The Risk and Expected Returns of African Equity Investment

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ABSTRACT

The idea of this paper is to develop a simple country risk model that can be used to establish expected rates of return, volatility and correlations for African equity markets. These rates are appropriate for markets that are segmented in the sense that the same risk project may receive a different expected return, depending on its domicile. The model uses Political Risk Services' International Country Risk Guide (ICRG) country risk ratings. We establish rates that represent expected returns on investments of average risk within each country. These expected returns are forward-looking. We also calculate expected volatilities and correlations for each of the countries.

1. Overview of African Economies and Stock Markets

Table 1 shows that historically, countries in Africa have lagged the economic performance of the rest of the world. Real gross domestic product growth averaged 2.2% from 1978-1985, and 2% from 1986 to 1993. This is slightly lower than the growth rates experienced in the developed world, and much lower than the rate of growth in Asia. Africa, and sub-Saharan Africa in particular, have also carried relatively high debt loads. Africa represents about 8% of developing world gross domestic product, and 15% of developing world total debt. The numbers for sub-Saharan Africa are 3.4% and 8.6% respectively. Generally, low levels of economic growth and high debt levels have not been associated with thriving equity markets.

Table 2 supports this conclusion. There are currently over fifty world equity markets, tracked by the International Finance Corporation (IFC) of the World Bank and only three of them are in Africa.[1] These three national equity markets are small (less than 2% of IFC Composite market capitalization) and very illiquid (two of these countries have daily turnover of less than $15 million).

2. Measures of Country Risk in Developed Countries

2.1 Asset pricing theory and country risk

There are remarkably diverse ways to calculate country risk and expected returns. The risk that we will concentrate on is risk that is "systematic". That is, risk that is not diversifiable. Importantly, systematic risk will be rewarded by investors. That is, higher systematic risk should be linked to higher expected returns.

[1] These include South Africa, Nigeria and Zimbabwe. The IFC recently announced that Egypt and Morocco will be added in September 1996.

A simple, and well-known, approach to systematic risk is the beta of the Sharpe[1964], Lintner[1965], and Black[1972] capital asset pricing model (CAPM). This model was initially presented and applied to U.S. data. The classic empirical studies, such as Fama and MacBeth[1973], Gibbons[1982], and Stambaugh[1982] present some evidence in support of the formulation. The model is used in an international setting by Solnik[1974a, 1974b, 1977]. In these applications, the risk factor is no longer the U.S. market portfolio but the world market portfolio.

Evidence on using the beta factor as a country risk measure in an international context is mixed. The early studies find it difficult to reject a model that relates average beta risk to average returns. For example, Harvey and Zhou[1993] find it difficult to reject a positive relation between beta risk and expected returns in 18 developed markets. When more general models are examined, however, the evidence against the model becomes stronger.

Harvey[1991] presents evidence against the world CAPM when both risks and expected returns are allowed to change through time. Ferson and Harvey[1993] extend this analysis to a multifactor formulation that follows the work of Ross[1976] and Sharpe[1982]. Ferson and Harvey's model also allows for dynamic risk premiums and risk exposures.

The bottom line for these studies is that the beta approach has some merit when applied in developed countries. Beta, whether measured against a single factor or against multiple world sources of risk, appears to have some ability to discriminate between expected returns. The work of Ferson and Harvey[1994, 1995] is directed at modeling the conditional risk functions for developed capital markets. They show how to introduce economic variables, fundamental measures, and both local and worldwide information into dynamic risk functions.

This work, however, applies only to developed markets. What about the rest of the world, and in particular, Africa?

2.2 Country Risk in Developing Markets

One might consider measuring systematic risk the same way in emerging as well as developed markets. Harvey's[1995] study of emerging market returns suggests that there is no relation between expected returns and betas measured with respect to the world market portfolio. A regression of average returns on average betas produces an R-squared of zero. Harvey documents that the country variance does a better job of explaining the cross-sectional variation in expected returns.

Bekaert and Harvey[1995a, 1996a,b] pursue a model where expected returns are influenced by both world factors (like a world CAPM) and local factors (like a CAPM that holds only in that country). They propose a conditional regime-switching methodology that allows the country to evolve from a developing segmented country to a developing country that is integrated in world capital markets.

The Bekaert and Harvey work is very promising, and the authors have applied this idea to the cost of capital estimation for individual securities in emerging markets (see Bekaert and Harvey[1995b]). All the estimation is calibrated using the data for only the 20 developing countries collected by the International Finance Corporation, however.

It is straightforward to estimate a relation (the "reward for risk") between, say, a beta and expected return. The cost of capital is obtained by multiplying this reward for risk times the beta. The beta is measured by analyzing the way the equity returns covary with a benchmark return.

What if there is no equity market? That is, even if we estimate the risk premium using the countries where data are available, we have no way of using the reward for risk,

because we do not have betas for many of the developing economies' markets - because the equity markets do not yet exist.

2.3 Alternative Risk Measures

We start our exercise with the requirement that the candidate risk measure must be available for all countries, and it must be available in a timely fashion. This eliminates risk measures based solely on the equity market. It also eliminates measures based on macroeconomic data that are subject to irregular releases and often dramatic revisions. We focus on country risk rating. The country risk ratings source used in this paper is Political Risk Services' *International Country Risk Guide.*

There are many services that measure country risk. The appendix provides information on the following providers:

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

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

2.3.1 Institutional Investor

Institutional Investor credit ratings are based on a survey of leading international bankers who are asked to rate each country on a scale from zero to 100 (where 100

represents maximum creditworthiness). Institutional Investor averages these ratings, providing greater weights to respondents with greater worldwide exposure and more sophisticated country analysis systems.[2]

Whenever a survey or expert panel is used to subjectively rate creditworthiness, it is hard to exactly define the parameters taken into account. At any given point in time an expert's recommendation will be based upon factors the expert feels are relevant.

In order to identify the factors that its survey participants have taken into consideration in the past, Institutional Investor asks them to rank the factors that they take into account in preparing country ratings. The results of this survey are listed in Table 3. Note that the bankers rank factors differently for different groups of countries and that rankings have changed over time within country groups. The ranking of factors affecting OECD country ratings appear to have been the most turbulent over the 15-year period.

