ABSTRACT

Title of Document: FOREIGN DIRECT INVESTMENT AND POLITICAL UNCERTAINTY

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Recent developments in the general equilibrium theory of multinationals emphasize the importance of multilateral considerations. Yet, existing explanations and corresponding estimations of FDI patterns have largely limited political and institutional investment impediments to a bilateral framework. Through the application of spatial econometric techniques, I demonstrate that the presence of both domestic and regional political uncertainty generate real options effects that lead to the delay or redirection of foreign direct investment. The magnitude and direction of these effects is conditional upon the host country regime type and the predominant multinational integration strategies in the region. Comparing these results with FDI of U.S. origin, I find evidence for divergent investment behavior by U.S. multinationals during regime changes in partner countries. Additionally, I find no evidence that multinationals from developing countries are more likely to complete cross-border deals in environments characterized by greater political risk or political uncertainty.

FOREIGN DIRECT INVESTMENT AND POLITICAL UNCERTAINTY

By

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of the requirements for the degree of
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Professor Martin E. Dresner, Chair
Professor Curt Grimm
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Professor Phillip Swagel

Dedication

This dissertation is dedicated to my father, Sherif D. Elwakil. He is the source from which my intellectual curiosity and reverence for academic scholarship originate.

Acknowledgments

First and foremost, I must acknowledge the generosity and benevolence of my dissertation advisor, mentor, and good friend, Martin Dresner. I was fortunate to be under his guidance and it was a pleasure working with him. I must also acknowledge the members of my dissertation committee for their direction: Curt Grimm, Bennet Zelner, Wilbur Chung, and Phillip Swagel. To have a collection of some of the finest and most regarded scholars in the field on my committee was a benefit that I greatly appreciate. Furthermore, I must thank the faculty members of the Logistics, Business, & Public Policy department for their instruction and training. Their commitment to the doctoral students is a principal reason for the success of the program. Additionally, I would like to thank Kislaya Prasad and the Center for International Business Education & Research for the summer research funding they provided. I must also acknowledge Juan Alcacer for granting me access to the Harvard Business School databases. The Doctoral Programs Office of the Robert H. Smith School and Justina Blanco also deserve mention for their assistance, patience, and accommodation. Finally, I am grateful to my family and particularly my father, Sherif D. Elwakil, for his encouragement and support throughout the process.

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Table 1: Country-Year Regime Type (1984-2013) – Full Sample

Regime Type	Freq.	Percent	Cum.
Full Autocracy	518	15.01	15.01
Partial Autocracy	671	19.45	34.46
Partial Democracy	448	12.99	47.45
Partial Democracy w/ factionalism	789	22.87	70.32
Full Democracy	891	25.83	96.14
Interregnum	64	1.86	98.00
Interruption	24	0.70	98.70
Transition	45	1.30	100
Total	**3,450**		

Table 2: Regime Change Type (1984-2013) – Full Sample

Regime Change Type	Freq.	Percent	Cum.
Major Democratic Transition	89	25.43	25.43
Minor Democratic Transition	14	4.00	29.43
Positive Regime Change	38	10.86	40.29
No Change in Polity Score	154	44.00	84.29
Negative Regime Change	12	3.43	87.71
Adverse Regime Transition	21	6.00	93.71
Interruption	16	4.57	98.29
Interruption	4	1.14	99.43
Undefined	2	0.57	100
Total	**350**		

Table 3: FDI Inward by Regime Type (1984-2013) – Full Sample

Regime Type	FDI Flows Inward (Total)	FDI Stocks Inward (Total)
Full Autocracy	2065109.61	11023631.69
Partial Autocracy	571050.08	5567011.97
Partial Democracy	1185297.00	12451138.47
Partial Democracy w/ factionalism	3167791.03	29648399.02
Full Democracy	14117276.64	182717759.45
Interregnum	6474.70	122519.66
Interruption	21958.90	135385.43
Transition	19921.12	308663.04
Total	**21154879.09**	**241974508.73**

Note: On net bases. Real USD millions (2009 = 100).

Table 4: FDI Inward by Regime Change Type (1984-2013) – Full Sample

Regime Change Type	FDI Flows Inward (Total)	FDI Stocks Inward (Total)
Major Democratic Transition	92323.54	776739.85
Minor Democratic Transition	6936.94	206261.21
Positive Regime Change	26656.50	208368.21
No Change in Polity Score	315929.96	2629708.73
Negative Regime Change	6859.28	87407.66
Adverse Regime Transition	14702.55	216307.99
Interruption	2131.14	45675.88
State Failure	1255.06	1876.09
Total	**466794.97**	**4172345.62**

Note: On net bases. Real USD millions (2009 = 100).

