Country Risk and Global Equity Selection

Country credit ratings have substantial predictive power.

Claude B. Erb, Campbell R. Harvey, and Tadas E. Viskanta

One of the most difficult tasks in tactical global asset allocation is to assess, in a meaningful way, the risk exposure of a national market. Traditional factor models, while reasonably successful in characterizing the expected return/risk trade-off in developed markets, fail when applied to the new emerging equity markets. Harvey [1994a, 1994b] finds that only one of twenty emerging markets has a beta greater than one when measured against a world equity market return, yet intuition tells us emerging markets have large risk exposure.

A related challenge is the cross-sectional selection of national equity markets. There are many approaches to estimating the relative attractiveness of each equity market. A number of risk and expected return proxies, such as dividend yield, size, and price-to-book ratios, have been studied in the U.S. and Japan (see Fama and French [1992] and Chan, Hamao, and Lakonishok [1991]).

This research has spread to national equity selection. Keppler [1991] and Keppler and Traub [1993] investigate the role of dividend yields and size across national equity markets. Ferson and Harvey [1994a, 1994b] examine price-to-book, price-to-cash flow, price-to-earnings, national volatility, momentum/reversal indicators, long-term interest rates, term structure spreads, relative inflation growth, and relative GDP, but much of these applications are to developed markets.

There are limitations to these indicators. In terms of asset pricing theory, the cross-section of

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expected returns is determined by the cross-section of risk exposures. No one suggests, for instance, that the dividend yield is a stand-alone measure of risk exposure. Indeed, dividend yields can vary across different countries for various institutional reasons. The dividend yield may be best thought of as an input in some unknown risk function (see Ferson and Harvey [1994a]). Unfortunately, the risk function is not observed, and asset managers often rely directly on the levels of these attributes for their allocation decisions.*

We analyze an alternative measure of risk, which is simple, publicly available, and forward-looking: country credit ratings. We show that this risk measure is meaningfully correlated with future equity returns and with market volatility. Our portfolio simulations, based on lagged credit risk ratings, show how this measure can be directly used to enhance global asset allocation performance.

How do credit risk ratings translate into perceived risk? Most globally oriented banks have credit analysis staffs whose charter is to estimate the probability of default on their bank's loans. One dimension of this analysis is the estimation of sovereign credit risk. The higher the perceived credit risk of a borrower's home country, the higher the rate of interest that the borrower will have to pay. There are many factors that are considered simultaneously: political and other expropriation risks, inflation and exchange rate volatility/controls, the industrial portfolio and its economic viability, and sensitivity to global economic shocks, to name some of the most important.

Our survey-based credit risk rating may proxy for all of these risks. Through time, the weights on each of these inputs vary. Most important of all, however, banks are concerned with future risk. In contrast to traditional risk measurement methodologies that look back in history, the credit risk rating is forward-looking.

COUNTRY CREDIT INVESTING: DATA AND METHODOLOGY

Our country credit ratings source is *Institutional Investor*'s semiannual survey of bankers. *Institutional Investor* has published this survey in its March and September issues every year since 1979. The survey represents the responses of seventy-five to one hundred bankers. Respondents rate each country on a scale of 0 to 100, with 100 representing the smallest risk of default. *Institutional Investor* weights these responses by its perception of each bank's level of global prominence and credit analysis sophistication (see Shapiro [1994]). The far right column of Exhibit 1 lists each country's average country credit rating.

We investigate the performance of forty national equity market indexes. Morgan Stanley Capital International (MSCI) publishes twenty-one of the indexes, and the International Finance Corporation (IFC) of the World Bank publishes the other nineteen. We view the MSCI national equity indexes as developed market returns and the IFC indexes as emerging market returns.

We examine a number of hypothetical investment strategies over a period beginning in March 1980 and ending in December 1993. Twenty-eight of the country indexes existed at the beginning of this analysis. We added country indexes to the analysis during the month that they were first introduced by either MSCI or the IFC. Countries and the inclusion date for each country index appear in Exhibit 1.

