

The Influence of Political, Economic and Financial Risk on Expected Fixed Income Returns

Claude B. Erb

First Chicago Investment Management Company, Chicago IL 60670

Campbell R. Harvey

Duke University, Durham, NC 27708

National Bureau of Economic Research, Cambridge, MA 02138

Tadas E. Viskanta

First Chicago Investment Management Company, Chicago IL 60670

ABSTRACT

Is there information in the commonly used indicators of country risk for expected global fixed income returns and volatility? We examine the information content in publicly available measures of political, financial and economic risk. We find that these ex-ante measures contain important information about the cross-section of expected fixed income and currency returns. Trading strategies based on the change in, and level of, these risk measures produce positive risk-adjusted returns. We find that the country risk measures are significantly correlated with international bond metrics, such as real yields.

Introduction

Much is known about measuring and monitoring the interest rate sensitivities of global fixed income investments. However, it is often the case that non-quantifiable factors, like governmental policy, play a key role in determining the level and volatility of interest rates within each country. This paper investigates the information in ex-ante measures of political, financial, and economic risk with respect to future fixed income returns.

Our fixed income data include yields and returns on the Salomon Brothers World Government Bond Indices. These data are available on a monthly basis starting in 1985 for ten developed countries and expands to 20 countries by 1995. We also examine a shorter sample of Brady bond returns for eight emerging markets.

We examine both the US dollar (unhedged) and currency hedged returns. This distinction is important. Much of the cross-sectional variation in unhedged returns is driven by currency movements. Figure 1 presents efficient frontiers (without short selling) for 15 developed countries from 1991-1995. The average investment opportunities for currency hedged bonds are more limited than the opportunities that are presented with unhedged returns. However, it is important to realize that these frontiers represent the returns to passive strategies with five year holding periods. The idea of our paper is to examine active fixed income strategies that use the information in risk ratings to determine the attractiveness of a country's fixed income securities.

We study the four risk measures produced by Political Risk Service's *International Country Risk Guide*: political risk, financial risk, economic risk and composite risk. The data are available on a monthly basis from 1984 for 117 countries. In addition, we utilize the country risk ratings published by *Institutional Investor* on a semi-annual basis for the same countries. Each measure is ex ante in that it reflects analysts' opinions about the future risks of an investment in each country. Some of these risk measures have been studied in the context of equity investments by Harlow (1993), Diamonte, Liew and Stevens (1996) and Erb, Harvey and Viskanta [EHV 1996b].

Our results suggest that the world bond markets respond to both the level of and recent changes in various measures of country risk. Positive risk-adjusted returns seem to be available to those willing to take on incremental risk as defined by these measures. In addition, markets seem adjust incompletely to changes in perceived market risk. These results should not be surprising in that these measures of risk are correlated with commonly used cross-market valuation attributes. These results generalize those found in EHV (1994).

The paper is organized as follows. The first section discusses how various services measure country risk, and its various subcomponents. The second section describes our data sources and provides a preliminary analysis of the data. The third section provides the results from some country risk based portfolio strategies. The fourth section utilizes regression analysis to examine the impact of the various country risk and fundamental variables on local, hedged, unhedged and foreign exchange returns. The fifth section provides a summary of our research and some topics for further examination.¹

I. Data Analysis

Country Risk Data

There are a number of services that measure country risk.² Each of the index or rating providers must amalgamate a range of qualitative and quantitative information into a single index or rating. We will discuss later the data and methodologies used by the various services, therefore any user of country risk data must weigh which service or services that best suits their purpose. In this section we review the methodologies of two of the more established providers: Political Risk Service's *International Country Risk Guide (ICRG)* and *Institutional Investor (II)*.

Political Risk Services: International Country Risk Guide

On a monthly basis *ICRG* uses a blend of quantitative and qualitative measures to calculate risk indices for political, financial and economic risk, as well as a composite index. Five financial factors, thirteen political and six economic factors are used. Each factor is assigned a numerical rating within a specified range. The specified allowable range for each factor reflects the weight attributed to that factor. A higher score represents lower risk, for additional details see [EHV 1996b].

Table 1 presents the factors taken into account in the three subindices and the composite index. The composite index is simply a linear combination of the three subindices. Note that political risk is weighted twice that of either financial or economic risk. *ICRG*, as well as many of the other providers, think of country risk as being composed of two primary components: ability to pay and willingness to pay. Political risk is associated with a willingness to pay, while financial and economic risk are associated with an ability to pay.

Institutional Investor

Institutional Investor country credit ratings are based on a survey of leading international banks who are asked to rate each country on a scale from zero to 100 (where 100 represents the maximum creditworthiness). *Institutional Investor* averages these ratings, providing greater weights to respondents with higher worldwide exposure and more sophisticated country analysis systems. These ratings have appeared in the March and September issues of *Institutional Investor* since 1979 and now covers over 135 countries, for additional details see [EHV 1995, 1996a].

Whenever a survey or expert panel is used to subjectively rate creditworthiness, it is hard to exactly define the parameters taken into account. At any given point in time an expert's recommendation will be based upon those factors the expert feels are relevant. Table 2 demonstrates that the survey participants have ranked factors differently through time and across country groupings.

Index and Rating Provider Comparison

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

Most of the providers transform widely 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. Tables 3 and 4 contrast the primary risk index products available from the indicated groups.

Table 3 identifies the underlying analytical source (i.e., quantitative or qualitative information) for each major index subcomponent. Additionally, the index measure is categorized as ordinal or scalar and the data sources are classified. From this table it can be seen that most firms use a mix of qualitative and quantitative analysis. The extremes are represented by Bank of America's *World Information Services* which is wholly based on quantitative information, and *Institutional Investor* which is wholly based on a survey of banking professionals. Note that surveys and staff analysis which strive for an overall recommendation are categorized as qualitative analysis on the basis that this form of recommendation takes many non-quantitative factors into account. At the same time, the analysts and experts certainly do take relevant quantitative factors into account, just not in a formulaic manner as is true for a purely quantitative index.

Table 4 looks in more detail at the specific factors comprising each risk index. Moderately broad categories have been created to classify the many specific factors used by each group. This chart helps to identify the mix of quantitative and qualitative factors used by each group as well as the specific similarities and differences in the composition of the indices.

It should therefore not come as a surprise that these country risk measures are in fact correlated. Table 5 presents the 1995 year end risk level of the countries in this sample. One can see that the numeric measures provide a greater stratification of risk than do the S&P or Moody's ratings. The *Institutional Investor* country credit ratings are more highly correlated with the S&P and Moody's ratings, on a rank order basis, than any of the *ICRG* ratings. *ICRG* financial risk, however, has a high correlation with the credit based rankings. The relatively low correlation of the political and economic risk ratings with the other ratings tells us that they are measuring different risks which could make them valuable instruments in describing cross-sectional returns. In a larger sample of countries, i.e. including emerging markets, the correlations of the political and economic ratings with the credit ratings increase significantly see [EHV 1996b].

II. Summary Data Analysis

Data Sources and Calculations

The fixed income data, for twenty developed countries, are from the Salomon *Brothers World Government Bond Indices*. Salomon Brothers calculates local, hedged and US dollar returns for each country's government bond market. To maximize the number of countries in our sample and for consistency across countries, we use for each country its 'all maturity' index. There are a number of providers of bond market indices, but their return profiles are all very similar for developed markets.³ Market capitalizations are the US dollar value of government bonds as calculated by Salomon Brothers and are used during the portfolio creation process. Salomon Brothers also reports a composite world bond index (WGBI) which is capitalization weighted.

We use a fundamental variable, real yield, to help characterize the cross-section of global fixed income returns. The yield for each market is the average yield to maturity of the all maturity (one year plus) index. Real yields are defined as the geometric difference between the yield to maturity for a country's bond index and the trailing annual inflation rate. The inflation rates are the consumer price indices compiled by the International Monetary Fund, and are lagged one quarter to allow for delays in reporting.⁴

A summary of the returns, volatilities and betas relative to the Salomon World Government Bond Index for each country can be found in Panel A of Table 6. Note the large differences between the realized returns for the unhedged, hedged and local indices. Over the sample period the US dollar has depreciated against major foreign currencies.

Panel B of Table 6 summarizes risk measures for the various countries. Switzerland is the highest rated country, while among the larger countries Italy and Spain are the lowest ranked. Research has already found that these ratings tend to be correlated with the overall level of equity returns [EHV 1996b]. However, no one has studied fixed income returns.

Risk Attributes and Returns

Before examining the time series attributes of these risk measures, a summary view of the relation between the risk attributes and average returns, volatilities and betas is informative. Table 7 shows the correlation between the risk measures and the sample average returns, volatilities and betas for those eleven countries whose returns start in 1985.

The returns story is a relatively simple one. Higher returns are generally related to higher risk (lower risk ratings). In the unhedged case, returns are negatively related to beginning levels of risk, and are positively related to changes in the risk attributes. In the case of local returns, the relation is even stronger. Local returns are highly related to risk and positive changes in the risk attributes. This is driven in part by the high correlation between inflation and the risk attributes, [see EHV 1995]. The hedged returns are characterized by lower correlations. The highest correlations are found with the *ICRG* financial variable and *Institutional Investor's Country Credit Rating*. For the foreign exchange returns there is a slightly positive relation between risk and return in the beginning sample correlations.

The picture that emerges from the volatilities and betas is easier to characterize than that for returns. Figures 2 and 2A show the relation between country risk and volatility and beta in the unhedged sample. In the unhedged and foreign exchange cases, there is a clear negative relation between the risk measures and both volatility and betas. It is also evident that lower volatility and betas are associated with those countries whose risk measures improved, i.e. risk declined. In the hedged and local return cases, the opposite relation is evident. Because country risk is associated with both inflation and risk premia it should not come as a surprise that local return risk is highly correlated with country risk. Changes in risk however have the same sign as that of the unhedged case.

The summary data suggest opportunities to create portfolio strategies. Dynamic portfolio strategies that tilt towards higher risk countries, or tilt towards countries that are experiencing decreasing country risk should experience returns in excess of lower risk countries and those that are becoming riskier.

III. Portfolio Strategies

A commonly used technique in examining the cross-sectional importance of a fundamental variable is to form unique portfolios based on their ranking. We will examine the country risk variables in two ways. The first is based on the risk level itself. The second exercise tries to

capture the returns from owning countries that are experiencing decreasing country risk. In each case we examine the returns to portfolios that are equally weighted by country, and those that are weighted by each country's bond market capitalization.

Risk Level Portfolios

The summary analysis shows that there is a relation between average risk attributes and average total returns. We form two portfolios, a high risk and low risk portfolio, based on the lagged level of the risk attribute. For real yields, those countries with high real yields are categorized as high risk countries, whereas low levels for the risk attribute represent high risk countries. The portfolios are formed every quarter, and results for both hedged and unhedged US dollar returns are presented. New countries are added to the portfolios as their returns enter the sample.