Table 5: Descriptive Statistics – Full Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI flows inward	3,450	6131.849	20966.67	-33513.79	366774.9
GDP	3,450	331832.7	1166385	116.7583	14531847.68
Trade costs	3,450	2.368219	4.487528	0.2185847	81.58581
Surrounding-market potential	3,450	8460.181	5638.987	1756.079	37873.05
Composite risk	3,450	0.0242044	0.0856336	0.0104803	1
Political risk	3,450	0.0251227	0.0856171	0.0103093	1
Polity score	3,450	2.916232	6.96778	-10	10
Political constraint index	3,335	0.2716481	0.2131055	0	0.72
Regime durability	3,450	28.37449	32.67275	0	204

Table 6.1: FDI Flows Inward – Base Models – Full Sample

Variables	(1) FE Base	(2) RE Base	(3) FE Robust	(4) FE AR(1)
Ln(GDP)	9,477***	5,720***	9,477**	8,665***
	(1,315)	(703.9)	(4,735)	(2,201)
Ln(trade costs)	-6,250***	-6,366***	-6,250***	-4,759***
	(957.5)	(867.1)	(2,021)	(1,418)
Ln(total population)	-16,807***	-773.5	-16,807***	-14,565***
	(2,356)	(924.7)	(6,033)	(4,460)
Ln(political risk)	1,908***	1,975***	1,908***	387.8
	(643.5)	(642.3)	(562.4)	(1,064)
Ln(surrounding-market potential)	9,108***	2,739**	9,108	8,149**
	(2,317)	(1,351)	(6,508)	(3,313)
Constant	110,285***	-54,820***	110,285*	83,829***
	(26,545)	(14,271)	(57,281)	(21,548)
Observations	3,450	3,450	3,450	3,335
R-squared	0.102		0.102	
Number of Countries	115	115	115	115
Country FE	YES	NO	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 6.2: FDI Flows Inward – Base Models – Full Sample

Variables	(5) FE Robust	(6) FE AR(1)	(7) FE Robust	(8) FE Robust
Ln(GDP)	9,579**	8,762***	9,521*	9,343*
	(4,729)	(2,202)	(4,873)	(4,893)
Ln(trade costs)	-6,227***	-4,760***	-4,391**	-4,396**
	(2,009)	(1,417)	(1,742)	(1,748)
Ln(total population)	-16,584***	-14,588***	-17,464***	-17,714***
	(5,942)	(4,452)	(6,240)	(6,361)
Ln(composite risk)	2,502***	735.9	3,022***	
	(804.4)	(1,097)	(990.8)	
Ln(surrounding-market potential)	9,364	8,132**	-19,571**	-19,834**
	(6,561)	(3,311)	(8,931)	(9,038)
Ln(political risk)				2,369***
				(725.1)
Constant	105,827*	84,799***	363,315***	369,192***
	(56,361)	(21,494)	(114,574)	(116,931)
Observations	3,450	3,335	3,450	3,450
R-squared	0.103		0.138	0.136
Number of Countries	115	115	115	115
Country FE	YES	YES	YES	YES
Year FE	NO	NO	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 6.3: FDI Flows Inward – Base Models – Full Sample

Variables	(9) FE Robust	(10) FE AR(1)	(11) FE Robust
Ln(GDP)	8,899*	8,776***	8,168*
	(4,512)	(2,241)	(4,620)
Ln(trade costs)	-6,725***	-4,984***	-4,696***
	(2,102)	(1,454)	(1,780)
Ln(total population)	-17,439***	-15,060***	-18,831***
	(6,208)	(4,638)	(6,628)
Political Constraint Index	-7,041***	-2,365	-8,561***
	(2,146)	(2,309)	(2,492)
Ln(surrounding-market potential)	10,248	8,614**	-23,415**
	(6,652)	(3,415)	(9,585)
Constant	111,098*	85,807***	423,428***
	(57,397)	(22,854)	(126,693)
Observations	3,335	3,220	3,335
R-squared	0.104		0.141
Number of Countries	115	115	115
Country FE	YES	YES	YES
Year FE	NO	NO	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7.1: FDI Flows Inward – Regime Attributes – Full Sample