We construct country credit rating quartile portfolios: 1 = highest country credit ratings (lowest credit risk); 2 = second-highest country credit ratings; 3 = second-lowest country credit ratings; and 4 = lowest country credit ratings (highest credit risk or HCR). The portfolios are constructed with equal initial investments and rebalanced monthly

To be conservative, we use a six-month lag on the country credit ratings to allow for full information availability. Obviously, the composition of a portfolio may change if a change in a country's credit rating moves it into a different quartile, or if the addition of a new country in the study universe moves a country into a new quartile. All returns are calculated in U.S. dollars with gross dividends reinvested. Since we have built these portfolios based on lagged country credit risk ratings, the returns on these quartiles can be viewed as the out-of-sample performance of a portfolio selection strategy based on credit risk.

CREDIT RISK, EXPECTED RETURNS, AND VOLATILITY

The six scatter diagrams in Exhibits 2A through 2F depict the relationships among country credit ratings, expected returns, and volatility. Most of the analysis is conducted in U.S. dollar terms. This measurement is designed to represent the returns to an investable strategy. Alternatively, an investor may want to overlay a cur-

EXHIBIT 1
Risk and Return Characteristics in U.S. Dollars
Country Inclusion Date to December 1993

Country	Data Source	Inclusion Date	Compound Annual Rate of Return (%)	Annualized Average Return (%)	Annualized Risk (%)	Average Dividend Yield (%)	Average Credit Rating
Argentina	IFC	Mar. 80	7.9	43.9	87.0	1.2	31.8
Australia	MSCI	Mar. 80	10.8	14.3	26.9	4.4	78.2
Austria	MSCI	Mar. 80	12.4	15.1	26.3	2.5	83.8
Belgium	MSCI	Mar. 80	17.6	18.6	22.0	8.4	78.4
Brazil	IFC	Mar. 80	14.6	34.2	64.8	6.2	36.2
Canada	MSCI	Mar. 80	6.5	8.2	19.2	3.5	87.1
Chile	IFC	Mar. 80	17.5	21.2	31.6	5.4	38.6
Colombia	IFC	Jan. 85	45.5	42.5	31.5	5.9	44.4
Denmark	MSCI	Mar. 80	16.8	17.7	20.6	2.7	72.6
Finland	MSCI	Jan. 88	–0.9	2.4	26.1	2.3	76.0
France	MSCI	Mar. 80	14.0	16.1	23.8	4.4	85.3
Germany	MSCI	Mar. 80	13.4	15.3	23.0	4.1	93.4
Greece	IFC	Mar. 80	2.1	9.2	39.6	6.8	51.9
Hong Kong	MSCI	Mar. 80	22.3	26.5	34.3	4.4	69.6
India	IFC	Mar. 80	16.0	19.3	30.0	2.6	46.6
Ireland	MSCI	Jan. 88	10.8	12.9	23.4	2.5	66.4
Italy	MSCI	Mar. 80	13.6	16.6	28.0	2.6	75.5
Japan	MSCI	Mar. 80	17.0	19.0	25.7	1.1	94.5
Jordan	IFC	Mar. 80	7.4	8.7	17.6	3.8	33.6
Korea	IFC	Mar. 80	16.3	19.6	30.7	3.7	62.2
Malaysia	IFC	Jan. 85	18.5	20.7	26.7	2.1	64.4
Mexico	IFC	Mar. 80	19.7	30.1	46.3	4.8	43.3
Netherlands	MSCI	Mar. 80	19.1	19.3	18.5	5.3	87.6
New Zealand	MSCI	Jan. 88	4.5	7.6	26.3	5.7	68.9
Nigeria	IFC	Jan. 85	–6.1	3.3	41.4	7.7	30.6
Norway	MSCI	Mar. 80	9.2	12.9	28.3	3.1	83.0
Pakistan	IFC	Jan. 85	24.3	24.7	24.4	5.5	26.4
Philippines	IFC	Jan. 85	53.9	50.8	38.4	2.0	29.6
Portugal	IFC	Feb. 86	27.7	34.6	47.5	2.3	56.7
Singapore	MSCI	Mar. 80	13.5	16.4	26.4	1.9	77.6

rency hedging strategy. Obviously, local returns without a currency hedging strategy are not attainable.

