12.4% | 8.5% | 0.07 | 1.00 | 7.4% | | -0.56 | 0.52 | | | | | | | | | | | | | | |

-Significance level: * 10%, ** 5%, *** 1%.
-IFC Investables and MSCI World Indices in US dollars: Unhedged.
-Portfolios were formed by sorting the countries into three tritiles based on the level of the attribute.
-Portfolios were reformed semi-annually.
-Liquidity weighted portfolios based on IFC USD value traded - 12 month average.

Legend

| | |
|---|---|
| ICRGC | International Country Risk Guide Composite Index |
| ICRGP | International Country Risk Guide Political Index |
| ICRGF | International Country Risk Guide Financial Index |
| ICRGE | International Country Risk Guide Economic Index |
| II CCR | Institutional Investor Country Credit Ratings |
| EMCRR | Euromoney Country Risk Ratings |
| INFLATE | Annual Consumer Inflation: IFS Database |
| TRDGDP | (Exports+Imports)/GDP: IFS Database |
| MKCPGDP | IFC Global Market Capitalization/GDP |
| POPGR | Annual Growth in Population - UN Data |
| AAGEGR | Annual Growth in Average Age of Population - UN Data |
| AVEAGE | Average Age of Population - UN Data |
| MKTCAP | IFC Investables Market Capitalization |
| BETA | IFC Investables Beta with MSCI AC World - 36 months trailing |
| VOL | IFC Investables Volatility - 36 months trailing |
| MOM-1 | Trailing USD Total Return - Prior Month |
| MOM-2-4 | Trailing USD Total Return - Months -4 to -2 |
| P/E | IFC Investables Price/Earnings Ratio |
| P/B | IFC Investables Price/Book Ratio |
| P/D | IFC Investables Price/Dividend Ratio |

**Table 6**
*Estimated Transaction Costs in the Emerging Markets*
*Baring Securities Emerging Market Index Spread Analysis*

| Country | Spread in Basis Points | Weight BEMI | Weight BEMI +Standalones |
|---|---|---|---|
| Argentina | 155 | 5.9% | 5.5% |
| Brazil | 85 | 15.7% | 14.4% |
| Chile | 393 | 6.5% | 5.9% |
| China | 134 | 0.0% | 1.7% |
| Colombia* | 100 | 0.0% | 1.1% |
| Greece | 48 | 1.8% | 1.7% |
| India* | 150 | 0.0% | 4.4% |
| Indonesia | 112 | 3.1% | 2.9% |
| Jordan | 58 | 0.0% | 0.3% |
| Malaysia | 69 | 14.3% | 13.1% |
| Mexico | 93 | 11.7% | 10.7% |
| Pakistan | 38 | 0.6% | 0.5% |
| Peru | 111 | 2.3% | 2.1% |
| Philippines | 94 | 4.5% | 4.1% |
| Poland* | 150 | 0.0% | 0.7% |
| Portugal | 93 | 1.9% | 1.8% |
| South Africa | 112 | 12.2% | 11.2% |
| South Korea | 41 | 4.6% | 4.2% |
| Taiwan | 47 | 5.2% | 4.8% |
| Thailand | 70 | 8.2% | 7.5% |
| Turkey | 160 | 1.6% | 1.5% |

*Spread numbers are approximate.

*Global Spread (Basis Points)*

| Index | Cap Weight | Cap Weight +Standalones | Equal Weight | Equal Weight +Standalones |
|---|---|---|---|---|
| Global | 108 | 110 | 108 | 110 |
| Asia | 69 | 80 | 67 | 84 |
| Europe+Africa | 108 | 109 | 103 | 104 |
| Latin America | 146 | 145 | 167 | 156 |

*Source: Baring Securities (July 1995)*

-Please note that these figures represent spreads only, and do not include either commissions or taxes.
-Countries and weights differ from both IFC and MSCI.

**Table 7**
*Correlation of Emerging and World Indices*

*Correlation Matrix: January 1989-June 1996*

| | IFCI | IFCG | EMG | EMF | BEMI | WORLD | AC WORLD |
|---|---|---|---|---|---|---|---|
| IFCI | 1.00 | | | | | | |
| IFCG | 0.69 | 1.00 | | | | | |
| EMG | 0.74 | 0.98 | 1.00 | | | | |
| EMF | 0.92 | 0.70 | 0.77 | 1.00 | | | |
| BEMI | 0.96 | 0.88 | 0.90 | 0.94 | 1.00 | | |
| WORLD | 0.44 | 0.35 | 0.41 | 0.46 | 0.38 | 1.00 | |
| AC WORLD | 0.49 | 0.42 | 0.48 | 0.51 | 0.47 | 1.00 | 1.00 |

*Correlation Matrix: July 1991-June 1996*

| | IFCI | IFCG | EMG | EMF | BEMI | WORLD | AC WORLD |
|---|---|---|---|---|---|---|---|
| IFCI | 1.00 | | | | | | |
| IFCG | 0.89 | 1.00 | | | | | |
| EMG | 0.91 | 0.98 | 1.00 | | | | |
| EMF | 0.98 | 0.88 | 0.92 | 1.00 | | | |
| BEMI | 0.96 | 0.88 | 0.90 | 0.94 | 1.00 | | |
| WORLD | 0.35 | 0.31 | 0.36 | 0.36 | 0.38 | 1.00 | |
| AC WORLD | 0.44 | 0.40 | 0.45 | 0.45 | 0.47 | 0.99 | 1.00 |

| Legend | |
|---|---|
| IFCI | IFC Investables Composite |
| IFCG | IFC Global Composite |
| EMG | MSCI Emerging Market Global |
| EMF | MSCI Emerging Market Free |
| BEMI | Barings Emerging Market Index |
| WORLD | MSCI World |
| AC WORLD | MSCI All-Country World |