

# *A Model for Making Foreign Direct Investment Decisions Using Real Variables for Political and Economic Risk Analysis*

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The Foreign Investment Risk Matrix (FIRM) developed by Bhalla (1983) uses political and economic risk measures for foreign direct investment decision making. FIRM may be used to develop a matrix that categorizes countries based on political risk and economic risk as acceptable, unacceptable, or uncertain for investment. We demonstrate using political and economic risk variables that are available on the internet in an expanded model using three measures of political risk and three measures of economic risk. After determining the group of countries that would be acceptable for FDI, the multinational companies can focus on further analysis of acceptable countries.

*Key Words:* political risk analysis, economic risk analysis, foreign direct investment, multinational corporation

*JEL Classification:* G2, F2

## **Introduction**

In this paper, we show how a multinational firm can use readily available measures of political and economic risk to create a two-dimensional model for foreign direct investment (FDI) analysis. Bhalla (1983) describes a four-step process that can be used for political and economic risk analysis and step one is called the Foreign Investment Risk Matrix (FIRM). FIRM allows a multinational corporation to assess the political and economic risk of countries and allows the decision maker to classify countries into multiple risk groupings. In this paper, we demonstrate how to use an expanded version of Bhalla's model for a multinational corporation to execute country risk analysis in-house, which reduces the need to purchase political and economic risk information from either consultants or from analysis services and permits the multinational cor-

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poration decision maker to create a model for a specific company or FDI project.

Over the last two decades, the amount of direct foreign investment overseas has increased substantially. US direct investment abroad grew from \$208 billion in 1982 to \$1,789 billion (valued at historical cost) in 2003 which is an annual growth rate of 10.3% (Borga and Yorgason 2004). In 2003, US direct foreign investment was largest in the United Kingdom at \$273 billion or 15.2% of total US direct foreign investment, followed by investments in Canada and the Netherlands at \$192 billion and \$179 billion, respectively, which is 10.8% and 10.0% of the total US direct foreign investment (Borga and Yorgason 2004). While most US direct foreign investment is in countries in Europe and North America, the amount of investment in Africa and the Middle East grew by 16%, followed by Europe (14%), Canada (10%), Asia and the Pacific Region (7%), and Latin American and the Rest of the Western Hemisphere (7%). It is advantageous to be an early entrant in an emerging market for a multinational corporation. Early entry provides market power which yields monopolistic profits resulting from new sources of demand, acquisition of cheaper raw materials, and economies of scale.

From 2001 to 2002, US direct foreign investment in industrialized countries grew at a rate of about 8%. The largest growth, however, was in countries classified as emerging market countries. Growth in US direct foreign investment in Africa and the Middle East exceeded 10% in 2002 and 16% in 2003, although the absolute dollar amount invested still remains small (Borga and Yorgason 2002; 2004). These trends provide evidence for the need for multinational corporations to have access to a reliable model for predicting country risk as the risks of entering a new foreign market directly are not only higher, but are also difficult to forecast. Obtaining reliable and accurate forecasts of country risk is necessary for any multinational corporation (MNC) decision maker. Country risk relates to the likelihood that changes in a foreign business environment will occur and will reduce the profitability or riskiness of an overseas FDI. The two main components of country risk that investors need to consider are political risk and economic risk for a country. Butler and Joaquin (1998) define political risk 'as the risk that a sovereign host government will unexpectedly change the 'rules of the game' under which businesses operate.' The authors show how political risk can affect the future cash flows of a FDI and how political risk can be factored into the required rate of return. Political risk refers to the risk that the politics within a country will affect a multinational's FDI in that country.

Butler and Joaquin (1998) develop a model of political risk that shows how political risk impacts the cost of capital for an investment. In the Butler-Joaquin model, the impact of a political risk change on the cost of capital of the investment depends on the impact of the political risk change on the expected return of the investment and the covariance of the return on the investment and the return on the market. If the expected impact of the change in the political environment on expected future cash flows is negative and if the covariance between the expected future cash flows from the investment and the return on the market is negative (positive), the effect of a political risk change is to increase (decrease) the cost of capital for the investment. If the expected impact of a change in the political environment has a positive impact on expected future cash flows and the covariance between the cash flows from the investment and the return on the market is positive (negative), the effect of a political risk shock is to increase (decrease) the cost of capital for the investment. The impact of a political risk change is determined by the impact of the change on the expected rate of return and the covariance of the return on the investment and the return on the market.