While it would be desirable to present U.S. dollar returns alongside currency-hedged returns, unfortunately fewer than half of the countries in our sample have liquid forward markets with which to hedge exposure. Nevertheless, in Exhibit 2, we examine both local currency and U.S. dollar returns. The relation between credit rating and foreign currency changes is also explored.

Exhibit 2A shows the relation between local currency returns and country rating from March 1980 to December 1993. This start date eliminates some of the emerging markets presented in Exhibit 1, but the emerging markets with shorter histories are used in the portfolio analysis.

We see in Exhibit 2A a distinct negative relation (lower ratings imply higher average returns). Indeed, 30% of the cross-sectional variation in the average returns is accounted for by country ratings. This result is not driven just by the two influential observations, Argentina and Brazil. When these observations are dropped from the cross-sectional analysis, over 40% of

EXHIBIT 1
Continued

Country	Data Source	Inclusion Date	Compound Annual Rate of Return (%)	Annualized Average Return (%)	Annualized Risk (%)	Average Dividend Yield (%)	Average Credit Rating
Spain	MSCI	Mar. 80	15.4	17.4	24.8	7.5	70.8
Sweden	MSCI	Mar. 80	21.1	22.3	24.5	3.1	79.5
Switzerland	MSCI	Mar. 80	14.5	15.5	19.6	2.5	94.7
Taiwan	IFC	Jan. 85	28.5	39.1	53.7	1.0	72.9
Thailand	IFC	Mar. 80	26.4	27.3	27.0	6.5	55.8
Turkey	IFC	Jan. 87	33.6	53.2	74.1	5.1	32.6
United Kingdom	MSCI	Mar. 80	15.8	17.1	21.8	5.0	87.6
United States	MSCI	Mar. 80	15.1	15.4	15.4	4.1	93.4
Venezuela	IFC	Jan. 85	19.2	28.4	46.0	1.4	45.0
Zimbabwe	IFC	Mar. 80	6.0	12.1	35.6	10.1	24.5
MSCI EW	MSCI	Mar. 80	17.6	17.5	15.4	3.9	82.5
IFC EW	IFC	Mar. 80	22.3	21.4	14.9	4.9	43.5
World EW	MSCI/IFC	Mar. 80	21.0	20.0	12.8	4.4	65.3

EW = Equal-weighted.
MSCI = Morgan Stanley Capital International.
IFC = International Finance Corporation.

the cross-sectional variation in the expected returns can still be explained. These findings are not unexpected, given that Erb, Harvey, and Viskanta [1994] find that country credit risk ratings explain up to 50% of the cross-sectional variation in global fixed-income expected returns.

As we note above, local currency returns are not generally attainable. It is possible that the negative relation in Exhibit 2A exists because credit rating is correlated with foreign currency changes rather than with the underlying equity markets. Indeed, this is part of the story.

Exhibit 2B presents the U.S. dollar returns against the country ratings. Again, lower credit ratings are significantly associated with higher average returns. When measured statistically, the country ratings

