Political Risk, Economic Risk, and Financial Risk

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Given the increasingly global nature of investment portfolios, an understanding of country risk is very important. This article addresses the economic content of five different measures of country risk: four measures from the International Country Risk Guide's *political-, financial-, economic-, and composite-risk indexes and one from* Institutional Investor's *country credit ratings. We explored whether any of these measures contain information about future expected stock returns. We conducted time-series/cross-sectional analysis linking these risk measures to future expected returns. Finally, we analyzed the links between fundamental attributes such as book-to-price ratios within each economy and the risk measures. The results suggest that the country-risk measures are correlated with future equity returns. In addition, such measures are highly correlated with equity valuation measures. This finding provides some insight into the reason that value-oriented strategies generate high average returns.*

What is country risk, and how should it affect global investment strategies? We explored five measures of country risk. Three—political risk, economic risk, and financial risk—are from Political Risk Services' *International Country Risk Guide* (ICRG). The ICRG also reports a measure of composite risk, which is a simple function of the three base indexes. The fifth measure is *Institutional Investor*'s (II) country credit ratings (CCR). The information content of these indexes was examined in a number of ways.

We initially investigated whether the risk indexes contain information about future expected returns.[1] This analysis was conducted in two ways. First, we formed a portfolio of countries that experienced a decrease in risk rating (became more risky) and a portfolio of countries that experienced an increase in risk rating (became less risky). We formed the portfolios after the risk information was available and rebalanced them every six months. We found that these measures do, indeed, provide information about expected equity returns. We supplemented this analysis with time-series/cross-sectional regressions that measure the amount of information contained in each metric. We found that the financial-risk measure contains the most information about future expected returns and that political risk contains the least.

We next investigated the link between these country-risk measures and some more-standard measures of risk. We investigated, for example, whether a country's beta is correlated with the Morgan Stanley Capital International (MSCI) World Index. Although this index is a standard risk measure for integrated capital markets, many researchers have found the world beta model inadequate to characterize risk in emerging markets. As an alternative, we also investigated the relation between the country-risk measure and equity volatility.

We then explored the interface between country-risk analysis and investment strategies based on country fundamental information such as book-to-price ratios. We found that the risk indexes are highly correlated with the fundamental attributes. This finding provides some economic insight as to why value-oriented strategies earn higher returns than other strategies—they reflect higher risk exposure.

Relatively little research in finance has focused on the economic content of various country ratings. Political-risk measures were studied in Harlow (1993) and Diamonte, Liew, and Stevens (1996). Erb, Harvey, and Viskanta (1995) examined the information in credit-risk measures. In this study, we investigated a broad cross-section of different risk measures.

MEASURING COUNTRY RISK

Many services measure country risk, including[2]

- Bank of America World Information Services

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- Business Environment Risk Intelligence (BERI) S.A.,
- Control Risks Information Services (CRIS),
- Economist Intelligence Unit (EIU),
- *Euromoney,*
- *Institutional Investor,*
- Standard & Poor's Rating Group (S&P),
- Political Risk Services: *International Country Risk Guide,*
- Political Risk Services: Coplin–O'Leary Rating System, and
- Moody's Investors Service.

Each of the index or rating providers must amalgamate a range of qualitative and quantitative information into a single index or rating. This section reviews in detail the methodologies used by two of the foremost providers of risk ratings: *Institutional Investor* and *International Country Risk Guide.*

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 0 to 100 (100 represents maximum creditworthiness). II 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 rate creditworthiness subjectively, the parameters taken into account are difficult to define exactly. At any given point in time, an expert's recommendation will be based upon factors the expert believes are relevant.

To identify the factors that its survey participants have taken into consideration in the past, II asks them to rank the factors they consider in preparing country ratings. Table 1 presents the results of this survey. 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 (Organization for Economic Cooperation and Development) country ratings appear to have been the most turbulent during the 15-year period from 1979 to 1994.

International Country Risk Guide

ICRG compiles monthly data on a variety of political-, financial-, and economic-risk factors to calculate risk indexes in each of these categories, as well as a composite-risk index. Five financial, 13 political, and 6 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 high score indicates low risk.

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

Calculation of the three individual indexes 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 indexes' point scores. Note that political risk (100 points) is given twice the weight of financial and economic risk (50 points each). ICRG, as well as many of the other providers, thinks of country risk as being composed of two primary components: ability to pay and willingness to pay. Political risk is associated with willingness to pay, and financial and economic risk are associated with ability to pay.

The specific formulas for these calculations are as follows: $PR = \sum PR_i$, $ER = \sum ER_i$, $FR = \sum FR_i$, and $CR = 0.5(PR + ER + FR)$, where PR is political risk, ER is economic risk, FR is financial risk, and CR is the composite-risk rating. The specific factors taken into account for each risk index are detailed in Table 2.

Table 1. Rankings of Critical Risk Factors in *Institutional Investor*'s Country Credit Ratings by Rankings, 1979 and 1994

	OECD		Emerging		Rest of World	
Factor	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

Factor	Points	Percentage of Individual Index	Percentage of Composite
Political			
Economic expectations versus 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 national 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
Total political points	100	100	50
Financial			
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
Total financial points	50	100	25
Economic			
Inflation	10	20	5
Debt service as a percentage 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 percentage of goods and services	15	30	8
Parallel foreign exchange rate market indicators	5	10	3
Total economic points	50	100	25
Overall points	200		100

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.

Index and Rating Provider Comparison

Although the factors taken into account by each provider of ratings and the audience it seeks to inform vary, the methods these providers use have significant similarities. Most of the providers transform widely used 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 3. ICRG Risk Categories

Risk Category	Composite Score Range
Very high	0.0–49.5
High	50.0–59.5
Moderate	60.0–69.5
Low	70.0–84.5
Very low	85.0–100.0

Table 4 provides a comparison of S&P and Moody's ratings, by country, with the II and ICRG ratings as of October 1995. The S&P and Moody's ratings have a close correspondence with the II credit-risk measure (rank order correlation of 95 percent) and with the ICRG financial rating (rank order correlation of 90 percent). 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 percent.