Table 8 presents the results and they are consistent with the earlier analysis. In the unhedged case, the spread in raw returns for almost all attributes is positive, and the spread in beta adjusted returns are higher. Only the *ICRG* economic variable seems to fail this test on an unadjusted basis. One should note that the beta with respect to the world bond portfolio is higher for the low risk portfolios, and substantially boosts the adjusted returns.

When we shift to hedged results are mixed. One can see from Panel B of Table 8 that the risk adjusted returns are somewhat positive, albeit insignificant, for all measures except for economic risk. The results are driven by the nature of the hedging process itself. Hedging eliminates the foreign exchange risk inherent in holding foreign bonds, and it makes sense to expect that our risk measures are correlated with foreign exchange risk.

Currency Hedging as a Country Risk Swap

We have seen that higher levels of country risk are generally compensated in an unhedged context, whereas in an hedged context country risk is not clearly priced. This is due to the hedging process and the instrument most commonly used, the forward foreign exchange contract.

A hedge accomplished with a short forward foreign exchange contract involves swapping a short term deposit in the foreign currency for a short term deposit in the US dollar. An investor is therefore receiving the domestic rate and paying the foreign interest rate, in contrast to the long foreign bond position. In short this involves swapping the relative country risk premia through the forward foreign exchange contract. If the hedge is rolled over on a consistent basis the return advantage of the foreign bond position is eliminated because almost all other countries are deemed riskier than the United States. Whereas for an investor based in a higher risk country, like Italy, hedging foreign exchange risk could be a return enhancing strategy.

Therefore the only way to judge the diversification benefits of international fixed income is using unhedged assets. The reason is that unhedged fixed income investments reflect the widest array of country risk premia whereas hedged fixed income represent only the home country risk premium. Although the unhedged portfolio is significantly riskier than the hedged portfolio, see Figure 1, an unhedged perspective allows the investor to access potentially diversifying assets, and subsequent returns.

Changing Country Risk Portfolios

The results of Table 7 suggest that there is a relation between changes in risk and subsequent returns. We form portfolios based on upgrades and downgrades in country risk. We measure the returns to both an ex-post and ex-ante portfolio criteria. In other words, the ex post criteria means you have perfect knowledge of the country rating, one quarter in advance. With the ex ante criteria, we form portfolios after *ICRG* ratings are available to the public.

We form two portfolios: upgrades and downgrades. The portfolios are rebalanced quarterly. If the rating does not change, we keep the country in its respective portfolio. This reduces potential transaction costs and increases the number of countries in the portfolios.

Panels A and C in Table 9 represent the results to the ex-post strategy. The upgrade portfolios show uniformly higher returns than the downgrade portfolios. The *ICRG* composite measure seems to generate the highest returns.⁵ The risk adjusted returns are generally positive, but there are significant differences in risk between the equally and capitalization weighted portfolio schemes.

Panels B and D in Table 9 represent the results to an ex-ante strategy, and is therefore an investable strategy. The positive returns are sustained for the spread portfolio and for the beta-adjusted portfolio returns. The predictive ability of upgrades is diminished in the hedged case, although risk adjusted returns remain generally above zero. For example, the composite hedged strategy delivers 290 basis points of extra annual return.

These portfolio exercises are useful in demonstrating the potential of these risk attributes on returns. However these portfolios clearly deviate from the benchmark and, in some cases, the number of countries in a portfolio come closes to zero [see Figure 3]. In addition, transactions costs have not been taken into account. We have tried to minimize the transactions costs by two step. First, a zero change in ratings does not induce any turnover in the portfolio. Second, our portfolios are rebalance quarterly, rather than monthly. Nevertheless, It is interesting to note that all the risk attributes seem to add some value in the portfolio process and some optimized combination of the variables might produce even more impressive trading results.

IV. Cross-Sectional Analysis of Risk

The previous analysis 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. Much information is potentially lost with such a coarse aggregation. More information can be obtained by trying to predict both the cross-section and time-series of expected returns based on the risk attributes.

Panel A of Table 10 presents attribute regressions of the form:

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

where R represents a vector of quarterly returns from March 1985-December 1995 for all of the countries in our sample (some markets' returns begin later). 'A' represents the risk attribute which is lagged and matched to the country. With our full sample of all countries, there are 578 observations.

The first line of Table 10 reports coefficients and t-statistics for five separate regressions of the returns on each of the attributes and adjusted R-squares. T-statistics for all the regression results utilize a heteroskedasticity-consistent covariance matrix. Regressions are estimated on the lagged level of the attribute as well as lagged changed changes in the attribute.

Panel A reports the regressions using the lagged level of the attribute as an explanatory variable for the cross-section of expected returns. The *ICRG* financial variable is negatively correlated with returns, i.e. high financial risk is associated with higher expected returns. In fact, for local returns all the risk attributes have negative signs. Aside from the local returns, there are few significant regression results.

Panel B of Table 10 reports the regressions using the lagged change in the attribute. For both the unhedged and foreign exchange case the sign on all the attributes is positive, although only the *ICRG* financial and economic variables approach significance. It should be noted that the *ICRG* economic variable has a positive sign in all the return samples and is significant in the unhedged, local and foreign exchange returns (increased rating associate with increased returns). However in the hedged and local samples there tends to be a negative relation between changes in risk and subsequent returns.

In Table 11, we examine a small sample of emerging markets returns. The returns are quarterly returns from the Salomon Brothers Brady Bond Index for eventually eight countries and 111 observations from 1990 through 1995. The lagged level regressions all have negative signs, but there is little of statistical significance. The results from the lagged change in risk regressions show increased explanatory power, but again there are no coefficients that are significant at conventional significance levels.

Relation Between Real Yields and Risk Attributes

A common variable used in comparing expected returns on national fixed income markets involves adjusting yield to maturities for either trailing inflation or expected inflation. The incremental contribution of the risk ratings relative to real yields (RY) is presented in Table 12. Univariate regressions are estimated in the form:

$$R_t = c_0 + c_1 RY_{t-1} + c_2 A_{t-1} + \varepsilon_t$$

for each attribute.

Table 12 reports the coefficients and t-ratios on the various risk attributes. Comparing the results to Panel A of Table 10 shows that real yields have an ability to discriminate between expected returns. The adjusted r-squared statistics increase in all but the unhedged case. The country risk attributes largely retain their signs and significance when used in conjunction with

real yields. This implies that there is some incremental information in the risk measures that is not fully captured by the cross-section of real yields.

The bottom Panel of Table 12 shows that the country risk attributes are all significantly related to real yields. That is, real yields are driven in part by market perceptions of various kinds of risk. Models that utilize real yields as a descriptor of cross-sectional fixed income returns can be enhanced by adjusting for perceived country risk.

Trading Strategies Based on Risk Attributes

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

Panel A of Table 13 reports the results of estimating a cross-sectional regression at each three month interval. The number of countries in each cross-sectional regression grows from 11 in March 1985 to 20 in March 1995. The slope coefficients are averaged and the standard error of the average is also presented. Although the statistical precision of the averages seems limited in all but the local return case, the hedged coefficients are for a majority of the cases of the correct sign.

There is variation in the estimated cross-sectional slope coefficients through time as is evident in Figure 4 which presents the time-series coefficients for the five country risk measures and real yields along with the time series of adjusted R-squares. The attributes remain of the correct sign the majority of the time, but when there is a negative payoff to country risk the effect seems to be significant. Identifying those periods, and potentially forecasting them could significantly enhance any country risk strategy.

Panel B of Table 13 assess the incremental contribution of the risk attributes when real yields are included in the cross-sectional regression. While the coefficients are by and large negative, they are only significant in the local sample.

V. Conclusions

The goal of this paper was to examine the economic content of country risk measures provided by *Institutional Investor* and *Political Risk Services'* International Country Risk Guide. Our analysis suggests that there is information in these measures with regard to world bond market expected returns. For example, when we form portfolios based on changes in risk ratings, we find risk-adjusted abnormal returns in the range of 500 bp per year on unhedged returns.

The cross-sectional regressions do not always confirm the results of the portfolio analysis. We find evidence that ex-post real yields have an ability to predict the cross-section of returns. It is also the case that real yields are inversely correlated with the risk measures, higher real yields imply higher risk. Some 23% of the variation in real yields can be described by a combination of risk measures, with the *ICRG* financial and *Institutional Investor* Country Credit Rating providing the most value. This provides insight on why value-oriented strategies might work.

A great deal of research has been directed toward describing the factors that determine fixed income risk in a global setting [Harvey, Solnik & Zhou (1996) and Ilmanen (1995, 1996)]. Our research defined some new measures of country risk and attempts to analyze the expected returns implications. A comprehensive process for managing global bond portfolios should integrate the insights of both methods.

Endnotes

¹ Some of this research is available on the World Wide Web at the Country Risk site: http://www.duke.edu/~charvey/Country_risk/couindex.htm.

² A partial listing of providers includes:

- Bank of America World Information Services (BoA)
- Business Environment Risk Intelligence S.A. (BERI)
- Control Risks Information Services (CRIS)
- Economist Intelligence Unit (EIU)
- Euromoney
- Institutional Investor
- Moody's Investor Services
- Political Risk Services: International Country Risk Guide (ICRG)
- Political Risk Services: Coplin-O'Leary Rating System (COL)
- Standard and Poor's Rating Group (S&P)

See Tables 3 and 4 for greater detail on specific factors included in, and primary components of, country ratings.

³ In addition to Salomon Brothers, J.P. Morgan and Datastream all provide indices for the developed global bond markets. The use of the other providers will not dramatically alter the results found here. The 'all maturity', US dollar return correlations between the Salomon, J.P. Morgan, Datastream All Issue and Datastream Tracker (most liquid bonds) country indices do not fall below .96 for any country. The correlations between the Salomon and Datastream Tracker indices are above 99% for 17 of 18 countries and above 98% for the remaining 2 countries which are available between April 1991 and March 1996. More information available on request.

⁴ The use of expectational inflation data could potentially add value and should be a topic for further research.

⁵ Harlow (1993) finds that countries which experience upgrades in political ratings have higher returns than downgrades up to six months after the change in rating. Diamonte, Liew and Stevens and EHV [1996b] both find contemporaneous changes in the *ICRG* political rating can be used to produce significant abnormal returns in a global equity sample.

Acknowledgments

The authors would like to thank Chris Rath and Political Risk Services for providing their data, and Salomon Brothers for providing data on their bond indices. Rob Feldman provided valuable assistance in analyzing the various country risk providers.

