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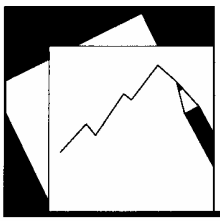

IMF Working Paper

Risk Instability and the Pattern of Foreign Direct Investment in the Middle East and North Africa Region

Kitty K. Chan and Edward R. Gemayel

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Risk Instability and the Pattern of Foreign Direct Investment in the Middle East and North Africa Region

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Abstract

This paper demonstrates that instability associated with investment risk is critical in explaining the level of foreign direct investment for the Middle East and North Africa (MENA) countries, which generally have higher investment risk than developed countries. The empirical results support this hypothesis, whether either the standard deviation or the interquartile range is used as a measure of instability, in a dynamic panel model. The paper recommends a reorientation of policies toward those with a longer-term focus in order to help lower the degree of risk instability for MENA countries.

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Keywords: Foreign direct investment, Multinational firms, MENA countries

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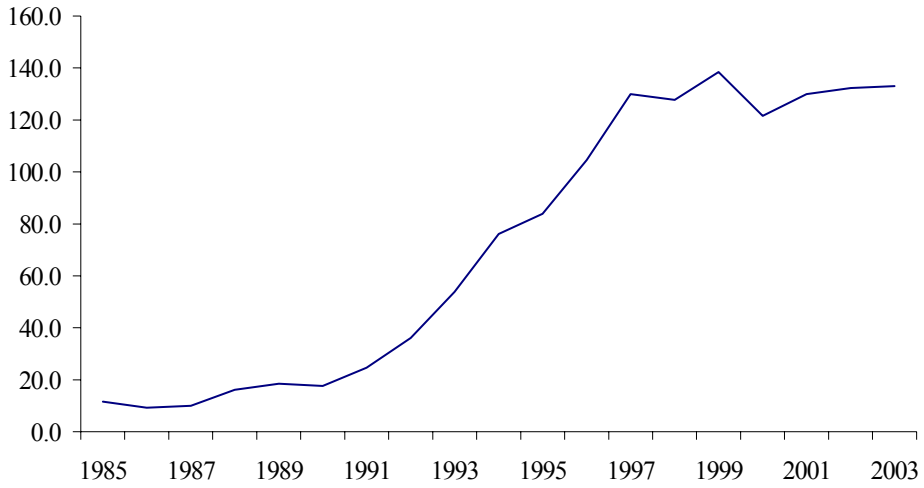
I. INTRODUCTION

Sudden and sharp reversals of capital flows have been a key feature of recent financial crises in emerging market countries. Although short-term flows have proven to be volatile and unwanted, long-term capital flows, such as foreign direct investment (FDI), have tended to be more stable and thereby more desirable (Lipsey, 2001). As a result, developing countries have come to rely increasingly on FDI compared with other sources of financing. By 2003, FDI into developing countries had reached US$133 billion (Figure 1), an almost tenfold increase since 1990.[2] Other factors that have encouraged developing economies to attract FDI have included the ability to benefit from the transfer of intangible assets, such as technology, know-how, and technical skills.

Figure 1. Net Foreign Direct Investment (FDI) to Developing Countries, 1985–2003
(In billions of US$)



