Country Risk Components, the Cost of Capital, and Returns in Emerging Markets

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Abstract

This paper examines the importance of political risk, the financial risk, and economic risk in portfolio and direct investment decisions. In addition, the components of each of these risk measures are examined. First, I explore whether any of these measures contain information about future expected stock returns by conducting trading simulations. Second, I show the relation between these measures and implied costs of capital based on earnings forecasts. My results suggest that the country risk measures are correlated future equity returns – but only in emerging markets. These results are consistent with emerging markets being to some degree segmented from world capital markets.

Introduction

What is country risk and how should it impact global investment strategies? I explore the information in 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. In contrast to previous work, I also explore the components of each of the three categories.

The first part of my analysis investigates the link between these country risk measures and some more standard measures of risk. I investigate whether there is a correlation between a country's beta versus the MSCI world index and country risk ratings. While beta 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, I also investigate the relation between the country risk measure and equity volatility. Finally, I consider return skewness and its relation to country risk.

Next, I explore whether the risk indices contain information about future expected returns. This analysis is conducted in two ways. First, I form a portfolio of countries with low risk ratings (more risky) and a portfolio of countries with high risk ratings (less risky). I find that there is, indeed, information about expected equity returns in these measures. However, the information is only useful for trading strategies involving emerging markets

The trading strategies are based on historical returns. In the final part of the paper, I examine the relation between country risk measures and the implied cost of capital. The implied cost of capital is the discount rate that makes a company's expected cash flows (based on analysts forecasts' of earnings) exactly equal the current stock price. Hence, the implied cost of capital is based on ex ante rather than historical data. There is a significant relation between the country risk and the implied cost of capital which is consistent with the results of the trading strategies. Again, the relation is only significant for emerging markets.

Measuring Country Risk

There are many services that measure country risk. The research of Erb, Harvey, and Viskanta (1996) details the correlation between the different measures (which includes Moody's, Standard and Poors, Institutional Investor and Political Risk Services: International Country Risk Guide (ICRG). In this chapter, I concentrate on the ICRG data. Indeed, Erb, Harvey, and Viskanta show that the ICRG data which is available on a monthly frequency is able to predict changes in the Institutional Investor measure which is available only semi-annually.

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, 12 political and five 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 risks are associated with an ability to pay.

The specific factors taken into account for each risk index are detailed in Table 1. While previous research has examined the information in the broad categories (i.e. Political, Economic, and Financial), one of the goals of this chapter is to examine the information in the components of each of these categories. For example, how important is Law and Order in the Political Risk versus Investment Profile?

Summary Data Analysis

Variation in risk measures

Our analysis focuses on over 100 countries. I segment the countries into three groups: All countries, developed countries, and emerging. In the financial analysis, I will reduce the number of countries by focusing only on those with equity markets.

Figure 1 presents time-series graphs of the equally weighted risk indices for three groups over the January 1984-July 2004 period. The equally-weighted measures for the developed countries (Panel A) exhibit remarkably little variation through time. The ICRG financial and economic measures remain about the same throughout the sample.¹ The analysis for the emerging countries and all countries (Panels B and C) is different. Generally, all of the risk rating measures increase over the sample. Obviously, the increase in rating for the all countries sample is driven by the emerging markets.

Mean reversion of risk ratings

The cross-sectional behavior of the risk measures is explored in Figure 2. I graph the January 1984 risk level against the change in the risk level up to July 2004. There appears to be cross-sectional mean reversion in the risk measures. Those countries that began with a very low risk rating tend to improve. Those countries with a high rating have remained at the high level or slightly deteriorated.

The cross-sectional behavior of ratings is further explored in Figure 3. In panel A, I consider the change in the Financial, Economic, Political and Composite ratings for emerging, developed, countries with equity markets and all countries. It is clear from this

¹ Notice a drop in the ICRG Financial rating in September 1997. This is a result of a reorganization of the components. A smaller drop is evident in the ICRG Composite on the same date.

graph that there has been minimal change in the ratings for developed countries – most of the improvement has occurred in emerging markets.

The next three panels of Figure 3 examine the components of each of three risk measures. In Panel B, it is evident that most of the improvement in the financial rating in emerging countries versus developed countries is due to improved exchange rate stability and more favorable debt service ratios. Panel C shows that the relative improvement over developed countries for the economic ratings is being driven by improved capital account as a percentage of GDP, improved budget balances, reduced inflation and more robust GDP growth. Panel D shows significant gains in democratic accountability, reduced external conflict and a sharp improvement in government stability in the political risk category.

Comovement of risk ratings

Table 2A details the correlation of the various risk measures. 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 calculated by staking all country observations together.

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. The highest cross-correlation of the levels of the three ICRG components is 80%. The correlations for the changes in risk levels are all very small.

Table 2A also examines the components of each risk measure. Similar to the aggregated measures, the subcomponents show high correlations in levels and low correlations when examined as components.

Table 2B shows that stacking all country observations produces higher correlations compared to averaging correlations across the different countries. However, the flavor of the results is unchanged.

Persistence of risk ratings

Table 3 shows the degree of persistence in the log changes in the risk measures and the subcomponents. I report the average autocorrelations. I present the results by all, developed and emerging countries. In addition, I report the number of countries with autocorrelations that are significantly above or below zero.

For the composite, economic, political, and financial measures, there is very little evidence of persistence in the developed markets. Of the 26 countries, for example, only two show significant autocorrelation in the changes in the Political Risk ratings. The emerging markets present a similar story. Of the 119 countries, only 6 show significant changes in the Political Risk ratings – about what one would expect by random chance.

While changes in the Political, Economic and Financial ratings are generally unpredictable, the story changes when the components are examined. Many of these components are quite stable. A long string of zeros often induces significant autocorrelations. It is best to interpret this as persistence in the component risk levels.

Risk Ratings and Returns

Risk ratings and price moments

Table 4 provides a correlation analysis of the ratings with mean returns, volatility, beta and skewness. In this table, I only examine countries with equity markets. First, I examine the beta which is calculated against the Morgan Stanley Capital International World Index. The correlation of the composite risk measure and beta is positive and is 0.16 for in the all country sample. In addition, the positive correlation is driven by the emerging markets in the sample. The sign of the correlation is exactly the opposite of what one would expect (low rated countries which are presumably risky have the lowest beta risk). Figure 4 which graphs the betas against the average risk measures. This positive relation is largely due to the fact that a number emerging markets have very low betas with respect to the world market portfolio [see Harvey (1995)]. Panels A-D show the developed markets. The relation between betas and ratings is flat for all but the two countries with the lowest ratings. Panels E-H show the emerging markets. While the relation is weak, some of the lowest rated countries have lower betas. The picture in Figure 4 contrasts with a similar graph in Erb, Harvey and Viskanta (1996) which showed a much sharper positive relation between beta and rating. The reason is simple. Over the past 10 years, these emerging markets have become more integrated with world capital markets. With increased integration, their betas with respect to the world tend to increase [see Bekaert and Harvey (2000)] and hence flatten out the slopes in Panels E-H.

Figure 5 shows that there is a sharp negative correlation between volatility and the risk measures. 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. We observe a negative relation for developed markets in Panels A-D and emerging markets in Panels E-H.

Figure 6 explores the relation between return skewness and risk ratings. High risk countries might experience big upside or downside risk that manifests itself in skewness. I find that there is generally a negative relation between the risk ratings and skew. The lowest rated countries have the most potential for a big positive surprise. Interestingly, this relation is robust across both developed (Panels A-D) and emerging markets (Panels E-H). However, the relation with skewness presents somewhat of a puzzle. Markets with positive skew should have low expected returns -- investors like positive skew and should bid up prices thereby lowering expected returns. But this is not what we observe. The lower rated countries have both higher expected returns and positive skewness. Nevertheless, there are two important caveats. First, the negative relation in Panels A-D for the developed countries is influenced by a few lower rated countries. Second, the relation in Panels E-H for the emerging markets while negative is only weakly negative.

What type of risk is priced?

Table 4 suggests that there is a relation between average return and average rating. One way to analyze this relation is to form a portfolio strategy based on ratings changes. One version of this strategy is analyzed in Diamonte, Liew and Stevens (1996). They form two portfolios: upgrade and downgrade based on the ICRG political risk measure. Importantly, their strategy is ex post - rather than ex ante. That is, their strategy is only investable if you knew in advance what next month's rating would be.