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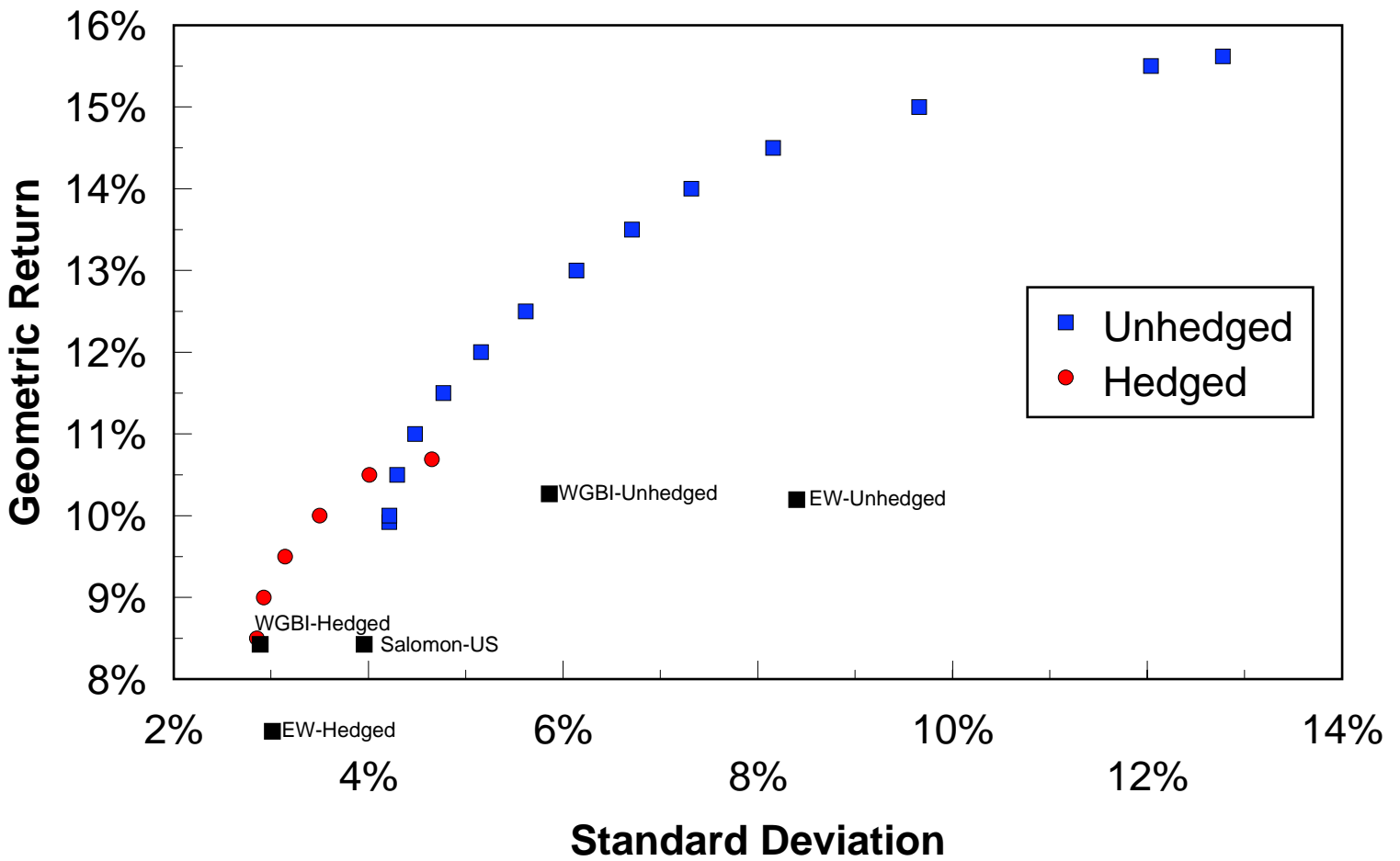
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Figure 1

Efficient Frontiers

Salomon Bros. World Government Bond Indices

Sample: 15 Countries (1991-1995)



WGBI - Salomon World Government Bond Index
 EW - Equal Weighted Portfolio (by country)

Figure 2

Volatility and Country Risk Ratings

Countries Existing From Sample Start

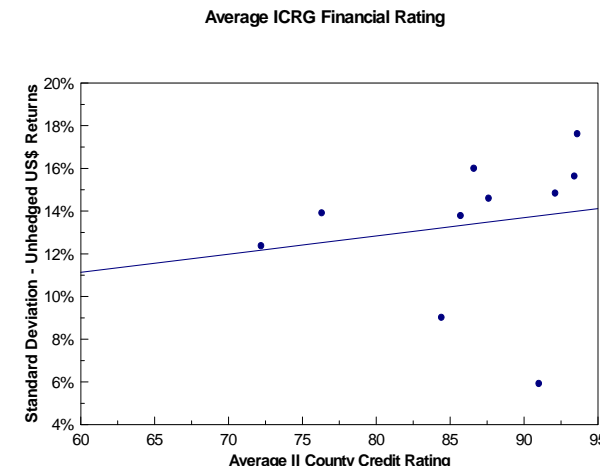
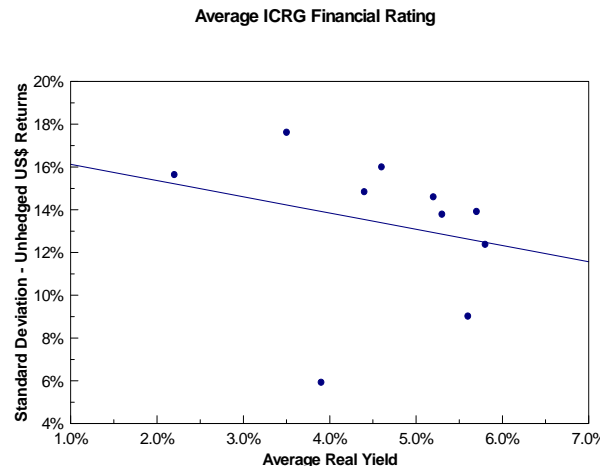
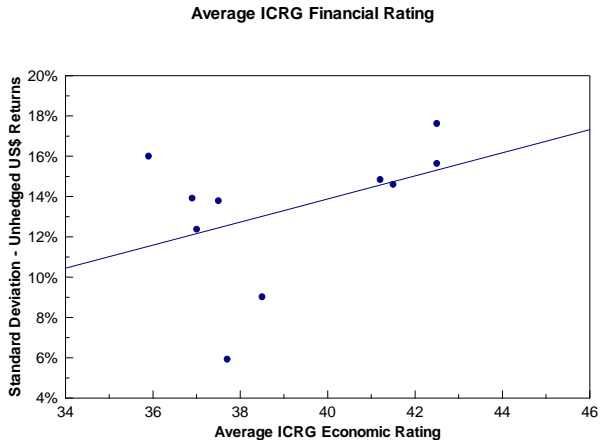
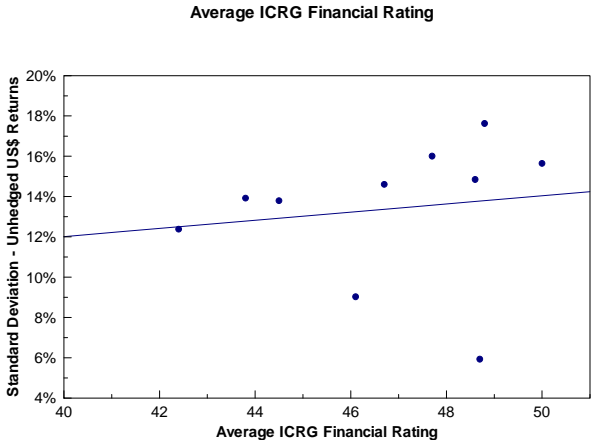
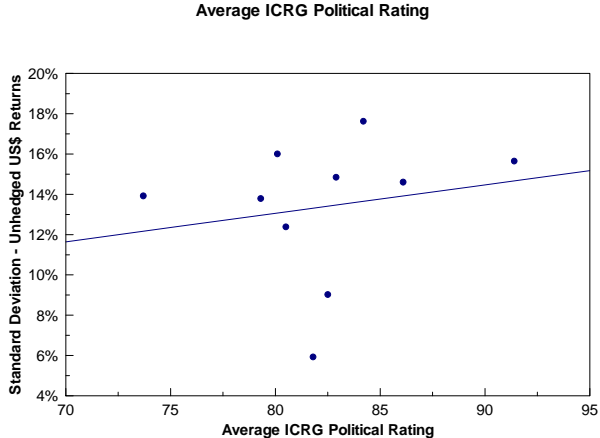
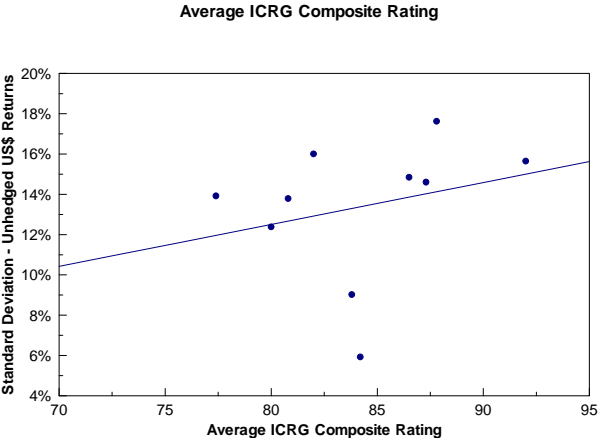