2.3.2 International Country Risk Guide

ICRG compiles monthly data on a variety of political, financial and economic risk factors to calculate risk indices in each of these categories as well as a composite risk index. Five financial, thirteen political and six economic factors are used. Each factor is assigned a numerical rating within a specified range. The specified allowable range for each factor reflects the weight attributed to that factor. A higher score indicates lesser risk.[3]

Political risk assessment scores are based on subjective staff analysis of available information. Economic risk assessment scores are based upon objective analysis of

[2] See Erb, Harvey and Viskanta (1994, 1995, 1996a) for a detailed analysis of the Institutional Investor data.

[3] See Erb, Harvey and Viskanta (1996b) for an analysis of the ICRG data.

quantitative data and financial risk assessment scores are based upon analysis of a mix of quantitative and qualitative information.

Calculation of the three individual indices is simply a matter of summing up the point scores for each factor within each risk category. The composite rating is a linear combination of the three individual indices' point scores. Note that the political risk measure (100 points) is given twice the weight of financial and economic risk (50 points each). ICRG, as well as many of the other providers, think of country risk as being composed of two primary components: ability to pay and willingness to pay. Political risk is associated with a willingness to pay while financial and economic risk are associated with an ability to pay.

The specific formulas for these calculations are as follows:

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

where PR is political risk, ER is economic risk, FR is financial risk and CRR is the composite risk rating. The specific factors taken into account for each risk index are detailed in Table 4.

2.4 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 5 and 6 contrast the primary risk index products available from the indicated groups.

Table 5 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 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 6 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.

Finally, Table 7 provides a comparison of S&P and Moody's Ratings with both the II and ICRG ratings. The table reports the ratings in October 1995. There is a close correspondence between the S&P and Moody's ratings and the II credit risk measure with a rank order correlation of 95%. There is also a strong correlation between these ratings and the ICRG financial rating (rank order correlation of 90%). The correlations are weaker for the other measures. For example, the rank order correlation of the Moody's rating and the ICRG economic rating is only 68%.

2.5 Other Measures of Risk

There are alternative metrics that can be used to develop expected return, volatility and correlation estimates in these countries. To be useful, the variable must be available for a wide range of countries on a timely basis. Some fundamental variables might include: per capita gross domestic product, the growth of gross national product, the size of the trade sector, inflation, the change in the exchange rate versus a benchmark, the volatility of exchange rate changes, size of the government sector, the external debt of a country, the number of years of schooling, life expectancy, quality of life and political risk. Work by Packer and Cantor[1996] shows that many of these variables are highly correlated with the sovereign credit ratings of Standard & Poor's and Moody's. Given the correlation between the risk measure we use in this paper and the Standard & Poor's and Moody's ratings (Table 7), we believe that we are picking up many of these fundamental influences. Tables 8 and 9 provide some perspective on the relationship between the risk measures we have discussed and fundamental variables such as population, real gross domestic product growth, and inflation.

3. Estimating expected return, risk, and correlation

3.1 Econometric specification

We fit our model using equity data from forty-nine national equity markets. Morgan Stanley Capital International (MSCI) publishes twenty -one of the indexes, and the International Finance Corporation (IFC) of the World Bank publishes the other twenty-eight. We view the MSCI national equity indexes as developed market returns and the IFC indexes as emerging market returns.

Our sample begins in April 1984 and ends in March of 1996. Twenty-eight of the country indexes existed at the beginning of this analysis. We add developed country indexes to the analysis during the month that they were first introduced by MSCI. Emerging market country indices are added three years after introduction by the IFC.

We estimate a log-linear time series cross-sectional regression by combining all the countries and risk ratings into one large model. Specifically, we estimate using a pooled time-series cross-sectional regression:

$$\text{Return}_{i,t} = a + b * \text{Country Risk}_{i,t-1} + c * \text{Change in Country Risk}_{i,t-1} + \text{residual}_{i,t}$$

The slope coefficient of country risk should be negative, implying that a higher risk rating is associated with lower average returns. The slope coefficient of change in country risk should be positive, suggesting that an increase in credit rating is associated with higher returns.[4]

We also use the above model to explain the variance and correlation of returns over the period:

$$\sigma_{i,t} = a + b * \text{Country Risk}_{i,t-1} + c * \text{Change in Country Risk}_{i,t-1} + \text{residual}_{i,t}$$

and

$$\rho_{i,t} = a + b * \text{Country Risk}_{i,t-1} + c * \text{Change in Country Risk}_{i,t-1} + \text{residual}_{i,t}$$

where $\sigma_{i,t}$ is the unconditional standard deviation of the monthly returns six months after the credit rating is observed , and $\rho_{i,t}$ is the correlation of a country's equity market with the world equity market six months after the risk rating is observed.

3.2 Results

Table 10 presents the regression results for the country risk model. We estimate returns, volatilities, and correlations for a number of African countries, whether or not

[4] That is, an increase in rating (lower risk), implies that expected returns are lower which is achieved by an immediate price appreciation.

they have currently existing equity markets. Our universe consists of 34 African countries for which Political Risk Services supplies an estimate of country risk. In panel A, the slope coefficient on the level of country risk is significantly different from zero and of the correct sign (heteroskedasticity consistent t-statistic of -2.43). The slope coefficient on the change in the level of country risk is also significantly different from zero and of the correct sign. Panel B, the volatility model, shows that the coefficient on the level of country risk is negative and statistically significant. This means that a higher level of rating (lower country risk) is associated with a lower level of equity return volatility. Panel C, the correlation model, shows that the coefficient on the level country risk is positive and statistically significant. This means that a higher level of rating is associated with a higher level of correlation with the world equity market.

3.3 Fitted Expected Rates of Return, Volatility and Correlation

Table 11 presents our estimates of annual expected return, volatile and correlation for 34 countries in Africa. The formula is simple. The natural logarithm of the most recent ICRG composite risk rating is multiplied by -0.17 (slope coefficient from Table 10) and added to .87 (the intercept from Table 10). We assume no future change in country risk rating in this exercise.

The average expected excess return for our universe of 34 African countries is 18.4%. Compare this to expected rates of return for the developed world of 12%, for the United States of 12.7%, for Iraq of 25% and for Argentina of 14%. Of the African countries in our sample, Somalia has the highest expected rate of return (29.8%) and Botswana has the lowest expected rate of return (13.3%).

There are two reasons that emerging markets are attractive to investors: expected return and correlation. Table 11 shows that correlations for these African countries are on average very low (5% compared to an average correlation of 41% for developed

countries' equity markets). If most of these markets existed and were available to international investors, they would be very good portfolio diversifiers.

