

## **Political Risk, Economic Risk and Financial Risk**

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### ABSTRACT

How important is an understanding of country risk for investors? Given the increasingly global nature of investment portfolios, we believe it is very important. Our paper measures the economic content of five different measures of country risk: The *International Country Risk Guide's* political, financial, economic and composite risk indices and *Institutional Investor's* country credit ratings. We explore whether any of these measures contain information about future expected stock returns. Next, we conduct time-series-cross-sectional analysis linking these risk measures to future expected returns. Finally, we analyze the linkages between fundamental attributes within each economy, such as book-to-price ratios, and the risk measures. Our results suggest that the country risk measures are correlated future equity returns. In addition, country risk measures are highly correlated with equity valuation measures. This provides some insight into the reason why value-oriented strategies generate high average returns.

## Political Risk, Economic Risk and Financial Risk

### SHORT ABSTRACT

We assess the economic importance of political, economic and financial measures of country risk. While the country risk measures contain unique information, they are highly correlated with equity valuation measures, such as price-to-book ratios. This helps explain why value-oriented strategies generate high average returns.

## 1. Introduction

What is country risk and how should it impact global investment strategies? We explore the information in five different measures of country risk. The first four measures are from Political Risk Services' *International Country Risk Guide (ICRG)*. These measures include political risk, economic risk and financial risk. The ICRG also reports a measure of composite risk which is a simple function of the three base indices. The final measure we examine is *Institutional Investor's* country credit ratings. We define the information content in a number of different ways.

We initially explore whether the risk indices contain information about future expected returns.<sup>1</sup> This analysis is conducted in two ways. First, we form a portfolio of countries which experience a decrease in the risk rating (become more risky) and a portfolio of countries which experience an increase in the risk rating (become less risky). We form the portfolio after the risk information is available and rebalance the portfolio every six months. We find that there is, indeed, information about expected equity returns in these measures. We supplement this analysis with a time-series cross-sectional regressions which measure the amount of information contained in each metric. We find that the financial risk measure contains the most information about future expected returns and political risk contains the least.

The next part of our analysis investigates the link between these country risk measures and some more standard measures of risk. We investigate whether there is a correlation

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<sup>1</sup>To ensure the widest possible dissemination of our methodology, we have established a country risk homepage:

[http://www.duke.edu/~charvey/Country\\_risk/couindex.htm](http://www.duke.edu/~charvey/Country_risk/couindex.htm)

This site includes information on 135 different countries which could not be included in this manuscript. For example, the site contains equity return histograms for 48 countries, time-series graphs of the five risk measures for 117 countries, summary statistics, as well as the most recent version of this paper and the associated tables and exhibits.

between a country's beta against the MSCI world index. While this is a standard risk measure for integrated capital markets, many have found the world beta model inadequate to characterize risk in emerging markets. As an alternative, we also investigate the relation between the country risk measure and equity volatility.

The final part of our paper explores the interface between country risk analysis and investment strategies based on country fundamental information, such as book-to-price ratios. We find that the risk indices are highly correlated with the fundamental attributes. This provides some economic insight as to why value-oriented strategies earn higher returns -- they reflect higher risk exposure.

There has been relatively little research in finance that focusses on the economic content of various country ratings. Political risk measures have been studied in Harlow (1993) and Diamonte, Liew and Stevens (1996). Erb, Harvey and Viskanta (1995) examine the information in credit risk measures. Our current study investigates a broad cross-section of different risk measures.

## 2. Measuring Country Risk

There are many services that measure country risk:<sup>2</sup>

- Bank of America World Information Services
- Business Environment Risk Intelligence (BERI) S.A.
- Control Risks Information Services (CRIS)
- Economist Intelligence Unit (EIU)
- Euromoney
- Institutional Investor

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<sup>2</sup>An appendix which is available on request provides information and comparisons of these on these providers.

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- Standard and Poor's Rating Group
- Political Risk Services: International Country Risk Guide (ICRG)
- Political Risk Services: Coplin-O'Leary Rating System
- Moody's Investor Services

Each of the index or rating providers must amalgamate a range of qualitative and quantitative information into a single index or rating. In this section, we review in detail the methodologies used by two of the foremost providers of risk ratings: Institutional Investor and International Country Risk Guide (ICRG).

### *2.1 Institutional Investor*

Institutional Investor credit ratings are based on a survey of leading international bankers who are asked to rate each country on a scale from zero to 100 (where 100 represents maximum creditworthiness). Institutional Investor averages these ratings, providing greater weights to respondents with greater worldwide exposure and more sophisticated country analysis systems.

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 factors the expert feels are relevant.

In order to identify the factors that its survey participants have taken into consideration in the past, Institutional Investor asks them to rank the factors that they take into account in preparing country ratings. The results of this survey are listed in Table 1. Note that the bankers rank factors differently for different groups of countries and that rankings have changed over time within country groups. The ranking of factors affecting OECD country ratings appear to have been the most turbulent over the fifteen-year period.

## 2.2 *International Country Risk Guide*

ICRG compiles monthly data on a variety of political, financial and economic risk factors to calculate risk indices in each of these categories as well as a composite risk index. Five financial, thirteen political and six economic factors are used. Each factor is assigned a numerical rating within a specified range. The specified allowable range for each factor reflects the weight attributed to that factor. A higher score indicates lesser risk.

Political risk assessment scores are based on subjective staff analysis of available information. Economic risk assessment scores are based upon objective analysis of quantitative data and financial risk assessment scores are based upon analysis of a mix of quantitative and qualitative information.

Calculation of the three individual indices is simply a matter of summing up the point scores for each factor within each risk category. The composite rating is a linear combination of the three individual indices' point scores. Note that the political risk measure (100 points) is given twice the weight of financial and economic risk (50 points each). 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.

The specific formulas for these calculations are as follows:

$$PR = \sum PR_i, \quad ER = \sum ER_i, \quad FR = \sum FR_i \quad \text{and} \quad CRR = 0.5 * (PR + ER + FR).$$

where PR is political risk, ER is economic risk, FR is financial risk and CRR is the composite risk rating. The specific factors taken into account for each risk index are detailed in Table 2.

ICRG also groups country composite scores into ordinal risk categories to facilitate quick

interpretation and comparison of country scores. This categorization scheme is presented in Table 3.

### *2.3 Index and Rating Provider Comparison*

A wide range of groups provide country risk or country credit ratings. Although the factors taken into account by each group and the audience they seek to inform vary, there are significant similarities across the providers of these measures.

Most of the providers transform widely use quantitative economic indicators in roughly the same manner. The important differences are found in the degree of and specific factors included in the qualitative component of the risk index measures.

Table 4 provides a comparison of S&P and Moody's Ratings with both the II and ICRG ratings. The table reports the ratings in October 1995. There is a close correspondence between the S&P and Moody's ratings and the II credit risk measure with a rank order correlation of 95%. There is also a strong correlation between these ratings and the ICRG financial rating (rank order correlation of 90%). The correlations are weaker for the other measures. For example, the rank order correlation of the Moody's rating and the ICRG economic rating is only 68%.

## **3. Summary Data Analysis**

### *3.1 Variation in risk measures*



Our analysis focuses on 117 countries. For these countries, we have all five risk indices.<sup>3</sup> We segment the countries into five groups: All countries, countries with equity markets, developed countries with equity markets, emerging countries with equity markets and countries without equity markets.

Figure 1 presents time-series graphs of the equally weighted risk indices for three groups over the January 1984-July 1995 period: Developed (with equity markets), emerging (with equity markets) and all other countries.

The equally-weighted measures for the developed countries (Panel A) exhibit remarkably little variation through time. The ICRG financial and economic measure remain about the same throughout the sample, as does the II country credit rating. There is a small decline the ICRG political rating.

The analysis for the emerging countries and all other countries (Panels B and C) is similar. Many of the other countries have similar economic characteristics to the emerging country sample. Generally, all of the risk rating measures increase over the sample. This is particularly evident over the 1988 to 1993 period.

The cross-sectional behavior of the risk measures is explored in Figure 2. For the countries with equity returns and all countries (with and without equity markets), we graph the January 1984 risk level against the change in the risk level up to July 1995. The panels analyze all five measures: II credit risk and the ICRG political, economic, financial and composite risk. The cross-sectional mean reversion in the political risk measure that Diamonte, Liew and Stevens (1996) document also occurs in the other risk measures. Those countries that began with a very low risk rating tend to improve. Those countries with a high rating have tended to deteriorate.

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<sup>3</sup>Time-series graphs of the risk indices for each country are available through the country risk web site, [http://www.duke.edu/~charvey/Country\\_risk/couindex.htm](http://www.duke.edu/~charvey/Country_risk/couindex.htm).  
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This mean reversion is particularly evident for the financial and composite risk measures for countries with equity markets. There is also evidence that the political and economic risk exhibit the same type of behavior. The weakest evidence of cross-sectional mean reversion is found for the credit risk. There are a number of countries which show sharp improvement in the risk ratings. For example, Argentina begins with a ICRG composite rating of 40.0 and rises to 71.5 by July 1995. Similar improvements are evident for many of the other Latin American countries. In contrast, some developed markets have shown deterioration, for example, Switzerland dropped from an ICRG composite rating of 95.0 to 88.5 in July 1995. Similar declines were found for Japan, the U.K. and the U.S.

The first panel of Table 7 details the correlation of the various risk measures. Since the credit rating is only available on a semi-annual basis the correlations are presented based on semi-annual observations. The correlation measure is equally weighted across the different countries. The upper triangle of the matrix reports the correlation based on changes in rating and the lower triangle reports the correlation of the levels.