EXHIBIT 2A
AVERAGE COUNTRY CREDIT RATINGS AND STOCK MARKET RETURNS MARCH 1980 TO DECEMBER 1993 IN LOCAL CURRENCY

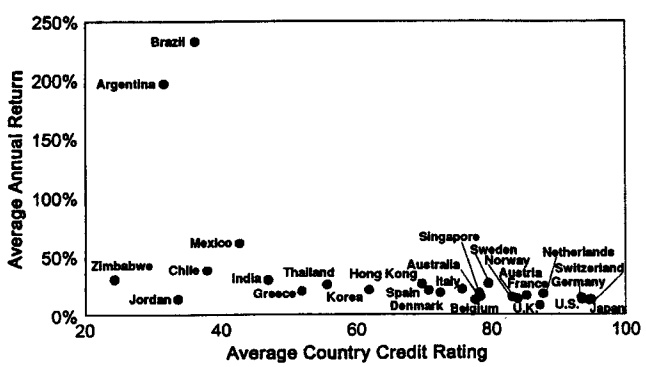


EXHIBIT 2B
AVERAGE COUNTRY CREDIT RATINGS AND STOCK MARKET RETURNS MARCH 1980 TO DECEMBER 1993 IN U.S. DOLLARS

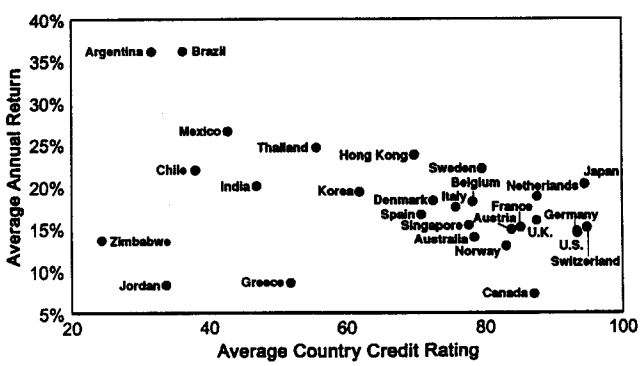


EXHIBIT 2C
AVERAGE COUNTRY CREDIT RATINGS AND CURRENCY CHANGES
MARCH 1980 TO DECEMBER 1993
U.S. DOLLARS TO FOREIGN CURRENCY

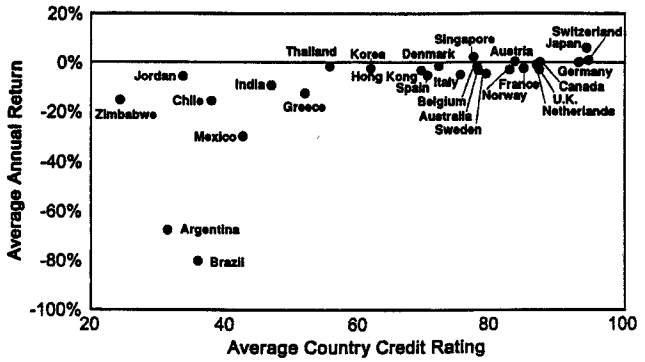
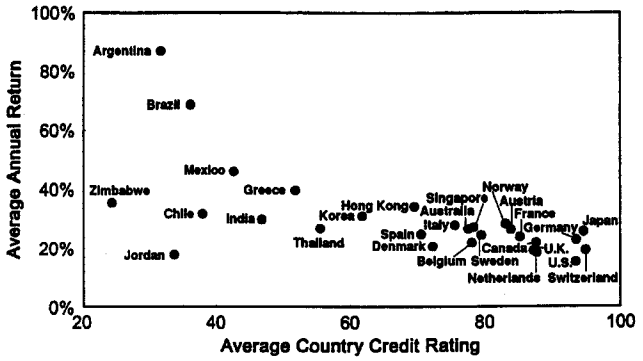


EXHIBIT 2E
AVERAGE COUNTRY CREDIT RATINGS AND STOCK MARKET VOLATILITY
MARCH 1980 TO DECEMBER 1993
U.S. DOLLAR STANDARD DEVIATION



account for 16% of the cross-sectional variation in the average returns.

Credit ratings account for 30% of the variation in local currency average returns and 16% of the variation in U.S. dollar returns. It is reasonable to surmise that country credit ratings are correlated with exchange rate changes. Indeed, Exhibit 2C shows that this is the case. Many of the lower-rated emerging markets show large currency depreciations versus the U.S. dollar. Over 40% of the cross-sectional variation in the currency changes is explained by credit rating.

Credit ratings are important for explaining the cross-sectional variation of average currency changes, but country ratings contain information in addition to the currency aspect. Ratings significantly explain the unhedged investable average equity returns.

Given the relation between country credit ratings and average returns, it is worthwhile to investigate ratings and volatility. Exhibit 2D presents the relation between local return volatility and country credit rating. In general, there is a strong negative relation between local return volatility and credit rating (32% of the cross-sectional variation is explained). As in the case of the return analysis, this relation is stronger (43%) when the influential Argentinian observation is removed.

The negative relation is preserved (and strengthened) when the volatility of U.S. dollar returns is examined in Exhibit 2E. Credit rating explains 40% of the cross-sectional variation in volatility. On average a 10-point decrease in credit rating is worth an extra 5% in volatility. This relation appears reasonably linear although heteroscedastic (dispersion much larger for low credit rating countries).