4. Conclusions

African countries represent about small amount of world GDP, a large part of world population, and an insignificant part of world equity capitalization. It is reasonable to suppose that these markets will grow in the future - especially as more countries create new equity markets. This article provides a method of assessing what to expect in these new markets.

The method we propose to forecast expected returns, volatilities, and correlations is simple and parsimonious. Of course, it is not necessarily the best model. Because of the nature of the problem, there is no way to verify the accuracy of the results until some of the developing countries emerge into the MSCI or IFC data bases.

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Appendix A: Country Rating Services

PROVIDER: BANK OF AMERICA WORLD INFORMATION SERVICES

a. Products

Country Outlooks: Summary of business, financial and economic environment. Includes key economic historical and projected indicators.

Country Data Forecast: Country-specific forecasts of commonly used economic, financial and demographic variables.

Country Country Risk Monitor: Business risk ranking based upon economic and financial ratios.

b. Risk measurement components

I. *Financial/Economic*

Information Type: Quantitative
Data Source: Published Sources
Components:
Debt Service/Exports
External Debt/Exports
External Debt/GDP
External Debt/Reserves
Reserves/Imports
Import Coverage
Exports/GDP
Current Account/GDP
Budget Deficit/GDP
GDP per Capita/G-7 Average

ii. *Summary Format*

Risk Index Briefing (Country Outlook) Economic/Financial Indicators

iii. *Risk Index*

Type: Ordinal

Components: Above Financial/Economic indicators, rank ordered, averaged.

PROVIDER: BUSINESS ENVIRONMENT RISK INTELLIGENCE (BERI) S.A.

a. Products

Force Country Reports: Qualitative analysis of socio-political, economic and financial forecasts. Scenario basis.

Political, operations and remittance/repatriation risk indices. Profit opportunity recommendation (POR) is a composite of the individual risk indices.

b. Risk measurement components

I. Political

Information Type: Qualitative
Data Source: Expert Panel
Components:

- Political Factionalization
- Linguistic/Ethnic/Religious Tension
- Coercive Measures to maintain Regime
- Mentality: Nationalism, Corruption, nepotism
- Social Conditions: population, income distribution
- Radical Left Strength
- Dependence on outside major power
- Regional Political Forces
- Social Conflict
- History of Regime Instability

ii. Operations

Information Type: Quantitative Qualitative
Data Source: Expert Panel
Components:

- Policy Continuity
- Attitudes towards foreign investors
- Nationalization
- Monetary Inflation
- Balance of Payments
- Bureaucratic Delays
- Economic Growth
- Currency Convertibility
- Enforceability of Contracts
- Labor Cost/Productivity
- Professional Services and Contractors
- Communications and Transport
- Local Management and Partners
- Short-term Credit
- Long-Term Loans

iii. Remittances and repatriation of capital

Information Type: Quantitative Qualitative
Data Source: Expert Panel, Published Data
Components:

- Legal Framework
- Foreign Exchange
- International Reserves
- Foreign Debt

iv. Quantitative Index

Components:

- Foreign Exchange

Foreign Debt
International Reserves
Budget Performance

v. *Qualitative Index*

Components:

Resolve towards honoring international obligations
Foreign loan structure and terms
Technocratic competence
Corruption
Concessionary loans and grants

vi. *Summary Format*

Briefing Risk Index

vii. *Risk Index*

Type: Ordinal Scalar

Components:

Weighted average of above components

PROVIDER: CONTROL RISKS INFORMATION SERVICES (CRIS)

Products

On-line country information services
Travel security guide
Security Risk ratings and security forecasts

Risk Index

Type: Ordinal (1-4)

Components:

Staff analysis (Methodology is not explained)
Government Survival
Likely Policy Continuity
Political Pressure on Economic Decisions
Criminal or terrorist threat

PROVIDER: **Economist Intelligence Unit (EIU)**

a. Products

Repayment risk measure
Regional and Country Reports

b. Risk measurement components

I. *Political and Policy Risk*
Information Type: Qualitative
Data Source: Staff Analysis
Components:
Economic Policy Factors:
- Fiscal, Monetary and Export Policy
- Attitude towards foreign investment
- Ease of Structural and Policy Change
- Size/Performance of public sector
- Policy Consistency

Political and Strategic Factors:
- Ability to implement economic policy
- Operation of political system
- New Regime policy continuity
- Enfranchisement
- Regional Context

ii. *Medium-Term Lending Risk*
Information Type: Qualitative
Data Source: Published Sources
Components:
- External Debt
- Debt Service
- Current Account
- Savings Rate
- Export Concentration

iii. *Short-Term Trade Risk*
Information Type: Quantitative
Data Source: Published Sources
Components:
Foreign Exchange variables:
- Import Cover Ratio
- History of Foreign Exchange Transfers

iv. *Summary Format*

Briefing Risk Index Economic, payment, debt and trade indicators

v. *Risk Index*

Type: Ordinal Scalar

Components:
Weighted average of above components

PROVIDER: EUROMONEY

a. Products

Risk Assessment Index

b. Risk measurement components

I. Political
Information Type: Qualitative
Data Source: Survey of Experts
Components:

ii. Economic
Information Type: Quantitative
Data Source: Euromoney global economic projections

iii. Financial
Information Type: Primarily Quantitative
Data Source: Published Sources
Debt indicators
Debt in default or rescheduled
Credit Ratings (Moody's and Standard and Poor's)
Access to bank finance
Access to short-term finance
Access to international bond and syndicated loan markets
Access to and discount on forfeiting

iv. Summary Format

Risk Index (No briefing mentioned)

v. Risk Index

Type: Ordinal Scalar

Components:
Weighted average of above components

PROVIDER: INSTITUTIONAL INVESTOR

a. Products

Country Credit Rating Index

b. Risk measurement components

I. Political, Economic and Financial Variables
Information Type: Qualitative
Data Source: Weighted Survey of International Bankers
Components:
- Economic Outlook
- Debt Service
- Financial Reserves/Current Account
- Fiscal Policy
- Political Outlook
- Access to Capital Markets
- Trade Balance
- Inflow of Portfolio Investment
- Foreign Direct Investment

ii. Summary Format

Credit Rating (No briefing indicated)

iii. Risk Index

Type: Ordinal Scalar

Components:
Weighted average of above components

PROVIDER: STANDARD AND POOR'S RATINGS GROUP

a. **Products**

Sovereign Credit Ratings
Local and foreign currency obligation ratings
Regional and local government obligation ratings
Sovereign-supported obligation ratings
Multilateral lending institution obligation ratings
International structured financing ratings

b. **Risk measurement components (Only Sovereign Credit Ratings reviewed)**

I. Political

Information Type: Quantitative Qualitative
Data Source: Published Data, Staff Analysis
Components:
Political System:
- Stability
- Orderliness of succession
- System flexibility
- Public participation
- Characteristics of major political parties