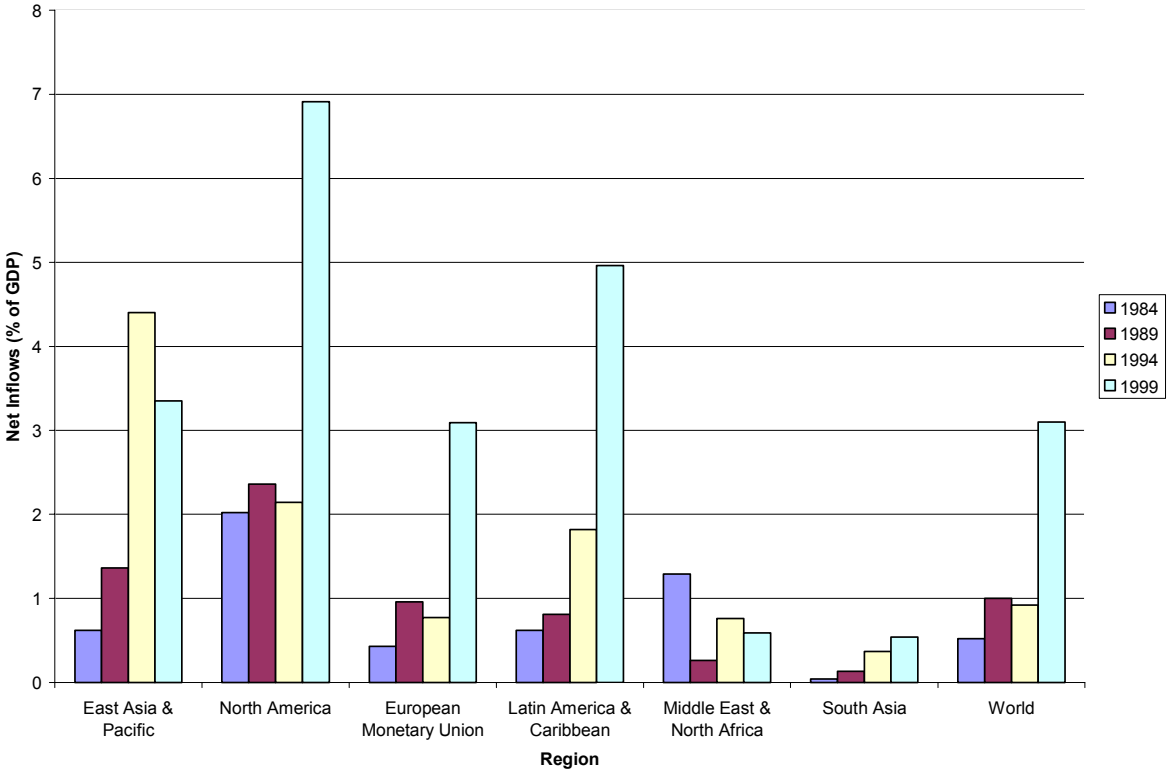
Source: World Bank (2002).

The tremendous increase in FDI into developing countries during the last decade also reflects the improvement in the local investment environment perceived by investors, on account of the adoption by many countries of sound macroeconomic and structural reform measures. These changing perceptions explain, in part, the shifts over time in the geographic distribution of FDI. In the early 1990s, Asia was the main recipient of FDI and then, following the Asian crisis, Latin America took the lead role. But in the last two years, there has been a rebound in Asia, where FDI has again exceeded the share of Latin America.

[2] In contrast to FDI, debt financing to developing countries fell sharply, from net inflows of more than US$100 billion in 1995 to net outflows in 2001.

FDI to the Middle East and North Africa (MENA) region, by contrast, scarcely increased during this period. Although net inflows as a percentage of GDP grew sixfold between 1985 and 1999 in most other regions, that of MENA stagnated (Figure 2).[3] In some cases a rational explanation can be found, as, for example, for countries experiencing conflict. But generally, it is rather surprising that multinational companies did not take advantage of the low production costs in the MENA region. Anecdotal evidence suggests that the only MENA countries able to attract FDI were those with significant natural resources (oil and gas), such as Kuwait, Qatar, and Saudi Arabia.

Figure 2. Foreign Direct Investment, by Geographic Region



Source: World Bank (2002)

Historically, countries in the MENA region have a higher level of instability associated with investment risk relative to developed countries. This paper argues that this risk instability has been a key determinant in discouraging FDI into the region. Stability in the level of investment risk allows investors to incorporate risk more accurately when estimating the rate

[3] Except for North America, which includes only Canada and the United States, net inflows have grown by approximately threefold.

of return. Because of this, investors might be willing to accept a higher level of risk if this were more stable. The desire for stability in investment risk is likely to increase as the investment risk increases.

In this paper, we first examine the relationship between FDI and different types of risks affecting investment into the MENA region. Our results are compared with the results for countries in the European Union (EU) and North America. The results indicate that the instability measure of each of the risk indices provides a better fit than the index itself when explaining FDI inflows for MENA countries. However, this ranking is the reverse for countries in the EU and North America. The results are consistent whether the standard deviation or interquartile range is used as a measure of instability.

We conclude that for developed countries, such as members of the European Union (EU), Canada, and the United States, which have relatively lower investment risk, instability associated with investment risk is not as critical a determinant of foreign investment as it is for the MENA countries. Policies created to decrease instability associated with investment risk would help countries in the MENA region in general to attract FDI. We recommend gradual implementation of policies with long-term benefits to lower the degree of risk instability for MENA countries.

This paper is organized as follows. Section II reviews the literature on FDI, and Section III describes the macroeconomic and instability measurements used in this study. Section IV provides the methodology, and Section V describes the data. Empirical results and policy recommendations are provided in Sections VI and VII, respectively.

