Property Rights Protection and FDI flows: The MENA Experience

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Abstract:

The paper empirically examines the influence of property rights protection institutions and bilateral investment treaties on FDI flows to the MENA region. The paper uses panel data on 13 MENA countries for the period 1985-2008, and adopts a least squares dummy variable approach. Empirical evidence shows that FDI flows are government expropriation risk-elastic. The influence of bilateral investment treaties is complementary to improvement in corruption and quality of government bureaucracy. World oil prices and labor force have a positive influence on FDI flows emphasizing the importance of economic growth in industrialized countries and human resources to FDI flows in MENA countries.

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I.   Introduction

The paper empirically examines the influence of property rights protection institutions and bilateral investment treaties on FDI flows to the MENA region. Bilateral investment treaties are contracted to strengthen property rights protection, reduce political risk, and thus encourage FDI. The paper uses panel data on 13 MENA countries for the period 1985-2008, and adopts a least squares dummy variable to account for unobservable country effects.[2] Empirical evidence shows that the risk of government expropriation of investment matters the most to FDI flows; FDI flows are elastic to risk improvements. The influence of bilateral investment treaties is complementary to improvement in corruption and quality of government bureaucracy. Oil prices and labor force have a positive influence on FDI flows emphasizing the importance of economic growth in industrialized countries and human resources to FDI flows in MENA countries.

The paper proceeds as follows. Section II discusses the empirical model. Section III discusses the data and empirical issues and the estimation methodology adopted. Section IV discusses the empirical results and section V concludes.

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[2] Sample countries comprise Algeria, Bahrain, Egypt, Jordan, Kuwait, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE.

II.   Empirical Model

The empirical model builds theoretically on the location advantage hypothesis of Dunning's (1981) ownership-location-internalization paradigm. Of the many location advantages that characterize MENA countries, natural and human resource endowments stand out. Thus the empirical model is expressed as:

$$\ln(FDIFLOWS_{it}) = \beta_0 + \beta_1 \ln(FDIFLOWS_{it-1}) + \beta_2 \ln(INSTIT_{it}) + \beta_3 BIT_{it} + \beta_4 BITINSTIT_{it}$$

$$+$$

$$\beta_5 \ln(OIL_{it}) + \beta_6 \ln(PRICE_{it}) + \beta_7 \ln(LABOR_{it}) + \beta_8 ln(TRADE_{it}) +$$

$$\beta_9 ln(INFLATION_{it}) + \beta_{10} ln(WFDIFLOWS_{it}) + \varepsilon_{it} \qquad \textbf{(1)}$$

where *FDIFLOWS* is annual FDI inflows, $FDIFLOWS_{it-1}$ lagged dependent variable, *INSTIT* property rights protection domestic institution, *BIT* total number of bilateral investment treaties entered into force, *BITINSTIT* is an interaction term between the natural logarithm of domestic institutions on the one hand and bilateral investment treaties on the other, *OIL* oil production, *PRICE* oil price, *LABOR* labor force, *TRADE* trade, *INFLATION* inflation rate, *WFDIFLOWS* world FDI flows, and ε an error term. The subscripts *i* and *t* are country and time indicators with *i=1,...,N* and *t=1,...,T*. The variables are in logarithmic form except for *BIT*. Appendix A provides more information on the construction of variables.

We consider four dimensions of property rights protection based on the International Country Risk Guide's political risk index: investment profile, corruption, law and order, and bureaucracy quality. Investment profile refers to the risk of investment

expropriation, profits repatriation, and payment delays, clearly influencing PRP. Corruption is a threat to property rights protection as it enables people to assume positions of power through patronage rather than ability, constituting a threat to the rights of foreign investors as they facilitate government expropriation of investment or when direct conflicts with those patrons arise. Law and order refers to the strength and impartiality of the legal system as well as the popular observance of the law. Institutional strength and quality of bureaucracy refers to bureaucracy governing without drastic changes in policy when governments change. High scores on each of these institutions indicate better performance.