In contrast to the returns analysis, it does not appear that currency factors are driving the relation between credit rating and volatility. Exhibit 2F shows the volatility of currency changes and the average credit ratings. There appear to be two patterns. In the emerging countries, there is an insignificant negative relation between currency volatility and credit rating. In the developed markets, there is no relation between credit rating and volatility.

Next, we analyze portfolio strategies based on our full sample of forty countries. The credit risk portfolios are formed on an ex ante basis (after the credit ratings have been published, countries are grouped into

EXHIBIT 2D
AVERAGE ANNUAL COUNTRY CREDIT RATINGS AND STOCK MARKET VOLATILITY
MARCH 1980 TO DECEMBER 1993
LOCAL CURRENCY STANDARD DEVIATION

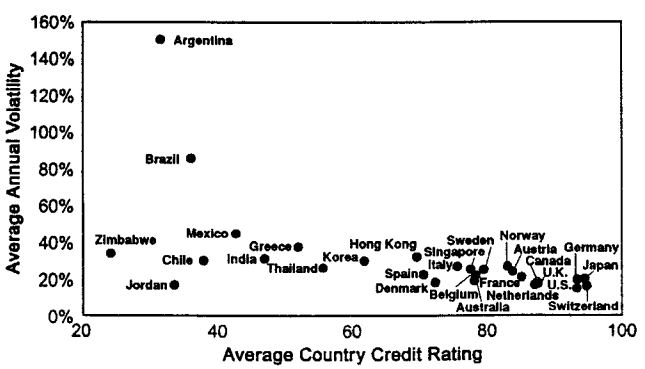
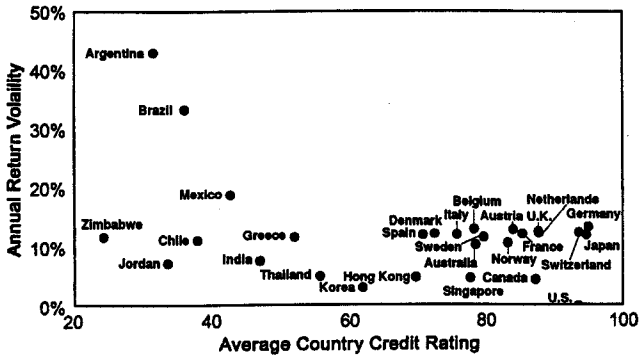


EXHIBIT 2F
AVERAGE COUNTRY CREDIT RATINGS AND CURRENCY VOLATILITY
MARCH 1980 TO DECEMBER 1993
U.S. DOLLAR/FOREIGN CURRENCY
STANDARD DEVIATION



portfolios). Exhibit 3 shows that the credit risk variable is able to distinguish between expected returns. The highest risk quartile has an average performance of 27% per year while the lowest risk quartile has an average performance of 15% per year. Interestingly, the volatilities of the four portfolio returns are all fairly close (17% highest credit risk to 15% lowest credit risk).

It is possible that the credit risk measure is proxying for the dividend yield (a traditional measure of cross-sectional dispersion of expected returns) — or the other way around. Indeed, over the 1980-1993 period, the cross-sectional correlation between the average dividend yields and the average credit risk rating of our countries is 85%. But, as we will see, the credit risk variable appears to contain other information.

Exhibit 3 details the performance of the credit risk quartile strategies. The spread in return performance, as mentioned above, is 12 percentage points per year. The credit risk (all countries) varies from 33.2 to 90.2. There is also a recognizable pattern in dividend yields. The highest-credit risk countries have the highest dividend yields, and the lowest-risk have the lowest dividend yields. Across all countries, there is a monotonic relation between average dividend yields and average returns.

The relation is somewhat weaker for the country credit risk and dividend yields when the sample is split between the IFC and MSCI countries. There is no longer a monotonic decline in dividend yields as we move to lower-expected return portfolios.

A more direct comparison of the ability of the dividend yield and the credit risk rating to distinguish between the cross-section of expected returns appears in Exhibit 4. This time, portfolios are formed on the basis of dividend yield quartiles. For all the countries in the sample, the spread between the highest-yield portfolio and the lowest-yield portfolio is 1.8 percentage points per year. The performance does not monotonically decrease moving to lower-yield countries. This is also true for the IFC and MSCI subsamples.