For the analysis in Table 5, I form three portfolios based on ratings levels: low, medium and high. The portfolios are rebalanced every six months. Based on the sort, I hold the portfolio for the <u>next</u> month and then re-sort. My method is predictive because the portfolios are formed based on past information.² As with other tables, I consider all, developed and emerging countries for the portfolio strategies. I consider the broad country risk categories as well as subcomponents.

I report summary statistics (mean, standard deviation and beta with respect to the MSCI world) for each of the three categories (low, medium and high) as well as summary statistics for the hedge portfolio (long position in low rating portfolio and a short position in the high ratings countries). If the country risk measures are priced, I would expect to see a positive return in the hedge portfolio. That is, if the high risk (low rating) is rewarded then I should see the high risk portfolio produce a greater return than the low risk portfolio.

I start with the developed countries. There is little evidence that the country risk measures are priced in developed markets. Indeed, the hedge portfolio average return is slightly negative for the ICRG Composite risk measure. Looking across the components and subcomponents, there is little evidence that any of these risk measures commands a premium. This evidence is consistent with the low cross-country variation in country risk in developed markets being a diversifiable type of risk for investors.

The emerging markets present a much different picture of the importance of country risk. The composite, financial and economic risk ratings produce large average hedge portfolio returns. The hedge portfolios based on the financial and economic risk measures produce average annual returns exceeding 13% per annum (the mean returns in the table are monthly returns). The composite produces a more modest 9% per annum return. The reason that the composite produces a lower return is the negative return associated with the political risk variable.

This is where the analysis of components becomes useful. Not all the categories of political risk produce negative hedge returns. The drivers of the negative returns are P5, P7, P8 and P9 which represent, External Conflict, Military in Politics, Religion in Politics, and Law and Order. There are three components, P1, P3, and P4 (Government Stability, Investment Profile, and Internal Conflict) that produce hedge returns of more than 12% per year.

One might think that the positive returns are simply a result of high beta risk in the hedge portfolio. The results in Table 5 suggest that this is not the case. For the emerging markets, the betas are *negative* for each of the economic, financial, and political categories. As a result, the 'alphas' or risk adjusted hedge returns would be even greater than what is presented in the table.

The evidence in Table 5 suggests that country risk is priced – but only in emerging markets. This evidence is consistent with Bekaert and Harvey (1995, 2000) analysis of the factors that impact expected returns in integrated and segmented markets.

 $^{^{2}}$ An alternative approach, pursued in Erb, Harvey and Viskanta (1996) is to form portfolios based on past changes in the ratings. This strategy is also predictive – but does not take the level of the rating into account.

Country risk and the cost of capital

The hedge portfolio evidence in Table 5 suggests that country risk is an important driver of expected returns in emerging markets – but the analysis is based on past returns. Unfortunately, it is difficult to measure expected returns. Hail and Leuz (2004) calculate implied costs of capital for a number companies in emerging and developed markets. They aggregate the costs of capital to the country level. This provides an interesting, independent sample to test some of the results in Table 5.

One can think of the implied cost of capital in terms of a dividend discount model. In this model, the stock price is equal to the future dividends discounted by the cost of capital. The implied cost of capital model uses earnings forecasts to determine the future dividends. Given we know the current stock price, I solve for the cost of capital, i.e. the discount rate that matches the present value of the dividends with the current stock price. This is very similar to a yield to maturity. Given we know the bond coupon and the current bond price, the yield to maturity is the discount rate that turns the present value of the coupons and final principal exactly into today's bond price.

Figures 8A,B examine the cross-sectional relation between the implied costs of capital and the Composite and Political Risk ratings in developed markets. Consistent with the analysis in Table 5, there is no significant relation between the risk measures and the expected returns.

Figures 9A,B focus on the emerging markets. For these countries, there is a highly significant negative relation between the risk measures and the implied cost of capital. Lower ratings (higher risk) is associated with higher expected returns. This corroborates my analysis in Table 5 that country risk is important for emerging markets.

Conclusions

The goal of this research is to explore the economic content of country risk measures and their components. I focused on the monthly political, financial, economic and composite risk ratings from the International Country Risk Guide. My analysis suggests that there is considerable information contained in the ICRG composite, financial and economic ratings, and their components. For example, when I form portfolios based on the risk ratings, I find abnormal returns in the range of 10% per year.

I present new results based on the components of the risk measures. For example, trading strategies based on the aggregate political risk rating can be improved by looking at the 12 components of the political risk rating.

Finally, I present evidence that the country risk measures are most useful for the analysis of emerging rather than developed markets. This is consistent with developed markets being fully integrated into world capital markets. For investors concentrating their portfolio in developed markets, fluctuations in country risk can be 'diversified' away and this is the reason that the country-risk measures do not command a premium. The story is different in emerging markets. These markets are rarely fully integrated and investors face non-diversifiable risk. For emerging markets, country risk is rewarded. I document this by showing that trading strategies that load up on higher country risk (but controlling for beta risk) command higher returns. To strengthen my case, show there is a strong correlation

between country risk and expected returns in emerging markets using implied costs of capital based on forecasted earnings in these markets.

Overall, country risk is rewarded in emerging markets. However, not all country risks are rewarded equally. This analysis has particular implications for calculating the costs of capital for direct investment in emerging markets – as well as implications for portfolio investments in emerging markets.

Acknowledgements

I appreciate the help of Jie Yang valuable research assistance and the comments of Sam Wilkin.

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Table 1. Critical Factors in the ICRG Rating System

		Percentage o		
	Deinte	Individual	Percentage of	l ab al
Factor Political	Points	Index	Composite	Label
Government Stability	12	12	6	P1
Socioeconomic Conditions	12	12	6	P2
Investment Profile	12	12	6	P3
Internal Conflict	12	12	6	P4
External Conflict	12	12	6	P5
Corruption	6	6	3	P6
Military in Politics	6	6	3	P7
Religion in Politics	6	6	3	P8
Law and Order	6	6	3	P9
Ethnic Tensions	6	6	3	P10
Democratic Accountability	6	6	3	P11
Bureaucracy Quality	4	4	2	P12
Total political points	100	100	50	
Financial				
Foreign Debt as a Percentage of				
GDP	10	20	5	F1
Foreign Debt Service as a				
Percentage of Exports of Goods and	10	20	5	F3
Current Account as a Percentage of				
Exports of Goods and Services	15	30	7.5	F4
Net International Liquidity as Months				
of Import Cover	5	10	2.5	F5
Exchange Rate Stability	10	20	5	F2
Total financial points	50	100	25	
Economic	_	40	0.5	-
GDP Per Head	5	10	2.5	E1
Real GDP Growth	10	20	5	E2
Annual Inflation Rate	10	20	5	E3
Budget Balance as a Percentage of	10	20	F	
GDP	10	20	5	E4
Current Account as a Percentage of GDP	15	30	7 5	E5
Total economic points	50	100	7.5 25	ED
· · · · =		=		
Overall Points	200		100	