Bhalla (1983) shows that a change in political risk can result from political changes due to elections, revolts, recessions, or wars, and the resultant change in political risk can lead to expropriation, higher taxes or tariffs, reduced FDI incentives, local ownership requirements, local content requirements, or currency inconvertibility. The net effect may be the loss of assets, the termination of operations, reduced after-tax income, higher import costs, reduced revenue, management restrictions, higher operational costs, or an inability to repatriate funds. Macro-economic mismanagement by the government can lead to higher inflation and higher interest rates leading to higher costs, planning difficulties, and higher interest costs. Other types of political difficulties such as labor unrest or strikes can lead to higher production costs and production interruptions.

MNCs need to determine future risks to an FDI from political risk and future risks from the country's economic environment, both of which affect the profitability and riskiness of FDI. Two types of economic factors affect MNC FDI: macro-economic factors and micro-economic factors. Macro-economic factors would include fluctuations in a country's inflation rate, exchange rate, tax rate, and interest rates, while micro-economic factors would include demand for a firm's products, the availability of local labor, local wage rates, and employment laws.

It is important that the MNC planning to invest overseas be able to analyze a country's political and economic risk. The MNC can purchase

country risk information from a consulting service and/or the MNC can create their own in-house analytical model. When MNCs purchase a consulting service, the model developed may not reflect the specific environment of the country and the specific FDI project since consulting services provide general ratings for country political and economic risk and may not provide specific industry, firm, or project information and details in the analysis. If MNCs create country political and economic risk analyses for specific FDI characteristics, they can tailor the FDI risk analysis with less uncertainty.

### **Literature Review**

Erb, Harvey, and Viskanta (1996b) describe country risk analysis using five measures: political risk, economic risk, financial risk, a composite risk, and a country credit rating. The first four variables the authors use are taken from *Political Risk Services' International Country Risk Guide* (ICRG; see <http://www.prsgroup.com>) and the fifth variable is from *Institutional Investor* (see <http://www.institutionalinvestor.com>). The empirical results indicate that the country risk measures are correlated with each other, but the financial risk measures contain the most information about future stock returns, and political risk measures contain the least information about future stock returns. These findings support the use of political and economic risk analysis by investors interested in foreign stock market returns. But, MNCs considering FDI need to be able to forecast the effect of future political events and economic events for use in FDI decisions.

Erb, Harvey, and Viskanta (1996a) findings support the use of political and economic risk analysis using FIRM by multinational corporations. Multinational corporations considering direct foreign investments of the bricks and mortar type need to be able to forecast the effect of future political events as well as financial or economic events on their investments. Using FIRM will enable a corporation to assess this risk for a specific project while differentiating between a numbers of countries.

Using annual data for the period 1980 to 1997, Bekaert, Harvey and Lundblad (2001) find that emerging equity market liberalization leads to an increase in real economic growth. Bekaert, Harvey and Lumsdaine (2002) find that emerging equity market liberalization leads to increases in market integration that leads to an increase in real economic growth. The empirical breaks that the authors find do not correspond with announced liberalization dates, but reflect the date of actual liberalization

such as the announcement of the first ADR or the date when the first country fund is issued. Empirical liberalization effect dates generally occur after the official dates. The authors conclude that it is not enough for countries to change the rules to permit foreign investment to bring about market integration. Foreign investors must still be able and willing to invest in the country with liberalized stock markets.

Stoever (2002a) states that there are numerous stimuli for economic liberalization which will reduce political risk and shows the process by which economic liberalization leads to economic development. As the host country government liberalizes the political and economic environment, multinational corporations will be permitted an increased range of economic activity. Economic liberalization leads to reduced restrictions on the actions of multinational corporations, which reduces the costs and risks to multinational corporations making foreign direct investments. With reduced costs and reduced risks, the multinational corporation requires a reduced rate of return that, in turn, provides greater benefits to the host country since more of the excess cash flow is left in the host country. Any country evolving policies for foreign direct investment should avoid inconsistency, develop clear priorities, evolve policies over time, match the speed of deregulation with the rate of economic growth, keep actions and statements consistent, make reforms genuine, and avoid excess political influence in the liberalization process. Stoever (2002b) develops a measure of openness for Korea over the period from 1962 to 2000. Data are provided for both foreign direct investment into Korea and for Stoever's measure of openness. These results show a positive relationship between economic openness and foreign direct investment, that is, reduced political risk leads to increased foreign direct investment.