II. Role of Risk Instability

A common strategy which rational investors adopt to minimize the level of risk in their investment portfolio is to avoid investments associated with highly volatile return. Most studies suggest that the macroeconomic environment has an important affect on the level of a country's productivity. Maintaining macroeconomic stability has been a challenge for many MENA countries (Iqbal, 2001).

Aizenman (2002) explored the implications of volatile productivity on a multinational company's production patterns in emerging markets. His results showed that higher volatility in productivity would have adverse consequences for the profitability of multinationals, as well as for their expected levels of employment in the relevant emerging market. Consequently, the multinational would opt to invest in more stable emerging markets—thus affecting the level of inward FDI.

Fry, Claessens, Burridge, and Blanchet (1995) examined flows of FDI to 46 developing countries to test whether such flows are autonomous or accommodating vis-à-vis the current account and other capital flows. Using Granger causality tests, they found that: (i) the requirement to surrender export proceeds to the monetary authorities and the existence of special exchange rates for some capital account transactions reduces the probability that FDI

is independent; (ii) the more liberal a country's foreign exchange system, the more likely FDI is to be independent or exogenous; and (iii) FDI is associated with a larger increase in capital formation when it is independent than when it is "Granger-caused" by other capital flows.

Lucas (1990) argues that many multinational companies continue to produce in high-cost developed countries because, among other factors, these countries are considered to be politically stable. Investments in many "low-cost" countries, by contrast, are exposed to large political risks. However, while a stable political environment is desirable, it is not a sufficient condition for attracting foreign investment. As companies extend their activities beyond their borders—and thus become subject to different regulatory regimes—a new complex set of risks emerges.

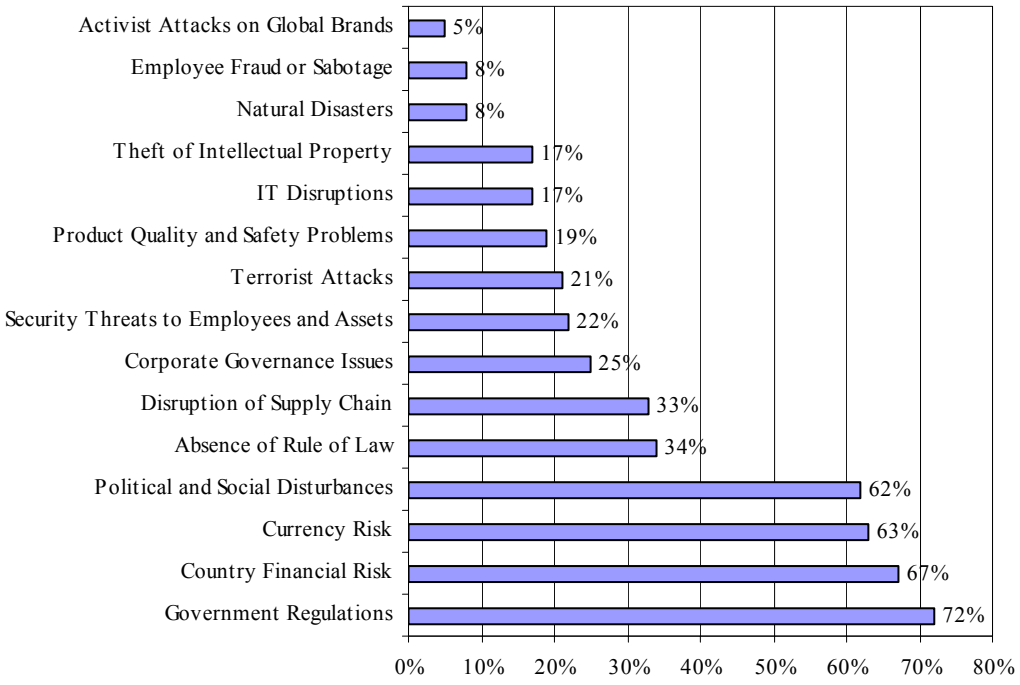
Figure 3 ranks some of the critical risks that investors perceive as threatening to their operations. The ranking is the result of a survey that was constructed using primary data from a proprietary survey administered to senior executives of the world's 1,000 largest corporations.[4] The results show that over 50 percent of senior executives believe that political and social disturbance, currency risk, country financial risk, and government regulations are the most critical risks that bear on their investment decisions. These political, economic, and financial risks rank very high when compared to other factors such as theft of intellectual property, IT disruptions, or product quality and safety problems.