Social Environment:
- Living standards
- Wealth and income distribution
- Labor market conditions
- Union politicization
- Cultural/demographic characteristics
- Literacy levels
- Urbanization trends
- Regional, racial, religious and other cultural differences

International Relations:
- Integration with multilateral trade and international financial systems
- Relations with neighboring countries
- National security

ii. Economic

Information Type: Quantitative, Qualitative
Data Source: Published Data, Staff Analysis

Components:
External Financial Position:
- Balance of Payments
- International reserves
- External debt
- GDP
- Exports

Economic structure and growth
- Economic development
- Natural resources
- Rate and composition of growth

Economic Management
- Budgetary performance
- Social security system
- Local government
- Fiscal flexibility
- Tax structure
- Current and capital accounts
- Wage behavior incentives

Exchange rate policy
Long-term economic efficiency
Economic Prospects

iii. *Summary Format*

Risk Index (No Briefing mentioned)

iv. *Risk Index*

Type: Ordinal

Components:
Composite of above factors.

PROVIDER: POLITICAL RISK SERVICES: ICRG

a. Products

Country Risk Ratings

b. Risk measurement components

I. Political

Information Type: Qualitative
Data Source: Staff Analysis
Components:

- Economic Expectations
- Economic Planning Failures
- Political Leadership
- External Conflict
- Corruption
- Military in Politics
- Organized Religion in Politics
- Law and Order Tradition
- Racial and Nationality Tensions
- Political Terrorism
- Civil War
- Political Party Development
- Quality of the Bureaucracy

ii. Financial

Information Type: Quantitative, Qualitative
Data Source: Published Data, Staff Analysis
Components:

- Loan Default/Unfavorable Restructuring
- Delayed Payment of Suppliers Credits
- Repudiation of Contracts by Governments
- Losses from Exchange Controls
- Expropriation of Private Investments

iii. Economic

Information Typel: Quantitative
Data Source: Published Data

Components:

- Inflation
- Debt Service
- International Liquidity Ratios
- Foreign Trade Collection Experience
- Current Account Balance
- Parallel Foreign Exchange indicators

iv. Summary Format

Briefing Risk Index

v. Risk Index

Type: Ordinal Scalar

Components:
Weighted Average of above components

PROVIDER: POLITICAL RISK SERVICES-COPLIN-O'LEARY RATING SYSTEM

a. **Products**

Country Risk Ratings: International Business Climate Index (IBC)
Various other indices are calculated from sub-components of the IBC index:
Financial Transfer Risk
Direct Investment Risk
Export Market Risk

b. **Risk measurement components**

I. *Export Market*
Information Type: Quantitative Qualitative
Data Source: Staff Analysis Expert Panel

ii. *Financial Transfer*
Information Type: Quantitative Qualitative
Data Source: Staff Analysis Expert Panel

iii. *Direct Investment*
Information Type: Quantitative Qualitative
Data Source: Staff Analysis Expert Panel

iv. *Components*: (The three above indices use an overlapping mixture of the following)
Turmoil
Restrictions on Equity
Restrictions on local operations
Taxation Discrimination
Repatriation Restrictions
Exchange Controls
Tariff Barriers
Nontarrif Barriers
Payment Delays
Expansionary Economic Policies
Labor Costs
Foreign Debt
Investment Restrictions
Restrictions on Foreign Trade
Domestic economic Problems
International Economic Problems

v. *Summary Format:* Briefing Risk Index

vi. *Risk Index:* Ordinal Scalar

PROVIDER: MOODY'S INVESTOR SERVICES

a. Products

Sovereign Foreign-Currency Debt Ratings
Credit Opinions for Governmental Bodies

b. Risk measurement components

I. Political Dynamics and Social Interaction
Information Type: Qualitative
Data Source: Staff Analysis
Components:
- Potential for radical shift in leadership
- Legal framework
- Effective political structure
- Income distribution
- Religious, ethnic and linguistic differences
- Single issue political movements
- Social welfare policies
- Organized protest/armed resistance
- Political intrusiveness on cultivation of wealth
- Depth and experience of government bureaucrats
- Political intrusiveness on economic management
- Political links with foreign partners
- Past behavior under stress
- Regime legitimacy

ii. Financial
Information Type: Quantitative
Components: Published Sources
- Illiquidity
- Debt burden
- Balance of payments
- Subnational governments

iii. Economic
Information Type: Quantitative Qualitative
Components: Published Sources, Staff Analysis
- Policy environment
- Infrastructure
- Structure of production
- Independent monetary authority
- Labor market mobility
- Interest rates
- Foreign exchange
- Quality of economic management
- Dependency on export/import sectors
- International capital flows
- Ability to implement austerity programs

iv. Summary Format

Credit Opinion Summaries Debt Ratings

v. Risk Index

Type: Ordinal

Table 1
Developing Countries: World Economic Activity

Region	Real GDP: Average Annual Growth 1978-1985A	1986-1993A	1994-1997E	1998-2001E	Percent of: Total GDP World	Total GDP Developing	Total Exports World	Total Exports Developing	Total Debt Developing
Industrial	2.6%	2.5%	2.4%	2.7%	58.8%	-	73.0%	-	-
Developing	4.3%	5.3%	6.2%	6.5%	41.2%	100.0%	27.0%	100.0%	100.0%
Africa	**2.2%**	**2.0%**	**3.9%**	**4.5%**	**3.2%**	**7.8%**	**1.7%**	**6.3%**	**15.1%**
Sub-Saharan Africa					1.4%	3.4%	0.6%	2.2%	8.6%
Asia	6.5%	7.6%	8.3%	7.7%	24.4%	59.2%	17.7%	65.6%	35.5%
Middle East and Europe	2.2%	3.5%	2.6%	4.4%	4.8%	11.7%	3.6%	13.3%	16.1%
Western Hemisphere	3.0%	2.5%	3.4%	4.9%	8.8%	21.4%	3.9%	14.4%	33.2%

Source: *World Economic Outlook*, International Monetary Fund, May 1996.
Projections are Medium-Term Baseline Scenario
GDP based on purchasing power parity (PPP) valuation of country GDPs.