SUMMARY DATA ANALYSIS

This section explores the time-series and cross-sectional patterns in the country-risk measures. Then, the correlations between risk measures are examined to assess whether each measure contains unique information. Finally, we provide some analysis of portfolio strategies that use the information in the country-risk ratings. We track the performance of a portfolio that includes countries that have been downgraded recently, as well as a portfolio containing upgraded countries.

Variation in Risk Measures

Our analysis focused on 117 countries for which we have all five risk indexes.[3] We segmented 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 equal-weighted risk indexes for three groups of country types for the January 1984–July 1995 period: developed countries with equity markets, emerging countries with equity markets, and all other countries.

The equal-weighted measures for the developed countries (top panel) exhibit remarkably little variation through time. The ICRG financial and economic measures remain about the same throughout the sample, as does the II country credit rating.

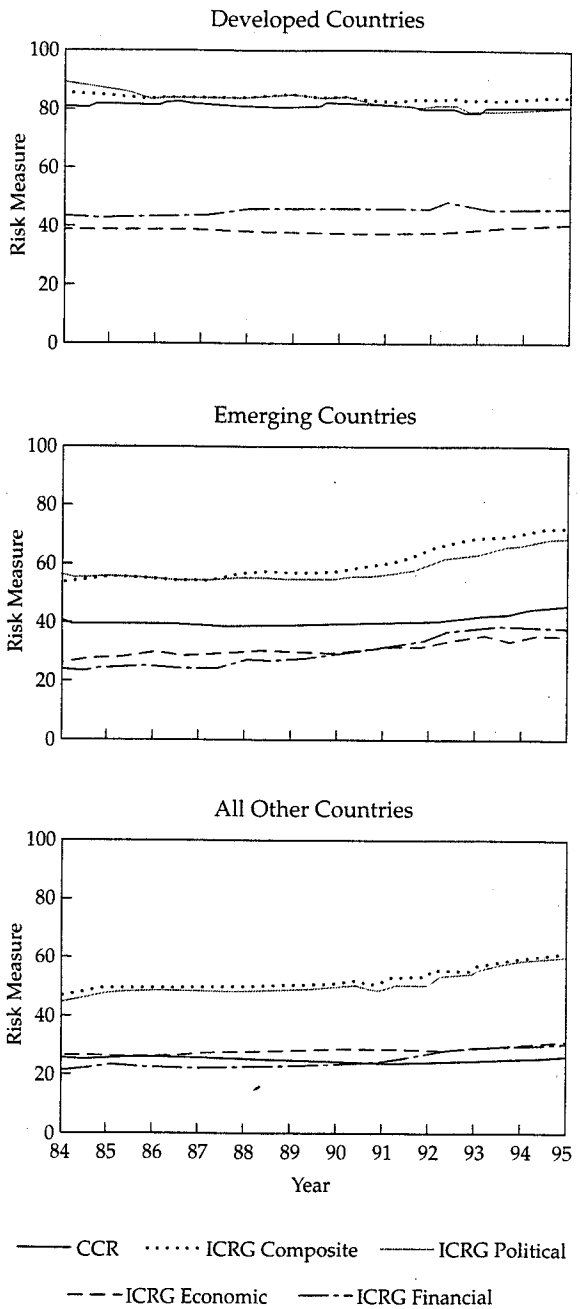
Table 4. Comparison of Sovereign Country Ratings and Other Risk Attributes, October 1995

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
The 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
The 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
United States	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
S&P rank correlation			95.2%	87.6%	77.0%	90.2%	72.4%
Moody's rank correlation			95.1%	87.5%	79.5%	89.8%	67.6%

NR = not rated.

Key: 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

Figure 1. Analysis of Equal-Weighted Average Risk Ratings, January 1984–July 1995



The ICRG political rating shows a small decline.

The analysis for the emerging countries and all other countries (the center and lower panels) is similar. Many of the other countries have similar economic characteristics to the emerging country sample. Generally, all of the risk ratings increase over the sample period, particularly from 1988 to 1993.

The cross-sectional behavior of the risk measures is demonstrated in Figures 2 to 6. For the countries with equity returns and for all countries (with and without equity markets), the figures show the January 1984 risk level against the change in the risk level up to July 1995. The figures analyze all five measures: II country credit risk (Figure 2) and the ICRG composite (Figure 3), political (Figure 4), financial (Figure 5), and economic (Figure 6) risk. The cross-sectional mean reversion in the political-risk measure that Diamonte, Liew, and Stevens (1996) documented also occurs in the other risk measures. Those countries that began with a very low risk rating have tended to improve; the countries with a high rating have tended to deteriorate.

Mean reversion is particularly evident for the financial- and composite-risk measures for coun-

Figure 2. Mean Reversion in Risk Levels: II Country Credit Rating, January 1984–July 1995

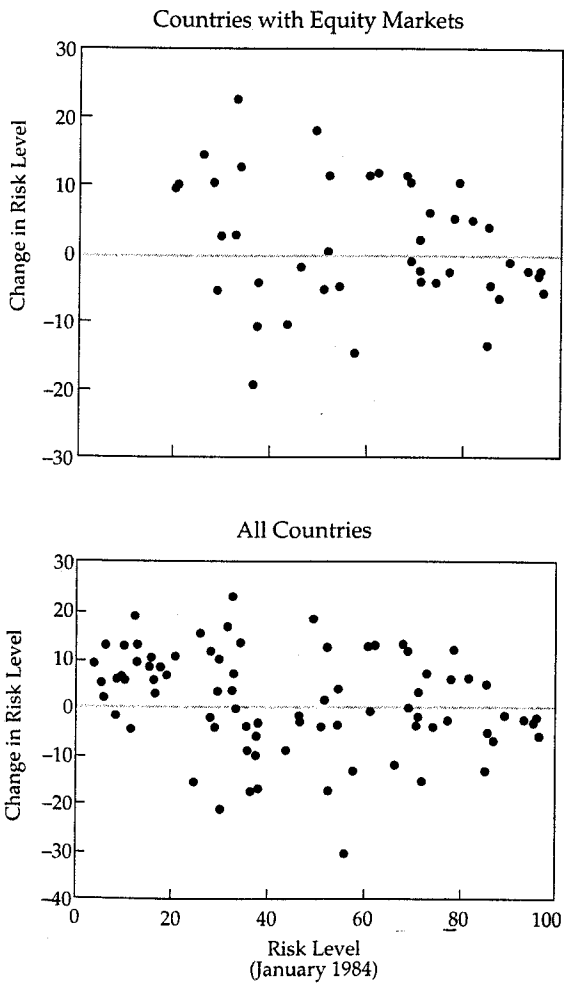


Figure 3. Mean Reversion in Risk Levels: ICRG Composite Rating, January 1984–July 1995