The portfolio exercise suggests that the credit risk rating measure, although correlated with the dividend yield, has a far greater ability to distinguish between the cross-section of expected returns. In our quartile analysis, the credit risk selection criterion delivers an 11.5-percentage point spread in expected

EXHIBIT 3
Country Selection Strategies Based on
Country Credit Rating Portfolio Characteristics
March 1980 to December 1993
in U.S. Dollars

	Annual Return (%)	Annual Volatility (%)	Average Dividend Yield (%)	Average Credit Rating
All Countries				
Highest Credit Risk	27.3	17.1	5.1	33.2
High Credit Risk	20.2	17.5	4.8	58.6
Low Credit Risk	18.7	17.3	3.7	78.2
Lowest Credit Risk	15.7	15.0	3.5	90.2
IFC Countries				
Highest Credit Risk	34.3	25.6	5.7	27.2
High Credit Risk	21.0	22.7	4.4	37.4
Low Credit Risk	19.1	24.7	5.2	46.3
Lowest Credit Risk	7.9	24.7	4.1	61.9
MSCI Countries				
Highest Credit Risk	22.4	19.3	4.6	70.6
High Credit Risk	13.3	17.3	3.6	79.9
Low Credit Risk	14.5	16.6	4.2	86.1
Lowest Credit Risk	17.3	15.7	3.2	93.2

EXHIBIT 4
Country Selection Strategies Based on
Dividend Yield Portfolio Characteristics
March 1980 to December 1993
in U.S. Dollars

	Annual Return (%)	Annual Volatility (%)	Average Dividend Yield (%)	Average Credit Rating
All Countries				
Highest Yield	22.9	14.4	8.5	53.1
High Yield	19.4	14.8	4.5	73.3
Low Yield	19.3	16.6	3.1	69.1
Lowest Yield	21.1	19.0	1.6	65.9
IFC Countries				
Highest Yield	11.5	20.6	9.8	39.2
High Yield	38.2	23.2	5.2	42.3
Low Yield	19.1	24.8	3.4	46.3
Lowest Yield	18.4	30.2	1.6	45.1
MSCI Countries				
Highest Yield	21.8	16.5	6.5	78.6
High Yield	15.8	16.5	4.3	85.0
Low Yield	12.6	16.9	3.2	83.3
Lowest Yield	18.2	20.6	2.6	81.0

return with only a 2-percentage point difference in volatility. The dividend yield variable produces a 1.8-percentage point spread in returns with a 5.6-percentage point difference in volatility.

IS CREDIT RISK JUST BETA?

We have already established that the credit risk variable is linked to volatility. Exhibit 5 suggests that average credit risk is correlated with average volatility. Given that credit risk is an ex ante measure, it is reasonable to expect that it predicts future volatility. We verify this by showing that the cross-section of volatility over the 1989-1993 period can be explained by the cross-section of credit risk ratings available in December 1988. Credit risk is a predictor of volatility.

What about the traditional measure of risk — beta? Beta measures the sensitivity of the national market return to the world market return. World asset pricing theories suggest that higher national expected returns are linked to higher national betas. Given the differences in industry mixes across countries, it is reasonable to expect a large spread in betas.

Exhibit 6 shows that there is a *positive* relation between credit risk rating and beta! That is, the highest-credit risk countries have the lowest betas. This runs counter to our intuition and suggests that the beta measure is not meaningful in distinguishing between high- and low-expected return markets. These results are consistent with Harvey [1994a, 1994b], who shows that this problem arises in the emerging markets, where only one country (Portugal) has a beta greater than one.

There are a number of reasons why the world beta model does not make much sense. The world beta model assumes that all capital markets are completely integrated. That is, investments that pose identical risk should earn exactly the same expected returns in any two integrated markets. There are reasons to believe that some of the markets, in particular the emerging markets, are not fully integrated into the world economy.