The correlations are not as high as one might expect. Obviously, the correlation between the composite and the political rating is the highest because, by definition, the political rating is 50% of the composite. However, the highest cross-correlation of the levels of the three ICRG components is 35%. Interestingly, the correlation between the ICRG financial measure and the II credit rating is only 26%.

The second panel of Table 5 documents the degree of predictability in the risk measures. The levels of the measures are very persistent. We report the average autocorrelations of the changes in the risk measures. The change in the II credit rating is the most predictable. The average first order autocorrelation is 24% (20% in developed markets and 26% in emerging markets). The least predictable measure is the change in the political risk rating. The average autocorrelation is -0.01 (0.03 in developed markets and -0.04 in emerging markets).

The final part of Table 5 provides a correlation analysis of the ratings with mean returns, volatility and beta against the Morgan Stanley Capital International world market portfolio. The equity returns are from MSCI and the International Finance Corporation (IFC). First examine the beta. The correlation of each of the risk measures and beta is positive (43% for beta and the ICRG composite). This is exactly the opposite of what one would expect. The evidence suggests that the highest rated countries (lowest financial, economic and credit risk) have the highest betas. This is evident in panel A of Figure 3 which graphs the betas against the average risk measures. This positive relation is largely due to the fact that the emerging markets have very low betas with respect to the world market portfolio [see Harvey (1995)].

Also notable in this panel is the sharp negative correlation between volatility and the risk measures (see panel B of Figure 3). This closely squares with intuition. The lowest (highest) rated countries have the highest (lowest) equity return volatility. This volatility is robust across all risk measures except for political risk. In emerging markets, there is a positive relation between the political risk and the volatility.

We also investigate whether the ICRG ratings, given that they are made on a more timely basis, contain advance information regarding the II credit rating. These results are contained in Table 6. We find that the February-August and August-next February ICRG rating change predicts the March-September and September-next March II CCR. The regression results show that the ICRG ratings lead the II CCR. Each of the ICRG components enters regressions predicting next period's CCR change with coefficients more than four standard errors from zero. The t-ratio on the ICRG composite measure is 7.6. All coefficients are positive. We also assessed the impact of the change in the II credit rating on the next month's change in the ICRG rating. There is little information here. Only one of the regressions, the financial risk, has a coefficient that is significantly different from zero. However, the coefficients are all negative which makes little sense (increased CCR predicts lower ICRG ratings). We conclude that the ICRG contains information that predicts CCR but the reverse is not true.

### *3.2 An initial portfolio strategy*

The final panel of Table 5 suggests that there is a relation between average returns and average ratings. One way to analyze this relation is to form a portfolios based on ratings changes. One version of this approach is analyzed in Diamonte, Liew and Stevens (1996). They form two portfolios: upgrade and downgrade based on the ICRG political risk measure. Importantly, their approach is ex post - rather than ex ante. That is, their portfolios are only investable if you knew in advance what next month's rating would be.

An alternative approach is an event strategy which is pursued in Harlow (1993). He examines the cumulative returns of countries up to six months after political rating increases and decreases. This strategy is investable given that countries are purchased or sold after the rating changes.

Our strategy will be to form two portfolios: upgrade and downgrades. The portfolios are rebalanced every six months. If the rating does not change, we keep the country in its respective portfolio. This reduces transactions costs and increases the number of countries in the portfolios.

The first panel of Table 7 complements the Diamonte, Liew and Stevens (1996) results. The upgrade portfolios have higher average returns than the downgrade portfolios. This is true not just for political risk, but also for the other risk measures as well. Indeed, of the four ICRG risk measures, political risk is never the most important measure. In the all country group and the emerging markets, the composite risk measure is more important in the sense that it implies a more profit. In the developed countries, the financial risk measure has the most ability to discriminate between high and low return portfolios.

The second panel of Table 7 presents the results from an investable strategy. Portfolios are based on a previous rating change and held for six months. Each country is equally

weighted in the portfolios. The results suggest that the composite risk measure has considerable power to identify high and low return portfolios. On a risk adjusted basis, the hedge strategy (buy upgrades and sell downgrades) based on composite risk has an (annualized) alpha of 1140bp per year when all countries are examined. Interestingly, the political risk measure has an alpha of -160bp per year. The portfolios formed on economic risk have an alpha of 750bp. The portfolios based on financial and credit risk fare worse than the political risk measure.

Perhaps the most interesting aspect of the analysis is that this is not just an emerging markets phenomena. If the portfolio strategy is executed on developed countries, the alpha for the composite risk is 840bp. For the economic risk, the alpha is 540bp. Similar to the overall sample, the financial, political and credit measures fare poorly.

When the emerging markets are examined, the alpha on the composite risk measure is 860bp. For the economic risk, the alpha is 880bp. Consistent with the developed market analysis, financial, political, and credit risk are unable to distinguish between high and low returns in a portfolio strategy.

The performance of these strategies is robust to different country weighting schemes. As an alternative to the equal weighting of countries, we implemented a capitalization weighting strategy. Similar results were found. For example, the risk adjusted return of the composite risk upgrade-downgrade portfolio is 1170bp per year for the capitalization weighting scheme compared to 1140bp for the equal weighting [these results are available on request]. Within the country groupings, capitalization weighting makes the economic risk measure more important in developed markets. Capitalization weights make the political risk measure more important in emerging markets.

Finally, some caution should be exercised in interpreting our results because transactions costs have not been taken into account. We have taken two steps to minimize the transactions costs. Turnover is minimized by keeping the zero rating change countries in

their current portfolio. Second, we only rebalance twice a year. In addition, the our portfolio strategy is successful on developed as well as emerging markets. In many of the developed markets, trading costs can be minimized by using index futures.

#### **4. Cross-sectional analysis of risk**

##### *4.1 Time-series cross-sectional analysis of risk attributes*

The analysis in Table 7 suggests that portfolio groupings by certain attributes produce positive risk adjusted profits on an ex ante basis (panel B). This simple analysis was based on two portfolios: increased risk rating and decreased risk rating. Much information is potentially lost with such a coarse aggregation. More information can be obtained by trying to predict both the cross-section and the time-series of expected returns based on the risk attributes.

Table 8 presents attribute regressions of form:

$$R_t = c_0 + c_1 A_{t-1} + \varepsilon_t$$

where  $R$  represents a vector of six-month returns from (earliest) July 1984- June 1995 for all of the countries in our sample (some markets' returns begin later).  $A$  represents the risk attribute which is lagged and matched to the country. With our full sample of all countries, there are 884 observations. When developed countries are examined, there are 441 observations. There are 443 observations in the emerging equity market sample.

The first line of Table 8 reports coefficients and t-statistics for five separate regressions of the returns on the attributes. The R-square from this regression and the R-square from a similar regression with indicator variables for each country is also reported (fixed effect regression or FER2). Regressions are estimated on the lagged level of the attribute as well as lagged changes in the attribute. The number of countries in each cross-sectional

regression grows from 28 in March 1984 to 48 in March 1995.

Panel A reports the regressions using the lagged level of the attribute as an explanatory variable for the cross-section of expected returns. With the full sample of 48 countries, each of the five risk attributes has a coefficient significantly different from zero when the attributes are examined separately. In each case, the coefficient is negative implying that lower rating (higher risk) is associated with higher expected returns. In this analysis, the financial risk variable is most important and the composite is second most important. When a multivariate regression is estimated on four attributes, only the financial risk variable enters the regression with a significant coefficient.

When the regressions are estimated separately on developed and emerging countries, it is clear that the developed countries sample is driving the explanatory power of the entire sample. The ICRG financial risk variable enters the developed country regression with a t-ratio close to four in the univariate regression. In both the univariate and multivariate regressions, both the ICRG financial and economic risk variables enter the regression while the political risk and II credit risk do not. In the emerging countries sample, no attribute enters the regression with a significant coefficient. However, the closest variables are the ICRG financial and economic risk variables.

The second panel of Table 8 examines regressions of country returns on the lagged change in the attributes. This panel is closer to the trading strategy results in Table 7 where portfolios were constructed of countries whose rating had changed. While the change regressions have less explanatory power than the lagged levels, there are many similarities between panel A and panel B. In particular, in the developed country sample, the ICRG financial variable is by far the most important with t-ratios close to two. In contrast to Panel A, the political risk variable is important - but only for the emerging market sample.

Overall, the regression evidence complements the evidence from the portfolio strategies. However, the regression results do not seem as dramatic as profits from the portfolio

strategies. This could be driven by the fact that the value of the change variable is often zero.

#### *4.2 The relation between the risk attributes and fundamental variables*

Ferson and Harvey (1995) provide evidence fundamental attributes, such as book-to-price, earnings-price, dividend-to-price, and price-to-cash ratios, are linked to the risk exposure of national markets. They propose an asset pricing framework where the fundamental attributes are linked to dynamic country risk (beta) functions. We now explore whether our set of risk variables are also linked to fundamental attributes.

We focus on a set of three attributes that are available for both the developed and emerging markets: book-to-price, earnings-price and dividend-to-price ratios. Table 9 provides cross-sectional regressions that attempt to explain the cross-section of the valuation attributes using our country risk measures. Similar to Table 8, both univariate regressions and multivariate regression are presented for three different samples. We will focus our discussion on the multivariate regressions. The number of countries in the cross-sectional regression varies from 18 in March 1984 to 47 in March 1995.