Singh and Jun (1995) empirically analyzed various factors—including political risk, business conditions, and macroeconomic variables—that have influenced FDI to developing countries. Using a pooled model of developing countries, they showed that political risk and business operating conditions have been important determinants of FDI for countries that have historically attracted high FDI. For countries with relatively low FDI, a key determinant was the degree of sociopolitical instability, proxied by work hours lost in industrial disputes. They also observed that a country's orientation toward exports is the strongest variable for explaining why a country attracts FDI.

In view of these findings, it is reasonable to believe that the level of FDI inflows to MENA countries is likely to be affected by the degree of stability associated with investment risk. Previous studies have provided empirical analysis on the level of investment risk and the pattern of FDI in the MENA region. However, none of these studies has investigated the degree of instability associated with investment risk on FDI inflows to MENA countries.

[4] Kearney (2003).

Figure 3. Most Critical Risks to Corporations



Source: Kearney (2003).

III. MEASUREMENT OF RISK AND INSTABILITY

In this paper, we proxy the impact of the different factors affecting the risk level associated with foreign investment with the economic, financial, and political risk indices of the International Country Risk Guide (ICRG). The ICRG rating comprises 22 variables in three subcategories of risk: economic,[5] financial,[6] and political.[7] The ICRG rating provides a measure of the risk level, but the rating provides no indication of the stability of the risk level.

[5] Economic risk components are as follows: GDP per Head of Population, Real Annual GDP Growth, Annual Inflation Rate, Budget Balance as a Percentage of GDP, and Current Account Balance as a Percentage of GDP.

[6] Financial risk components include the following: Foreign Debt as a Percentage of GDP, Foreign Debt Service as a Percentage of XGS, Current Account as a Percentage of XGS, Net Liquidity as Months of Import Coverage, and Exchange Rate Stability.

[7] Political risk components include the following: Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability, and Bureaucracy Quality.

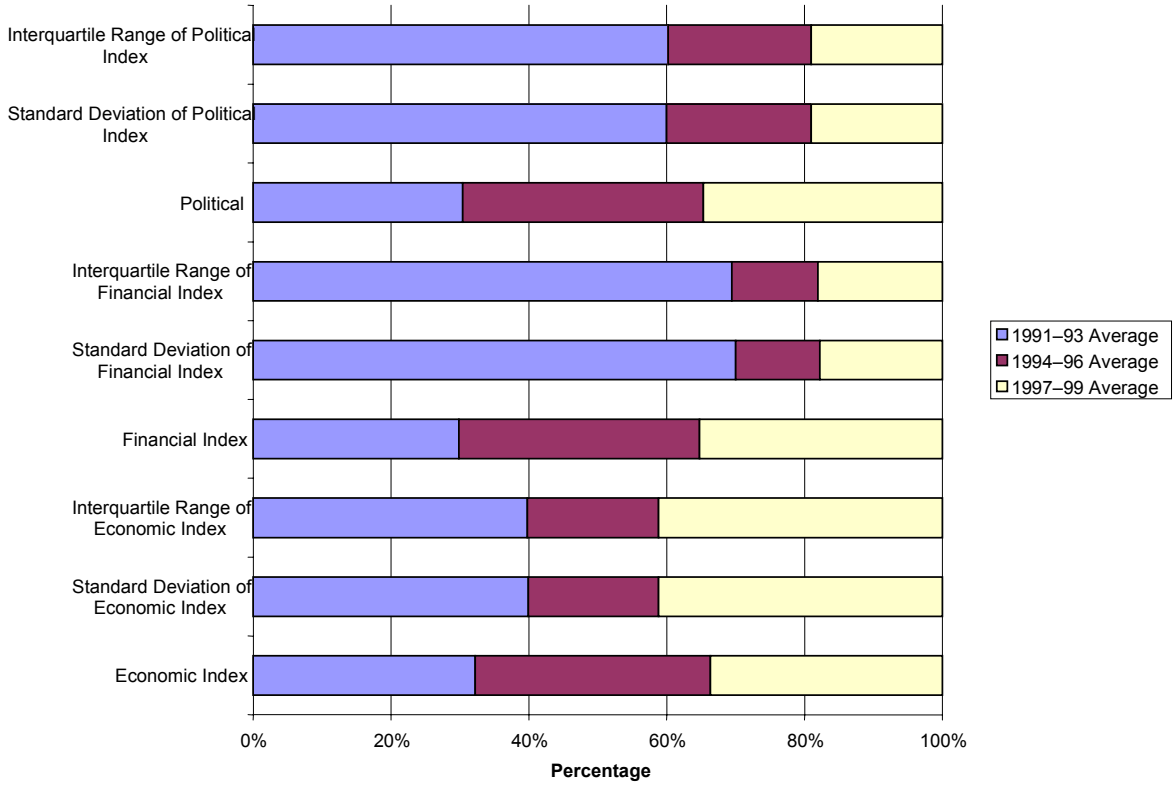
We use the standard deviation and interquartile range[8] as measures of risk instability. Each of these measures has its limitations: the intensity of instability can be over-estimated by outliers in the standard deviation and underestimated by extreme data points in interquartile range.[9]