	· ·	i obs: 2	/																							
	ICRG	ICRG	ICRG	ICRG																						
Source	С	Р	F	Е	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	F1	F2	F3	F4	F5	E1	E2	E3	E4	E5
ICRGC		0.61	0.56	0.53	0.33	0.25	0.28	0.28	0.25	0.11	0.12	0.10	0.16	0.15	0.13	0.05	0.28	0.29	0.14	0.29	0.10	0.20	0.28	0.21	0.28	0.33
ICRGP	0.95		0.12	0.03	0.54	0.34	0.46	0.47	0.41	0.18	0.20	0.17	0.27	0.25	0.24	0.09	0.09	0.04	0.01	0.00	0.01	0.17	0.21	0.02	0.23	0.24
ICRGF	0.92	0.80		0.07	0.06	0.10	0.05	0.05	0.05	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.44	0.61	0.08	0.17	0.08	0.05	0.09	0.02	0.11	0.19
ICRGE	0.83	0.67	0.75		0.02	0.04	0.02	0.01	0.01	0.00	0.01	0.00	0.01	0.01	-0.02	0.00	0.05	-0.01	0.18	0.40	0.13	0.15	0.25	0.36	0.21	0.20
P1	0.56	0.58	0.50	0.41		0.06	0.08	0.14	0.08	0.05	0.07	0.01	0.08	0.06	0.05	0.01	0.05	0.02	0.02	0.01	0.01	0.04	0.05	0.02	0.04	0.06
P2	0.72	0.70	0.62	0.62	0.26		0.11	0.05	0.04	0.00	0.02	0.02	0.05	0.03	0.02	0.02	0.08	0.03	0.02	0.01	0.01	0.06	0.09	0.02	0.09	0.09
P3	0.70	0.71	0.59	0.57	0.61	0.58		0.07	0.11	0.00	0.02	-0.01	0.03	0.02	0.05	-0.01	0.06	0.01	0.01	0.02	0.00	0.36	0.44	0.01	0.49	0.54
P4	0.80	0.85	0.67	0.54	0.48	0.50	0.49		0.16	0.06	0.09	0.08	0.16	0.20	0.08	0.02	0.03	0.02	-0.01	0.02	0.00	0.01	0.02	0.01	0.01	0.01
P5	0.63	0.67	0.56	0.40	0.34	0.32	0.37	0.63		0.02	0.06	0.04	0.08	0.08	0.04	0.00	0.05	0.01	0.00	0.01	0.01	0.03	0.03	0.00	0.04	0.03
P6	0.59	0.64	0.48	0.37	0.16	0.49	0.27	0.48	0.34		0.03	0.03	0.07	0.06	0.05	0.04	0.01	0.01	-0.01	0.01	0.00	0.00	-0.02	0.01	-0.01	-0.02
P7	0.74	0.78	0.62	0.51	0.27	0.54	0.48	0.64	0.45	0.60		0.03	0.08	0.06	0.09	0.02	0.02	0.00	0.01	-0.01	0.00	0.00	0.00	0.02	0.01	0.00
P8	0.44	0.54	0.34	0.19	0.17	0.26	0.24	0.48	0.43	0.36	0.41		0.08	0.08	0.00	0.00	0.01	0.01	-0.01	-0.01	0.00	0.01	0.00	0.00	-0.01	0.01
P9	0.80	0.83	0.69	0.57	0.43	0.57	0.47	0.76	0.49	0.63	0.66	0.40		0.16	0.04	0.02	0.02	0.00	-0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00
P10	0.58	0.64	0.49	0.33	0.34	0.36	0.31	0.64	0.44	0.40	0.46	0.43	0.58		0.03	0.03	0.02	0.01	0.00	0.02	0.00	-0.01	0.00	0.00	-0.01	-0.01
P11	0.61	0.68	0.48	0.38	0.22	0.40	0.42	0.48	0.45	0.60	0.62	0.35	0.51	0.35		0.10	0.01	0.02	-0.01	0.00	0.00	0.02	0.02	-0.02	0.01	0.02
P12	0.77	0.77	0.67	0.60	0.29	0.65	0.49	0.56	0.40	0.68	0.69	0.30	0.68	0.39	0.65		0.01	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.02	-0.02
F1	0.76	0.66	0.82	0.63	0.29	0.64	0.44	0.53	0.39	0.47	0.57	0.31	0.59	0.41	0.40	0.62		0.04	0.03	0.03	0.00	0.14	0.03	-0.01	0.07	0.12
F2	0.68	0.59	0.73	0.56	0.59	0.36	0.60	0.50	0.39	0.21	0.38	0.22	0.48	0.35	0.32	0.41	0.43		0.00	0.01	0.02	-0.11	0.08	0.00	-0.03	0.01
F3	0.30	0.26	0.31	0.27	0.28	0.16	0.28	0.18	0.26	0.01	0.12	0.13	0.17	0.09	0.16	0.18	0.19	0.24		0.05	0.01	0.01	0.00	0.03	0.01	0.02
F4	0.50	0.38	0.48	0.62	0.19	0.38	0.30	0.29	0.30	0.22	0.31	0.06	0.27	0.20	0.26	0.39	0.41	0.23	0.14		0.00	0.01	0.02	0.01	0.03	0.14
F5	0.42	0.31	0.43	0.48	0.24	0.31	0.34	0.23	0.12	0.17	0.22	-0.01	0.28	0.23	0.17	0.28	0.34	0.31	0.01	0.28		0.00	0.02	0.02	0.01	0.00
E1	0.58	0.57	0.46	0.52	0.12	0.78	0.47	0.39	0.21	0.47	0.50	0.24	0.48	0.28	0.36	0.60	0.59	0.18	0.09	0.32	0.26		0.20	0.00	0.45	0.46
E2	0.52	0.48	0.49	0.48	0.70	0.26	0.71	0.35	0.26	0.06	0.23	0.11	0.32	0.19	0.22	0.24	0.26	0.65	0.29	0.18	0.26	0.08		0.07	0.40	0.45
E3	0.66	0.55	0.58	0.75	0.41	0.46	0.53	0.43	0.29	0.22	0.38	0.16	0.45	0.24	0.29	0.45	0.43	0.57	0.21	0.32	0.30	0.31	0.48		-0.01	0.01
E4	0.68	0.62	0.61	0.64	0.57	0.55	0.72	0.44	0.32	0.27	0.41	0.18	0.45	0.28	0.32	0.45	0.48	0.54	0.25	0.39	0.29	0.47	0.65	0.47		0.55
E5	0.66	0.58	0.65	0.61	0.65	0.46	0.74	0.41	0.32	0.17	0.36	0.15	0.39	0.25	0.25	0.41	0.49	0.60	0.29	0.46	0.33	0.38	0.71	0.46	0.77	

 Table 2A
 Correlations of Risk Measure Levels and Changes, Monthly Observations, January 1984-July 2004 (no. of obs: 21821)

Source	ICRG C	ICRG P	ICRG F	ICRG E
	Averaging Ov	ver Countries		
ICRGC		0.61	0.54	0.55
ICRGP	0.80		0.10	0.03
ICRGF	0.70	0.39		0.07
ICRGE	0.64	0.35	0.34	
	Stacking all C	Observations		
ICRGC		0.61	0.56	0.53
ICRGP	0.95		0.12	0.03
ICRGF	0.92	0.80		0.07
ICRGE	0.83	0.67	0.75	

Table 2B. Correlations of Risk Measure Levels and Changes, Monthly Observations, January 1984-July 2004