There are a number of interesting results in Table 9. First, the risk measures have some ability to explain all three valuation ratios. However, the risk measures do the best in explaining the cross-sectional variation in the book-to-price ratios. In the full sample, over 25% of the variation can be explained using all four risk measures. Of all the component risk measures, the ICRG economic risk rating is the most important accounting for 18% of the variation in the full sample of countries. The economic risk measure enters with a negative coefficient. This suggests that higher rating (lower risk) is associated with lower book-to-price ratios.

When the data are segmented by developed and emerging countries, the results are similar to the pooled regression. For developed countries, 18% of the cross-sectional variance of



the book-to-price ratios can be explained of which the economic risk variable contributes 10%. For the emerging equity markets, 29% of the variation can be explained in the multivariate model and the economic risk variable contributes 24%.

The risk variable also shows some ability to explain the cross-section of dividend yields. However, with the dividend yield, the results are different across the developed and emerging markets. For the developed markets, a total of 16% of the cross-sectional variation can be explained. The ICRG economic risk measure contributes 13% and the financial risk variable contributes 5% (the contributions need not sum to the total because of correlation between the risk measures). In emerging markets, a similar amount of explanatory power is found, 17%. However, in this case, almost all of the explanatory power is coming from the financial risk which is contributing 16%. In both the developed and emerging market regressions, the two risk variables enter with negative coefficients suggesting that higher rating (lower risk) is associated with lower dividend yields.

The incremental contribution of the risk ratings relative to the book-to-price valuation measure is presented in Table 10. Univariate regressions are estimated in the form

$$R_t = c_0 + c_1 A_{t-1} + c_2 B / P_{t-1} + \varepsilon_t$$

Table 10 reports the coefficients and t-ratios on the risk attribute. The results indicate that there is little or no incremental information in the II credit rating or the ICRG political risk measure. The ICRG financial risk measure is the most important variable followed by the ICRG economic risk. While both the economic and financial risk measures add important incremental explanatory power to the developed country regressions, they have no ability to add to the emerging equity market regressions. For the emerging markets, the book-to-price valuation attribute fully characterizes the information in the risk ratings.

### 4.3 Trading strategies based on risk attributes

There are two disadvantages of the time-series cross-sectional methodology. First, in stacking the time-series of returns together, important information regarding the cross-sectional correlation of the returns is eliminated. This could cause the standard errors to be understated. Second, the time-series cross-sectional methodology imposes the same slope coefficient for all time-periods. It is possible that the slope coefficient could change through time. Ferson and Harvey (1991, 1993) find that the variation in the slope coefficients is to some degree predictable.

Panel A of Table 11 reports the results of estimating a cross-sectional regression at each six month interval. The slope coefficients are averaged and the standard error of the average is also presented. The results are largely consistent with those reported in Table 8 for the univariate regressions. For each of the risk measures, the average slope coefficient is negative. In all cases, the slope coefficient is greater than 1.5 standard errors below zero.

Although not reported, we investigated the pattern of estimated cross-sectional slope coefficients through time along with the time-series of R-squares. In all cases, the explanatory power of the risk variables increases through time.

Panel B of Table 11 assesses the incremental contribution of the risk attributes when book value-to-price is included in the cross-sectional regression. While the coefficients are negative for each of the risk attributes, only II credit risk and the ICRG composite and political ratings have coefficients which are more than one standard error below zero.

Panel C of Table 11 implements the Ferson and Harvey (1995) attribute adjustment methodology. Ferson and Harvey make the beta risk (with respect to the MSCI world portfolio) a function of the attribute. We estimate a time-series regression for each country:

$$R_{it} = b_{i0} + b_{i1}R_{w,t} + b_{i2}[R_{w,t} \times A_{i,t-1}] + \varepsilon_t$$

With the results of this regression, an adjusted attribute is formed:

$$A_{i,t-1}^* = b_{i1} + b_{i2}A_{i,t-1}$$

Panel C reports regressions of the cross-section of returns on the cross-section of adjusted attributes. Here the coefficient is positive suggesting a positive relation between beta risk and expected returns. While the many of the coefficients are not significantly different from zero at conventional levels, the explanatory power of the regressions uniformly improve over the panel A regressions which consider only the raw attribute.<sup>4</sup>

The final panel in Table 11 considers both the adjusted and unadjusted attribute. Note that there is no problem with collinearity here because the adjustment factors are country specific. Consistent with the results in Panel C, the beta risk factor enters each regression with a positive coefficient. Each of the II and ICRG risk measures enters with a negative coefficient. Notable in this table is the large jump in explanatory power. The average cross-sectional R-square for the II credit risk measure is now 26% (regressing on credit risk alone produces on a 8% R-square). Both the economic and financial risk measures show similar explanatory power.

## Conclusions

The goal of this research is to explore the economic content of five country risk measures: *Institutional Investor's* country credit rating and the *International Country Risk Guide's* political, financial, economic and composite risk ratings. Our analysis suggests that there is

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<sup>4</sup>For example, the explanatory power of the book-to-market variable doubles after the Ferson-Harvey (1995) attribute adjustment is implemented. This appears to provide considerable support for the Ferson-Harvey method.

considerable information contained in the ICRG composite, financial and economic ratings, in particular. For example, when we form portfolios based on changes in the risk ratings, we find risk-adjusted abnormal returns in the range of 1000bp per year. Our exercise shows that trading on the political risk measure alone has no ability to produce abnormal returns.

The cross-sectional regressions confirm the results of the portfolio analysis. We find evidence that some of the ICRG risk measures, in particular, economic and financial risk, can predict the cross-section of expected returns. This is most strongly evidenced in the developed markets in our sample. We also find that the change in the political rating has some marginal explanatory power in emerging equity markets - but not in developed markets.

We find that the country risk ratings are correlated with fundamental valuation attributes. For example, 25% of the cross-sectional variation in book-to-price can be explained by the risk ratings. This explanatory power is largely driven by the ICRG economic risk which alone can explain 18% of the cross-sectional variation. These results shed light on the information that determines the fundamental valuation measures. We provide insights on why global value-oriented strategies work.

Our final contribution is to bridge attribute-oriented investment strategies with asset pricing. Ferson and Harvey (1995) argue that popular valuation attributes should enter each country's dynamic risk function. We follow their suggestion and find a relation between dynamic risk with respect to a world benchmark and expected returns. In addition, similar to Ferson and Harvey's results, we find that the attributes are still important for the alpha. That is, even after allowing for the attributes to influence the beta risk, they still have marginal cross-sectional explanatory power when included in the prediction exercise.

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**Table 1***Critical Factors in Institutional Investor's Country Credit Risk Ratings*

	OECD		Emerging		Rest of World	
	1979	1994	1979	1994	1979	1994
Economic Outlook	1	1	2	3	3	4
Debt Service	5	2	1	1	1	1
Financial Reserves/Current Account	2	3	4	4	4	3
Fiscal Policy	9	4	9	7	6	6
Political Outlook	3	5	3	2	2	2
Access to Capital Markets	6	6	7	9	8	9
Trade Balance	4	7	5	5	5	5
Inflow of Portfolio Investment	7	8	8	8	7	8
Foreign Direct Investment	8	9	6	6	9	7



**Table 2**  
*Critical Factors in the ICRG Rating System*

<b>Political</b>	<b>Points</b>	<b>% of Individual Index</b>	<b>% of Composite</b>
Economic expectations vs. reality	12	12%	6%
Economic planning failures	12	12%	6%
Political leadership	12	12%	6%
External conflict	10	10%	5%
Corruption in government	6	6%	3%
Military in politics	6	6%	3%
Organized religion in politics	6	6%	3%
Law and order tradition	6	6%	3%
Racial and nationality tensions	6	6%	3%
Political terrorism	6	6%	3%
Civil war	6	6%	3%
Political party development	6	6%	3%
Quality of the Bureaucracy	6	6%	3%
<i>Total Political Points</i>	100	<b>100%</b>	50%
<hr/>			
<b>Financial</b>			
Loan Default or unfavorable loan restructuring	10	20%	5%
Delayed payment of suppliers' credits	10	20%	5%
Repudiation of contracts by governments	10	20%	5%
Losses from exchange controls	10	20%	5%
Expropriation of private investments	10	20%	5%
<i>Total Financial Points</i>	50	<b>100%</b>	25%
<hr/>			
<b>Economic</b>			
Inflation	10	20%	5%
Debt service as a % of exports of goods and services	10	20%	5%
International liquidity ratios	5	10%	3%
Foreign trade collection experience	5	10%	3%
Current account balance as a % of goods and services	15	30%	8%
Parallel foreign exchange rate market indicators	5	10%	3%
<i>Total Economic Points</i>	50	<b>100%</b>	25%

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Overall Points	200	100%
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**Table 3**  
*ICRG Risk Categories*

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<b>Risk Category</b>	<b>Composite Score Range</b>
Very High Risk	0.0-49.5
High Risk	50.0-59.5
Moderate Risk	60.0-69.5
Low Risk	70.0-84.5
Very Low Risk	85.0-100.0

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**Table 4***Comparison of Sovereign Country Ratings and Other Risk Attributes in October 1995*