Figure 4 shows the relative magnitude of the economic, financial and political ICRG indices for the Middle East and North Africa region across different time periods as well of the standard deviations and interquartile ranges of theses indices. The time periods are 1991–93, 1994–96, and 1997–99. Each bar in Figure 4 indicates the relative sizes for the three periods for the level of an index, the standard deviation of an index, and the interquartile range of an index. For each variable, the sum of the three periods is converted into percentages and each section of a bar represents the percentage that each period contributes to the sum total. Figure 4 shows that the percentage contribution for the economic, financial and political index levels over each of the three periods is relatively constant when compared to the percentage contribution for their standard deviations and interquartile ranges.

[8] Interquartile range between 20th to 80th percentile is used.

[9] The coefficient of variation is not an appropriate measure of instability in this study, because FDI inflows are sometimes negative for some countries, which contributes to a mean of FDI to GDP ratio close to 0, and thus an artificially high coefficient of variation.

Figure 4. Period Contribution of International Country Risk Guide Index, Standard Deviation of the Index and Interquartile Range of Index for Middle East and North Africa



Source: PRS Group, Inc., 2003, *International Country Risk Guide* (New York).

IV. METHODOLOGY

Estimations are conducted using both fixed effects and random effects dynamic panel models. These models incorporate both intertemporal dynamic and individual differences and thus provide better control for the effects of missing or unobserved variables.

The fixed effects dynamic panel model is as follows:

$$y_{it} = \gamma y_{it-1} + \beta' x_{it} + \alpha_i^* + u_{it} \qquad \begin{matrix} i = 1, \ldots, N, \\ t = 1, \ldots, T, \end{matrix} \tag{1}$$

where y_{it} is the ratio of inflows of foreign direct investment to gross domestic product, and x_{it} is the explanatory variables, for country i at time t. Inflows of foreign direct investment are expressed as a ratio to gross domestic product in order to control for scale. The term α^*_i denotes unobserved country-specific effects which are assumed to be fixed over time and different across country i. The error term u_{it} is assumed to be independently distributed across i and over t with mean zero and variance σ^2.

The random effects dynamic panel model is:

$$y_{it} = \mu + \gamma y_{it-1} + \beta' x_{it} + \nu_{it} \qquad \begin{matrix} i = 1, \ldots, N, \\ t = 1, \ldots, T, \end{matrix} \tag{2}$$

where $v_{it} = \alpha_i + \mu_{it}$ and α_i are assumed to be independently distributed across i, with mean zero and variance σ_α^2, and uncorrelated with x_{it}. The error term u_{it} is assumed to be independently distributed across i and over t, with mean zero and variance σ^2.

When the number of observations is relatively large compared to the number of time periods, the fixed effects approach can produce significantly different results from the random effects approach (Hsiao, 2001). The Hausman test is applied to assess whether the fixed or random effects approach is more appropriate in the dynamic panel model. The condition index is calculated to check for multicollinearity (Belsley, Kuh, and Welsch, 1980) in all models. The White test is applied to check if the homoskedasticity assumption is violated (White, 1980) in the fixed effects model. We show in the next section that the random effects approach is to be preferred to the fixed effects approach for the dynamic panel model. The generalized least squares method is used under the random effects approach to provide the best linear unbiased estimator. The generalized least squares estimation allows the error structure to be heteroskedastic. Since homoskedasticity can be considered as a special case of heteroskedasticity, it is not necessary to check if the homoskedasticity assumption is satisfied. The short time series nature of the data set suggests that initial observations could affect the consistency of the estimator. The generalized least squares method provides consistent estimates, and allows adjustment for the correlation that exists between one explanatory variable, namely, the initial ratio for inflows of foreign direct investment to gross domestic product, and country-specific effects α_i (Hsiao, 2001).