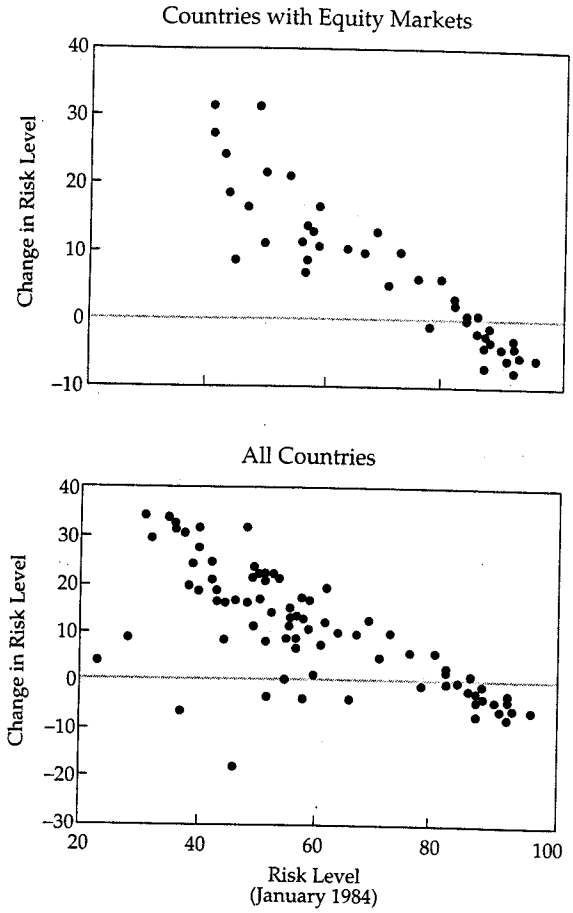
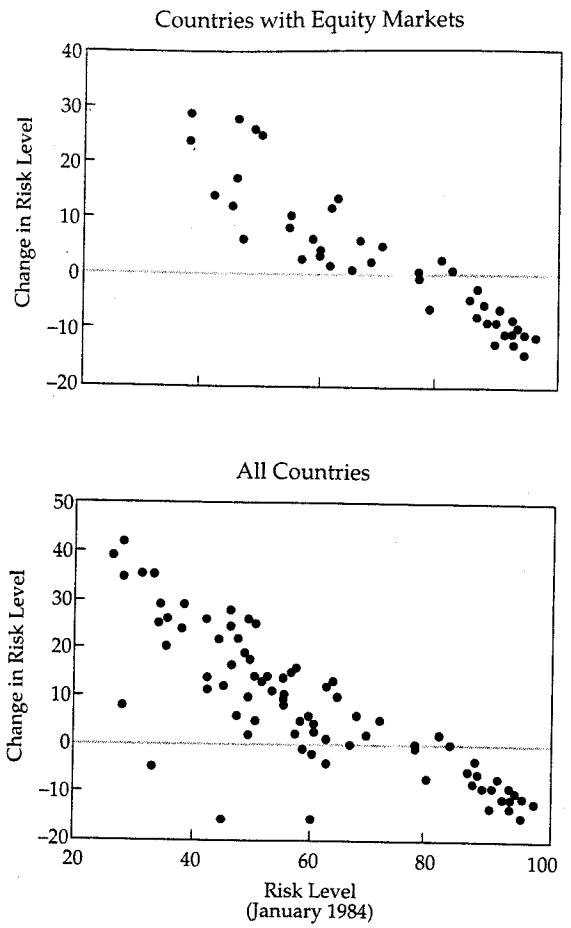


Figure 4. Mean Reversion in Risk Levels: ICRG Political Rating, January 1984–July 1995



tries with equity markets. Also, political and economic risks exhibit the same type of behavior. The weakest evidence of cross-sectional mean reversion is found for credit risk.

A number of countries show sharp improvement in their risk ratings. For example, Argentina began with a ICRG composite rating of 40.0 in January 1984 and rose 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 in January 1984 to 88.5 in July 1995. Similar declines were found for Japan, the United Kingdom, and the United States.

Table 5 details the correlations of the various risk measures. Because the credit rating is only available on a semiannual basis, the correlations presented are based on semiannual observations. The correlation measure is equal-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 ratings is the highest because, by definition, the political rating is 50 percent of the composite. The highest cross-correlation of the levels of the three ICRG components, however, is 35 percent. Interestingly, the correlation between the ICRG financial measure and the II country credit rating is only 26 percent.

Table 6 documents the degree of predictability in the risk measures. The levels of the measures are very persistent. The table shows the average autocorrelations of the changes in the risk measures. The change in the II country credit rating is the most predictable. The average first-order autocorrelation is 24 percent (20 percent in developed markets and

Figure 5. Mean Reversion in Risk Levels: ICRG Financial Rating, January 1984–July 1995