Roll and Talbott (2001) analyze the determinants of wealth over the period 1995 to 1999 for 162 countries. Roll and Talbott's empirical results indicate that variation in GNI per capita across countries can be explained by nine different measures of economic openness – property rights, political rights, civil liberties, press freedom, and government expenditures positively influence GNI per capita. GNI per capita is negatively related to excessive regulation, poor monetary policy, black market activity, and trade barriers. Roll and Talbott find that positive democratic events are followed by increases in growth in GNI per capita in those countries, while negative democratic events are followed by decreases in growth in GNI per capita in those countries.

Additional empirical findings support the hypothesis that there is a positive relationship between economic openness and economic growth and development. Demirguc-Kunt and Maksimovic (1998) and Wurgler (2000) analyze the relationship between the legal environment and economic development and show that increasing the level of legal protection increases economic growth. A positive relationship between financial liberalization and economic growth is reported in Beck, Levine, and Loayza (2000), Henry (2000), Jalilian and Kirkpatrick (2002), Jayaratne and Strahan (1996), Kassimatis (2002), King and Levine (1993), Levine and Zervos (1996; 1998) and Rajan and Zingales (1998). Barro (1991), Ryoo and Smith (2002) and Su and Fleisher (1998) show that government intervention, in the form of day trading limits, reduces market efficiency. Fischer and Sahay (2000) find that the former Communist countries economies that have performed the best are the countries that were most committed to political and economic reform.

Empirical research indicates that country credit ratings are useful to multinational corporations in evaluating the riskiness of foreign direct investment in a particular country. Measures of political openness are useful in evaluating the political environment of a particular country and measure the foreign direct investment environment. Published research of the World Bank indicates that gross national income per capita describes the economic environment and potential in countries and is highly correlated with other measures of economic development. These research results support the hypothesis that country risk can be measured by country credit ratings and that country risk levels are further related to political and economic risk variables.

### **Foreign Investment Risk Matrix**

Bhalla (1983) provides a country risk analysis process to analyze a foreign direct investment by a multinational corporation using a four-step process. The first step is to create the foreign investment risk matrix to determine which countries provide a stable political environment and have the economic potential to give the country the potential to be acceptable for foreign direct investment. The second step is to create a country risk profile for each country selected in the first step that is a detailed analysis of the business environment in each country selected in step one. The third step creates a foreign investment risk analysis for each project for each country to determine if the proposed foreign direct investment is compatible with the economic and political environment assumed in

the country under analysis. The fourth step creates a foreign investment risk audit that allows the multinational corporation to monitor and re-evaluate the environment on a continuous basis to alert the multinational corporation to avoid surprises that may arise from changes in the economic and political situation in the country in the future.

Bhalla (1983) defines foreign investment risk management as the process of evaluating the political stability and the market potential of a particular country by a multinational corporation. Bhalla creates a two-dimensional matrix with four categorical variables for each dimension of political risk and economic risk called the foreign investment risk matrix (FIRM). Political risk is divided into four categories from A to D with A being stable, B being moderately unstable, C being volatily unstable, and D being substantially unstable. Economic risk is divided into four categories from one to four. Category one indicates acceptable risk, category two indicates moderate risk, category three indicates major risk, and category four indicates unacceptable risk. The specific political risk measures used by Bhalla are government stability, the method and frequency of changes in government, and the attitude of the public toward government leaders and institutions. The specific economic risk measures used by Bhalla are defined in terms of the market potential for the firm's products. The economic risk measures used are the demographic characteristics of the country, the infrastructure in the country, the economic breadth of income, the per capita GNP, and the economic growth potential.

Bhalla (1983) argues that income per capita and the distribution of income per capita are the most important variables in determining both economic and political risk because income per capita reflects both the underlying economy and the effectiveness of the political management. Both the level of income per capita and the distribution of income per capita effect economic and political risk. More evenly distributed income per capita reduces both economic and political risk.