	_		All Co	untries					Developed	I Countries					Emerging Countries			
			No. Sig	No. Sig					No. Sig	No. Sig					No. Sig	No. Sig		
Source	No. Obs	Average	Above	Below	Minimum	Maximum	No. Obs	Average	Above	Below	Minimum	Maximum	No. Obs	Average	Above	Below	Minimum	Maximum
ICRGC	145	-0.03	3	5	-0.50	0.28	26	-0.09	1	0	-0.27	0.15	119	-0.02	3	4	-0.50	0.28
ICRGP	145	0.03	4	2	-0.48	0.33	26	0.01	1	1	-0.16	0.21	119	0.04	4	2	-0.48	0.33
ICRGF	145	-0.05	3	3	-0.49	0.23	26	-0.11	1	0	-0.28	0.14	119	-0.04	3	4	-0.49	0.23
ICRGE	145	-0.09	2	6	-0.50	0.22	26	-0.16	0	0	-0.40	0.03	119	-0.07	2	5	-0.50	0.22
P1	145	-0.02	2	3	-0.40	0.41	26	-0.03	1	1	-0.21	0.16	119	-0.02	2	3	-0.40	0.41
P2	145	-0.01	3	6	-0.39	0.17	26	-0.02	1	1	-0.17	0.12	119	-0.01	3	4	-0.39	0.17
P3	145	-0.02	2	7	-0.42	0.18	26	-0.01	1	1	-0.14	0.11	119	-0.02	2	7	-0.42	0.18
P4	143	-0.02	5	5	-0.37	0.50	25	-0.03	2	1	-0.33	0.20	119	-0.02	3	4	-0.37	0.50
P5	143	-0.02	5	8	-0.42	0.30	26	-0.04	0	2	-0.42	0.08	118	-0.01	5	6	-0.39	0.30
P6	135	-0.02	12	8	-0.37	0.15	25	-0.01	1	1	-0.24	0.00	110	-0.02	11	7	-0.37	0.15
P7	106	-0.02	42	5	-0.50	0.47	11	-0.09	15	2	-0.50	0.00	95	-0.02	27	4	-0.46	0.47
P8	108	-0.02	40	5	-0.50	0.44	17	-0.04	9	1	-0.25	0.00	91	-0.02	31	4	-0.50	0.44
P9	122	-0.01	27	5	-0.49	0.33	16	0.00	11	1	-0.35	0.26	106	-0.01	15	5	-0.49	0.33
P10	127	-0.03	19	8	-0.50	0.31	24	-0.03	2	1	-0.50	0.00	103	-0.03	17	8	-0.39	0.31
P11	130	-0.04	15	10	-0.50	0.15	17	-0.06	9	1	-0.50	0.00	113	-0.03	6	8	-0.50	0.15
P12	100	-0.02	46	6	-0.58	0.25	14	-0.09	12	1	-0.58	0.00	86	-0.01	35	3	-0.50	0.25
F1	144	0.00	5	5	-0.42	0.49	26	-0.01	1	1	-0.42	0.49	118	0.00	4	3	-0.35	0.41
F2	145	-0.09	3	3	-0.52	0.54	26	-0.19	0	0	-0.42	0.10	119	-0.07	2	5	-0.52	0.54
F3	137	-0.03	8	7	-0.49	0.07	25	-0.03	1	2	-0.19	0.00	112	-0.03	7	7	-0.49	0.07
F4	144	-0.05	1	11	-0.50	0.10	26	-0.12	0	1	-0.44	0.04	118	-0.04	1	5	-0.50	0.10
F5	125	-0.09	21	7	-0.48	0.22	26	-0.17	0	1	-0.44	0.00	99	-0.08	21	5	-0.48	0.22
			_	_														
E1	142	-0.04	5	5	-0.48	0.21	26	0.01	0	1	-0.35	0.17	116	-0.06	4	4	-0.48	0.21
E2	145	0.00	3	5	-0.42	0.39	26	-0.03	0	1	-0.25	0.10	119	0.01	2	4	-0.42	0.39
E3	142	-0.04	5	7	-0.43	0.26	26	-0.08	0	2	-0.43	0.04	116	-0.03	5	5	-0.41	0.26
E4	145	-0.10	1	9	-0.60	0.21	26	-0.10	0	1	-0.41	0.16	119	-0.10	1	8	-0.60	0.21
E5	145	-0.07	1	7	-0.54	0.36	26	-0.05	1	1	-0.35	0.17	119	-0.07	1	6	-0.54	0.36

Table 3.	Persistence of Risk Measures	First-Order Autocorrelations	of Log Rating Change	es, Monthly Observation	ons, January 1984-July 2004

Note: Significance at 95% based on 2 standard deviations.

		All Co	ountries			Develope	d Countries			Emerging	Countries	
Risk Measures	Geometric Return	Volatility	Skewness	Beta - MSCI World	Geometric Return	Volatility	Skewness	Beta - MSCI World	Geometric Return	Volatility	Skewness	Beta - MSCI World
ICRGC	0.25	-0.55	-0.38	0.16	0.15	-0.52	-0.45	0.07	-0.12	-0.28	-0.15	0.16
ICRGP	0.34	-0.48	-0.34	0.17	0.13	-0.50	-0.39	-0.03	0.11	-0.15	-0.08	0.21
ICRGF	0.17	-0.56	-0.41	0.17	0.18	-0.52	-0.47	0.18	-0.28	-0.33	-0.21	0.14
ICRGE	0.05	-0.58	-0.37	0.08	0.13	-0.33	-0.40	0.22	-0.41	-0.40	-0.18	-0.01
P1	0.10	-0.42	-0.36	0.02	0.19	-0.44	-0.41	0.02	-0.19	-0.26	-0.18	-0.04
P2	0.07	-0.62	-0.36	0.02	0.05	-0.56	-0.46	-0.06	-0.38	-0.44	-0.11	-0.06
P3	0.21	-0.62	-0.38	0.07	0.29	-0.61	-0.40	0.05	-0.18	-0.45	-0.20	0.00
P4	0.27	-0.27	-0.18	0.23	0.06	-0.20	-0.17	-0.06	0.09	0.06	0.06	0.30
P5	0.41	-0.16	-0.09	0.24	0.17	-0.46	-0.20	-0.05	0.40	0.18	0.18	0.36
P6	0.33	-0.52	-0.35	0.11	0.00	-0.19	-0.33	0.04	0.11	-0.28	-0.13	0.07
P7	0.44	-0.44	-0.37	0.20	0.08	-0.47	-0.37	0.02	0.32	-0.08	-0.20	0.23
P8	0.41	-0.18	-0.23	0.27	0.25	-0.06	-0.05	-0.02	0.32	0.06	-0.14	0.32
P9	0.30	-0.42	-0.29	0.14	0.07	-0.52	-0.55	0.00	0.02	-0.02	0.08	0.13
P10	0.22	-0.25	0.03	-0.07	0.04	0.02	0.16	-0.06	0.13	-0.13	0.14	-0.13
P11	0.32	-0.41	-0.39	0.13	-0.01	-0.65	-0.50	-0.07	0.19	-0.02	-0.10	0.17
P12	0.20	-0.57	-0.48	0.10	-0.07	-0.72	-0.71	0.10	-0.19	-0.29	-0.30	0.02
F1	0.18	-0.56	-0.40	0.12	0.29	-0.53	-0.38	0.08	-0.32	-0.34	-0.22	0.08
F2	0.23	-0.59	-0.37	0.06	0.17	-0.59	-0.43	-0.04	-0.16	-0.38	-0.13	-0.01
F3	-0.16	-0.25	-0.38	0.04	-0.05	-0.53	-0.44	-0.06	-0.19	-0.33	-0.41	0.08
F4	-0.09	-0.13	-0.25	0.22	-0.12	-0.55	-0.30	0.07	-0.21	0.06	-0.19	0.40
F5	-0.10	-0.24	0.02	-0.16	-0.14	0.06	0.05	0.01	-0.18	-0.27	0.07	-0.23
E1	0.34	-0.51	-0.33	0.15	0.25	-0.62	-0.52	0.21	0.02	-0.12	-0.01	0.11
E2	0.00	-0.59	-0.38	0.02	0.17	-0.57	-0.43	0.05	-0.41	-0.47	-0.19	-0.06
E3	-0.04	-0.70	-0.32	-0.15	0.24	-0.53	-0.39	0.10	-0.50	-0.58	-0.13	-0.33
E4	0.21	-0.56	-0.37	0.07	0.07	-0.42	-0.41	0.05	-0.13	-0.39	-0.14	0.00
E5	0.19	-0.33	-0.35	0.28	0.26	-0.43	-0.36	0.27	-0.18	0.02	-0.14	0.32

Table 4. Sample-Period Correlation between Average Risk Measures and Price Moments	
Table 4. Sample-Period Correlation between Average Risk Measures and Price Moments	