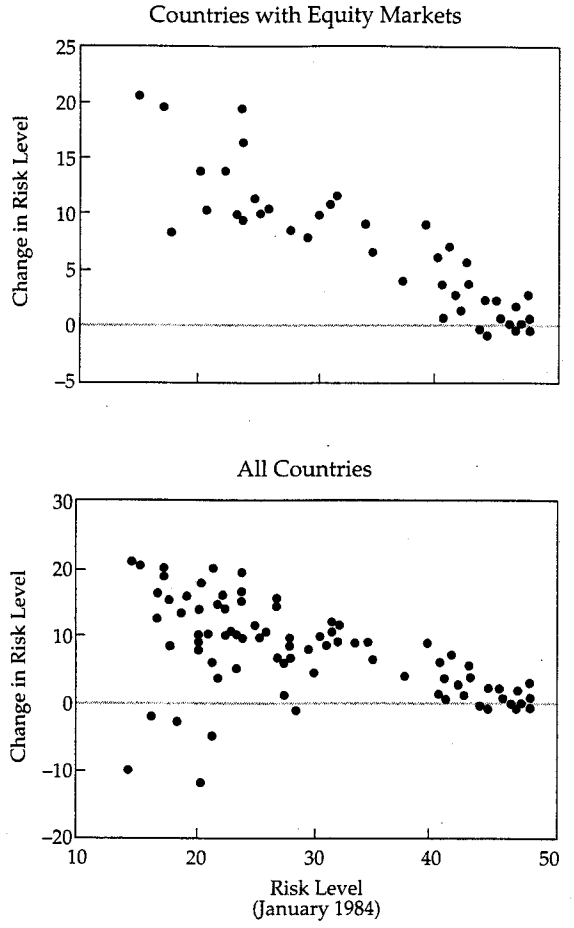
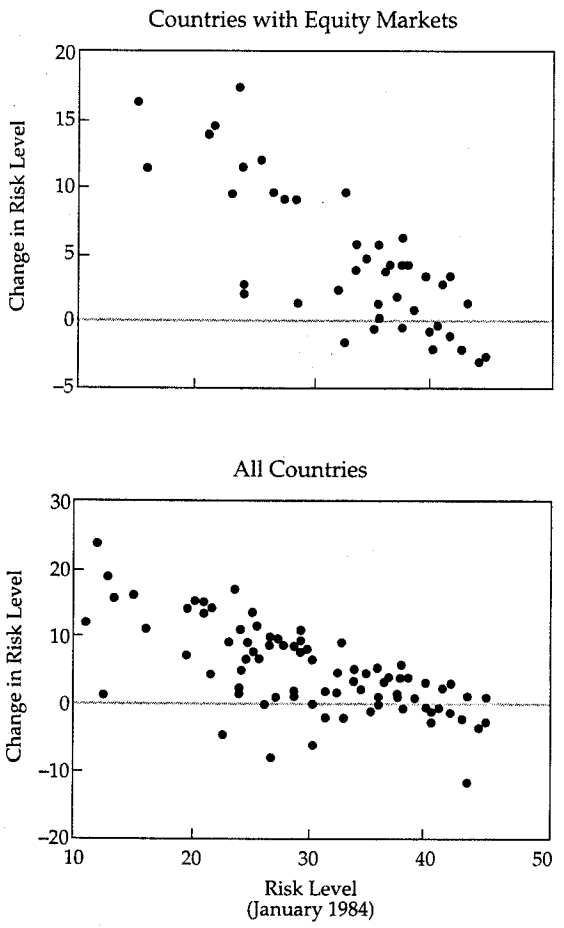


Figure 6. Mean Reversion in Risk Levels: ICRG Economic Rating, January 1984–July 1995



26 percent 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).

Table 7 provides a correlation analysis of the ratings with mean returns, volatility, and beta against the MSCI world market portfolio. The equity returns are from MSCI and the International Finance Corporation (IFC). The correlation of each risk measure with beta is positive (43 percent for beta and the ICRG composite). This result 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, which is evident in Figure 7. This positive relation largely results from the fact that the emerging markets have very low betas with respect to the world market portfolio (see Harvey 1995).

Figure 8 shows the sharp negative correlation between volatility and the risk measures. This finding 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, political risk and volatility have a positive relation.

We also investigated whether the ICRG ratings, given that they are made on a monthly rather than semiannual basis, contain advance information regarding the II country credit rating. These results are contained in Table 8. 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.

Table 5. Correlations of Risk Measure Levels and Changes, Semiannual Observations, January 1984–July 1995

Source	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	

Table 6. Persistence of Risk Measures, First-Order Autocorrelations of Log Rating Changes, Semiannual Observations, January 1984–July 1995

	All Countries				
Source	Average	Minimum	Maximum	Developed Country Average	Emerging Country 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

We also assessed the impact of the change in the II country credit rating on the next month's change in the ICRG rating. There is little information here. Only one of the regressions, that on financial risk, has a coefficient that is significantly different from zero. The coefficients are all negative, which makes little sense (increased II CCR predicts lower ICRG ratings). We concluded that the ICRG contains information that predicts II CCR but the reverse is not true.

An Initial Portfolio Strategy

Table 7 suggests a relation between average returns and average ratings. One way to analyze this relation is to form portfolios based on rating changes. One version of this approach is analyzed in Diamonte, Liew, and Stevens (1996). They formed two portfolios: upgrade and downgrade, based on the ICRG political-risk measure. Importantly, their approach is *ex post* rather than *ex ante*.

Table 7. Sample-Period Correlation between Average Risk Measures and Price Moments

Country Sample	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 countries					
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 countries					
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

That is, their portfolios are only investable if you know in advance what next month's rating will be.