The four different categories of income are graphed on the FIRM. Countries will have substantial political instability if they have low income per capita with poor income distribution and a narrow economic base. Countries have stable political risk if they have high income per capita, even income distribution, and a broad economic base. Countries with populations less than 5 million or income per capita of less than \$500 were excluded from consideration because these countries lacked sufficient market size for the product being considered. The four polit-

ical risk rankings are influenced by population size, income per capita growth rates and economic diversity. Economic risk is divided into four categories from acceptable to unacceptable, based on demographics, infrastructure, economic diversity, demand characteristics, and economic growth.

The FIRM is a graphic representation of these two dimensions. Four categories of political risk by four categories of economic risk yield sixteen different categories of countries. Countries that have political stability and have acceptable economic risk would be in the upper left-hand cell. Countries with substantial political instability and unacceptable economic risk would be in the lower right-hand cell.

A multinational corporation would choose from the countries in the cells that meet the first round of criteria. This first pass will substantially reduce the number of countries under consideration. Stage two of the political risk analysis process is the country risk profile. The country risk profile is more detailed and is based on three sets of criteria: political stability, social stability, and economic stability. A multinational corporation analyzes these variables to determine if any internal or external problems exist that could substantially alter the FIRM created in the first step. The country risk profile allows the multinational corporation to eliminate any country that appears to have potential future economic or political problems.

The investment risk analysis is conducted as stage three, in order to ensure that the project can be structured to survive future risks such as political risk, social risk, and economic risk. Political risk variables would include political instability, expropriation, or acts of terrorism. Social risk variables would include labor unrest. Economic risk variables would include price controls, recession, inflation, devaluation, or foreign exchange controls.

The fourth stage of analysis is the foreign investment risk audit. The foreign investment risk audit is an ongoing process designed to allow the multinational corporation to anticipate changes in the environment that will affect the viability of the foreign direct investment project. The foreign investment risk audit allows the multinational corporation to develop appropriate strategies for adapting to changes in the environment or to appropriate exit strategies. The foreign investment risk audit allows the multinational corporation to develop an information data base of variables that will allow the multinational corporation to monitor and adapt the foreign direct investment project to future changes in the political and economic environment.

Madura (2000) presents the FIRM in a continuous, variable framework instead of using discrete categories. The Madura model uses a continuous variable framework instead of providing only sixteen categories in a four – by – four categorical matrix. Both economic risk ratings and political risk ratings are continuous and described from low risk to high risk allowing the multinational corporation decision maker to differentiate countries in a continuous framework. The Madura model provides three categories: countries that have acceptable risk levels, countries that have unacceptable risk levels, and countries with unclear (uncertain) risk levels. Countries in the uncertain area would need further analysis for an acceptable or unacceptable decision to be made. McGowan and Moeller (2003) demonstrate how to determine the empirical boundaries in the political risk and economic risk space using multiple discriminant analysis. The authors use GNI per capita and the Index of Economic Freedom to categorize countries as either acceptable for FDI, unacceptable for FDI, or uncertain for 128 countries. McGowan and Moeller (2005) create a similar model using the same variables but with multinomial logistic regression.

In this paper, we demonstrate how to conduct country risk analysis using readily available measures that can be easily found using the internet. We extend Bhalla's model from a categorical model to a continuous format model using three variables to measure the political risk dimension and three variables to measure the economic risk dimension. We select this set of input variables because these variables are available from internet websites that are easy to use and free. We develop the model using three measures of political risk (the attitude of the host government toward FDI, conflict, and perceived corruption) and three measures of economic risk (GNI per capita, FDI potential, and the inflation rate). Both the variables and the weights are selected to demonstrate how to use the model and should be modified by the MNC making the FDI decision to fit the specific project, country, and MNC. These measures are used to differentiate countries that are acceptable for foreign direct investment from countries that are uncertain or unacceptable for foreign direct investment.

### **Input Variables**

We select three variables to measure the political risk component: the attitude of the government toward FDI, the degree of conflict for the country, and perceived corruption within the country. We select three variables to measure the economic risk component: gross national in-

come per capita, inward FDI potential, and the inflation rate. Each of the three variables measures a different aspect of the risk component. We use three variables to demonstrate the model, even though a MNC could apply the model with only one variable or as many variables as needed by the MNC to meet its goals. The specific variables are chosen because the variables represent political and economic risk; even though alternative variables may be available, these six variables are available for free online. We try to provide example variables that are reasonable and readily available.