Table 2
Summary Statistics: International Finance Corporation Global Indices

Country	Price Earnings Ratio	Price Book Ratio	Dividend Yield	Number of Companies	Market Capitalization US$ (Millions)	Mkt Cap % of Composite	Daily Value Traded US$ (Millions)	Percent of IFCG Composite
Composite	20.1	1.9	2.0	1683	1,202,760		68,099	
Asia	22.2	2.6	1.4	936	758,603	63.1%	43,220	63.5%
Latin America	19.1	1.0	2.7	330	272,319	22.6%	10,823	15.9%
Europe/Mid East	13.1	2.3	3.4	296	68,340	5.7%	1,797	2.6%
Africa	18.8	2.7	2.4	121	103,498	8.6%	1,218	1.8%
Asia								
China	26.7	3.0	1.5	172	46,186	3.8%	11,041	16.2%
India	16.1	2.7	1.6	131	79,987	6.7%	2,952	4.3%
Indonesia	22.5	3.1	1.2	45	55,767	4.6%	1,204	1.8%
Korea	15.0	1.1	1.9	151	110,558	9.2%	4,722	6.9%
Malaysia	27.1	3.8	1.2	123	165,530	13.8%	3,112	4.6%
Pakistan	17.6	1.9	2.0	68	7,153	0.6%	653	1.0%
Philippines	32.0	3.7	0.6	46	46,420	3.9%	1,067	1.6%
Sri Lanka	7.2	1.2	3.4	44	1,071	0.1%	6	0.0%
Taiwan	26.9	3.5	1.0	83	154,781	12.9%	28,182	41.4%
Thailand	20.5	2.9	2.2	73	91,149	7.6%	1,321	1.9%
Latin America								
Argentina	19.7	1.5	2.6	35	25,647	2.1%	266	0.4%
Brazil	55.9	0.6	3.2	86	113,553	9.4%	7,082	10.4%
Chile	16.3	2.1	3.8	47	43,085	3.6%	560	0.8%
Colombia	9.9	0.9	3.0	28	6,875	0.6%	N/A	N/A
Mexico	10.5	1.7	1.2	81	70,922	5.9%	2,656	3.9%
Peru	15.1	3.0	1.4	37	8,423	0.7%	218	0.3%
Venezuela	20.6	2.3	2.7	16	3,814	0.3%	41	0.1%
Europe/Middle East								
Czech Republic	14.4	1.1	1.4	69	13,541	1.1%	43	0.1%
Greece	9.4	1.8	5.1	53	10,416	0.9%	238	0.3%
Hungary	27.3	1.5	1.1	16	3,592	0.3%	69	0.1%
Jordan	13.4	1.5	3.5	51	3,029	0.3%	14	0.0%
Poland	11.4	2.4	1.0	23	4,935	0.4%	N/A	N/A
Portugal	15.9	1.6	2.9	30	13,045	1.1%	361	0.5%
Turkey	10.0	4.1	5.4	54	19,783	1.6%	1,072	1.6%
Africa								
Nigeria	10.6	2.6	4.8	35	2,090	0.2%	4	0.0%
South Africa	19.1	2.7	2.3	63	99,577	8.3%	1,201	1.8%
Zimbabwe	9.4	1.6	4.6	23	1,831	0.2%	14	0.0%

Date: June 30, 1996

Table 3
Critical Factors in Institutional Investor's Country Credit Ratings

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

Table 4
Critical Factors in ICRG Rating System

	Points	% of Individual Index	% of Composite
Political			
Economic expectations versus reality	12	12%	6%
Economic planning failures	12	12%	6%
Political leadership	12	12%	6%
External conflict	10	10%	5%
Corruption in government	6	6%	3%
Military in politics	6	6%	3%
Organized religion in politics	6	6%	3%
Law and order tradition	6	6%	3%
Racial and nationality tensions	6	6%	3%
Political terrorism	6	6%	3%
Civil war	6	6%	3%
Political party development	6	6%	3%
Quality of bureaucracy	6	6%	3%
Total Political Points	100	100%	50%
Financial			
Loan default or unfavorable loan restructuring	10	20%	5%
Delayed payment of suppliers' credits	10	20%	5%
Repudiation of contracts by government	10	20%	5%
Losses from exchange controls	10	20%	5%
Expropriation of private investments	10	20%	5%
Total Financial Points	50	50%	25%
Economic			
Inflation	10	20%	5%
Debt service as a % of exports of goods and service	10	20%	5%
International liquidity ratios	5	10%	3%
Foreign trade collection experience	5	10%	3%
Current account balance as % of goods and service	15	30%	8%
Parallel foreign exchange rate market indicators	5	10%	3%
Total Economic Points	50	50%	25%
Overall Points	200		100%

Table 5

Specific Factors Included in Country Ratings

	Index Provider (See Endnotes)									
Index Subcomponents	BoA	BERI	CRIS	EIU	EUROMY	INSTINV	MOODY	PRSICRG	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										
Expert Panel		X							X	
Survey					X	X				
Staff Analysis			X	X			X	X		X
Published Data	X	X		X	X		X	X	X	X

Table 6

Primary Components of Country Ratings

	Index Provider (See Endnotes)								
Factors	BoA	BERI	CRIS	EIU	INSTINV	MOODY	PRSICRG	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 7
Comparison of Sovereign Country Ratings and Other Risk Attributes - December 1995