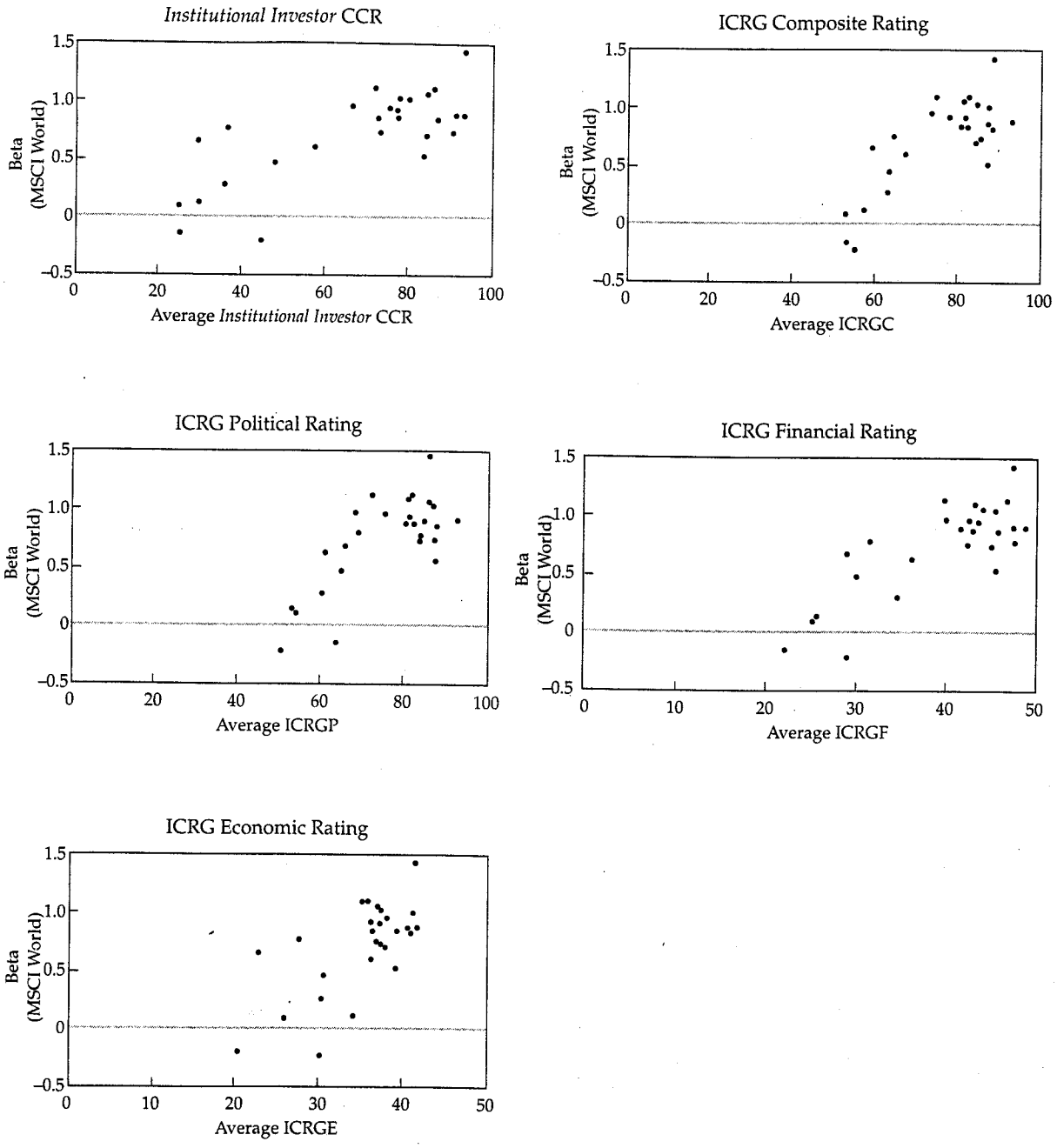
An alternative approach is an event strategy, which was pursued by Harlow (1993). He examined the cumulative returns of countries up to six months after political rating increases or decreases. This strategy is investable, given that countries are purchased or sold after the rating changes.

Our strategy was to form two portfolios: upgrades and downgrades. The portfolios are rebalanced every six months. If the rating does not change, the country stays in its respective portfolio. This strategy reduces transaction costs and increases the number of countries in the portfolios.

The top panel of Table 9 complements the Diamonte, Liew, and Stevens results. The upgrade portfolios have higher average returns than the downgrade portfolios. This result is true not only for political risk but also for the other risk measures. Indeed, of the four ICRG risk measures, political risk is never the most important one. In the all-country group and the emerging markets, the composite risk is more important than the others in the sense that it implies more profit. In the developed countries, the financial-risk measure has the most ability to discriminate between high- and low-return portfolios.

The lower panel of Table 9 presents the results from an investable strategy. Portfolios are based on a previous rating change and held for six months. Each country is equal 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 alpha of 1,140 basis points a year when all countries are

Figure 7. Equity-Risk and Country-Risk Ratings by Exposure to World Market, January 1984–July 1995