Figure 2A

Beta and Country Risk Ratings

Countries Existing from Sample Start

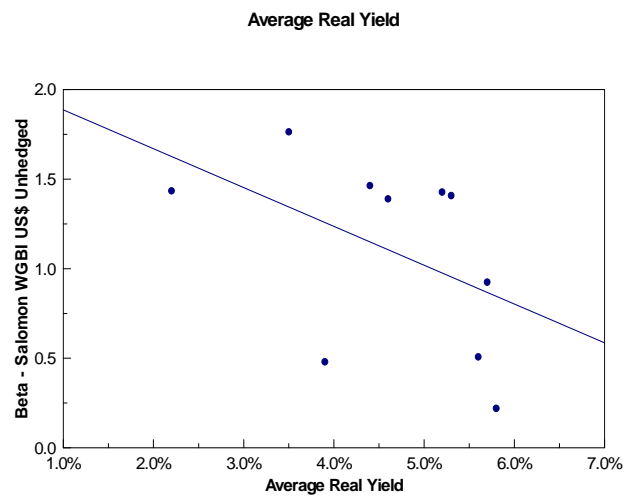
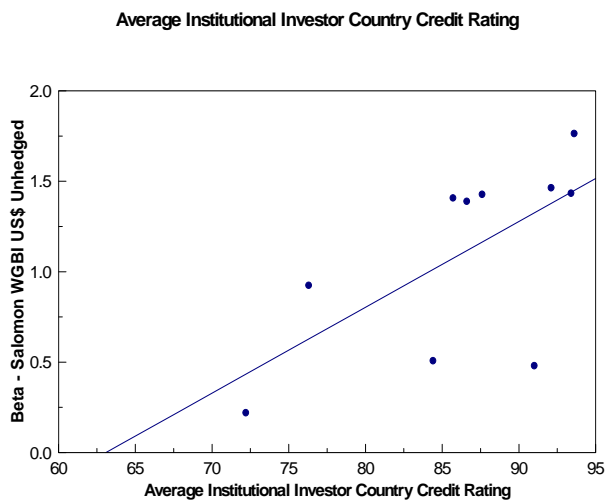
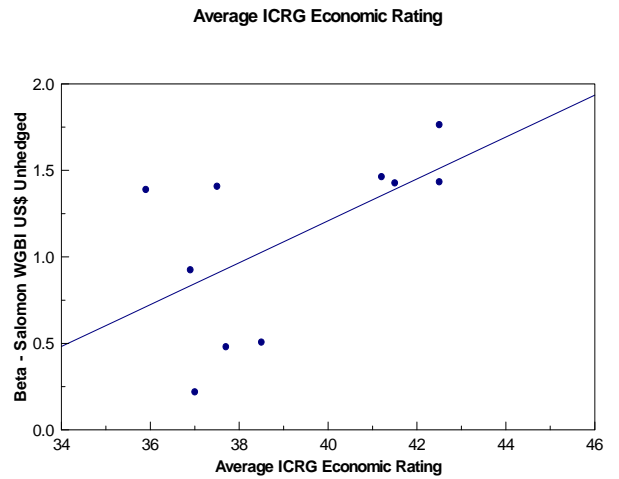
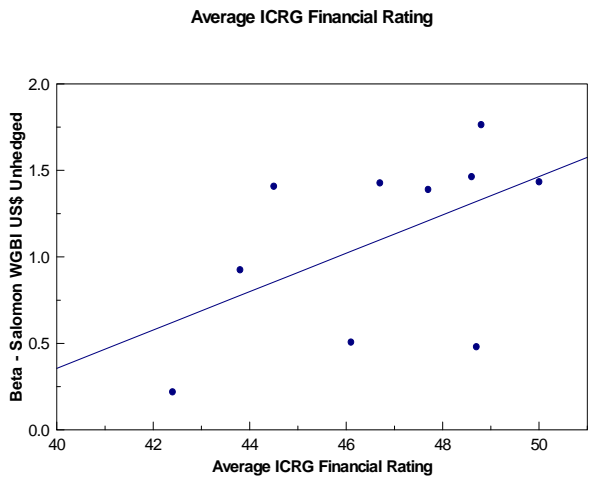
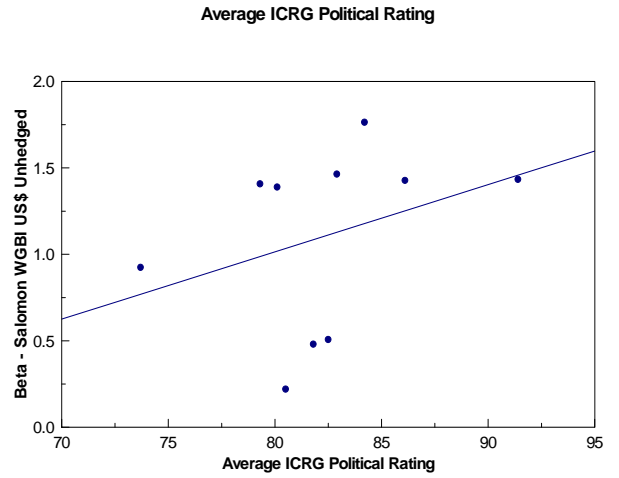
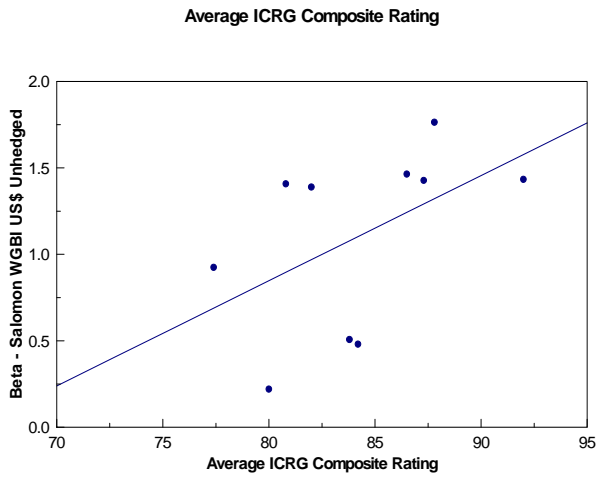
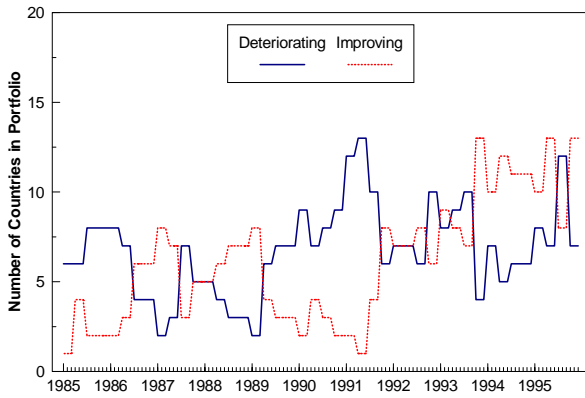


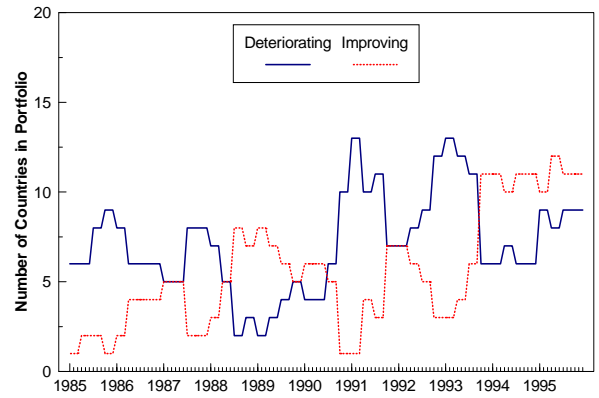
Figure 3

Composition of Country Risk Rating Portfolios

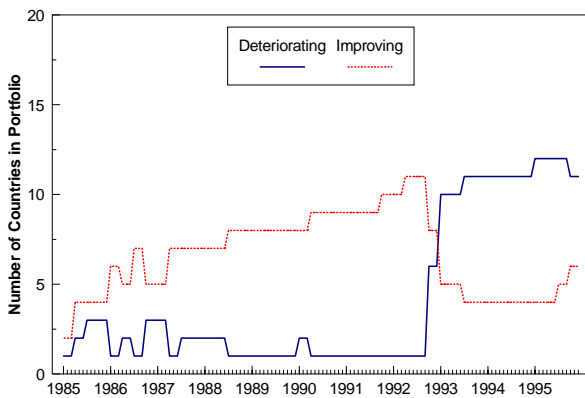
ICRG Composite Rating



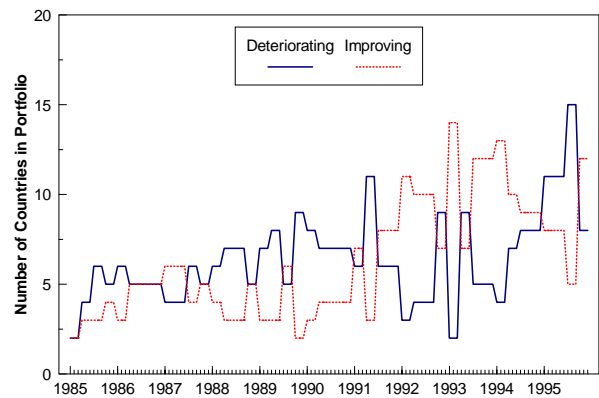
ICRG Political Rating



ICRG Financial Rating



ICRG Economic Rating



Institutional Investor Country Credit Rating

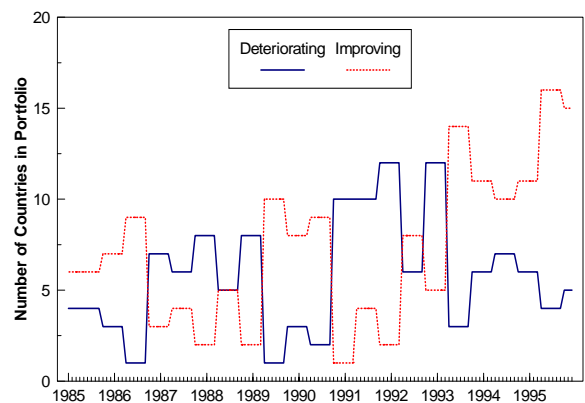
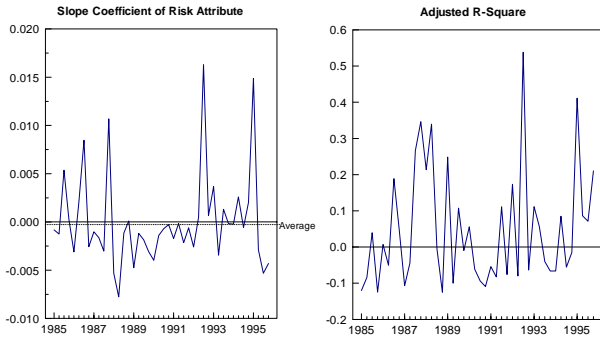