Country	S&P	Moody's	CCR	ICRGC	ICRGP	ICRGF	ICRGE
Argentina	BB-	B1	38.8	70	74	34	31.5
Australia	AA	Aa2	71.2	82.5	83	44	37.5
Austria	AAA	Aaa	86.2	84	81	47	39.5
Belgium	AA+	Aa1	79.2	83	79	46	41
Brazil	B+	B1	34.9	62.5	64	33	28
Canada	AA+	Aa2	80.3	83	81	46	39
Chile	A-	Baa1	57.4	79.5	74	43	42
Colombia	BBB-	Baa3	46.5	68	60	40	35.5
Czech Republic	A	Baa1	58.4	82	80	42	41.5
Denmark	AA+	Aa1	79.9	87.5	84	48	42.5
Finland	AA-	Aa2	71.4	84.5	87	43	39
France	AAA	Aaa	89.1	82	80	44	40
Germany	AAA	Aaa	90.9	53	53	24	28.5
Greece	BBB-	Baa3	50	75	75	38	36.5
Hong Kong	A	A3	67	81	72	46	43.5
Hungary	BB+	Ba1	45	72.5	78	39	28
India	BB+	Baa3	46.1	69	63	37	37.5
Indonesia	BBB	Baa3	52.4	69.5	63	39	37
Ireland	AA	Aa2	73.4	84	85	44	38.5
Israel	A-	A3	49.2	72.5	66	42	37
Italy	AA	A1	72.3	77	75	41	38
Japan	AAA	Aaa	91.6	86	80	48	44
Malaysia	A+	A1	69.1	80.5	76	43	42
Mexico	BB	Ba2	41.8	66	65	37	30
Netherlands	AAA	Aaa	89.3	86	84	47	40.5
New Zealand	AAaAa2		69.4	83.5	84	46	36.5
Nigeria	NR	NR	15.8	52.5	52	26	26.5
Norway	AAA	Aa1	81.6	87	83	46	44.5
Pakistan	B+	B1	30.7	59.5	54	33	31.5
Peru	NR	NA	25.8	60	56	31	33
Philippines	BB	Ba2	36.8	67.5	62	37	35.5
Poland	BB	Baa3	37.6	78	79	40	37
Portugal	AA-	A1	68.4	80	75	43	41.5
Singapore	AAA	Aa2	84	86	80	48	44
South Africa	BB+	Baa3	45.2	76.5	75	41	36.5
South Korea	AA-	A1	72.2	76.5	75	41	36.5
Spain	AA	Aa2	73.7	74	69	41	38
Sweden	AA+	Aa3	74.1	82	81	43	39.5
Switzerland	AAA	Aaa	92.2	89	85	50	43
Taiwan	AA+	Aa3	79.9	84.5	77	48	44
Thailand	A	A2	63.8	77	69	43	41.5
Turkey	B+	Ba3	40.9	62.5	59	36	30
UK	AAA	Aaa	87.8	74.5	68	41	39.5
USA	AAA	Aaa	90.7	83	80	48	38
Venezuela	B+	Ba2	31.4	66.5	65	34	34
Zimbabwe	NR	NR	31	64.5	66	31	31.5

			II CCR	ICRGC	ICRGP	ICRGF	ICRGE
S&P Rank Correlation	-	-	95.2	87.6	77	90.2	72.4
Moody's Rank Correlatio	-	-	95.1	87.5	79.5	89.8	67.6

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 8
Summary Statistics: Africa

	Population	Real GDP:			Inflation:			*Risk Ratings*							
	in Millions	Average Annual Change			Average Annual Change										
Country	1995	1978-87	1988-94	1995	1978-87	1988-94	1995	ICRGC	ICRGP	ICRGF	ICRGE	EMCRR	IICCR	S&P	Moody's
Algeria	28.6	1.7%	0.0%	3.9%	10.3%	24.8%	16.3%	56	50	38	25	37	22		
Angola			-4.4%	9.2%		366.8%	43.0%	52	50	23	32	20	13		
Botswana	1.5	11.0%	6.2%	4.4%	11.5%	12.0%	9.1%	77	72	40	42	58	50		
Burkina Faso	10.2	3.6%	2.7%	4.5%	5.2%	39.5%	7.8%	58	54	28	35	41	16		
Cameroon	13.3	7.4%	-5.4%	3.1%	9.8%	2.2%	26.9%	57	51	29	34	34	19		
Congo	2.5	7.7%	0.3%	0.9%	8.2%	10.2%	8.9%	57	57	29	27	23	14		
Cote d'Ivoire	14.2	2.4%	0.1%	6.5%	9.1%	5.9%	14.2%	60	59	29	32	41	17		
Egypt	59.2	5.9%	2.1%	3.2%	16.0%	16.6%	9.4%	69	59	40	39	49	34		
Ethiopia	56.9	2.5%	-2.0%	5.5%	6.7%	10.1%	11.4%	61	59	26	37	31	15		
Gabon	1.3	-3.9%	3.5%	2.8%	8.5%	4.6%	10.9%	66	59	35	38	39	25		
Gambia	1.1	2.5%	3.1%	-4.0%	16.0%	9.2%	5.0%	59	56	24	38	34			
Ghana	16.9	1.4%	4.6%	4.5%	51.5%	24.5%	58.1%	66	65	33	34	50	29		
Kenya	30.5	4.7%	2.9%	5.0%	11.4%	22.2%	1.7%	67	67	34	33	44	27		
Libya	4.9	-2.8%	-0.1%	1.2%	10.8%	12.8%	30.0%	67	59	34	42	23	7		
Malawi	9.8	2.6%	1.5%	9.9%	14.2%	19.7%	56.5%	61	64	28	29	39	20		
Mali	10.5	1.6%	2.8%	6.0%	7.4%	4.2%	12.4%	56	58	19	36	34	17		
Mauritius	1.1	4.1%	5.9%	4.1%	11.3%	8.9%	6.1%					55	50		Baa2
Morocco	27.1	3.3%	4.3%	-6.0%	8.8%	5.2%	6.6%	68	65	38	33	54	39		
Mozambique	17.4	-0.9%	6.3%	4.3%	26.5%	46.9%	44.3%	50	56	25	19	25	13		
Namibia	1.5		2.9%	1.7%		12.7%	9.3%	76	80	31	41	28			
Niger	8.9	1.4%	1.1%	3.0%	5.7%	4.2%	10.5%	49	47	26	24	33			
Nigeria	108.5	-0.6%	5.2%	2.9%	15.4%	37.7%	73.5%	53	54	23	29	32	15		
Senegal	8.1	2.3%	1.5%	4.5%	8.2%	4.1%	8.0%	61	59	29	33	39	22		
Sierra Leone	4.4		-1.4%	-10.0%	50.5%	58.7%	29.1%	43	39	16	31		8		
Somalia	9.1	1.9%	-1.2%	5.4%	37.5%	72.4%	16.3%	29	28	10	20	18			
South Africa	41.2	2.2%	1.0%	3.4%	14.5%	12.8%	8.9%	76	74	40	38	65	46	BB+	Baa3
Sudan	29.0	0.9%	4.1%	4.2%	28.3%	89.7%	85.0%	32	29	14	21	24	7		
Tanzania	30.3	2.0%	4.1%	4.5%	26.6%	25.2%	22.0%	64	64	33	31	32	18		
Togo	3.9	1.3%	0.1%	8.3%	5.8%	6.1%	14.7%	55	51	28	30	30	17		
Tunisia	8.8	4.6%	3.9%	3.5%	8.5%	6.2%	6.2%	70	70	36	31	65	45		Baa3
Uganda	20.6	1.9%	6.3%	6.5%	97.9%	25.2%	6.5%	55	52	25	32	42	15		
Zaire	42.6	1.3%	-6.9%	-0.7%	54.3%	13148.5%	533.3%	40	34	14	31	18	7		
Zambia	9.4	1.1%	0.2%		24.7%	114.2%	30.0%	62	65	29	31	35	16		
Zimbabwe	11.5	3.0%	2.7%	-1.1%	12.7%	21.4%	23.0%	61	62	28	32	50	32		
Average	*19.5*	*2.5%*	*1.7%*	*3.2%*	*19.8%*	*420.2%*	*36.9%*	*58*	*57*	*28*	*32*	*38*	*22*		
Median	*10.5*	*2.2%*	*2.4%*	*4.1%*	*11.5%*	*14.7%*	*13.3%*	*60*	*59*	*29*	*32*	*35*	*17*		