Table 5. Low, Medium, High Rating Portfolio Strategy, January 1984-July 2004

		Low Rating			Medium Ratin	g		High Rating		L	ow-High Spre	ad
Sample	Monthly Portfolio Return	Standard Deviation	MSCI World Beta	Portfolio Return	Standard Deviation	MSCI World Beta	Monthly Portfolio Return	Standard Deviation	MSCI World Beta	Monthly Portfolio Return	Standard Deviation	MSCI World Beta
Predictive rating	g and portfolio	performance										
All Countries												
ICRGC	1.36%	11.53%	0.80	1.09%	9.23%	0.95	0.96%	6.82%	0.96	0.41%	4.71%	-0.15
ICRGP	1.36%	11.12%	0.81	0.99%	9.84%	0.95	1.03%	6.64%	0.95	0.33%	4.48%	-0.14
ICRGF	1.55%	11.30%	0.81	1.03%	8.81%	0.95	0.89%	7.45%	0.96	0.66%	3.85%	-0.15
ICRGE	1.62%	11.52%	0.86	0.84%	8.52%	0.88	0.97%	7.52%	0.97	0.65%	4.01%	-0.10
P1	1.50%	10.19%	0.91	1.08%	9.15%	0.91	0.81%	8.17%	0.89	0.68%	2.02%	0.02
P2	1.22%	10.94%	0.86	1.23%	8.86%	0.91	0.91%	7.74%	0.94	0.31%	3.20%	-0.08
P3	1.44%	10.88%	0.88	1.04%	8.84%	0.90	0.92%	7.82%	0.93	0.51%	3.06%	-0.05
P4	1.23%	10.34%	0.80	1.22%	9.51%	0.95	0.91%	7.69%	0.96	0.32%	2.65%	-0.16
P5	0.98%	9.79%	0.81	1.27%	9.37%	0.93	1.05%	8.35%	0.97	-0.07%	1.44%	-0.17
P6	1.11%	11.15%	0.82	1.11%	9.24%	0.93	1.10%	7.18%	0.96	0.01%	3.98%	-0.15
P7	1.14%	11.12%	0.80	1.04%	9.22%	0.94	1.14%	7.22%	0.97	0.00%	3.90%	-0.18
P8	1.03%	10.04%	0.81	1.12%	9.18%	0.95	1.15%	8.29%	0.95	-0.12%	1.75%	-0.14
P9	1.14%	10.99%	0.81	0.99%	9.79%	0.97	1.17%	6.80%	0.93	-0.04%	4.19%	-0.11
P10	1.16%	10.02%	0.89	1.00%	8.63%	0.92	1.16%	8.83%	0.90	0.00%	1.19%	0.00
P11	1.28%	10.76%	0.85	0.99%	9.58%	0.89	1.06%	7.22%	0.97	0.22%	3.54%	-0.12
P12	1.33%	11.25%	0.80	0.94%	9.80%	0.95	1.08%	6.55%	0.96	0.25%	4.71%	-0.16
F1	1.45%	11.24%	0.83	0.94%	9.07%	0.93	1.03%	7.25%	0.96	0.41%	3.99%	-0.13
F2	1.69%	10.55%	0.87	0.84%	9.24%	0.92	0.95%	7.76%	0.92	0.74%	2.79%	-0.06
F3	1.43%	9.87%	0.88	1.15%	8.76%	0.89	0.76%	8.85%	0.94	0.67%	1.02%	-0.06
F4	0.91%	9.95%	0.80	1.06%	8.81%	0.90	1.31%	8.73%	1.01	-0.40%	1.22%	-0.21
F5	1.36%	9.92%	0.93	1.03%	8.45%	0.93	0.98%	9.10%	0.87	0.38%	0.82%	0.06
E1	1.09%	10.70%	0.85	1.21%	9.25%	0.92	1.03%	7.59%	0.95	0.06%	3.11%	-0.09
E2	1.63%	10.08%	0.88	1.01%	8.82%	0.92	0.80%	8.59%	0.91	0.83%	1.49%	-0.03
E3	1.69%	11.67%	0.92	0.87%	8.45%	0.86	0.91%	7.45%	0.93	0.77%	4.22%	-0.01
E4	1.45%	10.65%	0.87	1.09%	8.91%	0.90	0.87%	7.98%	0.93	0.58%	2.67%	-0.06
E5	1.16%	10.21%	0.85	1.12%	8.96%	0.88	1.05%	8.34%	0.98	0.10%	1.87%	-0.12
Developed Cou	Intries											
ICRGC	0.64%	8.82%	0.96	1.40%	7.80%	0.95	0.98%	6.49%	0.96	-0.34%	2.33%	0.01
ICRGP	1.41%	8.84%	1.02	1.29%	7.82%	0.95	0.99%	6.50%	0.95	0.41%	2.34%	0.07
ICRGF	0.70%	8.30%	0.81	1.17%	7.36%	1.02	1.10%	6.55%	0.95	-0.41%	1.74%	-0.14
ICRGE	1.50%	8.95%	0.85	1.03%	7.01%	0.96	1.08%	6.71%	0.97	0.42%	2.24%	-0.12
P1	1.28%	7.41%	0.95	1.13%	6.89%	0.95	0.93%	6.78%	0.96	0.35%	0.63%	-0.01
P2	1.36%	7.96%	0.95	1.18%	7.16%	0.97	0.97%	6.61%	0.95	0.39%	1.34%	0.00
P3	0.93%	7.85%	0.96	1.10%	6.94%	0.95	1.13%	6.69%	0.96	-0.21%	1.15%	0.00
P4	1.29%	7.68%	0.99	1.03%	6.96%	0.94	1.09%	6.86%	0.96	0.20%	0.83%	0.03
P5	1.33%	7.92%	0.95	1.12%	6.91%	0.96	0.97%	6.65%	0.96	0.36%	1.27%	-0.01
P6	0.92%	7.45%	0.98	1.06%	7.20%	0.95	1.11%	6.83%	0.95	-0.19%	0.62%	0.03
P7	1.17%	9.30%	0.98	1.17%	7.08%	0.94	1.04%	6.72%	0.96	0.13%	2.59%	0.02
P8	0.93%	7.27%	0.99	1.14%	6.72%	0.92	1.09%	7.09%	0.97	-0.16%	0.18%	0.02
P9	0.91%	9.11%	0.85	1.15%	7.46%	1.00	1.07%	6.58%	0.94	-0.15%	2.53%	-0.09
P10	1.14%	7.09%	0.97	0.88%	6.71%	0.94	1.22%	7.14%	0.96	-0.08%	-0.05%	0.01
P11	1.34%	9.49%	0.99	0.85%	6.78%	0.94	1.14%	6.57%	0.95	0.20%	2.93%	0.04
P12	1.10%	9.83%	0.84	1.12%	7.97%	0.97	1.07%	6.40%	0.95	0.03%	3.43%	-0.11

F1	1.19%	8.75%	0.92	0.95%	7.32%	0.98	1.14%	6.50%	0.95	0.05%	2.24%	-0.03
F2	1.02%	7.49%	0.99	1.08%	7.39%	0.96	1.11%	6.57%	0.94	-0.09%	0.92%	0.04
F3	1.04%	7.25%	0.96	1.34%	6.69%	0.93	0.88%	7.01%	0.97	0.16%	0.25%	-0.01
F4	0.87%	7.68%	0.88	0.88%	6.89%	0.95	1.35%	6.67%	1.00	-0.47%	1.01%	-0.11
F5	0.99%	6.70%	0.96	1.03%	6.93%	0.95	1.25%	7.26%	0.96	-0.26%	-0.56%	0.00
E1	0.95%	7.99%	0.95	1.23%	7.11%	0.94	1.04%	6.66%	0.96	-0.10%	1.33%	-0.02
E2	0.80%	7.38%	0.95	1.03%	6.90%	0.96	1.33%	6.78%	0.96	-0.53%	0.60%	-0.01
E3	1.56%	8.90%	0.88	1.05%	7.20%	0.97	1.07%	6.57%	0.96	0.49%	2.32%	-0.08
E4	1.00%	7.85%	0.97	1.32%	6.94%	0.96	0.97%	6.69%	0.95	0.04%	1.16%	0.02
E5	0.71%	7.67%	0.91	1.27%	6.86%	0.95	1.13%	6.75%	0.98	-0.42%	0.92%	-0.07
Emerging Cou	ntries						_					
ICRGC	1.41%	11.73%	0.79	0.78%	10.28%	0.95	0.65%	10.78%	0.95	0.77%	0.95%	-0.16
ICRGP	1.35%	11.33%	0.79	0.75%	11.05%	0.95	2.09%	9.22%	0.94	-0.74%	2.11%	-0.15
ICRGF	1.76%	11.80%	0.81	0.87%	10.05%	0.89	-0.05%	11.39%	1.01	1.81%	0.41%	-0.21
ICRGE	1.64%	11.82%	0.86	0.51%	10.26%	0.80	0.49%	10.36%	0.96	1.14%	1.46%	-0.10
P1	1.70%	11.92%	0.88	1.01%	11.28%	0.88	0.64%	9.98%	0.80	1.07%	1.93%	0.08
P2	1.18%	11.65%	0.84	1.32%	10.60%	0.84	0.73%	10.72%	0.93	0.44%	0.93%	-0.08
P3	1.69%	11.95%	0.85	0.96%	10.58%	0.86	0.35%	10.27%	0.86	1.33%	1.69%	-0.01
P4	1.22%	10.86%	0.76	1.45%	11.70%	0.96	-0.15%	10.91%	0.98	1.37%	-0.05%	-0.21
P5	0.78%	10.54%	0.75	1.44%	11.57%	0.91	1.26%	11.77%	1.01	-0.49%	-1.23%	-0.26
P6	1.13%	11.43%	0.80	1.17%	11.06%	0.91	0.98%	9.60%	1.04	0.15%	1.83%	-0.24
P7	1.13%	11.29%	0.78	0.87%	11.02%	0.94	2.01%	10.75%	1.07	-0.88%	0.54%	-0.29
P8	1.06%	10.78%	0.76	1.10%	12.08%	0.98	1.29%	10.74%	0.92	-0.23%	0.04%	-0.15
P9	1.16%	11.16%	0.81	0.81%	11.58%	0.95	2.45%	8.84%	0.77	-1.30%	2.31%	0.04
P10	1.17%	11.32%	0.86	1.17%	10.61%	0.90	1.01%	11.54%	0.80	0.16%	-0.22%	0.06
P11	1.26%	11.04%	0.82	1.13%	11.31%	0.86	0.47%	11.14%	1.06	0.80%	-0.11%	-0.24
P12	1.34%	11.34%	0.80	0.76%	11.07%	0.93	1.29%	8.98%	1.10	0.05%	2.36%	-0.31
F1	1.51%	11.69%	0.81	0.92%	10.40%	0.88	0.45%	11.01%	1.00	1.06%	0.68%	-0.19
F2	1.98%	11.44%	0.83	0.51%	10.93%	0.89	0.53%	10.79%	0.87	1.45%	0.66%	-0.04
F3	2.08%	12.42%	0.81	0.90%	10.92%	0.84	0.63%	10.27%	0.92	1.44%	2.15%	-0.12
F4	0.93%	11.14%	0.76	1.28%	10.59%	0.85	1.23%	11.88%	1.03	-0.30%	-0.73%	-0.27
F5	1.76%	11.81%	0.91	1.04%	10.85%	0.89	0.71%	10.64%	0.78	1.06%	1.17%	0.12
E1	1.14%	11.39%	0.83	1.19%	10.98%	0.89	0.97%	10.77%	0.88	0.17%	0.61%	-0.06
E2	2.51%	11.77%	0.84	0.98%	10.81%	0.87	0.14%	10.72%	0.86	2.37%	1.06%	-0.02
E3	1.70%	12.04%	0.93	0.61%	9.72%	0.75	0.03%	10.84%	0.83	1.67%	1.20%	0.09
E4	1.68%	11.67%	0.84	0.79%	10.64%	0.86	0.62%	10.84%	0.90	1.06%	0.84%	-0.06
E5	1.48%	11.36%	0.83	0.95%	10.64%	0.82	0.89%	11.56%	0.97	0.59%	-0.20%	-0.14