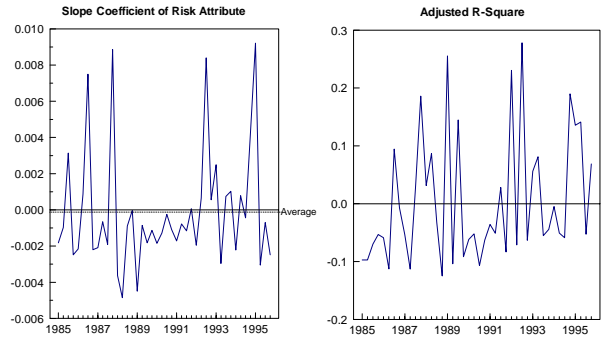
Figure 4

Quarterly Cross-Sectional Regressions Unhedged US\$ Return on Lagged Risk Level

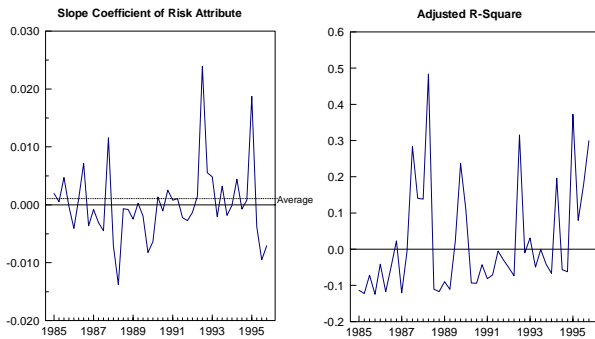
ICRG Composite Rating



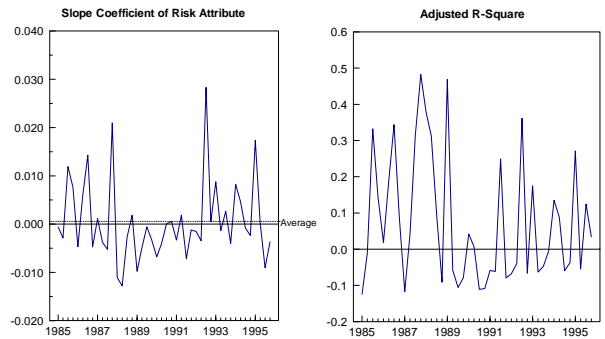
ICRG Political Rating



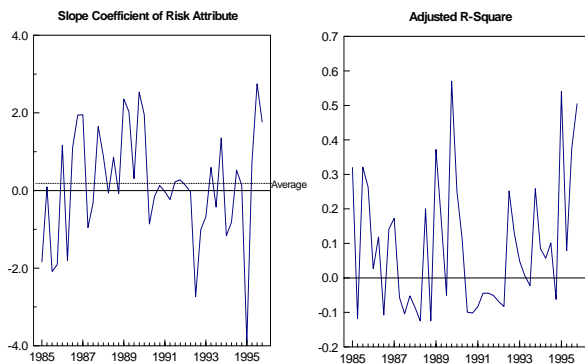
ICRG Financial Rating



ICRG Economic Rating



Real Yields



Institutional Investor Country Credit Rating

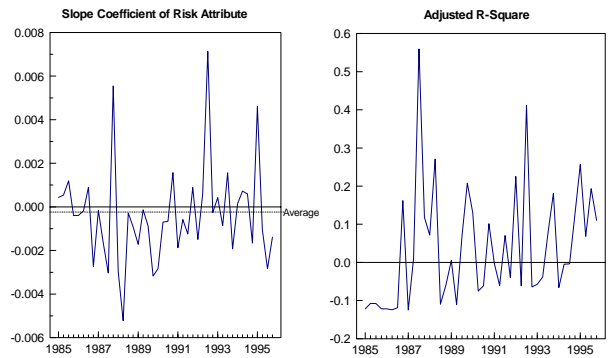


Table 1
ICRG Rating System

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

Table 2
Institutional Investor's Country Credit Ratings

Importance of Factor:	<i>OECD</i>	
	1979	1994
Economic Outlook	1	1
Debt Service	5	2
Financial Reserves/Current Account	2	3
Fiscal Policy	9	4
Political Outlook	3	5
Access to Capital Markets	6	6
Trade Balance	4	7
Inflow of Portfolio Investments	7	8
Foreign Direct Investments	8	9

Table 3

Specific Factors Included in Country Ratings

Index Subcomponents	Index Provider (See Endnotes)									
	BoA	BERI	CRIS	EIU	EUROMY	INSTINV	MOODY	PR SICRG	PRSCOPL	S&P
Political and Policy		Qual		Qual	Qual	Qual	Qual	Qual		Quant/Qual
Financial	Quant				Quant	Qual	Quant	Quant/Qual	Quant/Qual	
Economic	Quant	Quant		Quant	Quant	Qual	Quant/Qual	Quant/Qual		Quant
Operations		Quant/Qual								
Remittances and Repatriation of Capital		Quant/Qual								
Security			Qual							
Lending & Trade				Quant/Qual						
Export									Quant/Qual	
Direct Investment									Quant/Qual	
Index Type	Ordinal	Scalar	Ordinal	Scalar	Scalar	Scalar	Ordinal	Scalar	Scalar	Ordinal
Data Sources		X							X	
Expert Panel					X	X				
Survey			X	X			X	X		X
Staff Analysis				X	X		X	X	X	X
Published Data	X	X		X	X		X	X	X	X

Table 4*Primary Components of Country Ratings*

Factors	Index Provider (See Endnotes)								
	BoA	BERI	CRIS	EIU	INSTINV	MOODY	PRASICRG	PRSCOPL	S&P
Current Account/Balance of Payments	X	X		X	X	X	X	X	X
Debt	X	X		X	X	X	X	X	X
Deficit	X	X		X	X	X		X	X
Economic Structure and Growth (export concentration, reliance on imports)	X	X		X	X	X		X	X
Foreign exchange/Currency convertibility	X	X		X		X		X	X
GDPPC/GDP	X	X		X		X		X	X
Liquidity		X		X			X		
Parallel Market						X	X		X
Reserves	X			X	X	X			X
Savings Rate				X		X		X	X
Inflation		X						X	X
Access to capital markets		X			X	X			X
Factionalization (political, ethnic, religious, ideological, linguistic)		X	X	X	X	X	X		X
Social conditions/Conflict/History Attitudes/Expectations		X		X	X	X	X	X	X
Coercive regime/Legitimacy		X				X			
Bureaucratic/Technocratic competence									
Corruption/Policy flexibility		X	X	X		X	X		X
Criminal/Military insurgency		X	X			X	X		X
International commitment/integration		X			X	X	X	X	X
Legal framework		X				X	X		
Nationalization		X				X	X		X
Policy environment		X	X	X	X	X	X	X	X
Regional politics		X				X	X		X
Infrastructure and local service management		X				X			X
Labor costs/productivity		X				X		X	X

Table 5*Comparison of Sovereign Country Ratings and Other Risk Attributes - December 1995*

Country	S&P	Moody's	ICRGC	ICRGP	ICRGF	ICRGE	II CCR
Australia	AA	Aa2	82.0	83.0	44.0	36.5	71.2
Austria	AAA	Aaa	82.5	78.0	47.0	40.0	86.2
Belgium	AA+	Aa1	85.5	82.0	47.0	41.5	79.2
Canada	AA+	Aa2	83.0	81.0	46.0	39.0	80.3
Denmark	AA+	Aa1	87.5	84.0	48.0	42.5	79.9
Finland	AA-	Aa2	85.5	88.0	43.0	39.5	71.4
France	AAA	Aaa	78.5	74.0	44.0	39.0	89.1
Germany	AAA	Aaa	85.5	84.0	47.0	39.5	90.9
Ireland	AA	Aa2	84.0	85.0	44.0	39.0	73.4
Italy	AA	A1	76.5	73.0	41.0	38.5	72.3
Japan	AAA	Aaa	86.0	80.0	48.0	44.0	91.6
Netherlands	AAA	Aaa	86.0	84.0	47.0	41.0	89.3
New Zealand	AA	Aa2	83.0	84.0	46.0	35.5	69.4
Norway	AAA	Aa1	87.5	84.0	46.0	44.5	84.6
Portugal	AA-	A1	82.0	80.0	43.0	41.0	68.4
Spain	AA	Aa2	76.0	72.0	41.0	38.5	73.7
Sweden	AA+	Aa3	79.0	79.0	40.0	39.0	74.1
Switzerland	AAA	Aaa	88.5	84.0	50.0	43.0	92.2
United Kingdom	AAA	Aaa	80.5	80.0	46.0	35.0	87.8
United States	AAA	Aaa	83.0	80.0	48.0	38.0	90.7

<i>Rank Correlation</i>	Moody's	ICRGC	ICRGP	ICRGF	ICRGE	II CCR
Standard & Poors	0.84	0.31	-0.03	0.68	0.26	0.92
Moody's		0.45	0.21	0.78	0.21	0.85
ICRGC			0.83	0.77	0.62	0.38
ICRGP				0.46	0.20	0.01
ICRGF					0.38	0.71
ICRGE						0.35

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings

Table 6
Summary Statistics

A. Return Statistics

Country	Sample Start	<u>Unhedged US Dollar Returns</u>			<u>Hedged US Dollar Returns</u>			<u>Local Returns</u>			<u>Return to Forward FX</u>		
		Geometric Return	Standard Deviation	Beta vs. WGBI	Geometric Return	Standard Deviation	Beta vs. WGBI	Geometric Return	Standard Deviation	Beta vs. WGBI	Geometric Return	Standard Deviation	Beta vs. WGBI
Australia	Jan-85	12.5%	12.4%	0.22	8.2%	6.3%	0.69	13.6%	6.5%	0.72	4.0%	10.5%	0.09
Austria	Oct-92	10.0%	11.7%	1.30	8.6%	4.1%	0.71	10.2%	4.0%	0.69	1.3%	11.7%	1.11
Belgium	Jan-91	12.1%	13.6%	1.42	7.7%	4.8%	0.60	11.0%	4.5%	0.58	4.1%	13.9%	1.25
Canada	Jan-85	11.5%	9.0%	0.51	9.5%	6.9%	1.22	11.8%	6.9%	1.22	1.7%	4.6%	0.01
Denmark	Apr-89	15.6%	11.6%	1.25	6.7%	5.0%	0.62	10.7%	5.1%	0.64	8.3%	12.5%	1.09
Finland	Jan-95	30.5%	8.8%	0.75	20.0%	2.4%	0.07	19.6%	2.4%	-0.01	8.8%	10.7%	0.73
France	Jan-85	18.0%	13.8%	1.41	8.0%	5.7%	0.83	11.0%	5.8%	0.85	9.2%	12.6%	1.05
Germany	Jan-85	15.8%	14.8%	1.46	8.0%	4.0%	0.65	7.8%	3.9%	0.63	7.3%	13.5%	1.12
Ireland	Oct-92	8.1%	9.0%	0.84	6.4%	8.0%	1.17	13.2%	8.8%	1.37	1.6%	7.2%	0.61
Italy	Jan-85	15.6%	13.9%	0.92	6.9%	4.3%	0.27	13.5%	4.4%	0.34	8.1%	13.1%	0.88
Japan	Jan-85	16.2%	17.6%	1.76	9.4%	6.1%	0.99	7.1%	6.1%	0.98	6.2%	14.2%	1.17
Netherlands	Jan-85	16.3%	14.6%	1.43	8.0%	4.0%	0.60	8.1%	4.1%	0.59	7.7%	13.4%	1.12
New Zealand	Oct-92	14.7%	7.9%	0.61	5.1%	5.3%	0.84	7.8%	5.5%	0.93	9.2%	5.6%	0.31
Norway	Jan-95	24.9%	10.1%	0.82	17.4%	2.4%	-0.91	16.7%	2.5%	-0.89	6.5%	11.2%	0.82
Portugal	Jan-95	27.9%	9.4%	0.71	15.8%	4.0%	-1.20	20.0%	3.9%	-1.10	10.4%	11.7%	0.85
Spain	Jan-91	8.1%	12.2%	1.00	5.8%	6.2%	0.63	13.3%	6.7%	0.70	2.2%	13.0%	1.00
Sweden	Jan-91	9.5%	15.2%	0.85	7.2%	7.3%	0.69	13.2%	7.5%	0.72	2.2%	15.4%	0.99
Switzerland	Jan-85	13.7%	15.6%	1.43	6.7%	4.1%	0.49	5.6%	4.1%	0.47	6.6%	15.1%	1.25
United Kingdom	Jan-85	14.6%	16.0%	1.39	7.6%	7.9%	1.15	11.6%	8.0%	1.18	6.5%	12.2%	0.91
United States	Jan-85	10.4%	5.9%	0.48	10.4%	5.9%	1.10	10.4%	5.9%	1.09			
WGBI	Jan-85	12.9%	8.8%	1.00	9.5%	5.0%	1.00	9.8%	5.0%	1.00	6.4%	10.9%	1.00