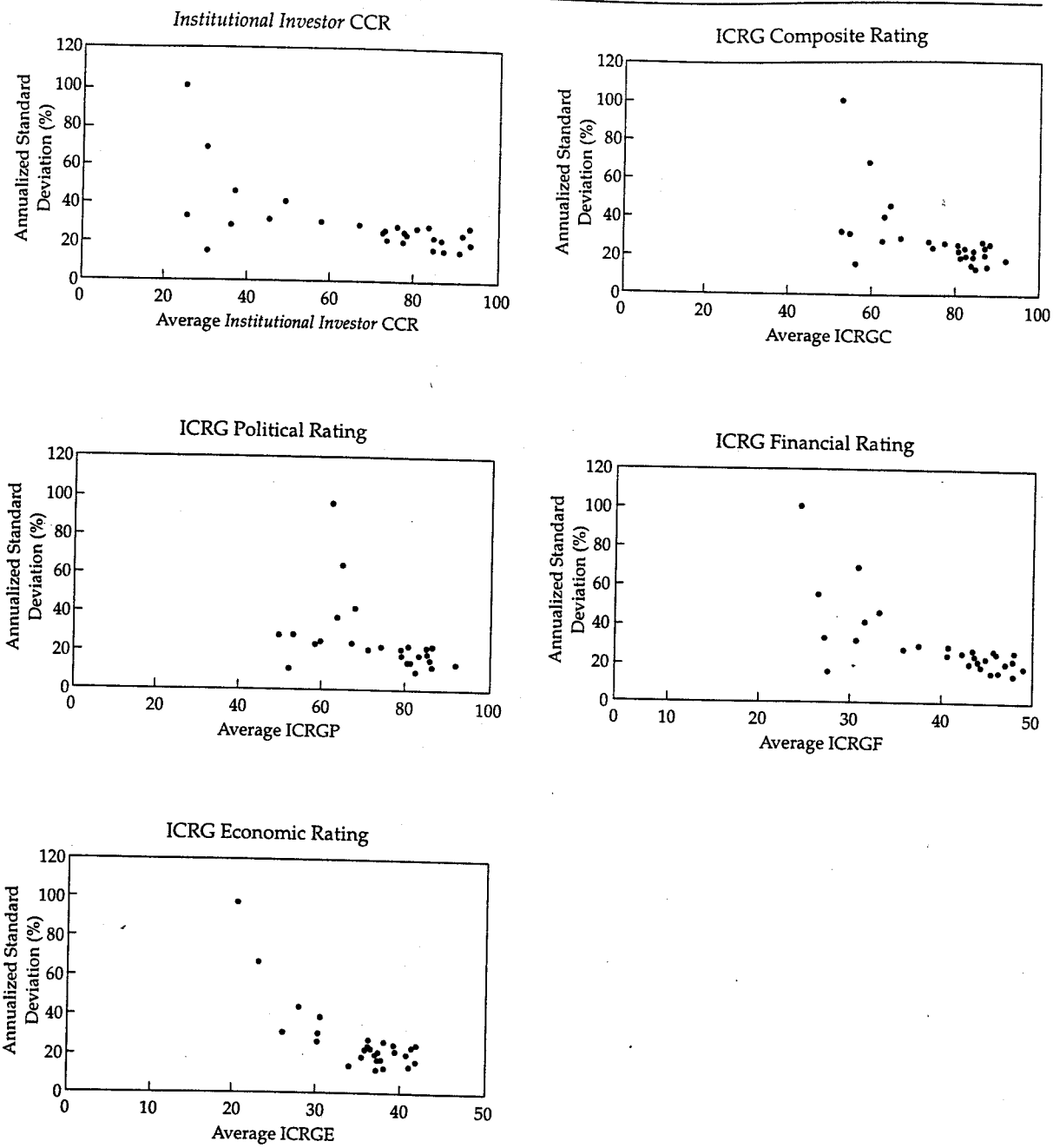


examined. The political-risk measure has an alpha of –160 basis points a year. The portfolios formed on economic risk have an alpha of 750 basis points. The portfolios based on financial and credit risk fare worse than those based on political risk.

Perhaps the most interesting aspect of the analysis is that this phenomenon does not apply only to emerging markets. If the portfolio strategy is executed for developed countries, the alpha for the composite risk is 840 basis points. For economic risk, the alpha is 540 basis points. 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 860 basis points. For economic risk, the alpha is 880 basis

Figure 8. Equity-Risk and Country-Risk Ratings by Annualized Standard Deviation, January 1984–July 1995



points. 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 used a capitalization-weighting strategy and found similar results. For example, the risk-adjusted return of the composite-risk, upgrade–downgrade portfolio is 1,170 basis points a year for the capitalization-weighting scheme, compared with 1,140 basis points for equal weighting (these results are available on request). Within the country groupings, capitalization weighting makes the economic-risk measure more important in developed markets

Table 8. Predicting Changes in Risk Attributes

Source	Coefficient	*t*-Statistic	R^2
ICRG attributes as predictors of II CCR			
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
II CCR as predictors of ICRG attributes			
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

Notes: In the top panel, the semiannual log change in the II ratings is regressed on the lagged semiannual log changes of the ICRG ratings. The sample is from March 1984 through October 1995 for countries with equity markets. In the lower panel, the monthly log change in the ICRG ratings is regressed on the lagged semiannual log change in the II CCR. The sample is from February 1984 through September 1995 for countries with equity markets.

than in other markets. Capitalization weights make the political-risk measure more important in emerging markets.

Some caution should be exercised in interpreting our results, because transaction costs have not been taken into account. We have taken two steps, however, to minimize those costs. First, turnover is minimized by keeping the countries with zero rating change in their current portfolios. Second, we rebalanced only twice a year. Our portfolio strategy is successful for developed as well as emerging markets. In many of the developed markets, trading costs can be minimized by using index futures.

CROSS-SECTIONAL ANALYSIS OF RISK

This section formalizes our investigation of the relation between expected returns and country-risk measures using time-series/cross-sectional regression analysis. An examination of the link between fundamental valuation measures and the country ratings indicates that the country ratings can explain a considerable amount of the variation in book-to-price measures. Finally, we address the problem that country attributes have different interpretations in different countries.

Time-Series/Cross-Sectional Analysis of Risk Attributes

The analysis in Table 9 suggests that portfolio groupings by certain attributes produce positive risk-adjusted profits on an *ex ante* basis. 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 10 presents attribute regressions in the following form:

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

where R represents a vector of six-month returns from July 1984 to June 1995 (some markets' returns begin later) for all of the countries in our sample. A represents the risk attribute that is lagged and matched to the country. The full sample of all countries has 884 observations: 441 for the developed countries and 443 for the emerging equity market sample.

Table 10 reports coefficients and *t*-statistics for five separate regressions of the returns on the attributes. The R^2 from this regression and the R^2 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 grew from 28 in March 1984 to 48 in March 1995.

The top panel of Table 10 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.

Regressions were estimated separately on developed and emerging countries, and the results show 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 4 in the univariate regression. In the univariate and multivariate regressions, the ICRG financial- and economic-risk variables both enter the regression but the political-risk and II CCR variables do not. In the emerging countries sample, no attribute enters the regression with a significant coefficient;