Country	S&P	Moody's	II CCR	ICRGC	ICRGP	ICRGF	ICRGE
Argentina	BB-	B1	38.8	70.0	74.0	34.0	31.5
Australia	AA	Aa2	71.2	82.5	83.0	44.0	37.5
Austria	AAA	Aaa	86.2	84.0	81.0	47.0	39.5
Belgium	AA+	Aa1	79.2	83.0	79.0	46.0	41.0
Brazil	B+	B1	34.9	62.5	64.0	33.0	28.0
Canada	AA+	Aa2	80.3	83.0	81.0	46.0	39.0
Chile	A-	Baa1	57.4	79.5	74.0	43.0	42.0
Colombia	BBB-	Baa3	46.5	68.0	60.0	40.0	35.5
Czech Republic	A	Baa1	58.4	82.0	80.0	42.0	41.5
Denmark	AA+	Aa1	79.9	87.5	84.0	48.0	42.5
Finland	AA-	Aa2	71.4	84.5	87.0	43.0	39.0
France	AAA	Aaa	89.1	82.0	80.0	44.0	40.0
Germany	AAA	Aaa	90.9	84.5	83.0	47.0	39.0
Greece	BBB-	Baa3	50.0	75.0	75.0	38.0	36.5
Hong Kong	A	A3	67.0	81.0	72.0	46.0	43.5
Hungary	BB+	Ba1	45.0	72.5	78.0	39.0	28.0
India	BB+	Baa3	46.1	69.0	63.0	37.0	37.5
Indonesia	BBB	Baa3	52.4	69.5	63.0	39.0	37.0
Ireland	AA	Aa2	73.4	84.0	85.0	44.0	38.5
Italy	AA	A1	72.3	77.0	75.0	41.0	38.0
Japan	AAA	Aaa	91.6	86.0	80.0	48.0	44.0
Malaysia	A+	A1	69.1	80.5	76.0	43.0	42.0
Mexico	BB	Ba2	41.8	66.0	65.0	37.0	30.0
Netherlands	AAA	Aaa	89.3	86.0	84.0	47.0	40.5
New Zealand	AA	Aa2	69.4	83.5	84.0	46.0	36.5
Nigeria	NR	NR	15.8	52.5	52.0	26.0	26.5
Norway	AAA	Aa1	81.6	87.0	83.0	46.0	44.5
Pakistan	B+	B1	30.7	59.5	54.0	33.0	31.5
Peru	NR	NR	25.8	60.0	56.0	31.0	33.0
Philippines	BB	Ba2	36.8	67.5	62.0	37.0	35.5
Poland	BB	Baa3	37.6	78.0	79.0	40.0	37.0
Portugal	AA-	A1	68.4	80.0	75.0	43.0	41.5
Singapore	AAA	Aa2	84.0	86.0	80.0	48.0	44.0
South Africa	BB+	Baa3	45.2	76.5	75.0	41.0	36.5
South Korea	AA-	A1	72.2	82.0	77.0	46.0	41.0
Spain	AA	Aa2	73.7	74.0	69.0	41.0	38.0
Sweden	AA+	Aa3	74.1	82.0	81.0	43.0	39.5
Switzerland	AAA	Aaa	92.2	89.0	85.0	50.0	43.0
Taiwan	AA+	Aa3	79.9	84.5	77.0	48.0	44.0
Thailand	A	A2	63.8	77.0	69.0	43.0	41.5
Turkey	B+	Ba3	40.9	62.5	59.0	36.0	30.0
United Kingdom	AAA	Aaa	87.8	79.5	78.0	46.0	35.0
USA	AAA	Aaa	90.7	83.0	80.0	48.0	38.0
Venezuela	B+	Ba2	31.4	66.5	65.0	34.0	34.0
Zimbabwe	NR	NR	31.0	64.5	66.0	31.0	31.5
<i>S&amp;P Rank Correlation</i>			95.2%	87.6%	77.0%	90.2%	72.4%
<i>Moody's Rank Correlation</i>			95.1%	87.5%	79.5%	89.8%	67.6%

**Legend**

II CCR	Institutional Investor Country Credit Ratings
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

**Table 5**

*Summary Analysis of Country Risk Measures  
Semi-Annual Observations: January 1984-July 1995*

*A. Correlation of Risk Measures*

	Risk Measure Changes				
	II CCR	ICRGC	ICRGP	ICRGF	ICRGE
II CCR		-0.03	0.01	0.03	-0.09
ICRGC	0.35		0.79	0.54	0.43
ICRGP	0.30	0.83		0.25	0.06
ICRGF	0.26	0.60	0.35		0.05
ICRGE	0.10	0.52	0.24	0.25	

Risk Measure Levels

*B. Persistence of Risk Measures*

First Order Autocorrelations of Log Rating Changes

	All Countries			Developed Emerging	
	Average	Minimum	Maximum	Average	Average
II CCR	0.24	-0.31	0.77	0.20	0.26
ICRGC	0.04	-0.92	0.93	-0.01	0.07
ICRGP	-0.01	-0.84	0.51	0.03	-0.04
ICRGF	0.10	-0.60	0.75	0.08	0.11
ICRGE	-0.18	-0.72	0.67	-0.17	-0.19

*C. Sample Period Correlation Between Average Risk Measures and Price Moments*

Country Sample	Price Moment	II CCR	ICRGC	ICRGP	ICRGF	ICRGE
All Countries	Geometric Return	-0.23	-0.15	-0.13	-0.16	-0.16
	Volatility	-0.52	-0.45	-0.31	-0.49	-0.59
	Beta - MSCI World	0.24	0.43	0.44	0.40	0.30
Developed	Geometric Return	0.18	-0.15	-0.28	-0.08	0.21
	Volatility	-0.46	-0.41	-0.38	-0.47	-0.15
	Beta - MSCI World	0.09	-0.15	-0.24	-0.04	0.06
Emerging	Geometric Return	-0.26	-0.06	-0.02	-0.08	-0.12
	Volatility	-0.16	-0.08	0.20	-0.16	-0.45
	Beta - MSCI World	0.03	0.42	0.46	0.35	0.20

Legend

II CCR	Institutional Investor Country Credit Ratings
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

**Table 6***Predicting Changes in Risk Attributes**A. Country Risk Guide Attributes as a Predictor of Institutional Investor Country Credit Ratings*

Attribute	Coefficient	T-Stat	R-Square
ICRGC	0.2120	7.59	5.0%
ICRGP	0.1244	5.67	2.8%
ICRGF	0.0956	5.69	2.8%
ICRGE	0.0833	4.65	1.9%

*B. Institutional Investor Country Credit Ratings as a Predictor of Country Risk Guide Attributes*

Attribute	Coefficient	T-Stat	R-Square
ICRGC	-0.0115	-1.13	0.1%
ICRGP	-0.0087	-0.62	0.0%
ICRGF	-0.0585	-4.09	1.4%
ICRGE	-0.0198	-0.99	0.0%

In Panel A, the semi-annual log change in the II CCR is regressed on the lagged semi-annual log changes of the ICRG ratings. The sample is from March 1984 through October 1995 for countries with equity markets.

In Panel B, the monthly log change in the ICRG ratings are regressed on the lagged semi-annual log change in the II CCR. The sample is from February 1984 through September 1995 for countries with equity markets.

Legend

II CCR	Institutional Investor Country Credit Ratings
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

**Table 8***Cross-Sectional Time-Series Importance of Country Risk Attributes*

## A. Lagged Level Regressions

Sample	Regression	II CCR	R-Sqr	ICRGC	R-Sqr	ICRGP	R-Sqr	ICRGF	R-Sqr	ICRGE	R-Sqr	R-Sqr
Full	Univariate	-0.0011 **	0.5%	-0.0023 ***	0.7%	-0.0017 **	0.4%	-0.0043 ***	1.2%	-0.0041 **	0.4%	
Full	Multivariate	0.0003				0.0016		-0.0082 ***		0.0024		1.1%
Developed	Univariate	-0.0007	-0.1%	-0.0019	0.0%	-0.0007	-0.2%	-0.0107 ***	3.2%	0.0071 **	0.8%	
Developed	Multivariate	0.0027 *				0.0000		-0.0184 ***		0.0109 ***		6.3%
Emerging	Univariate	-0.0009	-0.2%	-0.0023	0.1%	-0.0011	-0.2%	-0.0035	0.2%	-0.0050	0.2%	
Emerging	Multivariate	0.0015				0.0011		-0.0046		-0.0042		-0.4%

## B. Lagged Change in Level Regressions

Sample	Regression	II CCR	R-Sqr	ICRGC	R-Sqr	ICRGP	R-Sqr	ICRGF	R-Sqr	ICRGE	R-Sqr	R-Sqr
Full	Univariate	-0.0072	-0.1%	-0.0046	0.0%	-0.0076 *	0.3%	-0.0015	-0.1%	0.0071	0.0%	
Full	Multivariate	-0.0037				-0.0096 **		0.0050		0.0092		0.2%
Developed	Univariate	0.0072	-0.1%	-0.0014	-0.2%	-0.0012	-0.2%	-0.0181 *	0.6%	0.0051	-0.1%	
Developed	Multivariate	0.0097				-0.0032		-0.0188 *		0.0049		0.2%
Emerging	Univariate	-0.0147	0.0%	-0.0089	0.1%	-0.0135 **	0.9%	-0.0008	-0.3%	-0.0019	-0.2%	
Emerging	Multivariate	-0.0147				-0.0185 **		0.0123		0.0097		0.8%

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

Panel A results from time-series cross-sectional regressions of semi-annual returns against the lagged risk attribute, or in the multivariate case, risk attributes. Panel B results from time-series cross-sectional regressions of semi-annual returns against the lagged log change in the risk attribute, or in the multivariate case, risk attributes.