The Attitude of Government toward FDI is measured using the Index of Economic Freedom sub-index for Capital Flows and Foreign Investment. Beach and Driscoll (2002) provide a detailed discussion of how the factors of the Index of Economic Freedom are constructed. Restrictions on capital flows and FDI are measured by FDI codes, restrictions on foreign ownership of business, restrictions on the industries and companies open to foreign investors, restrictions and performance requirements on foreign companies, foreign ownership of land, equal treatment under the law for both foreign and domestic companies, restrictions on the repatriation of earnings, and availability of local financing for foreign companies.

The degree of conflict is measured using the *Conflict Barometer* which is published by the Heidelberg Institute of International Conflict and is available on the Institute's web site (<http://hiik.de>). Conflict is defined as 'the clashing of interests on national values of some duration and magnitude between at least two parties that are determined to pursue their interests and win their case.' The Conflict Barometer has five levels ranging in value from one to five. Level 1 is latent conflict and non-violent and low intensity. 'A positional difference on definable values of national meaning is considered to be a latent conflict if respective demands are articulated by one of the parties and perceived by the other as such.' Level two is a manifest conflict which is non-violent and low intensity. 'A manifest conflict includes the use of measures that are located in the forefield of violent force. This concerns for example verbal pressure, threatening publicly with violence, or the imposition of economic sanctions.' Level three is defined as crisis and is violent and of medium intensity. 'A crisis is a tense situation in which at least one of the parties uses violent force in single incidents.' Level 4 is defined as severe crisis and is high intensity. 'A conflict is considered to be a severe crisis if violent force is repeatedly used in an organized way.' Level 5 is defined as war and is violent and is

high intensity. 'Wars are a type of violent conflicts in which violent force is used with a certain continuity in an organized and systematic way. The conflict parties apply extensive measures, according to the situation. The amount of destruction is vast and of long duration.'

Perceived corruption is measured using the Corruptions Perceptions Index. The CPI is published by Transparency International on a yearly basis. The index is a weighted average of a number of indexes and surveys of perceived corruption. Political corruption is defined as 'the abuse of power by political leaders for private gain, with the objective of increasing power or wealth.'

Gross national income per capita data are taken from *World Development Indicators 2001* which is published by the World Bank and are available on the web site (<http://web.worldbank.org>). Estimation of Internationally Comparable Per Capita Income Numbers for Operational Purposes published by the World Bank (see <http://go.worldbank.org/v4HS8ZBUDO>) indicates that GNI per capita is not a complete measure of economic growth and development, but most other measures of economic growth and development are highly correlated with GNI per capita.

FDI Potential is measured using UNCTAD's Inward FDI Potential Index which is an equally weighted average of the values (normalized to yield a score between zero, for the lowest scoring country, to one, for the highest) of 12 variables: GDP per capita, the growth rate of GDP for ten years, exports to GDP, the average number of telephone lines per 1000 inhabitants, commercial energy use per capita, R&D spending to GDP, the proportion of tertiary students in the population, country risk, the world market share in exports of natural resources, the world market share of imports of parts and components for automobiles and electronic products, the world market share of exports of services, the share of world FDI inward stock.

The Inflation Rate is measured using the Index of Economic Freedom sub-index for Monetary Policy. The Monetary policy index is based on the inflation rate for the previous ten years in the country.

The Attitude of the Host Government and the Inflation Rate are the IEF sub-indexes subtracted from five since the IEF indexes are highest at one and lowest at five. The Conflict Barometer value is taken directly since the conflict barometer is valued from zero to five. The CPI is transformed by dividing the published value by two. The GNI per capita variable is assigned a five for a high income economy, one for a low income

TABLE 1 United Kingdom

Political risk factors	Rating	Weight	R×W
Attitude of host government	3.00	35%	1.05
Conflict	2.00	35%	0.70
Corruption	4.35	30%	1.31
Total		100%	3.06
Economic risk factors	Rating	Weight	R×W
GNI per capita	5.00	30%	1.50
FDI Potential	4.67	35%	1.63
Inflation rates	3.00	35%	1.05
Total		100%	4.18
Total risk factor	Weight	Value	W×V
Political risk	60%	3.06	1.83
Economic risk	40%	4.18	1.67
Total			3.51

NOTES Political risk variables are measured accordingly; (1) the attitude of the government toward FDI is measured by the Index of Economic Freedom Sub-index for Capital Flows and Foreign Investment, (2) the degree of conflict for the country is measured by the Conflict Barometer published by the Heidelberg Institute, (3) the perceived corruption within the country is measured by the Corruption Perceptions Index published by Transparency International.