B. Country Risk Measures

Country	Sample Start	<u>ICRG Composite</u>			<u>ICRG Political</u>			<u>ICRG Financial</u>			<u>ICRG Economic</u>			<u>II Country Credit Rating</u>			<u>Real Yield</u>		
		Beginning Value	Ending Value	Sample Average	Beginning Value	Ending Value	Sample Average	Beginning Value	Ending Value	Sample Average	Beginning Value	Ending Value	Sample Average	Beginning Value	Ending Value	Sample Average	Beginning Value	Ending Value	Sample Average
Australia	Jan-85	84.5	82.0	80.0	88.0	83.0	80.5	43.0	44.0	42.4	37.5	36.5	37.0	84.2	71.2	72.2	9.3%	2.7%	5.8%
Austria	Oct-92	89.5	82.5	86.5	90.0	78.0	84.8	49.0	47.0	47.8	39.5	40.0	40.1	84.3	86.2	85.4	3.8%	3.6%	3.3%
Belgium	Jan-91	81.5	85.5	81.8	80.0	82.0	78.7	45.0	47.0	45.9	38.0	41.5	39.1	79.8	79.2	79.4	5.9%	4.5%	5.1%
Canada	Jan-85	83.0	83.0	83.8	83.0	81.0	82.5	43.0	46.0	46.1	39.5	39.0	38.5	86.5	80.3	84.4	7.4%	4.5%	5.6%
Denmark	Apr-89	82.0	87.5	84.0	85.0	84.0	83.9	41.0	48.0	44.6	37.5	42.5	39.2	71.8	79.9	74.7	4.5%	4.2%	6.1%
Finland	Jan-95	83.5	85.5	83.9	83.0	88.0	84.5	44.0	43.0	43.5	39.5	39.5	39.5	69.6	71.4	70.3	6.8%	5.7%	6.3%
France	Jan-85	80.5	78.5	80.8	81.0	74.0	79.3	41.0	44.0	44.5	39.0	39.0	37.5	79.3	89.1	85.7	4.0%	4.3%	5.3%
Germany	Jan-85	85.5	85.5	86.5	84.0	84.0	82.9	45.0	47.0	46.6	42.0	39.5	41.2	93.1	90.9	92.1	5.2%	3.4%	4.4%
Ireland	Oct-92	78.5	84.0	80.0	75.0	85.0	78.0	44.0	44.0	43.1	38.0	39.0	38.7	68.6	73.4	70.6	6.5%	4.5%	5.9%
Italy	Jan-85	78.5	76.5	77.4	79.0	73.0	73.7	40.0	41.0	43.8	37.5	38.5	36.9	72.1	72.3	76.3	3.3%	4.9%	5.7%
Japan	Jan-85	89.5	86.0	87.8	91.0	80.0	84.2	45.0	48.0	48.8	42.5	44.0	42.5	95.0	91.6	93.6	4.1%	1.8%	3.5%
Netherlands	Jan-85	88.0	86.0	87.3	89.0	84.0	86.1	47.0	47.0	46.7	40.0	41.0	41.5	86.1	89.3	87.6	4.4%	4.0%	5.2%
New Zealand	Oct-92	82.0	83.0	83.6	80.0	84.0	82.0	46.0	46.0	46.0	37.5	35.5	38.7	62.2	69.4	65.6	6.4%	3.5%	5.6%
Norway	Jan-95	86.0	87.5	86.6	81.0	84.0	82.5	46.0	46.0	46.0	45.0	44.5	44.5	79.1	84.6	81.1	5.7%	3.5%	4.8%
Portugal	Jan-95	79.5	82.0	79.9	76.0	80.0	75.8	42.0	43.0	42.3	41.0	41.0	41.4	67.2	68.4	67.6	6.5%	5.4%	6.6%
Spain	Jan-91	71.5	76.0	75.3	67.0	72.0	71.2	42.0	41.0	41.8	34.0	38.5	37.3	76.6	73.7	75.2	7.2%	5.0%	5.4%
Sweden	Jan-91	82.5	79.0	82.1	82.0	79.0	80.5	47.0	40.0	45.1	35.5	39.0	38.2	80.9	74.1	76.1	1.0%	6.2%	4.6%
Switzerland	Jan-85	96.0	88.5	92.0	97.0	84.0	91.4	50.0	50.0	50.0	44.5	43.0	42.5	94.8	92.2	93.4	2.1%	1.5%	2.2%
United Kingdom	Jan-85	83.0	80.5	82.0	86.0	80.0	80.1	45.0	46.0	47.7	34.5	35.0	35.9	89.5	87.8	86.6	6.2%	3.4%	4.6%
United States	Jan-85	88.5	83.0	84.2	90.0	80.0	81.8	49.0	48.0	48.7	38.0	38.0	37.7	95.6	90.7	91.0	6.3%	3.0%	3.9%

Return source: Salomon World Government Bond Indices (WGBI)

Sample ends December 1995.

All statistics calculated from quarterly observations.

Returns and volatility annualized.

Betas calculated versus respective index.

Table 7

Correlation Between Risk Measures and Returns, Volatilities, and Betas
 Countries With Returns from Sample Start: 1985

		Average Risk Attribute					
Index	Moment	ICRGC	ICRGP	ICRGF	ICRGE	II CCR	REALYLD
Unhedged	Geometric Return	-0.02	-0.12	-0.10	0.25	0.11	0.07
	Volatility	0.26	0.19	0.14	0.42	0.18	-0.26
	Beta with WGBI	0.50	0.34	0.52	0.58	0.65	-0.48
Unhedged X-US	Geometric Return	-0.02	-0.17	0.08	0.17	0.32	-0.08
	Volatility	0.39	0.24	0.55	0.41	0.54	-0.66
	Beta with WGBI	0.55	0.36	0.73	0.56	0.83	-0.65
Hedged	Geometric Return	0.03	-0.01	0.14	-0.04	0.22	0.05
	Volatility	-0.34	-0.26	-0.14	-0.58	-0.17	0.20
	Beta with WGBI	0.03	0.05	0.24	-0.24	0.27	-0.01
Local	Geometric Return	-0.95	-0.85	-0.83	-0.91	-0.87	0.82
	Volatility	-0.38	-0.28	-0.19	-0.61	-0.23	0.24
	Beta with WGBI	-0.05	-0.03	0.18	-0.31	0.21	0.05
FX Return X-US	Geometric Return	-0.03	-0.15	0.08	0.09	0.23	-0.17
	Volatility	0.34	0.23	0.38	0.43	0.39	-0.59
	Beta with Non-US	0.48	0.30	0.61	0.53	0.68	-0.63

		Risk Attribute at Beginning of Sample					
Index	Moment	ICRGC	ICRGP	ICRGF	ICRGE	II CCR	REALYLD
Unhedged	Geometric Return	-0.23	-0.29	-0.38	0.18	-0.35	-0.57
	Volatility	0.13	0.13	-0.10	0.30	-0.02	-0.50
	Beta with WGBI	0.27	0.18	0.16	0.45	0.23	-0.73
Unhedged X-US	Geometric Return	-0.15	-0.21	-0.15	0.09	-0.17	-0.59
	Volatility	0.43	0.45	0.42	0.25	0.42	-0.57
	Beta with WGBI	0.39	0.30	0.43	0.42	0.44	-0.73
Hedged	Geometric Return	0.05	0.05	0.15	-0.08	0.40	0.49
	Volatility	-0.28	-0.11	-0.18	-0.60	0.10	0.61
	Beta with WGBI	-0.02	0.04	0.13	-0.29	0.44	0.51
Local	Geometric Return	-0.82	-0.68	-0.70	-0.84	-0.70	0.59
	Volatility	-0.31	-0.13	-0.22	-0.63	0.05	0.63
	Beta with WGBI	-0.10	-0.02	0.06	-0.36	0.38	0.53
FX Return X-US	Geometric Return	-0.08	-0.13	-0.04	0.05	-0.25	-0.70
	Volatility	0.41	0.40	0.38	0.34	0.20	-0.69
	Beta with Non-US	0.39	0.29	0.41	0.43	0.27	-0.85

		Change in Risk Attribute Over Sample					
Index	Moment	ICRGC	ICRGP	ICRGF	ICRGE	II CCR	REALYLD
Unhedged	Geometric Return	0.27	0.06	0.42	0.25	0.76	0.62
	Volatility	0.01	-0.13	0.30	0.14	0.30	0.32
	Beta with WGBI	-0.07	-0.22	0.25	0.18	0.63	0.56
Unhedged X-US	Geometric Return	0.02	-0.16	0.13	0.35	0.83	0.62
	Volatility	-0.51	-0.57	-0.23	0.26	0.27	0.24
	Beta with WGBI	-0.30	-0.40	0.02	0.22	0.62	0.53
Hedged	Geometric Return	0.08	0.01	0.11	0.17	-0.30	-0.48
	Volatility	0.12	0.01	0.27	0.24	-0.32	-0.57
	Beta with WGBI	0.12	0.04	0.26	0.13	-0.20	-0.50
Local	Geometric Return	0.42	0.39	0.08	0.19	-0.22	-0.25
	Volatility	0.13	0.02	0.27	0.25	-0.31	-0.58
	Beta with WGBI	0.15	0.06	0.28	0.17	-0.19	-0.50
FX Return X-US	Geometric Return	-0.19	-0.25	-0.20	0.21	0.80	0.71
	Volatility	-0.57	-0.54	-0.42	0.09	0.38	0.42
	Beta with Non-US	-0.42	-0.45	-0.22	0.14	0.65	0.65

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings
REALYLD	Trailing Real Yields (see paper for methodology)
WGBI	Salomon World Government Bond Index

Table 8

Country Risk Level Portfolio Strategy
January 1985-December 1995

A. Unhedged US Dollar Return Portfolio Performance

Risk Attribute	<u>Low Risk</u>			<u>High Risk</u>			<u>High Risk-Low Risk</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighted</u>									
ICRGC	14.8%	12.6%	1.34	15.5%	9.5%	0.87	0.6%	7.3%	6.3% ***
ICRGP	14.3%	12.4%	1.30	15.8%	9.2%	0.91	1.3%	6.2%	6.2% ***
ICRGF	14.2%	11.6%	1.25	14.7%	10.2%	0.95	0.5%	6.0%	4.3% **
ICRGE	15.0%	12.0%	1.25	14.3%	9.5%	0.87	-0.6%	7.0%	4.1% **
II CCR	14.4%	12.1%	1.31	15.8%	9.4%	0.90	1.3%	5.8%	6.3% ***
REALYLD	14.1%	10.7%	1.11	15.9%	11.2%	1.11	1.6%	6.1%	1.7%
<u>Capitalization Weighted</u>									
ICRGC	13.2%	11.7%	1.25	14.4%	10.2%	0.88	1.1%	9.6%	5.6%
ICRGP	12.6%	12.8%	1.36	14.2%	8.1%	0.75	1.4%	9.2%	9.1% ***
ICRGF	11.8%	8.9%	0.99	14.0%	11.6%	1.08	2.1%	7.5%	1.3%
ICRGE	14.2%	13.5%	1.42	11.9%	8.9%	0.79	-2.0%	10.7%	5.7%
II CCR	12.6%	9.0%	1.01	14.4%	10.5%	0.98	1.6%	6.6%	2.2%
REALYLD	13.6%	10.0%	1.04	14.1%	11.4%	1.12	0.5%	8.1%	-0.3%
Salomon WGBI	12.9%	8.8%							