V. DATA

Two panel data sets were constructed for this study. One includes 19 countries in the MENA region,[10] while the other includes 14 member countries of the EU[11] as well as Canada and the United States. For countries in the MENA region, inflows of FDI (in current U.S. dollars) are derived from the UNCTAD Handbook of Statistics On-line (United Nations Conference on Trade and Development, 2003). Gross domestic product (in current U.S. dollars) is compiled from the World Development Indicators (World Bank, 2002). For countries in the EU and North America, the share of FDI in gross domestic product is derived from the World

[10] The 19 countries in the sample data include Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Sudan, Syrian, Tunisia, Turkey, the United Arab Emirates, and Yemen.

[11] The 14 EU member countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

Development Indicators (World Bank, 2002). For all countries, the economic risk, financial risk and political risk indices, are compiled from the International Countries Risk Guide (The PRS Group, 2003).

Data availability constrains the data set to the years from 1990 to 1999. Shares of FDI to gross domestic product in the dynamic panel models for the three ending periods were collected from the years 1993, 1996, and 1999. Shares of FDI to gross domestic product for the three initial periods were collected from the years 1991, 1994, and 1997. The economic risk index, financial risk index and political risk index were averaged for the period 1991 to 1993, 1994 to 1996, and 1997 to 1999. In addition, the standard deviation and interquartile range for economic risk index, financial risk index, and political risk index were calculated over the periods 1991 to 1993, 1994 to 1996, and 1997 to 1999.

VI. EMPIRICAL RESULTS

Empirical results are shown in Table 1 and 2. Table 1 gives the results for the random effects dynamic panel model of the MENA. Table 2 presents the results for the random effects dynamic panel model for the EU and North America. Only results for the random effects dynamic panel model are provided because the Chi square for the Hausman test indicates that the null hypothesis, where individual effects are uncorrelated with the other regressors, is not rejected for the model at 1 percent significance level. It is therefore not necessary to test for heteroskedasticity.

In Table 1, the condition indices for all models are below 30, implying that there is no multicollinearity problem. Parameter estimates for the lagged dependent variable *Yl*, the FDI to GDP ratio at time *t*-1, and for *Ym*, the mean of the FDI to GDP ratio during the period, are of expected sign and significant at 10 percent level in all models. The time invariant variable, *Ym*, is used as an instrument to adjust for the correlation between the lagged dependent variable and the country specific effects. The negative sign of *Yl* reflects the volatility characteristic of the FDI to GDP ratio. The positive sign of *Ym* shows that the higher the average ratio of FDI to GDP a country has over time, the higher its period FDI to GDP ratio. Results from Table 1 indicate that, in each case, the instability of the risk index provides a better fit than the index itself when explaining country ratios of FDI to GDP over time in the MENA region. Parameter estimates for the financial risk index in Model 1, the economic risk index in Model 2, and the political risk index in Model 3 are not of the expected sign. The parameter estimates for the standard deviation as well as interquartile range of each of the three indices are of expected sign and significant at 10 percent level.

Table 1. Results for the Middle East and North Africa with Random Effects Dynamic Panel Model

Financial Index

Model 1			
Intercept	-0.0091	(0.0076)	
Yl	-1.7344	(0.0995)	
Financial	0.0004	(0.0002)	
Ym	2.4500	(0.0761)	
Condition Index			11.8
Chi Square for Hausman Test			8.6
Model 1-S			
Intercept	0.0075	(0.0021)	
Yl	-1.7200	(0.0937)	
Sfinancial	-0.0014	(0.0005)	
Ym	2.4749	(0.0727)	
Condition Index			3.5
Chi Square for Hausman Test			6.6
Model 1-R			
Intercept	0.0076	(0.0021)	
Yl	-1.7188	(0.0932)	
Rfinancial	-0.0013	(0.0004)	
Ym	2.4781	(0.0725)	
Condition Index			3.5
Chi Square for Hausman Test			6.4

Economic Index

Model 2			
Intercept	-0.0078	(0.0091)	
Yl	-1.7371	(0.1015)	
Economic	0.0003	(0.0003)	
Ym	2.4534	(0.0775)	
Condition Index			14.1
Chi Square for Hausman Test			6.0
Model 2-S			
Intercept	0.0069	(0.0024)	
Yl	-1.7452	(0.0990)	
Seconomic	-0.0016	(0.0008)	
Ym	2.4818	(0.0778)	
Condition Index			3.8
Chi Square for Hausman Test			6.8