Economic risk measures are measured accordingly; (1) gross national income per capita data are taken from the World Development Indicators published by the World Bank, (2) inward FDI potential is measured by the Inward FDI Potential Index published by UNCTAD, (3) the inflation rate is measured by the Index of Economic Freedom Sub-index for Monetary policy.

The weights from each index would be determined by the MNC decision maker based on the relative importance of each variable. In the paper, we randomly selected weights.

economy, four for a high middle income economy, two for a low middle income economy, and one for a low income economy. The FDI Potential Index is scaled from zero to one and is transformed by multiplying the published values by ten and dividing by two.

### The Model Applied to Four Countries

Tables 1, 2, 3, and 4 show the values computed for each of the six input variables for the United Kingdom, Brazil, Poland, and Russia. For the UK, the scores for Attitude of the Host Government, Conflict, and Corruption are 3.00, 2.00, and 4.35, respectively. The values for GDI per capita,

TABLE 2 Russia

Political risk factors	Rating	Weight	R×W
Attitude of host government	2.00	35%	0.70
Conflict	1.00	35%	0.35
Corruption	1.35	30%	0.41
Total		100%	1.46
Economic risk factors	Rating	Weight	R×W
GNI per capita	2.00	30%	0.60
FDI Potential	2.91	35%	1.02
Inflation rates	2.00	35%	0.70
Total		100%	2.32
Total risk factor	Weight	Value	w×v
Political risk	60%	1.46	0.87
Economic risk	40%	2.32	0.93
Total			1.80

TABLE 3 Brazil

Political risk factors	Rating	Weight	R×W
Attitude of host government	2.00	35%	0.70
Conflict	5.00	35%	1.75
Corruption	1.95	30%	0.59
Total		100%	3.04
Economic risk factors	Rating	Weight	R×W
GNI per capita	4.00	30%	1.20
FDI Potential	1.84	35%	0.64
Inflation rates	3.00	35%	1.05
Total		100%	2.89
Total risk factor	Weight	Value	w×v
Political risk	60%	3.04	1.82
Economic risk	40%	2.89	1.16
Total			2.98

NOTES For explanation, see table 1

FDI Potential, and Inflation are 5.00, 4.67, and 3.00, respectively. In this paper, as a demonstration, the weights are arbitrary. The weights used in the computation of the political risk factor and of the economic risk

TABLE 4 Poland

Political risk factors	Rating	Weight	R×W
Attitude of host government	2.00	35%	0.70
Conflict	5.00	35%	1.75
Corruption	1.80	30%	0.54
Total		100%	2.99
Economic risk factors	Rating	Weight	R×W
GNI per capita	4.00	30%	1.20
FDI Potential	2.56	35%	0.90
Inflation rates	2.00	35%	0.70
Total		100%	2.80
Total risk factor	Weight	Value	W×V
Political risk	60%	2.99	1.79
Economic risk	40%	2.80	1.12
Total			2.91

NOTES For explanation, see table 1.

factor would be determined by the corporate decision maker based on the importance of the individual variables to the specific company and project. An overall total risk factor can be calculated by taking a weighted average of the political risk factor and the economic risk factor. Again, the weights are based on the judgment of the corporate decision maker. The political risk factor for the United Kingdom is 3.06 and the economic risk factor value is 4.18. In this case, the United Kingdom plots in the region defined as acceptable for FDI. The values for Brazil and Poland both plot in the uncertain region, and the values for Russia plot in the unacceptable for FDI region.