B. Hedged US Dollar Return Portfolio Performance

Risk Attribute	<u>Low Risk</u>			<u>High Risk</u>			<u>High Risk-Low Risk</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighted</u>									
ICRGC	8.1%	4.2%	0.78	8.1%	4.4%	0.74	0.0%	2.1%	0.3%
ICRGP	7.7%	4.3%	0.77	8.4%	4.2%	0.74	0.6%	1.9%	0.9%
ICRGF	8.0%	4.5%	0.85	7.3%	4.4%	0.66	-0.8%	3.0%	1.0%
ICRGE	8.1%	4.1%	0.75	8.0%	4.6%	0.77	-0.2%	2.5%	-0.3%
II CCR	8.4%	4.4%	0.83	7.7%	4.3%	0.69	-0.6%	2.6%	0.7%
REALYLD	7.6%	4.1%	0.73	8.5%	4.6%	0.79	0.8%	2.6%	0.3%
<u>Capitalization Weighted</u>									
ICRGC	9.3%	5.1%	1.00	8.2%	5.2%	0.88	-0.9%	3.6%	0.2%
ICRGP	8.5%	5.3%	0.99	9.1%	5.1%	0.92	0.5%	3.7%	1.2%
ICRGF	9.3%	5.2%	1.03	7.2%	4.8%	0.73	-2.0%	3.7%	0.8%
ICRGE	9.1%	4.9%	0.91	9.0%	5.3%	0.96	-0.1%	3.8%	-0.5%
II CCR	9.6%	5.1%	1.02	7.8%	4.6%	0.76	-1.7%	3.1%	0.6%
REALYLD	9.3%	5.1%	0.96	8.5%	5.1%	0.86	-0.8%	3.9%	0.2%
Salomon WGBI	9.5%	5.0%							

-Alpha level of significance: *-10%, **-5%, ***1%.

-Salomon World Government Bond Indices (WGBI) in US dollars: Unhedged and hedged

-Risk portfolios were formed by sorting the samples in two portfolios - low risk countries have the highest country ratings.

-Portfolios were reformed quarterly.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings
REALYLD	Trailing Real Yields (see paper for methodology)

Table 9 (Cont)

Changing Country Risk Portfolio Strategy

January 1985-December 1995

C. Contemporaneous Ratings Changes and Hedged US Dollar Portfolio Performance

Risk Attribute	<u>Downgrade</u>			<u>Upgrade</u>			<u>Upgrade-Downgrade</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighting</u>									
ICRGC	7.1%	4.0%	0.71	9.3%	4.8%	0.85	2.1%	2.5%	0.8%
ICRGP	7.6%	4.1%	0.74	9.0%	5.0%	0.85	1.3%	2.9%	0.3%
ICRGF	7.2%	4.7%	0.62	7.9%	4.7%	0.82	0.7%	3.7%	-1.2%
ICRGE	7.4%	4.1%	0.71	8.3%	4.5%	0.77	0.8%	2.3%	0.2%
II CCR	8.3%	5.5%	0.90	8.3%	4.3%	0.77	0.0%	3.5%	1.3%
<u>Capitalization Weighting</u>									
ICRGC	8.1%	5.7%	1.04	10.0%	4.8%	0.88	1.7%	3.7%	3.2% ***
ICRGP	8.8%	5.4%	1.01	9.4%	5.1%	0.88	0.6%	3.8%	1.8%
ICRGF	7.5%	5.1%	0.71	8.7%	5.0%	0.93	1.2%	4.7%	-0.8%
ICRGE	9.0%	5.6%	1.03	8.9%	4.7%	0.84	-0.1%	3.9%	1.6%
II CCR	8.9%	5.9%	1.02	9.5%	4.8%	0.88	0.6%	4.2%	1.9%
Salomon WGBI	9.5%	5.0%							

D. Predictive Rating Change and Hedged US Dollar Portfolio Performance

Risk Attribute	<u>Downgrade</u>			<u>Upgrade</u>			<u>Upgrade-Downgrade</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighting</u>									
ICRGC	7.8%	4.2%	0.75	8.1%	4.5%	0.78	0.3%	2.5%	0.0%
ICRGP	8.0%	4.1%	0.73	7.6%	4.7%	0.77	-0.3%	2.9%	-0.8%
ICRGF	8.0%	4.8%	0.65	7.8%	4.7%	0.83	-0.1%	3.8%	-1.8%
ICRGE	7.4%	4.1%	0.74	8.5%	4.4%	0.77	0.9%	1.8%	0.7%
II CCR	8.1%	5.4%	0.88	7.9%	4.3%	0.75	-0.2%	3.5%	1.0%
<u>Capitalization Weighting</u>									
ICRGC	8.0%	5.8%	1.05	8.9%	4.6%	0.83	0.9%	4.1%	2.9% **
ICRGP	9.0%	4.9%	0.92	8.3%	4.7%	0.80	-0.6%	3.5%	0.4%
ICRGF	7.8%	5.1%	0.72	8.8%	5.0%	0.92	1.0%	4.7%	-0.7%
ICRGE	7.8%	5.2%	0.96	9.3%	5.3%	0.95	1.4%	3.9%	1.5%
II CCR	8.9%	6.4%	1.10	8.8%	4.9%	0.87	-0.1%	4.7%	1.9%
Salomon WGBI	9.5%	5.0%							

-Alpha level of significance: *-10%, **-5%, ***1%.

-Salomon World Government Bond Indices, Hedged US dollar returns.

-Panel A portfolios formed with all countries that experienced a contemporaneous change in a country risk exposure.

-Panel B portfolios formed with all countries that experienced a change in a country risk exposure over the previous quarter.

-Portfolios were reformed quarterly.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings

Table 9*Changing Country Risk Portfolio Strategy*

January 1985-December 1995

A. Contemporaneous Ratings Changes and Unhedged US Dollar Portfolio Performance

Risk Attribute	<u>Downgrade</u>			<u>Upgrade</u>			<u>Upgrade-Downgrade</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighted</u>									
ICRGC	13.2%	10.8%	1.08	17.8%	10.8%	1.11	4.1%	6.1%	4.0%
ICRGP	13.7%	10.2%	1.07	17.9%	11.6%	1.17	3.7%	5.2%	2.5%
ICRGF	12.5%	13.0%	1.15	14.9%	9.9%	1.03	2.1%	8.0%	4.0%
ICRGE	13.7%	10.9%	1.10	16.8%	10.7%	1.11	2.7%	4.7%	2.9%
II CCR	14.7%	11.2%	1.03	15.0%	11.6%	1.17	0.2%	8.7%	-1.0%
<u>Capitalization Weighted</u>									
ICRGC	12.5%	8.3%	0.83	18.0%	12.8%	1.30	4.9%	9.0%	-0.4%
ICRGP	11.6%	7.9%	0.80	18.3%	14.3%	1.49	6.0%	9.5%	-1.8%
ICRGF	12.1%	13.4%	1.27	14.1%	8.5%	0.87	1.9%	9.0%	7.1% **
ICRGE	11.9%	10.8%	1.05	15.1%	11.7%	1.19	2.9%	9.7%	1.9%
II CCR	11.7%	11.5%	1.04	12.7%	11.9%	1.20	0.9%	10.8%	-0.4%
Salomon WGBI	12.9%	8.8%							

B. Predictive Rating Change and Unhedged US Dollar Portfolio Performance

Risk Attribute	<u>Downgrade</u>			<u>Upgrade</u>			<u>Upgrade-Downgrade</u>		
	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Beta	Portfolio Return	Standard Deviation	Salomon WGBI Alpha
<u>Equal Weighted</u>									
ICRGC	14.2%	11.3%	1.16	16.6%	10.1%	1.00	2.1%	6.7%	4.3%
ICRGP	13.0%	11.0%	1.16	17.2%	10.8%	1.01	3.8%	6.5%	5.8% ***
ICRGF	13.7%	12.9%	1.09	14.3%	10.6%	1.07	0.5%	8.6%	1.1%
ICRGE	14.1%	10.3%	1.06	16.7%	11.6%	1.19	2.2%	4.8%	0.8%
II CCR	13.4%	11.3%	1.03	14.9%	11.8%	1.20	1.3%	9.0%	-0.3%
<u>Capitalization Weighted</u>									
ICRGC	10.0%	10.7%	1.07	17.6%	11.1%	1.11	6.9%	9.1%	7.0% **
ICRGP	10.0%	9.3%	0.95	18.2%	12.1%	1.17	7.5%	9.2%	5.2%
ICRGF	12.3%	13.3%	1.20	13.2%	10.2%	0.95	0.8%	10.5%	4.3%
ICRGE	9.9%	10.4%	1.02	16.8%	11.6%	1.15	6.3%	9.8%	5.3%
II CCR	11.4%	11.3%	1.03	12.9%	12.3%	1.25	1.3%	10.8%	-0.7%
Salomon WGBI	12.9%	8.8%							

-Alpha level of significance: *-10%, **-5%, ***1%.

-Salomon World Government Bond Indices, Unhedged US dollar returns.

-Panel A portfolios formed with all countries that experienced a contemporaneous change in a country risk exposure.

-Panel B portfolios formed with all countries that experienced either an increase or a decrease in a country risk exposure over the previous three months.