Table 1. Results for the Middle East and North Africa with Random Effects Dynamic Panel Model (concluded)

Model 2-R			
Intercept	0.0070	(0.0024)	
Yl	-1.7473	(0.0988)	
Reconomic	-0.0015	(0.0007)	
Ym	2.4828	(0.0776)	
Condition Index			3.8
Chi Square for Hausman Test			7.0

Political Index

Model 3			
Intercept	-0.0102	(0.0079)	
Yl	-1.7452	(0.1001)	
Political	0.0002	(0.0001)	
Ym	2.4580	(0.0764)	
Condition Index			12.3
Chi Square for Hausman Test			7.5

Model 3-S			
Intercept	0.0058	(0.0022)	
Yl	-1.7232	(0.0988)	
Spolitical	-0.0005	(0.0003)	
Ym	2.4703	(0.0776)	
Condition Index			3.6
Chi Square for Hausman Test			9.1

Model 3-R			
Intercept	0.0060	(0.0022)	
Yl	-1.7243	(0.0984)	
Rpolitical	-0.0005	(0.0003)	
Ym	2.4755	(0.0777)	
Condition Index			3.6
Chi Square for Hausman Test			9.2

Sources: International Countries Risk Guide (PRS Group, 2003), UNCTAD Handbook of Statistics (2003), World Development Indicators (World Bank, 2002).

Notes:

Standard Errors are shown in parentheses
Yl: Initial FDI Inflows-GDP Ratio
Economic: International Country Risk Guide economic index
Seconomic: Standard deviation of International Country Risk Guide economic index
Reconomic: Interquartile Range of International Country Risk Guide economic index
Financial: International Country Risk Guide financial index
Sfinancial: Standard deviation of International Country Risk Guide financial index
Rfinancial: Interquartile Range of International Country Risk Guide financial index
Political: International Country Risk Guide political index
Spolitical: Standard deviation of International Country Risk Guide political index
Rpolitical: Interquartile Range of International Country Risk Guide political index
Ym: Mean FDI Inflows-GDP Ratio

In Table 2, the condition indices for all models, except Model 1, Model 2 and Model 3, are below 10. However, having condition indices for Model 1, Model 2 and Model 3 greater than 30 is not surprising given that the ratio of initial FDI inflows to GDP, as well as the level of investment risk, are included as explanatory variables. Intriligator, Bodkin, and Hisao (1996) suggest that one way to approach multicollinearity is to "recognize the problem of multicollinearity and not try to change the data or model."[12] All three models have the same specification as the other models in our analysis. There is therefore no reason to change the specification of our models to achieve lower condition indices.

Parameter estimates for *Yl* and *Ym* are of expected sign and significant in all models. Overall, results in Table 2 show an opposite pattern to those in Table 1. The parameter estimates for the standard deviation as well as the interquartile range of the economic index and political risk index are not of expected sign and are insignificant. Although parameter estimates for the standard deviation as well as interquartile range of the financial risk index are of the expected sign, they are insignificant. Parameter estimates for the economic risk index in Model 2 and political risk index in Model 3 are of the expected sign and significant at the 10 percent level. Although results for Model 1 do not follow the same pattern, the parameter estimates for the financial risk index as well as standard deviation and interquartile range in the model are insignificant. Parameter estimates for *Yl* and *Ym* are of expected sign and significant in all models.

VII. CONCLUSIONS

Stability in investment risk allows investors to incorporate risk more accurately in estimating rate of return. The need to account for stability in investment risk is particularly important for countries in the MENA region, which historically have a higher level of instability associated with investment risk than developed countries.

The empirical results presented in this paper indicate that the degree of instability associated with investment risk is a much more critical determinant of foreign investment in the MENA countries than it is for developing countries, which have lower level investment risk.

These results also suggest that the instability of risk indices provide a better fit than the indices themselves when explaining the ratio of FDI to GDP over time for MENA countries. Results are consistent using either the standard deviation or interquartile range as a measure of instability. We further conclude that for developed countries, such as members of the EU, Canada, and the United States, which have relatively lower investment risk, the instability associated with investment risk is not as critical a determinant of foreign investment as it is for the MENA countries.