III.   Data, Empirical Issues and Estimation Methodology

To get around zeros and negative values of FDI flows, we use the same approach adopted by Blonigen and Davies (2004) and Neumayer and Spess (2005). The same approach is used with *INSTIT* and *OIL*. Data on bilateral investment treaties are obtained from the UNCTAD FDI online database.

Unobservable country effects and multicollinearity are empirical issues we account for. For the former, we used a least squares dummy variables approach. In detecting the latter, we use the variance inflation factor (VIF). Multicollinearity has been detected between some country dummies, namely Bahrain, Morocco, and Saudi Arabia, and *LABOR* in particular. Dropping these dummies has reduced VIF from a range of 30-37 to about 3. Although Bowerman *et al* (2005) consider multicollinearity as "severe" if the mean VIF is substantially greater than 1, we must accept some high multicollinearity while accounting for endogeneity associated with unobservable country effects.

IV. Empirical Results

Table 1 presents the estimation results. Each column corresponds to a domestic institution.

The lagged dependent variable is positive and statistically significant in all specifications suggesting persistence of FDI flows to MENA countries. In the first specification for example, an increase in FDI flows of the previous year by 10 percent increases FDI flows in the current year by about 2.8 percent.

Out of the four domestic institutional functions, investment profile or the risk of investment expropriation matters the most to FDI flows with positive and statistically significant coefficient, suggesting that FDI flows are elastic to improvements in investment expropriation risk. A reduction in the risk of investment expropriation by 10 percent increases FDI flows by nearly 20 percent.

BIT on the other hand is statistically insignificant, while the interaction term *BITINSTIT* is positive and statistically significant in two of the four specifications suggesting complementarity between improvement in corruption and the quality of government bureaucracy on the one hand and bilateral investment treaties on the other.

World oil price and labor force play an important role in attracting FDI flows in MENA countries. FDI flows are nearly unit elastic with respect to world oil price and the labor force in all specifications. These results lend support to Dunning's location advantage hypothesis.

Domestic economic policies seem to have no influence on FDI flows. Coefficients of *TRADE* and *INFLATION* have signs that we would expect but are statistically insignificant. Neither is the coefficient of *WFDIFLOWS*.

For country specific effects, the effect for Qatar is noticeable. The country dummy coefficient for Qatar is positive and statistically significant at the 1 percent level in all specifications. In comparison, country dummy coefficients for Egypt, Syria, and Tunisia are statistically significant but only in some specifications.

V.   Concluding Remarks

The above empirical results highlight the importance of human resources and world oil price to FDI flows in the MENA region. Productive and low cost labor help attract FDI flows. In addition, by putting upward pressure on world oil price, economic growth in industrialized countries seems to be associated with these flows, as opposed to a global business cycle.

In addition to these two factors, at the institutional level among the different property rights protection institutions, expropriation of private investments by the government appears to matter the most to foreign investors. A reduction in investment expropriation risk significantly encourages FDI flows to MENA countries. In addition, bilateral investment treaties complement the reduction in corruption and the improvement in bureaucracy quality, suggesting that government efforts to improve property rights protection through these treaties are not unproductive.

Appendix A
Variables, Definitions, and Data sources

Variable	Definition	Source
FDIFLOWS	FDI flows in millions of US$ (log)	UNCTAD's FDI online database.
BIT	Total number of bilateral investment treaties entered into force.	Author's calculation based on UNCTAD's bilateral investment treaties online database.
INSTIT	Domestic PRP institutional functions. These are a) investment profile, b) corruption, c) law and order, and d) bureaucracy quality (log).	ICRG political risk index.
BITINSTIT	Interaction term between *BIT* and *INSTITFN* constructed as the product of *INSTITFN* (log form) and *BIT*.	Author's calculation.
OIL	Oil production in thousands of barrels per day (log).	Energy Information Administration
PRICE	Crude oil price measured by the price of Saudi Arabian Light 34 in US$/barrel (log).	Energy Information Administration
LABOR	Labor force (log).	World Bank's World Development Indicators.
TRADE	Sum of exports and imports as a percentage of GDP (log).	World Bank's World Development Indicators.
INFLATION	Inflation rate in percentage (log). Rate is calculated based on the consumer price index, except for Oman and UAE where it is based on GDP deflator.	World Bank's World Development Indicators.
WFDIFLOWS	World FDI inflows in millions of US$ (in log form).	Author's calculation based on UNCTAD's bilateral investment treaties online database.