EXHIBIT 5
COUNTRY SELECTION STRATEGIES BASED ON COUNTRY CREDIT RISK
MARCH 1980 TO DECEMBER 1993
IN U.S. DOLLARS

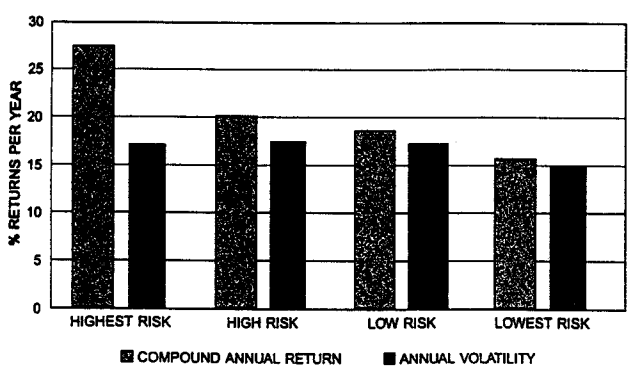


EXHIBIT 6
COUNTRY CREDIT RATING AND WORLD MARKET BETAS
MARCH 1980 TO DECEMBER 1993
IN U.S. DOLLARS

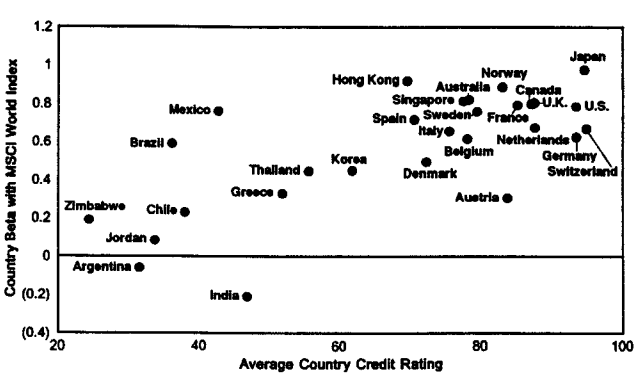


EXHIBIT 7
Composition of Highest-Credit Risk Portfolio
December 1993

Country	Market Capitalization (U.S. $Bil.)	Value Traded December 93 (U.S. $Mil.)	Price/ Earnings Ratio	Price/ Book Value Ratio	Dividend Yield Ratio (%)
Argentina	27.2	1,157	42.1	2.1	2.5
Brazil	83.9	6,217	18.9	0.7	0.3
Colombia	10.3	94	25.6	2.3	1.3
India	68.4	1,583	47.9	6.0	0.7
Jordan	3.1	65	19.9	2.1	2.2
Nigeria	1.5	0.8	8.4	1.8	5.8
Pakistan	8.6	299	25.9	4.3	1.4
Philippines	23.2	1,498	36.0	4.9	0.4
Venezuela	4.7	181	18.1	1.9	2.4
Zimbabwe	1.1	11	---	1.2	2.7

Source: International Finance Corporation.

In segmented markets, it is possible that both the world beta and the local market volatility are rewarded (see Bekaert and Harvey [1994]). In this type of market, a firm's beta with respect to the world market index as well as the beta with respect to the local market index is priced. It is difficult, however, to assign weights ex ante to the various betas. The advantage of the credit risk measure is that it reveals information about the risk exposure of the national market in a way that directly maps into the premium that investors expect on national debt.

CREDIT RISK PORTFOLIOS IN GLOBAL ASSET ALLOCATION

Equity investing outside the U.S. poses at least two major challenges for investors. First, investment managers incur higher transaction costs, relative to the U.S., when investing overseas (see Martin [1993]). All other things being equal, this reduces the ability of managers to achieve higher returns though international investing. Second, a manager must determine how difficult it is to invest in foreign markets.

Exhibit 7 shows the December 1993 composition of an equally weighted highest-credit risk portfolio. One problem of any equal weighting strategy is the liquidity (or investability) of the least liquid investment candidate. As we can see, the problem for this strategy is that the total value of stocks traded in Nigeria in December 1993 was only $800,000. Even assuming an investor were willing, or able, to represent 100% of the liquidity of a national equity market, the total amount of assets that could be invested in one month in this ten-country equally weighted portfolio would be only $8 million (Nigeria's liquidity times ten).