[12] Intriligator, M., R. Bodkin, and C. Hsiao, 1996, Econometric Models, Techniques, and Application, page 132.

Table 2. Results for European Union and North America with Random Effects Dynamic Panel Model

Financial Index

Model 1			
Intercept	-4.0482	(2.9545)	
Yl	-1.5911	(0.2771)	
Financial	0.0856	(0.0668)	
Ym	2.5682	(0.0869)	
Condition Index			31.6
Chi Square for Hausman Test			3.9
Model 1-S			
Intercept	0.0275	(0.5168)	
Yl	-1.6250	(0.2801)	
Sfinancial	-0.2515	(0.2177)	
Ym	2.5815	(0.0901)	
Condition Index			6.0
Chi Square for Hausman Test			5.1
Model 1-R			
Intercept	0.0360	(0.5176)	
Yl	-1.6272	(0.2801)	
Rfinancial	-0.2257	(0.1919)	
Ym	2.5828	(0.0901)	
Condition Index			6.0
Chi Square for Hausman Test			5.2

Economic Index

Model 2			
Intercept	10.0943	(3.8284)	
Yl	-1.5196	(0.2611)	
Economic	-0.2733	(0.1000)	
Ym	2.6168	(0.0846)	
Condition Index			45.1
Chi Square for Hausman Test			2.8
Model 2-S			
Intercept	-0.4655	(0.5157)	
Yl	-1.5913	(0.2810)	
Seconomic	0.1901	(0.3593)	
Ym	2.5466	(0.0871)	
Condition Index			5.6
Chi Square for Hausman Test			2.9

Table 2. Results for European Union and North America with Random Effects Dynamic Panel Model (concluded)

Model 2-R	-0.4548	(0.5179)	
Intercept	-1.5893	(0.2810)	
Yl	0.1520	(0.3134)	
Reconomic	2.5465	(0.0871)	
Ym			5.6
Condition Index			2.9
Chi Square for Hausman Test			

Political Index

Model 3	10.8710	(3.1448)	
Intercept	-1.5992	(0.2476)	
Yl	-0.1395	(0.0389)	
Political	2.6024	(0.0784)	
Ym			38.5
Condition Index			3.2
Chi Square for Hausman Test			

Model 3-S			
Intercept	-0.6787	(0.6135)	
Yl	-1.5623	(0.2801)	
Spolitical	0.1586	(0.1915)	
Ym	2.5551	(0.0872)	
Condition Index			6.0
Chi Square for Hausman Test			3.1

Model 3-R			
Intercept	-0.6923	(0.6126)	
Yl	-1.5618	(0.2799)	
Rpolitical	0.1436	(0.1667)	
Ym	2.5557	(0.0871)	
Condition Index			6.0
Chi Square for Hausman Test			3.0

Sources: International Countries Risk Guide (PRS Group, 2003), UNCTAD Handbook of Statistics (2003), World Development Indicators (World Bank, 2002).

Notes:

Standard Errors are shown in parentheses
Yl: Initial FDI Inflows-GDP Ratio
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Financial: International Country Risk Guide financial index
Sfinancial: Standard deviation of International Country Risk Guide financial index
Rfinancial: Interquartile Range of International Country Risk Guide financial index
Political: International Country Risk Guide political index
Spolitical: Standard deviation of International Country Risk Guide political index
Rpolitical: Interquartile Range of International Country Risk Guide political index
Ym: Mean FDI Inflows-GDP Ratio

Policies designed to stabilize investment risk should help MENA countries to attract FDI. Such policies could include measures to improve the regulatory environment, reduce currency and financial risk, and avoid political and social instability. Our findings also mirror the risk ranking of corporate executives related to investment (Figure 3) and support the hypothesis that economic, financial, and political risk are critical determinants of foreign direct investment.

According to the World Bank's MENA strategy paper (2003), the region's sensitive political environment has resulted in policies being overly oriented toward short-run gain, at the expense of long-run objectives. This has contributed to the instability of investment risk. This paper therefore recommends the reorientation of policies toward long-term objectives in order to help reduce the degree of risk instability in the region.

Future research could usefully explore the causality of other variables—such as the exchange rate, changes in total factor productivity, human capital, characteristics of the labor force (wage rate, education level, and the like)—and investigate their impact on FDI in the MENA region. It would also be worth investigating factors contributing to the instability of the components of each of the three ICRG risk indices and examining the relationship between the instability of these underlying factors and FDI in the MENA region.

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