Variables	(12) FE AR(1)	(13) FE AR(1)	(14) FE AR(1)
Ln(GDP)	8,589***	8,108***	8,200***
	(2,196)	(2,259)	(2,257)
Ln(trade costs)	-4,899***	-4,688***	-4,817***
	(1,420)	(1,418)	(1,424)
Ln(total population)	-14,055***	-13,795***	-13,604***
	(4,463)	(4,506)	(4,501)
Ln(political risk)	445.1	454.2	480.5
	(1,067)	(1,067)	(1,068)
Ln(surrounding-market potential)	8,480**	8,074**	8,355**
	(3,318)	(3,309)	(3,322)
Polity score	-128.3		-100.8
	(109.5)		(115.8)
Regime durability		37.65	27.37
		(35.09)	(37.08)
Constant	74,085***	77,002***	71,190***
	(21,831)	(21,715)	(21,894)
Observations	3,335	3,335	3,335
Number of Countries	115	115	115
Country FE	YES	YES	YES
Year FE	NO	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7.2: FDI Flows Inward – Regime Attributes – Full Sample

Variables	(15) FE Robust	(16) FE Robust	(17) FE Robust
Ln(GDP)	8,503*	7,832	7,789
	(4,794)	(5,150)	(5,058)
Ln(trade costs)	-5,031***	-4,244**	-4,829***
	(1,760)	(1,706)	(1,755)
Ln(total population)	-16,932***	-15,700***	-15,921***
	(5,935)	(5,952)	(5,846)
Ln(political risk)	1,991***	2,204***	1,964***
	(619.6)	(681.5)	(615.6)
Ln(surrounding-market potential)	-18,529**	-20,069**	-18,900**
	(8,630)	(9,692)	(9,026)
Polity score	-395.8***		-324.3***
	(121.2)		(104.1)
Regime durability		94.26**	53.97
		(40.75)	(34.82)
Constant	353,065***	351,004***	345,566***
	(108,383)	(114,286)	(108,571)
Observations	3,450	3,450	3,450
R-squared	0.143	0.140	0.144
Number of Countries	115	115	115

Country FE	YES	YES	YES
Year FE	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7.3: FDI Flows Inward – Regime Attributes – Full Sample

Variables	(18) FE Robust	(19) FE AR(1)	(20) FE Robust	(21) FE AR(1)
Ln(GDP)	8,178*	8,690***	7,490	8,237***
	(4,512)	(2,239)	(4,896)	(2,309)
Ln(trade costs)	-7,148***	-5,084***	-6,611***	-4,928***
	(2,159)	(1,456)	(2,107)	(1,454)
Ln(total population)	-16,914***	-14,702***	-15,606***	-14,330***
	(5,950)	(4,645)	(5,809)	(4,692)
Political Constraint Index	-2,922	-1,752	-5,661***	-2,163
	(1,957)	(2,421)	(1,895)	(2,319)
Ln(surrounding-market potential)	12,063*	8,868***	10,002	8,547**
	(7,067)	(3,424)	(6,661)	(3,413)
Polity score	-327.4**	-99.88		
	(132.5)	(116.4)		
Regime durability			82.73*	34.06
			(43.30)	(35.92)
Constant	94,102*	78,809***	95,495*	79,154***
	(53,854)	(23,117)	(55,115)	(23,049)
Observations	3,335	3,220	3,335	3,220
R-squared	0.107		0.107	
Number of Countries	115	115	115	115
Country FE	YES	YES	YES	YES
Year FE	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 7.4: FDI Flows Inward – Regime Attributes – Full Sample

Variables	(22) FE Robust	(23) FE AR(1)	(24) FE Robust
Ln(GDP)	7,376	8,283***	6,690
	(4,855)	(2,308)	(4,875)
Ln(trade costs)	-6,971***	-5,012***	-4,918***
	(2,177)	(1,459)	(1,789)
Ln(total population)	-15,774***	-14,216***	-17,191***
	(5,788)	(4,690)	(6,215)
Political Constraint Index	-2,925	-1,756	-4,588**
	(1,968)	(2,421)	(2,135)
Ln(surrounding-market potential)	11,474*	8,745**	-22,650**
	(6,868)	(3,427)	(9,564)
Polity score	-251.7**	-72.64	-246.2**
	(114.6)	(122.6)	(106.0)
Regime durability	56.91	27.18	60.31*
	(39.45)	(37.80)	(35.94)
Constant	87,299	75,403***	403,260***
	(53,237)	(23,205)	(120,022)
Observations	3,335	3,220	3,335
R-squared	0.109		0.146
Number of Countries	115	115	115
Country FE	YES	YES	YES
Year FE	NO	NO	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 8: FDI Flows Inward – Regime Type – Full Sample