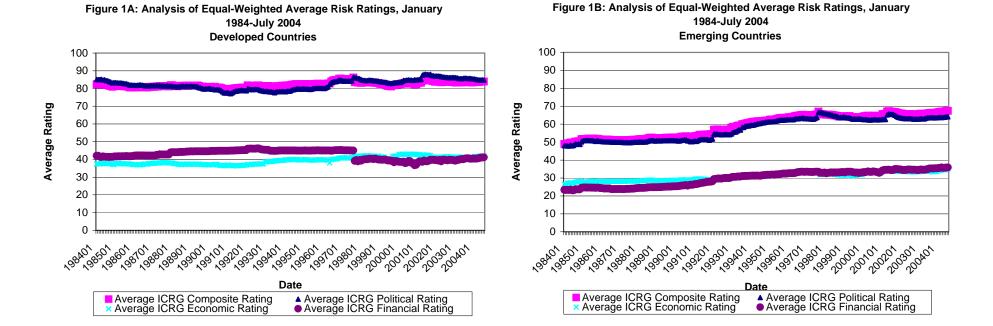
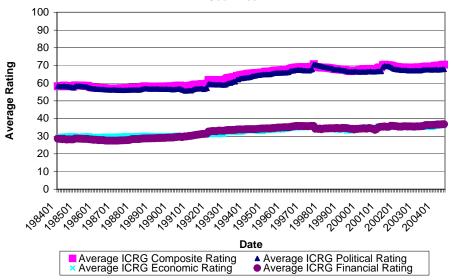
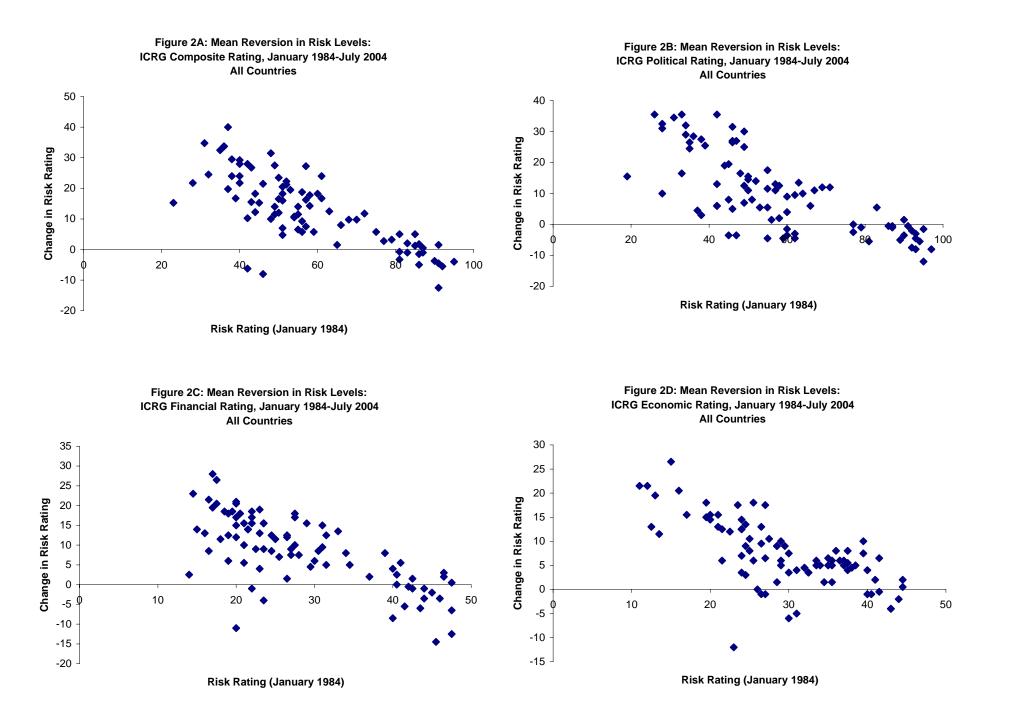


Figure 1C: Analysis of Equal-Weighted Average Risk Ratings, January 1984-July 2004 All Countries





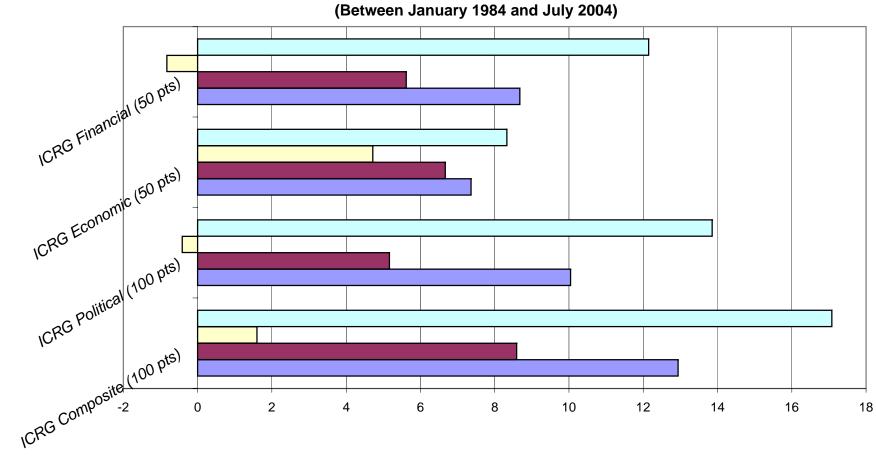
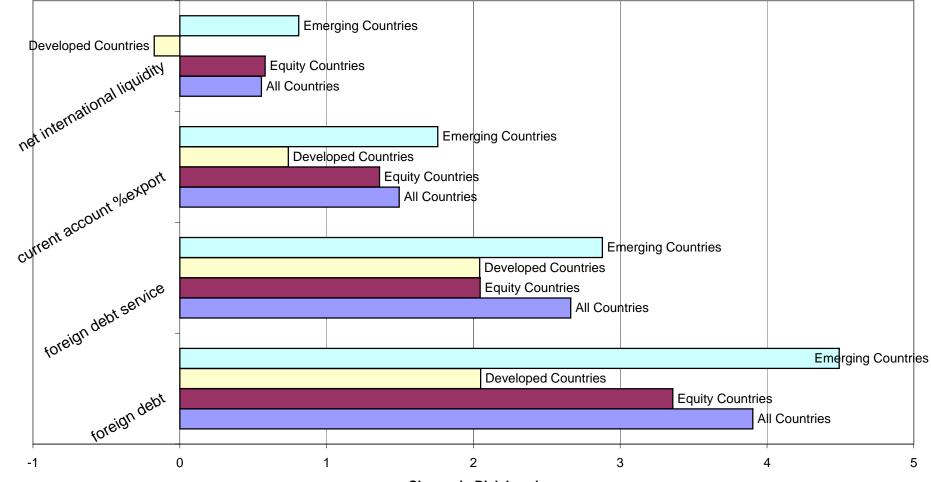