## Legend

II CCR	Institutional Investor Country Credit Ratings
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

**Table 9***The Relationship Between Fundamental Variables and Risk Attributes*

Sample	Regression	Fundamental Variable	II CCR	R-Sqr	ICRGC	R-Sqr	ICRGP	R-Sqr	ICRGF	R-Sqr	ICRGE	R-Sqr	R-Sqr
Full	Univariate	Book/Price	-0.0066 ***	5.0%	-0.0126 ***	5.7%	-0.0048 ***	0.8%	-0.0229 ***	8.4%	-0.0525 ***	18.5%	
		Dividend/Price	-0.0169 ***	3.2%	-0.0448 ***	7.1%	-0.0351 ***	5.0%	-0.0684 ***	7.3%	-0.1034 ***	6.9%	
		Earnings/Price	-0.0009 ***	6.2%	-0.0019 ***	8.3%	-0.0013 ***	4.3%	-0.0030 ***	9.3%	-0.0054 ***	12.3%	
Full	Multivariate	Book/Price	0.0042 **				0.0191 ***		-0.0254 ***		-0.0656 ***		25.1%
		Dividend/Price	0.0309 ***				-0.0204 *		-0.0660 ***		-0.0921 ***		9.8%
		Earnings/Price	0.0005 *				0.0005		-0.0023 ***		-0.0050 ***		13.1%
Developed	Univariate	Book/Price	-0.0099	11.4%	-0.0155 ***	9.2%	-0.0058 ***	2.1%	-0.0270 ***	12.2%	-0.0299 ***	10.4%	
		Dividend/Price	-0.0507 ***	7.6%	-0.1097 ***	11.8%	-0.0602 ***	6.2%	-0.1134 ***	5.4%	-0.2093 ***	13.1%	
		Earnings/Price	-0.0002	0.1%	-0.0001	-0.2%	0.0003	0.1%	-0.0006	0.1%	-0.0019 ***	1.9%	
Developed	Multivariate	Book/Price	-0.0047 **				0.0038 *		-0.0164 ***		-0.0208 ***		18.2%
		Dividend/Price	-0.0163				-0.0229 *		-0.0201		-0.1643 ***		15.6%
		Earnings/Price	-0.0002				0.0008 ***		-0.0004		-0.0021 ***		3.0%
Emerging	Univariate	Book/Price	-0.0159 ***	6.8%	-0.0220 ***	6.3%	-0.0013	-0.3%	-0.0348 ***	9.2%	-0.0775 ***	23.6%	
		Dividend/Price	-0.0562 ***	10.8%	-0.1018 ***	17.5%	-0.0888 ***	13.3%	-0.1298 ***	16.4%	-0.1353	8.9%	
		Earnings/Price	-0.0018 ***	5.9%	-0.0032 ***	8.8%	-0.0019 ***	3.1%	-0.0042 ***	8.8%	-0.0069 ***	12.2%	
Emerging	Multivariate	Book/Price	0.0105 **				0.0248 ***		-0.0282 ***		-0.0876 ***		28.7%
		Dividend/Price	-0.0136				-0.0388 **		-0.0679 **		-0.0125		17.2%
		Earnings/Price	0.0006				-0.0001		-0.0016		-0.0064 ***		12.2%

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

Results from time-series cross-sectional regressions of the fundamental variable against the lagged risk attribute, or in the multivariate case, risk attributes.

**Legend**

II CCR	Institutional Investor Country Credit Ratings
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

**Table 10***Incremental Contribution of Country Risk Attributes*

Sample	Regression	Fundamental Variable	II CCR	R-Sqr	ICRGC	R-Sqr	ICRGP	R-Sqr	ICRGF	R-Sqr	ICRGE	R-Sqr	R-Sqr
Full	Univariate	Book/Price	-0.0007	1.9%	-0.0016 *	2.0%	-0.0014 *	2.0%	-0.0030 **	2.3%	-0.0009	1.7%	
Full	Multivariate	Book/Price	0.0000				0.0003		-0.0066 **		0.0066 *	2.4%	
Developed	Univariate	Book/Price	0.0006	2.3%	0.0001	2.3%	0.0000	2.3%	-0.0084 ***	4.1%	0.0121 ***	5.0%	
Developed	Multivariate	Book/Price	0.0034 **				-0.0006		-0.0162 ***		0.0137 ***	8.7%	
Emerging	Univariate	Book/Price	0.0000	1.1%	-0.0011	1.2%	-0.0010	1.2%	-0.0017	1.2%	-0.0008	1.1%	
Emerging	Multivariate	Book/Price	0.0010				-0.0003		-0.0027		0.0002	0.5%	

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

Results from time-series cross-sectional regressions of semi-annual returns against the fundamental variable (book/price) and the lagged risk attribute, or in the multivariate case, risk attributes. Only results for risk attributes are reported.

**Legend**

II CCR	Institutional Investor Country Credit Ratings
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



**Table 11***Cross-Sectional Regression Results*

Semi-Annual Returns: April 1984-September 1995

## A. Semi-Annual Return vs. Risk Attribute

	Average Intercept	Ave Slope Coefficient	T-Stat	Average R-Square	% Negative Coefficient
II CCR	0.2413	-0.0018	-2.36	8.2%	65.2%
ICRGC	0.3110	-0.0025	-1.76	7.6%	65.2%
ICRGP	0.2671	-0.0019	-1.67	6.1%	69.6%
ICRGF	0.2785	-0.0038	-1.50	8.9%	56.5%
ICRGE	0.3747	-0.0069	-2.02	8.3%	56.5%
BP	0.0344	0.1387	4.46	9.4%	17.4%

## B. Semi-Annual Return vs. Risk Attribute &amp; Book-to-Price

	<i>Risk Attribute</i>				<i>Book-to-Price</i>			
	Average Intercept	Ave Slope Coefficient	T-Stat	% Negative Coefficient	Ave Slope Coefficient	T-Stat	% Negative Coefficient	Average R-Square
CCR	0.0869	-0.0008	-1.12	65.2%	0.1227	3.89	17.4%	16.1%
ICRGC	0.1708	-0.0017	-1.22	65.2%	0.1277	4.39	17.4%	16.3%
ICRGP	0.2132	-0.0023	-1.70	69.6%	0.1294	4.02	21.7%	16.1%
ICRGF	0.0908	-0.0014	-0.61	52.2%	0.1304	4.57	17.4%	16.6%
ICRGE	0.0420	-0.0003	-0.10	43.5%	0.1347	4.75	17.4%	15.9%

## C. Semi-Annual Return vs. Adjusted Risk Attribute\*

	Average Intercept	Ave Slope Coefficient	T-Stat	Average R-Square	% Negative Coefficient
CCR	0.0965	0.0401	1.26	17.9%	39.1%
ICRGC	0.1055	0.0272	0.77	17.3%	43.5%
ICRGP	0.0960	0.0446	1.37	16.0%	43.5%
ICRGF	0.1030	0.0259	0.78	17.9%	43.5%
ICRGE	0.1115	0.0196	0.59	18.9%	47.8%
BP	0.0654	0.0683	2.05	24.0%	30.4%

## D. Semi-Annual Return vs. Risk Attribute &amp; Adjusted Risk Attribute

	<i>Risk Attribute</i>				<i>Adjusted Risk Attribute</i>			
	Average Intercept	Ave Slope Coefficient	T-Stat	% Negative Coefficient	Ave Slope Coefficient	T-Stat	% Negative Coefficient	Average R-Square
CCR	0.2280	-0.0023	-3.24	73.9%	0.0494	1.56	30.4%	26.0%
ICRGC	0.3175	-0.0031	-2.18	60.9%	0.0409	1.13	39.1%	24.6%
ICRGP	0.2832	-0.0028	-2.35	78.3%	0.0537	1.60	34.8%	22.6%
ICRGF	0.2715	-0.0047	-1.96	60.9%	0.0393	1.15	39.1%	26.3%
ICRGE	0.3618	-0.0073	-2.12	56.5%	0.0292	0.88	52.2%	26.3%
BP	-0.0037	0.0972	3.00	31.8%	0.0701	2.01	36.4%	31.7%

\* Adjusted attributes are according to Ferson-Harvey methodology.

Legend

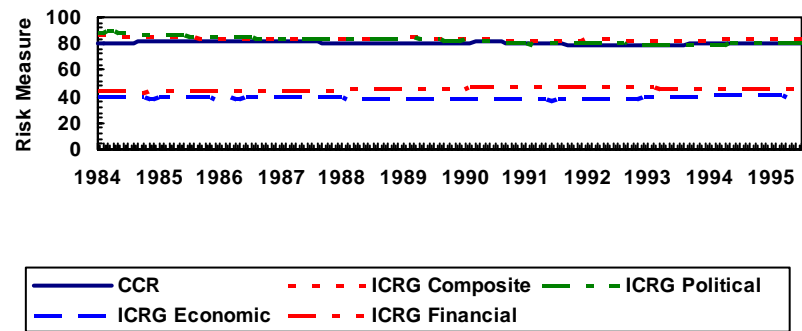
II CCR	Institutional Investor Country Credit Ratings
ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
BP	Book-to-Price Ratio