The model used in this paper is an extension of the Bhalla (1983) and Madura (2000) models. A two dimensional grid is created where one dimension is economic risk and the other dimension is political risk. Both dimensions are scaled from one to five, alternatively the scales could have been from one to one hundred. In either case, the scale for all of the variables must be transformed to be the same. For a country to be acceptable for FDI, the country must have values for political and economic risk that plot in the area segmented by the minimum acceptable level of both dimensions, both political risk and economic risk. Thus, in figure 1, countries that plot in the upper right hand corner are acceptable for FDI,

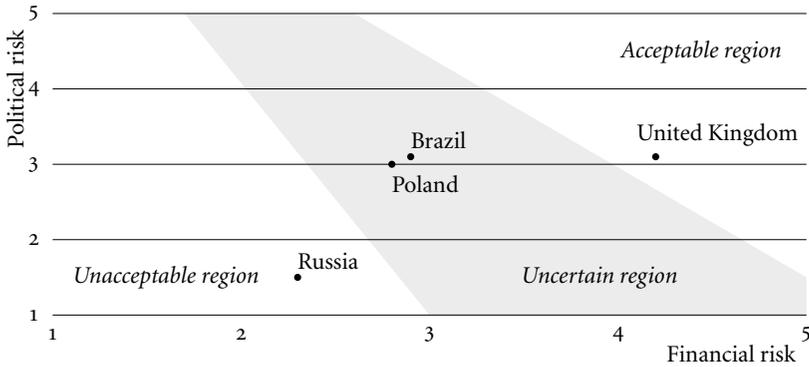


FIGURE 1 The Foreign Investment Risk Matrix is a graphical representation of the values computed in tables 1 to 4. The UK is in the upper right corner that represents the area of acceptable countries. Russia is in the lower left corner that represents the area of unacceptable countries. Brazil and Poland are in the uncertain area where countries might be acceptable or not depending on further analysis.

and countries that plot in the lower left hand corner are unacceptable for FDI. Countries that plot in the areas between the acceptable region and the unacceptable region, are uncertain, that is, these countries require further analysis for a final decision.

To demonstrate the use of the FIRM, we calculate values for both political risk and economic risk for four countries: Brazil, Russia, Poland, and the UK. These four countries are selected for illustration purposes only since this set of countries provides plots in each of the three regions. We estimate the political risk dimension with three variables: the attitude of the host government toward FDI, the level of conflict in the country, and the perceived corruption level in the country. We estimate the economic risk dimension with three variables: GNI per capita, the FDI Potential Index, and the inflation index. Each variable is measured using a published index that is available on the internet. Thus, an MNC can use the model provided in this paper to facilitate the FDI decision by allowing the decision maker to eliminate from detailed analysis countries that do not meet minimum specified levels of political and economic risk.

### Summary and Conclusions

Foreign direct investment has become increasingly important for multinational corporations. The level of foreign direct investment by US multinational corporations outside of the United States and by non-US

multinational corporations into the United States has increased dramatically over the last twenty years. The need for political and economic risk analysis has increased with foreign direct investment by multinational corporations. Even as some countries and regions of the world have steadily reduced barriers to and restrictions on foreign direct investment, other countries and regions of the world have become increasingly hostile to foreign direct investment. Although political risk assessment services are available, these services provide general ratings rather than ratings specific to the actual project being considered by the multinational corporation.

Political risk is the result of changes in the environmental circumstances for the multinational corporation. Although political risk generally results from governmental action, social factors can cause the environment to change. In either case, less political risk is desirable for the multinational corporation. Economic risk changes can result from changes in either the macro-economic or micro-economic environment. Multinational corporations need to be able to determine which countries provide the best economic conditions for the production and sale of the multinational corporation's products or services.

The Foreign Investment Risk Matrix provides a framework with which an MNC can analyze the combination of both political risk and economic risk for making FID decision. The FIRM uses values that are defined by the MNC for their impact on the specific FDI project that can be collected directly from the internet by the multinational corporation to evaluate the political risk and economic risk for a specific country related to the specific project under review. The six independent variables used in this paper can be applied to the FIRM to allow the multinational corporation to divide countries under consideration into countries that are acceptable for foreign direct investment, countries that are unacceptable for foreign direct investment, and countries that provide uncertain environments and need further study before an accept/reject decision can be made. Overall, the FIRM process allows the multinational corporation to focus attention on investment environments with higher likelihood of success. That is, the MNC decision maker can eliminate countries from further analysis that do not meet specified minimum levels of political and economic risk. The model, as shown in this paper, can be tailored to meet the specific needs of the MNC to evaluate a specific project in a specific country.

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