Rank Correlations		**Real GDP:**			**Inflation:**								
	Population	**1978-87**	**1988-94**	**1995**	**1978-87**	**1988-94**	**1995**	**ICRGC**	**ICRGP**	**ICRGF**	**ICRGE**	**EMCRR**	**IICCR**
Population	1.00	-0.10	-0.04	0.17	0.28	0.39	0.31	-0.08	-0.05	-0.02	-0.15	0.01	-0.13
GDP (78-87)		1.00	0.00	0.00	-0.24	-0.31	-0.60	0.42	0.33	0.39	0.29	0.52	0.54
GDP (88-94)			1.00	0.00	0.20	-0.06	-0.29	0.29	0.37	0.18	0.08	0.44	0.37
GDP (95)				1.00	-0.11	0.07	0.04	-0.11	0.00	-0.11	-0.13	0.01	-0.01
Inflation (78-87)					1.00	0.72	0.42	-0.19	-0.13	-0.27	-0.17	-0.10	-0.22
Inflation (88-94)						1.00	0.52	-0.36	-0.30	-0.38	-0.38	-0.35	-0.51
Inflation (95)							1.00	-0.45	-0.36	-0.40	-0.41	-0.53	-0.56
ICRGC								1.00	0.94	0.85	0.72	0.65	0.78
ICRGP									1.00	0.74	0.57	0.63	0.72
ICRGF										1.00	0.48	0.65	0.77
ICRGE											1.00	0.39	0.42
EMCRR												1.00	0.89
IICCR													1.00

Sources: *World Economic Outlook*, International Monetary Fund, May 1996
International Financial Statistics, International Monetary Fund, June 1996

ICRGC International Country Risk Guide Composite Rating (5/96)
ICRGP International Country Risk Guide Political Rating (5/96)
ICRGF International Country Risk Guide Financial Rating (5/96)
ICRGE International Country Risk Guide Economic Rating (5/96)
EMCRR Euromoney Country Risk Ratings (3/96)
IICCR Institutional Investor Country Credit Risk Ratings (3/96)
S&P Standard & Poors Long Term Sovereign Foreign Currency Rating
Moody's Moody's Long Term Sovereign Foreign Currency Rating

Table 9
Summary Statistics: IFC Countries

	Population	Real GDP:			Inflation:			*Risk Ratings*							
	in Millions	Average Annual Change			Average Annual Change										
Country	1995	1978-87	1988-94	1995	1978-87	1988-94	1995	ICRGC	ICRGP	ICRGF	ICRGE	EMCRR	IICCR	S&P	Moody's
IFC New															
Egypt	59.2	5.9%	2.1%	3.2%	16.0%	16.6%	9.4%	69	59	40	39	49	34		
Morrocco	27.1	3.3%	4.3%	-6.0%	8.8%	5.2%	6.6%	68	65	38	33	54	39		
Russia	147.9		-14.8%	-4.0%		659.4%	190.2%	66	73	36	23	41	20		
IFC Frontier															
Bangladesh	117.8	4.1%	4.5%	4.7%	12.5%	6.2%	8.9%	59	51	29	38	49	27		
Botswana	1.5	11.0%	6.2%	4.4%	11.5%	12.0%	9.1%	77	72	40	42	58	50		
Bulgaria		4.7%	-3.9%	2.5%	1.7%	88.2%	62.1%	72	75	36	34	41	23		
Cote d'Ivoire	14.2	2.4%	0.1%	6.5%	9.1%	5.9%	14.2%	60	59	29	32	41	17		
Ecuador	11.5	2.4%	4.0%	2.5%	22.1%	51.1%	23.0%	61	56	31	35	44	26		
Ghana	16.9	1.4%	4.6%	4.5%	51.5%	24.5%	58.1%	66	65	33	34	50	29		
Jamaica	2.5	2.4%	1.3%	0.5%	20.7%	32.8%	19.9%	77	73	41	39	45	28		
Kenya	30.5	4.7%	2.9%	5.0%	11.4%	22.2%	1.7%	67	67	34	33	44	27		
Lithuania	3.7		-23.1%	5.3%		431.9%	36.5%					45	24		
Mauritius	1.1	4.1%	5.9%	4.1%	11.3%	8.9%	6.1%	83	84	44	39	55	50	BB+	Baa3
Slovakia	5.3		0.6%	7.4%		18.2%	9.9%	73	75	38	33	65	39	A	A3
Slovenia	2.0		3.3%	4.8%		26.1%	12.1%					66	46	BB+	Ba1
Trinidad	1.3	-2.1%	0.1%	3.5%	12.7%	8.2%	5.3%	69	63	37	37	39	17		Baa3
Tunisia	8.8	4.6%	3.9%	3.5%	8.5%	6.2%	6.2%	70	70	36	31	65	45		
IFC New															
Average	78.1	4.6%	-2.8%	-2.3%	12.4%	227.1%	68.7%	68	66	38	31	48	31		
Median	59.2	4.6%	2.1%	-4.0%	12.4%	16.6%	9.4%	68	65	38	33	49	34		
IFC Frontier															
Average	16.7	3.6%	0.7%	4.2%	15.7%	53.0%	19.5%	69	68	36	35	51	32		
Median	5.3	4.1%	3.1%	4.5%	11.5%	20.2%	11.0%	69	69	36	35	47	27		