# Figure 1

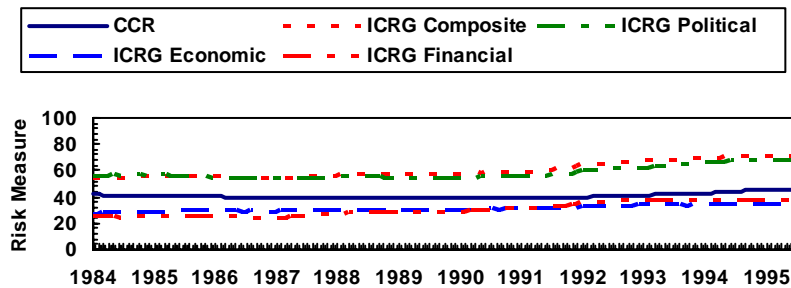
## Analysis of Average Risk Ratings

### January 1984-July 1995

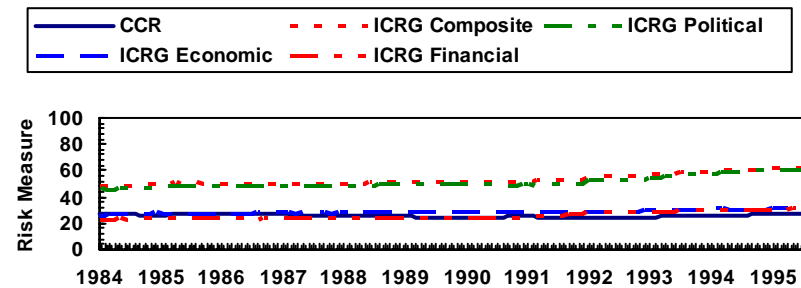
#### Equally Weighted Average for Developed Countries



#### Equally Weighted Average for Emerging Countries



#### Equally Weighted Average for All Other Countries

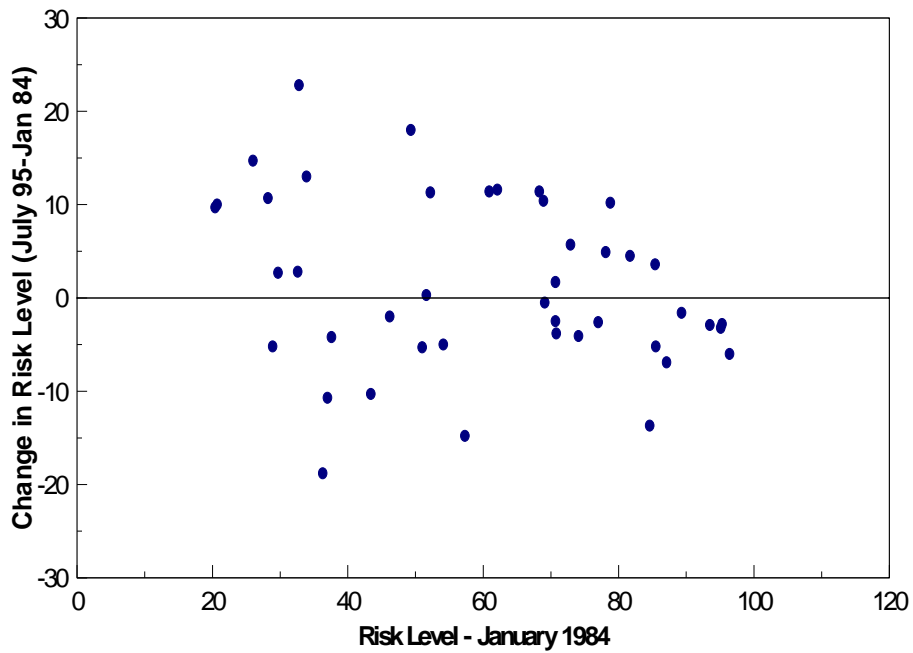


# Figure 2

## Mean Reversion in Risk Levels

### A. Institutional Investor Country Credit Rating

Sample: Countries with Equity Markets



Sample: All Countries

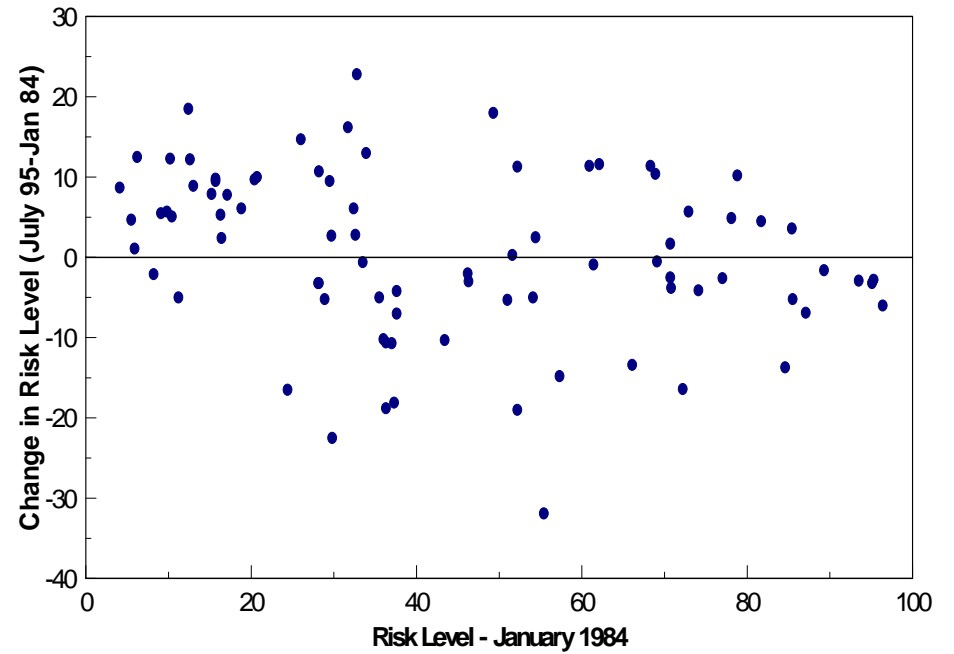
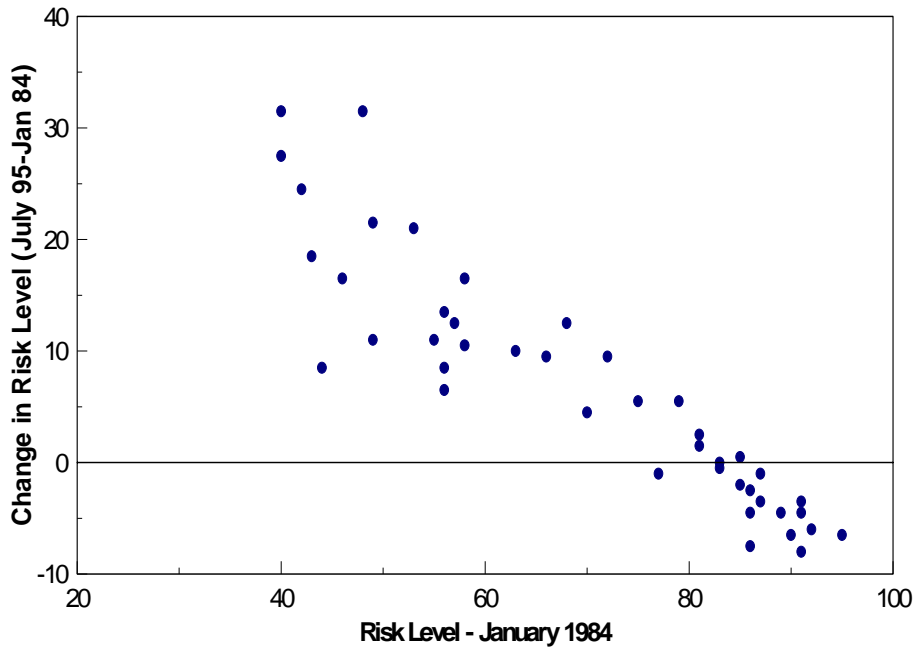


Figure 2  
Mean Reversion in Risk Levels

B. ICRG Composite Rating

Sample: Countries with Equity Markets



Sample: All Countries

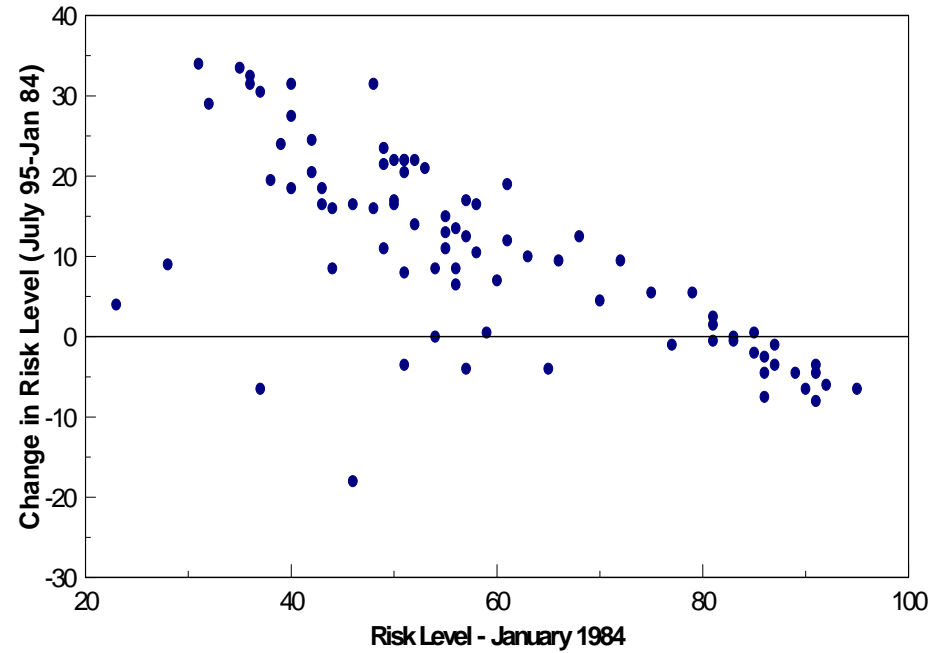
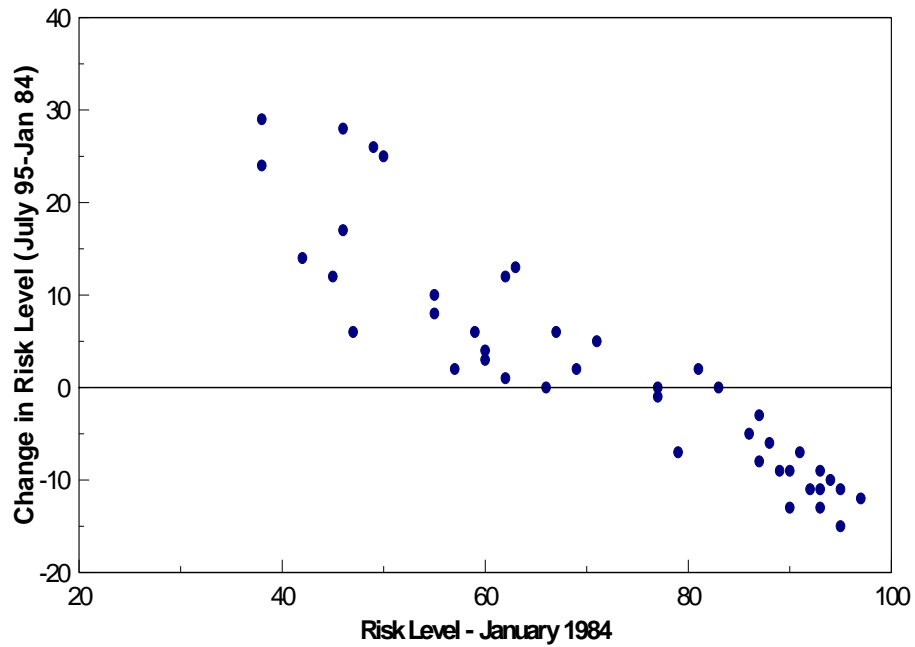