Figure 3A Average Changes in Risk Level Between January 1984 and July 2004)

Change in Risk Level

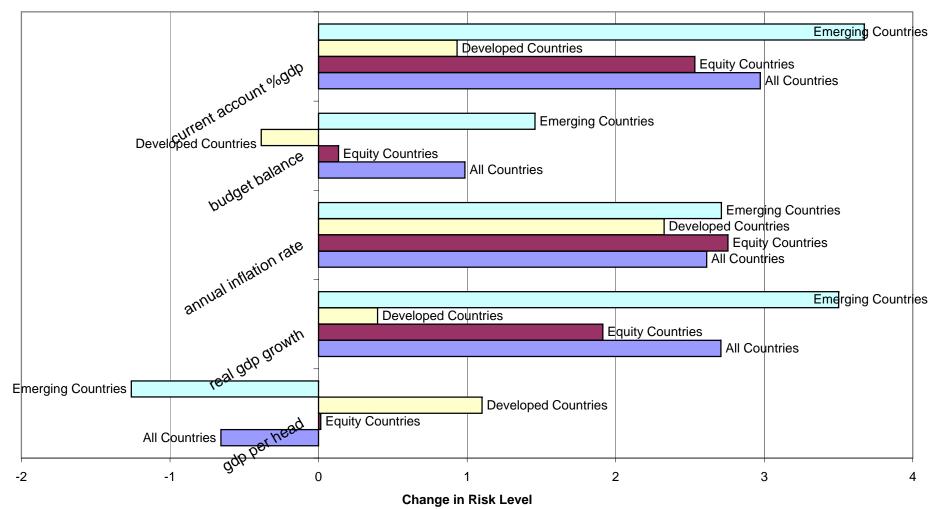
■ All Countries ■ Equity Countries ■ Developed Countries ■ Emerging Countries

Figure 3B Average Changes in Risk Level ICRG Financial Rating (Between January 1984 and July 2004)



Change in Risk Level

Figure 3C Average Changes in Risk Level ICRG Economic Ratings (Between January 1984 and July 2004)



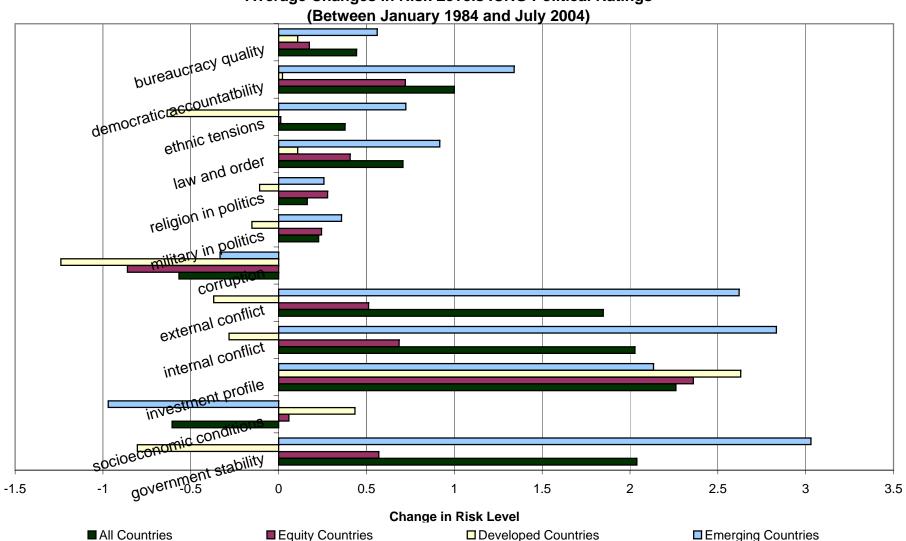


Figure 3D Average Changes in Risk Levels ICRG Political Ratings (Between January 1984 and July 2004)

Figure 4A: Equity Risk and Country Risk by Exposure to World Market, Developed Countries, January 1984-July 2003 ICRG Financial Rating

2.5

2

1.5

1

0.5

0

Beta

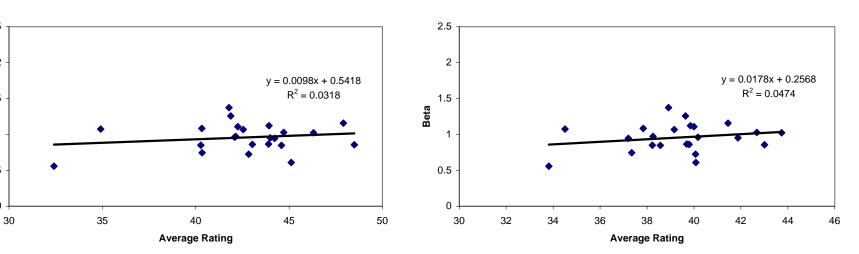


Figure 4C: Equity Risk and Country Risk by Exposure to World Market, Developed Countries, January 1984-July 2003 ICRG Political Rating

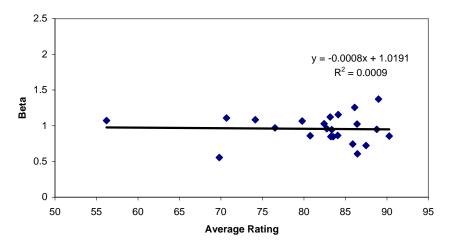


Figure 4D: Equity Risk and Country Risk by Exposure to World Market, Developed Countries, January 1984-July 2003 ICRG Composite Rating

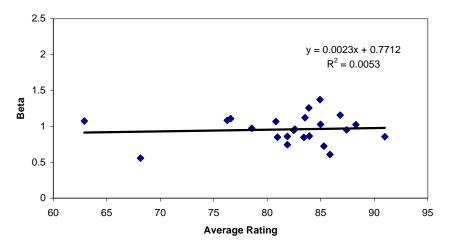


Figure 4B: Equity Risk and Country Risk by Exposure to World Market, Developed Countries, January 1984-July 2003 ICRG Economic Rating

Figure 4E: Equity Risk and Country Risk by Exposure to World Market, Emerging Countries, January 1984-July 2003 ICRG Financial Rating

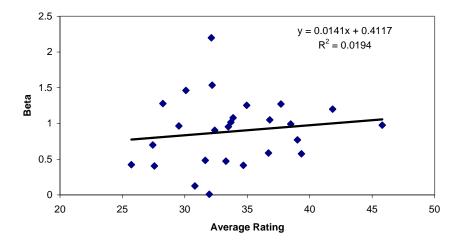


Figure 4F: Equity Risk and Country Risk by Exposure to World Market, Emerging Countries, January 1984-July 2003 ICRG Economic Rating

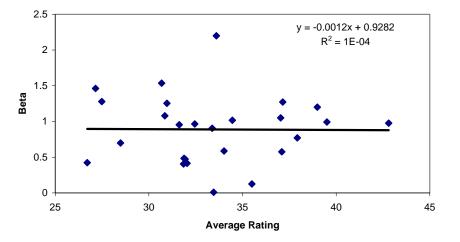


Figure 4G: Equity Risk and Country Risk by Exposure to World Market, Emerging Countries, January 1984-July 2003 ICRG Political Rating