Rank Correlations		**Real GDP:**			**Inflation:**								
	Population	**1978-87**	**1988-94**	**1995**	**1978-87**	**1988-94**	**1995**	**ICRGC**	**ICRGP**	**ICRGF**	**ICRGE**	**EMCRR**	**IICCR**
Population	1.00	0.18	-0.11	-0.18	0.04	0.04	0.23	-0.71	-0.43	-0.52	-0.47	-0.29	-0.33
GDP (78-87)		1.00	0.14	0.05	-0.42	0.08	-0.16	0.37	0.28	0.30	0.17	0.34	0.44
GDP (88-94)			1.00	-0.03	0.20	-0.45	-0.41	0.11	-0.17	0.07	0.47	0.60	0.72
GDP (95)				1.00	-0.02	-0.12	-0.15	-0.13	-0.09	-0.35	-0.08	0.25	0.03
Inflation (78-87)					1.00	0.41	0.26	-0.21	-0.41	-0.09	0.53	-0.11	-0.11
Inflation (88-94)						1.00	0.72	0.07	0.35	0.00	-0.01	-0.29	-0.28
Inflation (95)							1.00	-0.19	0.15	-0.22	-0.21	-0.26	-0.37
ICRGC								1.00	0.77	0.89	0.44	0.44	0.61
ICRGP									1.00	0.62	-0.04	0.21	0.35
ICRGF										1.00	0.49	0.38	0.59
ICRGE											1.00	0.19	0.37
EMCRR												1.00	0.91
IICCR													1.00

Sources: *World Economic Outlook*, International Monetary Fund, May 1996
International Financial Statistics, International Monetary Fund, June 1996
ICRGC International Country Risk Guide Composite Rating (5/96)
ICRGP International Country Risk Guide Political Rating (5/96)
ICRGF International Country Risk Guide Financial Rating (5/96)
ICRGE International Country Risk Guide Economic Rating (5/96)
EMCRR Euromoney Country Risk Ratings (3/96)
IICCR Institutional Investor Country Credit Risk Ratings (3/96)
S&P Standard & Poors Long Term Sovereign Foreign Currency Rating
Moody's Moody's Long Term Sovereign Foreign Currency Rating

Table 10

Estimating Expected Returns, Volatilities, and Correlations

Regression	Attribute	Intercept	Log ICRGC	Change ICRGC	Obs	Adjusted R-Square
A. Return	ICRGC	0.87	-0.17	1.95	431	6.6%
		1.68	*-2.43*	*2.50*		
B. Volatility	ICRGC	1.91	-0.38	-0.05	431	16.4%
		5.55	*-4.87*	*-0.22*		
C. Correlation	ICRGC	-3.21	0.79	0.06	431	21.5%
		-9.00	*9.75*	*0.17*		

Annual Observations: April 1984-March 1996
Sample: 49 Countries (MSCI, IFC)
Sample excludes first three years of emerging market returns
Returns are Unhedged US$ returns in excess of 1 Year US Govt Bond (Ibbotson)
Correlations are with the MSCI AC World (World before 1988)
All t-stats (italics) use a heteroskedasticity consistent (White) covariance matrix.
Correlation dependent variable = Correlation/(1+Correlation)
ICRGC International Country Risk Guide Composite Rating
Change Attribute measures change in rating over period.

Table 11
Expected Returns, Volatility, Correlations for African Countries

Country	Expected Excess Return	Expected Annual Volatility	Expected Correlation with World	IFC Status
Algeria	18.7%	36.6%	0.00	
Angola	20.0%	39.4%	-0.05	
Botswana	13.3%	24.4%	0.32	Frontier
Burkina Faso	18.1%	35.2%	0.03	
Cameroon	18.4%	35.9%	0.02	
Congo	18.6%	36.3%	0.01	
Cote d'Ivoire	17.6%	33.9%	0.06	Frontier
Egypt	15.2%	28.6%	0.19	New
Ethiopia	17.3%	33.3%	0.07	
Gabon	15.9%	30.3%	0.15	
Gambia	17.8%	34.6%	0.05	
Ghana	15.9%	30.3%	0.15	Frontier
Kenya	15.7%	29.7%	0.16	Frontier
Libya	15.7%	29.7%	0.16	
Malawi	17.4%	33.6%	0.07	
Mali	18.7%	36.6%	0.00	
Mauritius	18.5%	30.1%	0.16	Frontier
Morocco	15.4%	29.1%	0.17	New
Mozambique	20.6%	40.9%	-0.07	
Namibia	13.6%	24.9%	0.30	
Niger	21.1%	42.1%	-0.09	
Nigeria	19.7%	38.7%	-0.03	Existing
Senegal	17.4%	33.6%	0.07	
Sierra Leone	23.2%	46.7%	-0.16	
Somalia	29.8%	61.9%	-0.33	
South Africa	13.6%	24.9%	0.30	Existing
Sudan	28.2%	58.1%	-0.29	
Tanzania	16.5%	31.5%	0.12	
Togo	19.2%	37.6%	-0.02	
Tunisia	15.0%	28.0%	0.21	Frontier
Uganda	19.2%	37.6%	-0.02	
Zaire	24.6%	50.0%	-0.20	
Zambia	17.0%	32.7%	0.09	
Zimbabwe	17.3%	33.3%	0.07	Existing
Equal Weighted Average				*Count*
Africa	18.4%	35.6%	0.05	34
IFC Existing	14.5%	27.1%	0.25	28
IFC New	15.5%	29.3%	0.17	3
IFC Frontier	16.9%	29.9%	0.17	14
US	12.7%	22.9%	0.70	1
Argentina	14.0%	25.9%	0.21	1
Iraq	25.0%	51.0%	-0.22	1
MSCI Developed	12.0%	21.4%	0.43	21

World - MSCI All Country World Index
Returns are in US$ in excess of one year government bond return.
Source: Erb, Harvey & Viskanta