Table 9. Changing Country-Risk Portfolio Strategy, January 1984–July 1995

Sample	Downgrade			Upgrade			Upgrade–Downgrade		
	Portfolio Return	Standard Deviation	MSCI World Beta	Portfolio Return	Standard Deviation	MSCI World Beta	Portfolio Return	Standard Deviation	MSCI World Alpha
Contemporaneous rating changes and portfolio performance									
All countries									
II CCR	21.6%	20.6%	0.95	30.6%	24.4%	0.95	9.0%	14.4%	9.0%
ICRGC	16.7	24.3	1.07	33.4	21.9	0.97	16.7	14.5	16.6
ICRGP	19.3	21.5	0.95	34.3	24.3	1.13	15.0	16.1	11.2
ICRGF	18.1	30.2	1.21	28.5	22.6	0.99	10.4	23.0	11.4
ICRGE	25.5	26.6	1.30	26.6	18.9	0.78	1.1	10.9	8.0
Developed countries									
II CCR	17.2%	19.8%	0.98	19.5%	20.3%	1.09	2.3%	13.5%	1.0%
ICRGC	15.0	19.7	1.05	21.3	21.2	1.20	6.3	9.8	3.7
ICRGP	15.9	17.7	0.98	24.4	27.6	1.52	8.5	16.6	1.8
ICRGF	14.5	21.1	1.12	22.1	20.2	1.12	7.6	10.0	6.9
ICRGE	16.1	17.8	0.95	19.2	18.4	1.02	3.1	8.4	1.1
Emerging markets									
II CCR	22.2%	25.1%	0.87	36.7%	33.3%	0.83	14.4%	24.5%	15.3%
ICRGC	16.0	35.0	1.12	41.1	26.3	0.84	25.0	29.7	24.9
ICRGP	20.0	31.6	0.82	39.1	28.2	1.07	19.1	27.4	12.6
ICRGF	18.6	36.8	1.28	35.8	26.8	0.76	17.2	33.5	21.1
ICRGE	31.5	35.1	1.45	32.7	24.9	0.51	1.2	22.6	14.1
MSCI World	14.9%	15.5%							
Predictive rating changes and portfolio performance									
All countries									
II CCR	29.1%	21.5%	0.76	28.6%	24.7%	1.04	–0.5%	20.2%	–4.8%
ICRGC	21.3	22.3	1.02	30.8	22.0	0.85	9.5	16.6	11.4
ICRGP	26.1	18.9	0.85	26.8	21.9	1.00	0.7	10.7	–1.6
ICRGF	26.6	30.8	0.86	26.4	21.6	1.02	–0.2	24.5	–4.9
ICRGE	23.4	25.9	1.04	30.7	21.3	0.94	7.4	17.9	7.5
Developed countries									
II CCR	19.9%	20.6%	1.03	20.6%	20.5%	1.18	0.7%	14.2%	–1.9%
ICRGC	17.1	20.0	1.19	21.7	18.7	0.94	4.6	10.8	8.4
ICRGP	18.8	18.6	1.07	20.3	21.5	1.25	1.5	10.4	–1.2
ICRGF	21.8	20.9	1.09	19.9	19.3	1.12	–1.9	9.9	–2.5
ICRGE	14.8	18.5	1.04	19.9	17.6	0.99	5.1	9.0	5.4
Emerging markets									
II CCR	35.4%	26.9%	0.61%	29.9%	30.8%	0.81	–5.5%	29.9%	–7.7%
ICRGC	22.8	31.1	0.69	36.4	28.3	0.84	13.6	29.6	8.6
ICRGP	28.3	27.4	0.57	28.2	25.8	0.75	0.0	23.4	–3.9
ICRGF	27.2	37.1	0.76	33.8	26.6	0.89	6.6	33.5	0.8
ICRGE	27.2	37.3	0.90	38.0	28.8	0.83	10.8	36.3	8.8
MSCI World	17.5%	15.0%							

Notes: The upper panel portfolios are formed by equal weighting the returns for all countries that during the current period experienced an upgrade or downgrade in their risk exposures. The lower panel portfolios are formed by equal weighting the returns for all countries that during the previous period experienced an upgrade or downgrade in their risk exposures. Portfolios were reformed every six months. MSCI World alphas are annualized. MSCI World returns in the two panels differ because the starting date in the upper panel is January 1984 and in the lower panel is July 1984.

the closest are the ICRG financial- and economic-risk variables.

The lower panel of Table 10 presents the regression coefficients of country returns on the lagged change in the attributes. These results are closer to the trading strategy results in Table 9, in which the portfolios were constructed of countries with changes in rating. Although the change regressions have less explanatory power than the lagged levels, the upper and lower panels in Table 10 have many similarities. In particular, in the developed country sample, the ICRG financial variable is by far the most important, with *t*-ratios close to 2. In contrast to the upper panel, the political-risk variable is important—but only for the emerging market sample.

Overall, the regression evidence complements the evidence from the portfolio strategies. The regression results, however, do not seem as dramatic as profits from the portfolio strategies. This result

Table 10. Cross-Sectional/Time-Series Importance of Country-Risk Attributes

Sample	Regression	II CCR	R^2	ICRGC	R^2	ICRGP	R^2	ICRGF	R^2	ICRGE	R^2	Multivariate R^2
Lagged level regressions												
All	Univariate	–0.0011**	0.5%	–0.0023***	0.7%	–0.0017**	0.4%	–0.0043***	1.2%	–0.0041**	0.4%	
All	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
Lagged change in level regressions												
All	Univariate	–0.0072	–0.1	–0.0046	0.0	–0.0076*	0.3	–0.0015	–0.1	0.0071	0.0	
All	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

Notes: The upper panel results from time-series/cross-sectional regressions of semiannual returns against the lagged risk attribute or, in the multivariate case, risk attributes. The lower panel results from time-series/cross-sectional regressions of semiannual returns against the lagged log change in the risk attribute or, in the multivariate case, risk attributes.

* 10 percent level of significance.
** 5 percent level of significance.
*** 1 percent level of significance.

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

Risk Attributes and Fundamental Variables

Ferson and Harvey (1996) provided evidence that fundamental attributes such as book-to-price, earnings-to-price, dividend-to-price, and price-to-cash ratios are linked to the risk exposure of national markets. They proposed an asset-pricing framework in which the fundamental attributes are linked to dynamic country-risk (beta) functions.

We focused on a set of three attributes available for both the developed and emerging markets: book–price, earnings–price, and dividend–price ratios. Table 11 provides cross-sectional regressions that use our country-risk measures to attempt to explain the cross-section of the valuation attributes. As in Table 10, Table 11 presents both univariate regressions and multivariate regressions for three different samples. Our discussion focuses on the multivariate regressions. The number of countries in the cross-sectional regression varies from 18 in March 1984 to 47 in March 1995.

Table 11 presents a number of interesting results. First, the risk measures have some ability to explain all three valuation ratios. They do the best, however, in explaining the cross-sectional variation in the book-to-price ratios. In the full sample, more than 25 percent 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 percent of the variation in the full sample of countries. The economic-risk measure enters with a negative coefficient. This result suggests that high ratings (low risk) are associated with low book-to-price ratios.

When the data are segmented by developed and emerging countries, the results are similar to those for the pooled regression. For developed countries, 18 percent of the cross-sectional variance of the book-to-price ratios can be explained, to which the economic-risk variable contributes 10 percent. For the emerging equity markets, 29 percent of the variation can be explained in the multivariate model and the economic-risk variable contributes 24 percent.

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

The incremental contribution of the risk ratings relative to the book–price valuation measure is presented in Table 12. 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 12 reports the coefficients and t-ratios by risk attribute. The results indicate that the II CCR and the ICRG political-risk measures provide little or no incremental information. The ICRG financial-risk measure is the most important variable, followed by ICRG economic risk. Although both the economic and financial 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–price valuation attribute fully characterizes the information in the risk ratings.