Obviously, a more salient problem is that two of the portfolios are not investable: Nigeria and Zimbabwe. Nigeria is rated by the IFC as "closed," and Zimbabwe has special classes of shares and restrictions on the repatriation of capital. Still, exclusion of these countries does not really affect our analysis. Indeed, Nigeria has the lowest average return in the sample (–6.1%), and Zimbabwe has the third-lowest return (6.0%). Pulling these countries from the HCR portfolio improves portfolio performance by 5% per year.

If credit risk rating is able to separate high expected returns and low expected returns investments, how can we use the measure in global asset allocation? A related question is how much high credit risk should be in our portfolio. Exhibit 8 helps provide some answers to these questions.

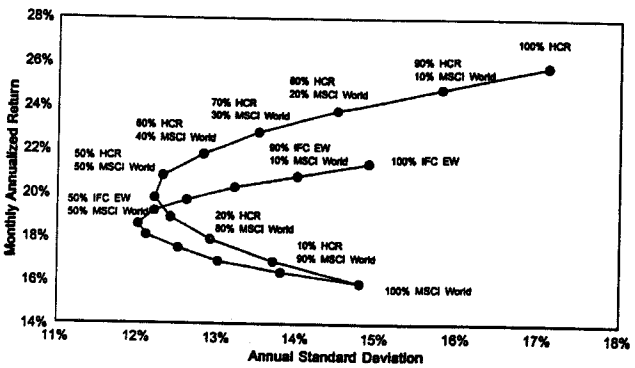
Exhibit 8 shows the efficient frontier with combinations of the MSCI World portfolio and various proportions of the high-credit risk (HCR) portfolio. The portfolios are formed six months after *Institutional Investor* publishes its ratings. We also examined a more liberal lag of three months, which does not affect our results.

Adding the HCR portfolio greatly reduces the volatility of the portfolio return. This is mainly a result of the fact that the HCR portfolio is composed of

emerging equities, and many have documented the low correlations of emerging market returns with developed market returns (see Harvey [1994a], Divecha, Drach, and Stefek [1992], and Speidell and Sappenfield [1992]).

But the HCR portfolio gives us more than just exposure to emerging markets. Also on the graph are portfolios of the MSCI World index combined with the equally weighted IFC composite index. Notice that the HCR-MSCI combination almost always dominates the IFC-MSCI combination. Inclusion of 10% HCR reduces portfolio volatility by 1 percentage point and increases returns by 1.3 percentage points. On the other hand, inclusion of 10% IFC also reduces portfolio volatility by 1 percentage point but increases returns by only 0.5 percentage point.

EXHIBIT 8
EFFICIENT PORTFOLIO SELECTION: HIGH-CREDIT RISK VERSUS PASSIVE IFC MARCH 1980 TO DECEMBER 1993



HCR = Highest-credit risk portfolio.

CONCLUSIONS

U.S. asset managers are rapidly adopting a global investment framework. Yet most investors do not take full advantage of global return enhancement and risk reduction opportunities (see Tesar and Werner [1992]). One reason for this behavior is that, many times, the most financially rewarding opportunities are also seemingly the most risky opportunities. To make things worse, it is difficult to quantify what "risk" means. Our work provides a meaningful foundation for the understanding of one particular risk measure.

We show that country credit ratings have substantial predictive power in discriminating between high-expected returns and low-expected returns countries. The difference in performance between the highest- and the lowest-credit risk portfolio (formed on an ex ante basis) is almost 12 percentage points per year. Interestingly, the volatility of the returns of these two portfolios is about the same.

Country credit risk is a far more successful measure than dividend yields in identifying between high- and low-return portfolios. When we replicate our ex ante portfolio selection on the basis of high-dividend yield and low-dividend yield countries, the difference in performance is less than 2 percentage points per year.

It is generally known that adding emerging markets to a globally diversified portfolio reduces overall risk and increases expected returns. At the same time, little is known about which emerging markets to choose. Our analysis shows that a strategy of adding an investment in our HCR countries to a globally diversified portfolio almost always dominates the strategy of adding an investment based on the broad IFC composite index.

ENDNOTES

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*Ferson and Harvey [1994b] analyze country risk functions where the level of the country attribute influences the time variation in the risk exposures.

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