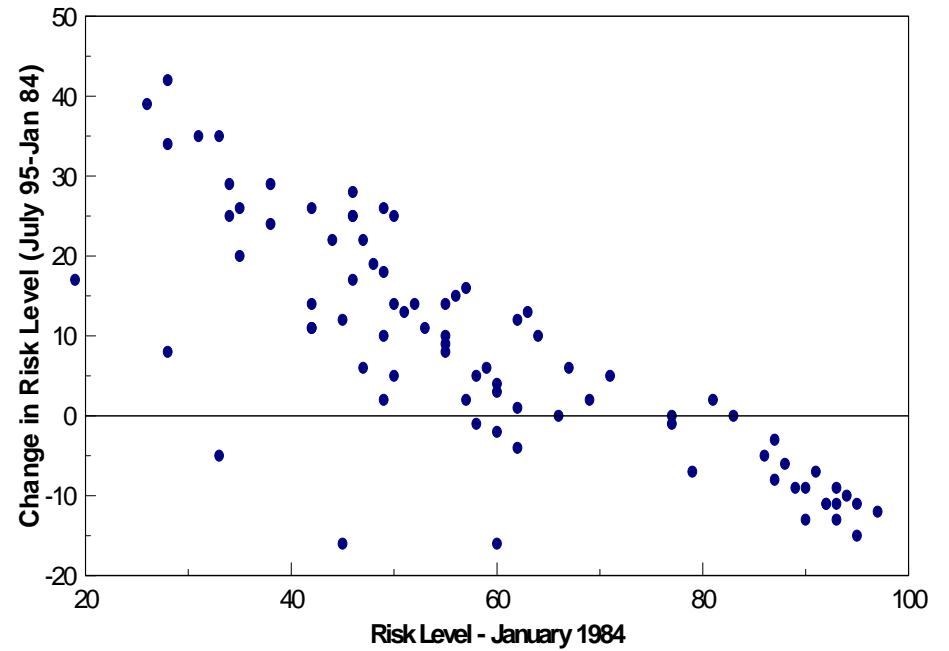
Figure 2  
Mean Reversion in Risk Levels