Trading Strategies Based on Risk Attributes

The time-series/cross-sectional methodology has two disadvantages. First, in stacking the time-series of returns together, important information regarding the cross-sectional correlation of the returns is eliminated, which could cause the standard errors to be understated. Second, the time-series/cross-sectional methodology imposes the same slope coefficient for all time periods, even though it could change through time. Ferson and Harvey (1991 and 1993) found that the variation in the slope coefficients is to some degree predictable.

The top panel of Table 13 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 10 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 here, we investigated the pattern of estimated cross-sectional slope coefficients through time along with the time-series of R^2s. In all cases, the explanatory power of the risk variables increases through time.

The second panel of Table 13 assesses the incremental contribution of the risk attributes when the book-to-price ratio is included in the cross-sectional regression. Although the coefficients are negative for each of the risk attributes, only II CCR and the ICRG composite and political ratings have coefficients that are more than one standard error below zero.

The third panel of Table 13 implements the Ferson and Harvey (1996) attribute-adjustment methodology. Ferson and Harvey made beta risk (with respect to the MSCI world portfolio) a function of the attribute. We estimated the following 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 was formed:

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

The third panel of Table 13 reports regressions of the cross-section of returns on the cross-section of adjusted attributes. The positive coefficient suggests a positive relation between beta risk and expected returns. Although many of the coefficients are not significantly different from zero at conventional levels, the explanatory power of the regressions uniformly improve over the raw attribute (top panel) regressions.[4]

The bottom panel in Table 13 considers both the adjusted and unadjusted risk attributes. Note that collinearity is no problem here because the adjustment factors are country specific. Consistent with the results in the panel above, the beta risk factor enters each regression with a positive coefficient. Each of the II CCR 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^2 for the II CCR is now 26 percent (regressing on credit risk alone produces an 8 percent R^2). The economic- and financial-risk measures both show similar explanatory power.

CONCLUSIONS

The goal of this research was 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 the ICRG composite, financial, and economic ratings, in particular, contain considerable information. For example, for portfolios based on changes in the risk ratings, risk-adjusted abnormal returns are in the range of 1,000 basis points a year. Trading on the basis of the political-risk measure alone has no ability to produce abnormal returns.

The cross-sectional regressions confirm the results of the portfolio analysis. Some of the ICRG risk measures—in particular, economic and financial risk—can predict the cross-section of expected returns, which is most strongly evidenced in the

Table 11. Relationship between Fundamental Variables and Risk Attributes

Sample	Regression	Fundamental Variable	II CCR	R^2	ICRGC	R^2	ICRGP	R^2	ICRGF	R^2	ICRGE	R^2	Multivariate R^2
All	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	
All	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

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

* 10 percent level of significance.
** 5 percent level of significance.
*** 1 percent level of significance.

Table 12. Incremental Contribution of Country-Risk Attributes

Sample	Regression	Fundamental Variable	II CCR	R^2	ICRGC	R^2	ICRGP	R^2	ICRGF	R^2	ICRGE	R^2	Multivariate R^2
All	Univariate	Book/price	–0.0007	1.9%	–0.0016*	2.0%	–0.0014*	2.0%	–0.0030**	2.3%	–0.0009	1.7%	
All	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

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

* 10 percent level of significance.
** 5 percent level of significance.
*** 1 percent level of significance.

Table 13. Average Cross-Sectional Regression Results, Semiannual Returns, April 1984–September 1995

Semiannual return versus risk attributes

Source	Intercept	Slope Coefficient	*t*-Statistic	Negative Coefficients	R^2
II CCR	0.2413	–0.0018	–2.36	65.2%	8.2%
ICRGC	0.3110	–0.0025	–1.76	65.2	7.6
ICRGP	0.2671	–0.0019	–1.67	69.6	6.1
ICRGF	0.2785	–0.0038	–1.50	56.5	8.9
ICRGE	0.3747	–0.0069	–2.02	56.5	8.3
Book/price	0.0344	0.1387	4.46	17.4	9.4

Semiannual return versus risk attribute and book-to-price ratio

		Risk Attribute			Book-to-Price Ratio			
Source	Intercept	Slope Coefficient	*t*-Statistic	Negative Coefficients	Slope Coefficient	*t*-Statistic	Negative Coefficients	R^2
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

Semiannual return versus adjusted risk attribute[a]

Source	Intercept	Slope Coefficient	*t*-Statistic	Negative Coefficients	R^2
CCR	0.0965	0.0401	1.26	39.1%	17.9%
ICRGC	0.1055	0.0272	0.77	43.5	17.3
ICRGP	0.0960	0.0446	1.37	43.5	16.0
ICRGF	0.1030	0.0259	0.78	43.5	17.9
ICRGE	0.1115	0.0196	0.59	47.8	18.9
Book/price	0.0654	0.0683	2.05	30.4	24.0

Semiannual return versus risk attribute and adjusted risk attribute

		Risk Attribute			Adjusted Risk Attribute			
Source	Intercept	Slope Coefficient	*t*-Statistic	Negative Coefficients	Slope Coefficient	*t*-Statistic	Negative Coefficients	R^2
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
Book/price	–0.0037	0.0972	3.00	31.8	0.0701	2.01	36.4	31.7

[a]Attributes are adjusted according to the Ferson–Harvey methodology.

developed markets in our sample. Change in political rating also has some marginal explanatory power in emerging equity markets but not in developed markets.

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

Our final contribution is to bridge attribute-oriented investment strategies with asset pricing. Ferson and Harvey (1996) argued that popular valuation attributes should enter each country's dynamic risk function. We followed their suggestion and found a relation between dynamic risk with respect to a world benchmark and expected returns. In addition, similar to Ferson and Harvey's results, 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.[5]

NOTES

1. To ensure the widest possible dissemination of our methodology, we have established a country-risk home page on the World Wide Web: http://www.duke.edu/~charvey/Country_risk/couindex.htm. This site includes information on 135 different countries that 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, and summary statistics.
2. An appendix, available on request, provides information on and comparisons of these providers.
3. Time-series graphs of the risk indexes for each country are available through the country-risk Web site.
4. For example, the explanatory power of the book-to-market variable doubles after the Ferson and Harvey (1996) attribute adjustment is implemented. This result appears to provide considerable support for the Ferson–Harvey method.
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