-Portfolios were reformed quarterly.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings

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

A. Lagged Level Regressions

Returns	Regression	ICRGC T-Stat	R-Sq	ICRGP T-Stat	R-Sq	ICRGF T-Stat	R-Sq	ICRGE T-Stat	R-Sq	II CCR T-Stat	R-Sq	R-Sq
Unhedged	Univariate	0.0002 0.33	-0.15%	0.0004 0.79	-0.05%	-0.0013 -1.45	0.18%	0.0014 1.16	0.13%	0.0001 0.32	-0.16%	
Unhedged	Multivariate			0.0006 0.96		-0.0024 -2.30		0.0018 1.33				0.70%
Unhedged	Multivariate			0.0004 0.63		-0.0034 -2.58		0.0016 1.24		0.0006 1.49		0.81%
Hedged	Univariate	-0.0001 -0.27	-0.16%	0.0000 -0.24	-0.17%	-0.0002 -0.55	-0.12%	0.0000 0.04	-0.17%	0.0001 0.50	-0.13%	
Hedged	Multivariate			0.0000 -0.08		-0.0002 -0.54		0.0001 1.33				-0.46%
Hedged	Multivariate			-0.0001 -0.39		-0.0007 -1.13		0.0001 0.15		0.0003 1.15		-0.36%
Local	Univariate	-0.0014 -5.93	4.77%	-0.0010 -4.98	3.31%	-0.0015 -3.76	2.30%	-0.0023 -5.31	4.22%	-0.0006 -3.76	2.36%	
Local	Multivariate			-0.0004 -1.75		-0.0006 -1.41		-0.0016 -2.78				5.06%
Local	Multivariate			-0.0004 -1.58		-0.0004 -0.75		-0.0015 -2.70		-0.0001 -0.53		4.95%
FX Return	Univariate	0.0000 0.09	-0.19%	0.0003 0.62	-0.12%	-0.0010 -1.14	0.06%	0.0006 0.66	-0.11%	0.0000 0.14	-0.19%	
FX Return	Multivariate			0.0005 0.89		-0.0018 -1.79		0.0009 0.78				0.14%
FX Return	Multivariate			0.0004 0.69		-0.0024 -1.94		0.0008 0.66		0.0004 0.81		0.07%

B. Lagged Change in Level Regressions

Returns	Regression	ICRGC T-Stat	R-Sq	ICRGP T-Stat	R-Sq	ICRGF T-Stat	R-Sq	ICRGE T-Stat	R-Sq	II CCR T-Stat	R-Sq	R-Sq
Unhedged	Univariate	0.3491 1.40	0.18%	0.0487 0.32	-0.16%	0.3646 1.84	0.42%	0.2980 2.38	0.64%	0.2212 0.73	-0.10%	
Unhedged	Multivariate			0.0198 0.13		0.3567 1.85		0.2958 2.36				0.88%
Unhedged	Multivariate			0.0183 0.12		0.3481 1.82		0.2964 2.36		0.1692 0.58		0.75%
Hedged	Univariate	-0.1101 -1.14	0.02%	-0.0807 -1.37	0.10%	-0.0244 -0.33	-0.16%	0.0442 0.81	-0.07%	0.1067 0.77	-0.08%	
Hedged	Multivariate			-0.0784 -1.32		-0.0112 -0.15		0.0426 0.78				-0.15%
Hedged	Multivariate			-0.0795 -1.33		-0.0171 -0.23		0.0430 0.79		0.1165 0.83		-0.22%
Local	Univariate	-0.2180 -2.01	0.54%	-0.1598 -2.54	0.84%	-0.1137 -1.29	0.30%	0.0771 1.30	0.11%	-0.0443 -0.29	-0.16%	
Local	Multivariate			-0.1487 -2.42		-0.0885 -1.07		0.0744 1.27				0.93%
Local	Multivariate			-0.1486 -2.41		-0.0876 -1.06		0.0743 1.27		-0.0170 -0.11		0.76%
FX Return	Univariate	0.4759 2.09	0.63%	0.1367 0.97	-0.01%	0.3808 2.12	0.65%	0.2592 2.02	0.58%	0.2031 0.61	-0.12%	
FX Return	Multivariate			0.1055 0.75		0.3595 1.98		0.2609 2.04				1.14%
FX Return	Multivariate			0.1053 0.74		0.3521 1.93		0.2613 2.04		0.1437 0.44		0.99%

-All R-Squares are adjusted for degrees of freedom.

-Standard errors are calculated using a heteroskedasticity consistent covariance matrix.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings

Table 11*Cross-Sectional Time-Series Importance of Country Risk Attributes in Emerging Fixed Income Markets*

A. Lagged Level Regressions

Returns	Regression	ICRGC T-Stat	R-Sq	ICRGP T-Stat	R-Sq	ICRGF T-Stat	R-Sq	ICRGE T-Stat	R-Sq	II CCR T-Stat	R-Sq	R-Sq
Emerging	Univariate	-0.0013	-0.10%	-0.0007	-0.58%	-0.0022	0.00%	-0.0039	0.23%	-0.0011	-0.28%	
		-0.84		-0.54		-0.98		-1.20		-0.81		
Emerging	Multivariate			0.0010		-0.0033		-0.0028				-1.11%
				0.47		-0.87		-0.83				
Emerging	Multivariate			0.0010		-0.0033		-0.0028		0.0000		-2.06%
				0.48		-0.69		-0.83		-0.01		

B. Lagged Change in Level Regressions

Returns	Regression	ICRGC T-Stat	R-Sq	ICRGP T-Stat	R-Sq	ICRGF T-Stat	R-Sq	ICRGE T-Stat	R-Sq	II CCR T-Stat	R-Sq	R-Sq
Emerging	Univariate	-0.6098	2.33%	-0.3082	0.48%	-0.3087	0.39%	-0.1589	-0.21%	0.2851	0.00%	
		-1.81		1.42		-1.28		-0.65		1.12		
Emerging	Multivariate			-0.2105		-0.1605		-0.1416				-0.49%
				-0.84		-0.56		-0.57				
Emerging	Multivariate			-0.1454		-0.2238		-0.1523		0.3065		-0.41%
				-0.56		-0.76		-0.62		1.16		

-Emerging market returns from Salomon Brothers Brady Bond Indices.

-All R-Squares are adjusted for degrees of freedom.

-Standard errors are calculated using a heteroskedasticity consistent covariance matrix.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings

Table 13
Cross-Sectional Regression Results
 Quarterly Returns: January 1985-December 1995

A. Quarterly Return vs. Risk Attribute

Risk Attribute	Average Intercept	Ave Slope Coefficient	Standard Error	T-Stat	% Positive Coefficient	Average R-Square
Unhedged US Dollar Returns						
ICRGC	0.0385	0.0000	0.0007	-0.01	31.8%	4.7%
ICRGP	0.0482	-0.0001	0.0005	-0.25	40.9%	0.4%
ICRGF	0.0310	0.0001	0.0010	0.14	43.2%	2.0%
ICRGE	0.0175	0.0005	0.0012	0.40	40.9%	7.4%
II CCR	0.0694	-0.0004	0.0003	-1.11	34.1%	3.8%
REALYLD	0.0312	0.1445	0.2188	0.66	54.5%	9.1%
Hedged US Dollar Returns						
ICRGC	0.0173	0.0000	0.0002	0.13	45.5%	1.7%
ICRGP	0.0253	-0.0001	0.0002	-0.41	47.7%	-1.4%
ICRGF	-0.0006	0.0004	0.0004	1.02	61.4%	5.3%
ICRGE	0.0159	0.0001	0.0004	0.22	47.7%	1.0%
II CCR	0.0108	0.0001	0.0001	0.73	47.7%	4.6%
REALYLD	0.0129	0.1451	0.0801	1.81	63.6%	4.6%
Local Returns						
ICRGC	0.1299	-0.0012	0.0002	-5.12	15.9%	13.0%
ICRGP	0.1085	-0.0010	0.0002	-5.93	13.6%	8.6%
ICRGF	0.0835	-0.0013	0.0004	-2.94	22.7%	9.5%
ICRGE	0.1012	-0.0020	0.0004	-4.39	13.6%	9.6%
II CCR	0.0776	-0.0006	0.0002	-4.02	20.5%	10.8%
REALYLD	0.0079	0.3546	0.0872	4.07	75.0%	11.1%
Forward Foreign Exchange Returns						
ICRGC	0.0188	0.0000	0.0005	0.02	46.5%	1.5%
ICRGP	0.0223	0.0000	0.0003	-0.09	44.2%	-2.9%
ICRGF	0.0027	0.0004	0.0009	0.42	51.2%	6.7%
ICRGE	0.0149	0.0001	0.0009	0.13	44.2%	2.2%
II CCR	0.0377	-0.0002	0.0003	-0.71	48.8%	4.5%
REALYLD	0.0310	-0.2587	0.1768	-1.46	48.8%	6.1%

B. Quarterly Return vs. Real Yield & Risk Attribute

Risk Attribute	Real Yield			T-Stat	% Positive Coefficient	Risk Attribute			% Positive Coefficient	Average R-Square
	Average Intercept	Ave Slope Coefficient	Standard Error			Ave Slope Coefficient	Standard Error	T-Stat		
Unhedged US Dollar Returns										
ICRGC	0.0411	0.0284	0.2115	0.13	50.0%	-0.0001	0.0006	-0.08	36.4%	19.4%
ICRGP	0.0362	0.0660	0.2265	0.29	52.3%	0.0000	0.0005	-0.02	36.4%	17.9%
ICRGF	0.0276	0.0922	0.2267	0.41	54.5%	0.0001	0.0008	0.15	45.5%	16.6%
ICRGE	0.0348	0.0900	0.1912	0.47	52.3%	0.0000	0.0011	-0.03	43.2%	21.0%
II CCR	0.0730	0.0280	0.2315	0.12	52.3%	-0.0004	0.0003	-1.26	45.5%	21.3%
Hedged US Dollar Returns										
ICRGC	-0.0149	0.1698	0.0789	2.15	59.1%	0.0003	0.0002	1.55	52.3%	13.8%
ICRGP	0.0041	0.1442	0.0823	1.75	59.1%	0.0001	0.0002	0.69	47.7%	11.8%
ICRGF	-0.0380	0.2173	0.0828	2.62	56.8%	0.0010	0.0004	2.35	61.4%	17.6%
ICRGE	-0.0067	0.1626	0.0720	2.26	63.6%	0.0005	0.0004	1.29	56.8%	13.2%
II CCR	-0.0146	0.2237	0.0845	2.65	54.5%	0.0003	0.0001	1.89	61.4%	18.5%
Developed Markets: Local										
ICRGC	0.0822	0.2257	0.0826	2.73	59.1%	-0.0008	0.0002	-3.61	27.3%	26.3%
ICRGP	0.0712	0.2457	0.0858	2.86	68.2%	-0.0007	0.0002	-4.42	18.2%	23.6%
ICRGF	0.0293	0.3167	0.0869	3.64	65.9%	-0.0004	0.0004	-1.03	43.2%	23.3%
ICRGE	0.0599	0.2764	0.0770	3.59	70.5%	-0.0012	0.0004	-3.07	29.5%	24.7%
II CCR	0.0384	0.3229	0.0930	3.47	61.4%	-0.0003	0.0002	-1.95	36.4%	27.0%
Forward Foreign Exchange Returns										
ICRGC	0.0724	0.0724	0.0486	1.49	60.5%	-0.0004	0.0005	-0.82	51.2%	16.8%
ICRGP	0.0521	0.0521	0.0319	1.64	58.1%	-0.0002	0.0003	-0.62	44.2%	14.1%
ICRGF	0.0351	0.0351	0.0538	0.65	58.1%	-0.0001	0.0010	-0.13	46.5%	20.9%
ICRGE	0.0800	0.0800	0.0454	1.76	62.8%	-0.0011	0.0010	-1.06	37.2%	17.4%
II CCR	0.0726	0.0726	0.0284	2.56	74.4%	-0.0004	0.0003	-1.47	34.9%	18.0%

-All R-Squares are adjusted for degrees of freedom.

-Standard errors are calculated using a heteroskedasticity consistent covariance matrix.

Legend

ICRGC	International Country Risk Guide Composite Index
ICRGP	International Country Risk Guide Political Index
ICRGF	International Country Risk Guide Financial Index
ICRGE	International Country Risk Guide Economic Index
II CCR	Institutional Investor Country Credit Ratings
REALYLD	Trailing Real Yields (see paper for methodology)