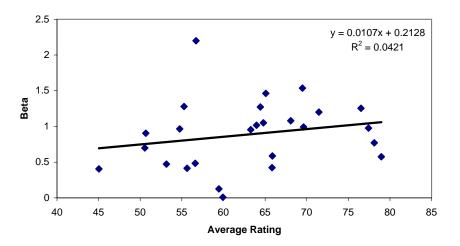
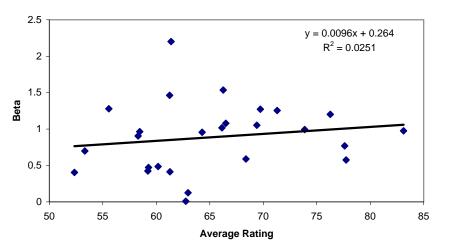
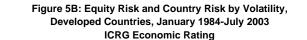


Figure 4H: Equity Risk and Country Risk by Exposure to World Market, Emerging Countries, January 1984-July 2003 ICRG Composite Rating







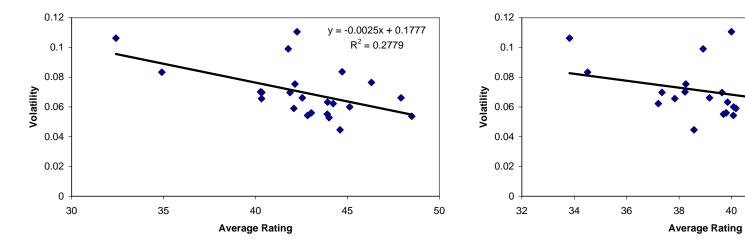


Figure 5C: Equity Risk and Country Risk by Volatility, Developed Countries, January 1984-July 2003 **ICRG Political Rating**

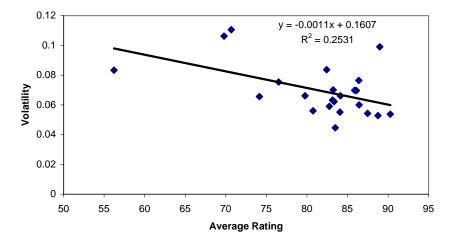


Figure 5D: Equity Risk and Country Risk by Volatility, Developed Countries, January 1984-July 2003 **ICRG Composite Rating**

40

y = -0.0023x + 0.1617

 $R^2 = 0.1056$

44

46

42

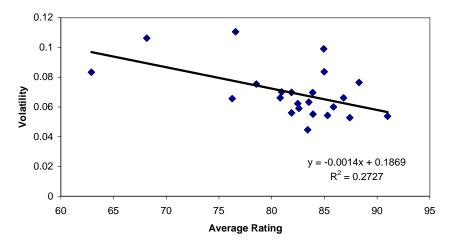


Figure 5E: Equity Risk and Country Risk by Volatility, Emerging Countries, January 1984-July 2003 ICRG Financial Rating

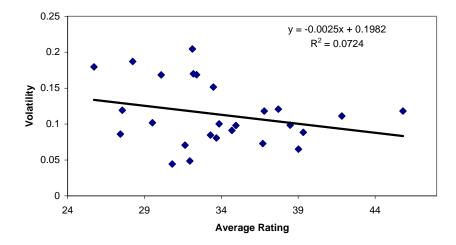


Figure 5F: Equity Risk and Country Risk by Volatility, Emerging Countries, January 1984-July 2003 ICRG Economic Rating

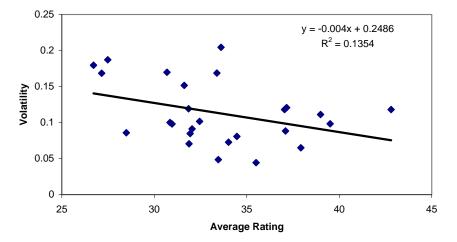


Figure 5G: Equity Risk and Country Risk by Volatility, Emerging Countries, January 1984-July 2003 ICRG Political Rating

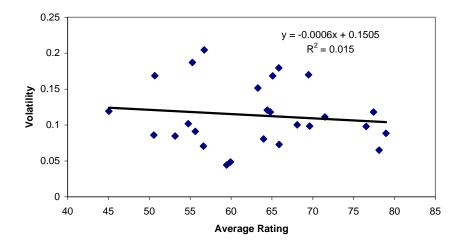


Figure 5H: Equity Risk and Country Risk by Volatility, Emerging Countries, January 1984-July 2003 ICRG Composite Rating

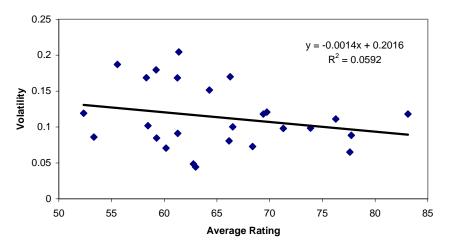


Figure 6A: Equity Risk and Country Risk by Skewness, Developed Countries, January 1984-July 2003 ICRG Financial Rating

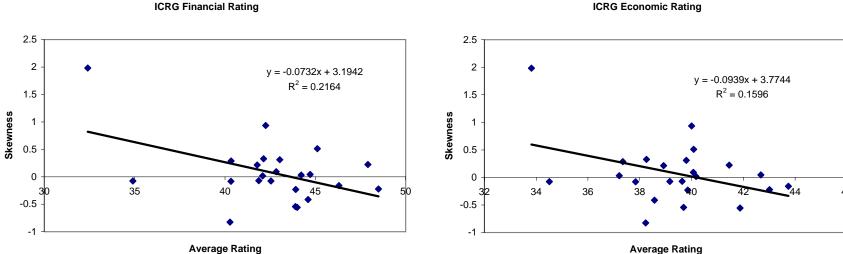
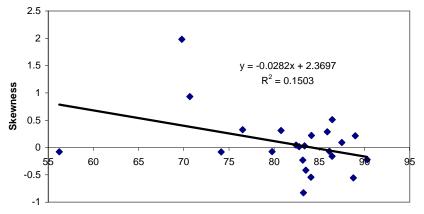


Figure 6C: Equity Risk and Country Risk by Skewness, Developed Countries, January 1984-July 2003 ICRG Political Rating

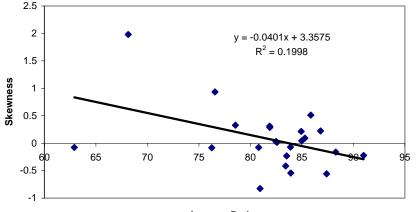
Figure 6D: Equity Risk and Country Risk by Skewness, Developed Countries, January 1984-July 2003 ICRG Composite Rating

Figure 6B: Equity Risk and Country Risk by Skewness,

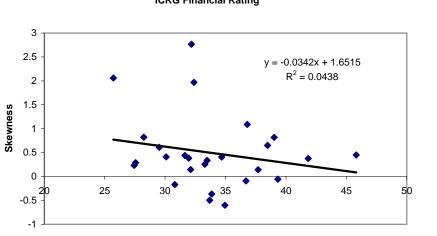
Developed Countries, January 1984-July 2003



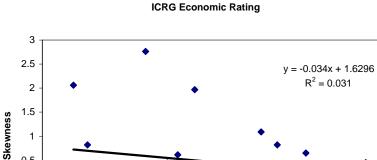
Average Rating



Average Rating



Average Rating



30

1

0.5

0

-0.5

-1

2

Figure 6F: Equity Risk and Country Risk by Skewness,

Emerging Countries, January 1984-July 2003

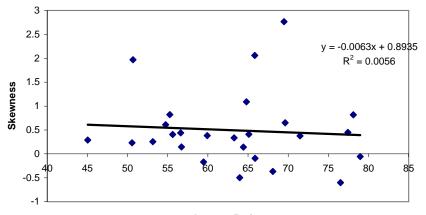


35

40

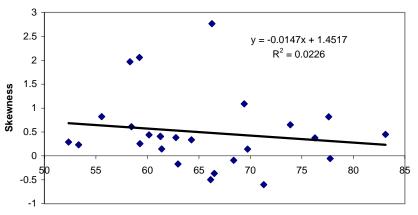
15

Figure 6G: Equity Risk and Country Risk by Skewness, Emerging Countries, January 1984-July 2003 **ICRG Political Rating**



Average Rating

Emerging Countries, January 1984-July 2003 ICRG Composite Rating



Average Rating

Figure 6E: Equity Risk and Country Risk by Skewness, Emerging Countries, January 1984-July 2003 ICRG Financial Rating