References

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Acknowledgements

Table 1: Institutions, Bilateral Investment Treaties and FDI Flows to MENA Countries
Dependent Variable: Log of FDI Inflows

VARIABLES	(1) IP	(2) C	(3) L&O	(4) BQ
FDIFLOWS(-1)	0.281a	0.297a	0.300a	0.297a
	(0.101)	(0.103)	(0.102)	(0.101)
INSTITFN	2.040a	-0.387	-0.681	-0.956
	(0.587)	(0.793)	(0.721)	(1.038)
BIT	-0.141	-0.117	-0.057	-0.164
	(0.099)	(0.095)	(0.099)	(0.104)
BITINSTITFN	0.009	0.114c	0.024	0.166b
	(0.021)	(0.058)	(0.030)	(0.072)
OIL	-0.142	-0.087	-0.063	-0.090
	(0.106)	(0.112)	(0.105)	(0.103)
PRICE	0.984b	1.106b	1.007b	1.135b
	(0.481)	(0.510)	(0.510)	(0.485)
LABOR	1.054a	0.919b	0.879b	1.065b
	(0.404)	(0.388)	(0.403)	(0.435)
TRADE	2.302c	2.042	1.971	2.450c
	(1.203)	(1.238)	(1.249)	(1.306)
INFLATION	-0.099	-0.161	-0.201	-0.180
	(0.155)	(0.162)	(0.165)	(0.163)
WFDIFLOWS	0.337	0.438	0.612	0.452
	(0.325)	(0.335)	(0.371)	(0.326)
Egypt	1.805b	1.007	0.944	0.710
	(0.820)	(0.747)	(0.788)	(0.739)
Oman	1.506	1.401	1.186	1.646
	(0.935)	(0.940)	(0.922)	(1.002)
Qatar	2.499a	2.431a	2.489a	2.616a
	(0.904)	(0.838)	(0.932)	(0.946)
Libya	-1.617	-2.000	-2.132	-2.236
	(1.528)	(1.585)	(1.529)	(1.481)
Kuwait	-0.779	-1.246	-1.337	-1.232
	(1.113)	(1.080)	(1.086)	(1.049)
Jordan	-0.802	-0.893	-0.940	-0.964
	(0.720)	(0.783)	(0.797)	(0.754)
Algeria	-0.462	-0.579	-1.078	-0.860
	(0.832)	(0.829)	(0.982)	(0.752)
UAE	-0.365	-0.457	-0.628	-0.636
	(1.273)	(1.286)	(1.287)	(1.266)
Syria	1.166c	0.488	0.425	0.191
	(0.609)	(0.549)	(0.532)	(0.643)
Tunisia	1.190c	0.959	0.725	0.992c
	(0.636)	(0.615)	(0.626)	(0.587)
Constant	-32.643a	-27.264a	-27.769a	-30.991a
	(9.590)	(8.915)	(9.647)	(10.257)
Observations	279	279	279	279
Adjusted R-squared	0.441	0.421	0.420	0.425
VIF (mean)	3.13	2.99	3.19	3.25

Notes: "IP", "C", "L&O" and "BQ" are investment profile, corruption, law and order, and bureaucracy
quality, respectively.
Robust standard errors in parentheses.
a,b,c denotes test statistic significance at the 1%, 5%, 10% level, respectively.