C. ICRG Political Rating

Sample: Countries with Equity Markets



Sample: All Countries

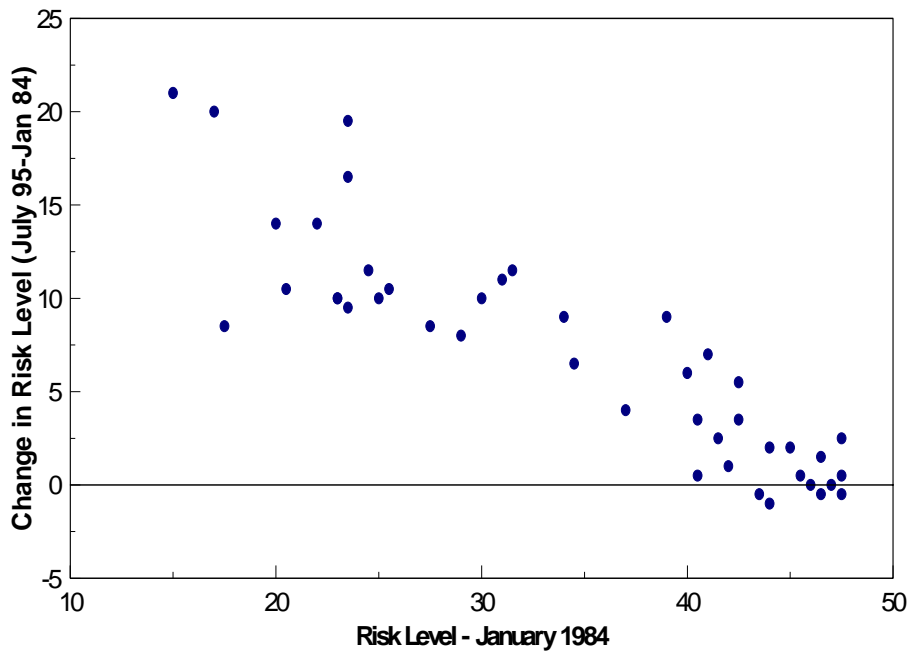


# Figure 2

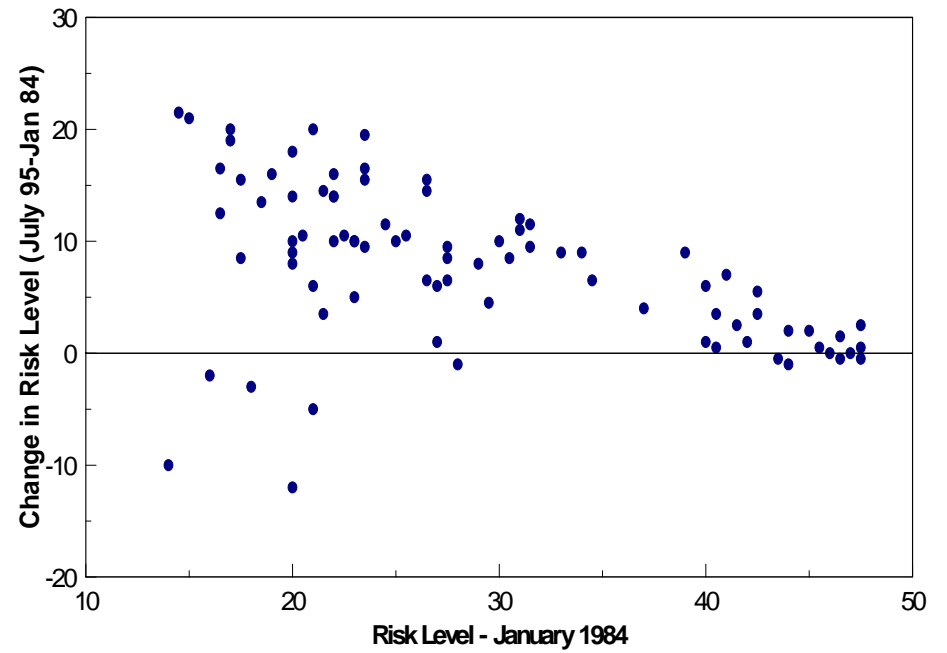
## Mean Reversion in Risk Levels

### D. ICRG Financial Rating

Sample: Countries with Equity Markets



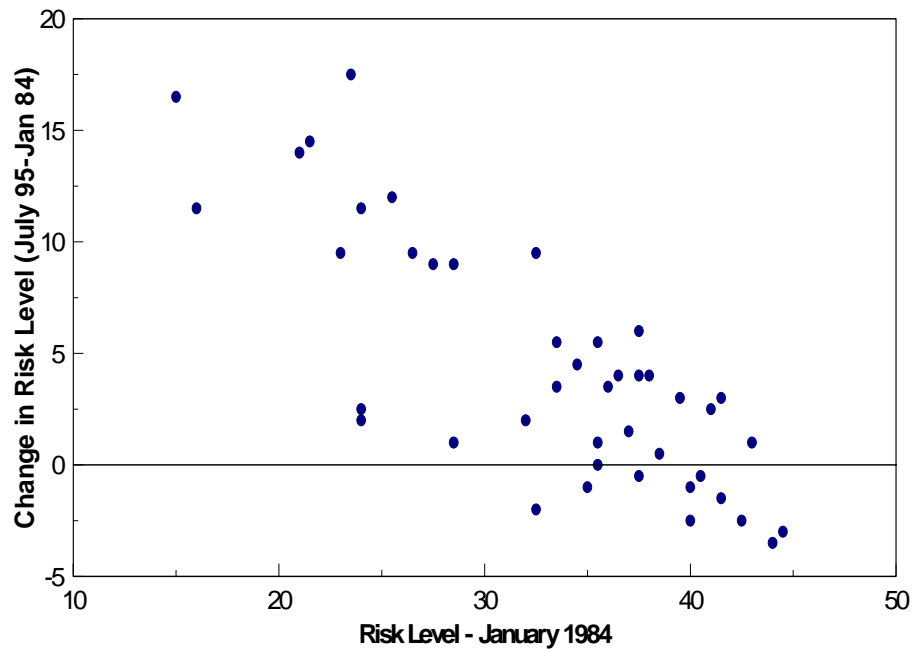
Sample: All Countries



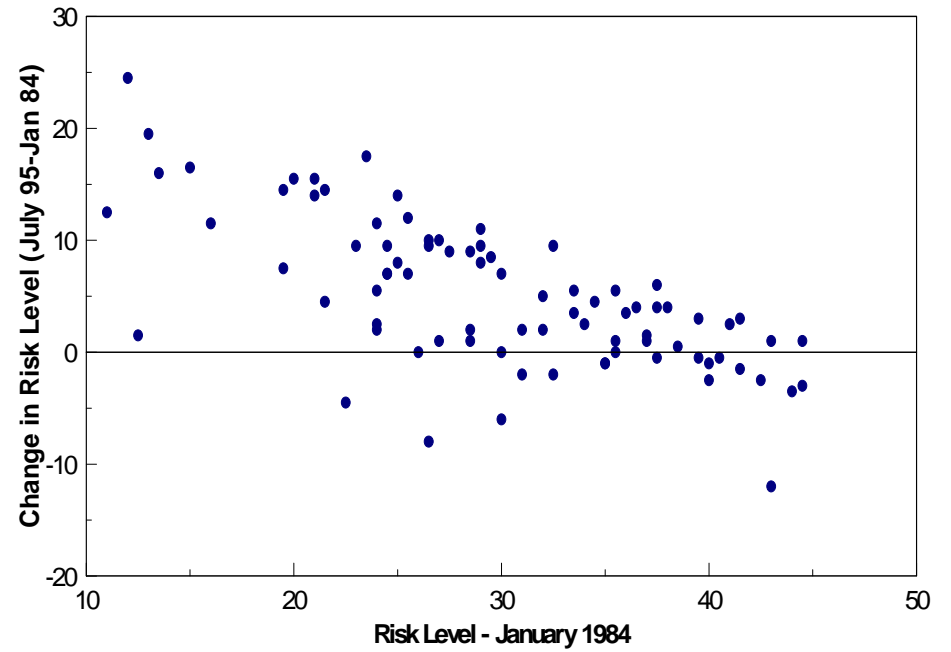
**Figure 2**  
**Mean Reversion in Risk Levels**

**E. ICRG Economic Rating**

**Sample: Countries with Equity Markets**



**Sample: All Countries**

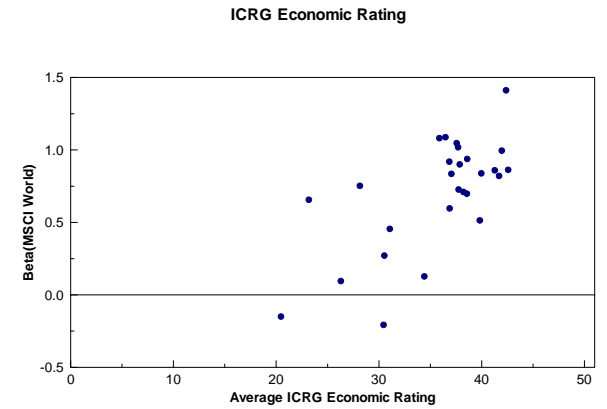
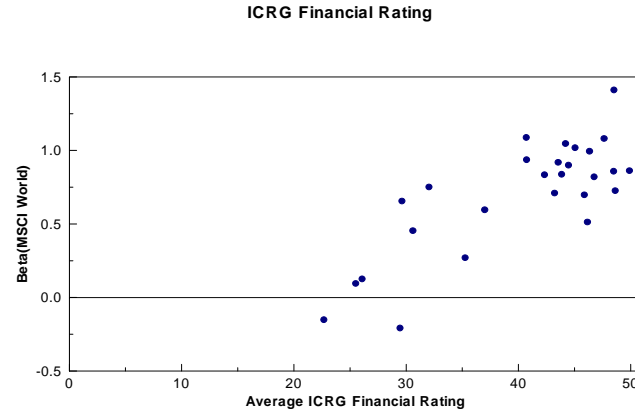
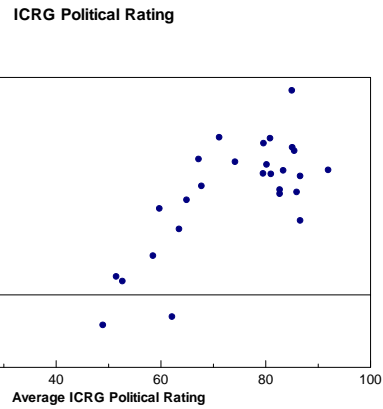
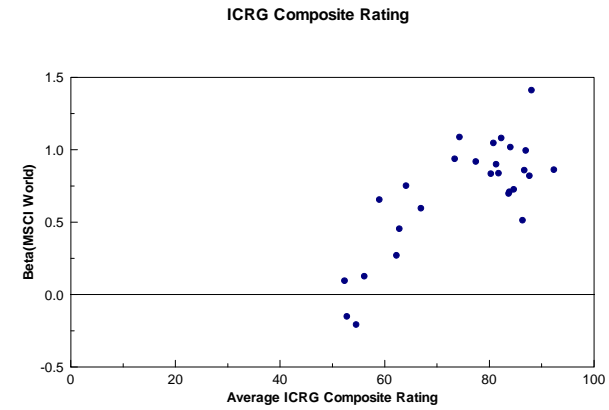
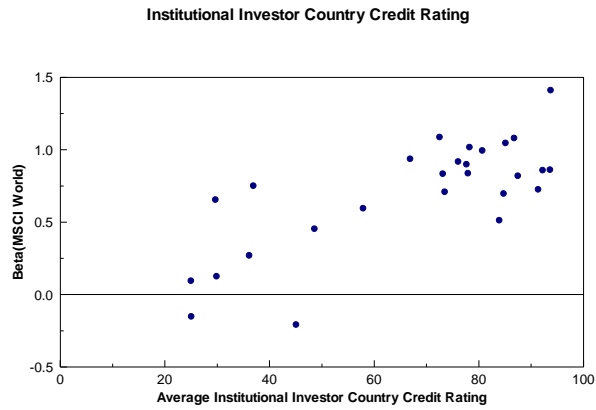


# Figure 3

## Equity Risk and Country Risk Ratings

January 1984-July 1995

### A. Exposure to World Market





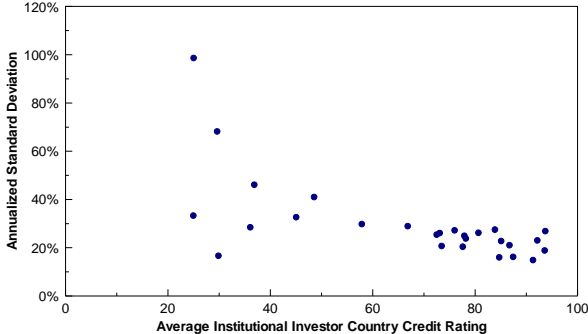
# Figure 3

## Equity Risk and Country Risk Ratings

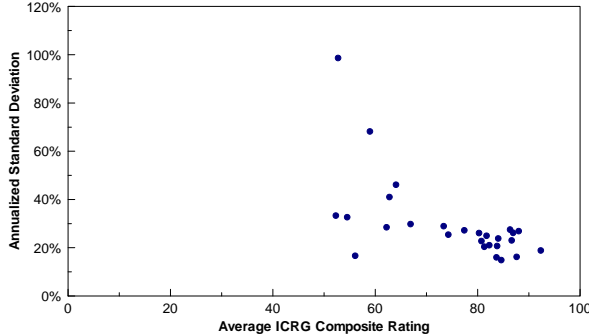
January 1984-July 1995

### B. Annualized Standard Deviation

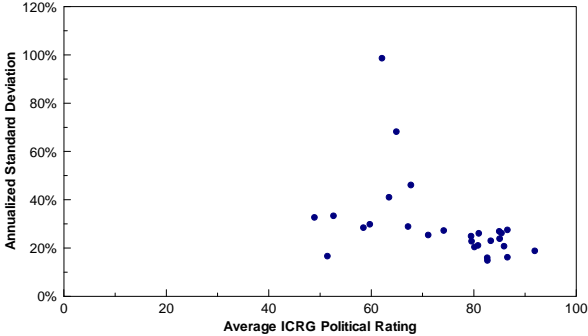
Institutional Investor Country Credit Rating



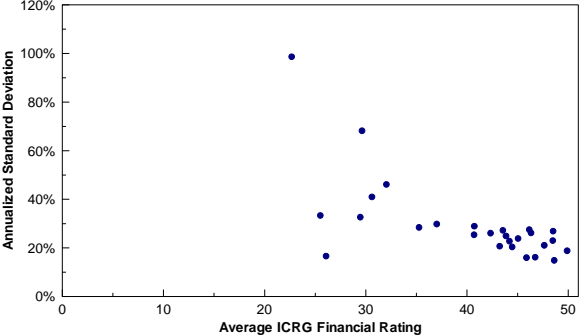
ICRG Composite Rating



ICRG Political Rating



ICRG Financial Rating



ICRG Economic Rating