Variables	(25) FE Robust	(26) FE Robust	(27) FE Robust	(28) FE AR(1)
Ln(GDP)	9,522*	8,735*	8,015*	8,369***
	(4,843)	(5,018)	(4,739)	(2,318)
Ln(trade costs)	-7,310***	-7,162***	-6,303***	-4,767***
	(2,214)	(2,217)	(2,164)	(1,463)
Ln(total population)	-18,265***	-17,054***	-14,531**	-14,016***
	(6,576)	(6,284)	(6,549)	(4,755)
Political Constraint Index	-4,030**	-3,692*	-5,955***	-2,394
	(1,955)	(1,951)	(1,935)	(2,325)
Ln(surrounding-market potential)	11,164	10,135	8,044	7,672**
	(7,041)	(6,783)	(5,238)	(3,616)
Regime durability		76.60*		
		(40.70)		
Full Autocracy	141.5	-2,008		
	(1,827)	(1,457)		
Partial Autocracy	-1,240	-2,533**		
	(1,323)	(1,175)		
Partial Democracy	-1,191	-1,764		
	(1,339)	(1,273)		

Partial Democracy w/factionalism	-4,462**	-4,925***		
	(1,849)	(1,831)		
Full Democracy	-9,523**	-10,006**		
	(4,402)	(4,398)		
Full autocracy*durability			84.54**	25.53
			(39.98)	(51.57)
Partial autocracy*durability			15.63	-3.347
			(27.72)	(53.87)
Partial democracy*durability			232.7	128.2
			(166.4)	(80.23)
Partial Democracy w/factionalism*durability			82.78	64.25
			(88.23)	(74.58)
Full democracy*durability			162.9	84.49
			(167.7)	(86.40)
Constant	113,185*	109,420*	88,385	79,478***
	(63,880)	(61,779)	(60,459)	(23,264)
Observations	3,335	3,335	3,335	3,220
R-squared	0.112	0.114	0.111	
Number of Countries	115	115	115	115
Country FE	YES	YES	YES	YES
Year FE	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 9: FDI Flows Inward – Regime Change – Full Sample

Variables	(29) FE Robust	(30) FE Robust	(31) FE Robust	(32) FE Robust
Ln(GDP)	8,951*	7,506	8,825*	8,165*
	(4,534)	(4,892)	(4,618)	(4,619)
Ln(trade costs)	-6,736***	-6,625***	-6,657***	-7,063***
	(2,107)	(2,113)	(2,092)	(2,146)
Ln(total population)	-17,503***	-15,618***	-17,315***	-16,748***
	(6,239)	(5,799)	(6,253)	(5,996)
Political Constraint Index	-6,982***	-5,440***	-6,856***	-3,083
	(2,138)	(1,878)	(2,079)	(1,979)
Ln(surrounding-market potential)	10,225	9,937	10,338	11,972*
	(6,652)	(6,659)	(6,645)	(7,015)
Regime durability		88.37*		
		(45.28)		
Onset Regime Change	462.6	997.5**		
	(405.4)	(496.9)		
Onset regime change* lag durability			16.43	18.48
			(24.31)	(24.79)
Polity score				-312.7**
				(128.7)
Constant	111,725*	95,784*	108,958*	92,290
	(57,700)	(54,997)	(59,131)	(55,876)
Observations	3,335	3,335	3,220	3,220
R-squared	0.104	0.107	0.099	0.102
Number of Countries	115	115	115	115
Country FE	YES	YES	YES	YES

Year FE	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 10.1: FDI Flows Inward – Regime Change Type – Full Sample

Variables	(33) FE Robust	(34) FE Robust	(35) FE Robust	(36) FE Robust
Ln(GDP)	8,908*	7,402	8,957**	7,459
	(4,525)	(4,893)	(4,520)	(4,892)
Ln(trade costs)	-6,796***	-6,722***	-6,821***	-6,750***
	(2,121)	(2,127)	(2,129)	(2,135)
Ln(total population)	-17,538***	-15,596***	-17,529***	-15,572***
	(6,250)	(5,796)	(6,241)	(5,800)
Political Constraint Index	-6,932***	-5,259***	-7,187***	-5,710***
	(2,136)	(1,874)	(2,188)	(1,922)
Ln(surrounding-market potential)	10,281	9,974	10,230	9,922
	(6,670)	(6,677)	(6,666)	(6,672)
Regime durability		91.29*		89.81*
		(46.48)		(45.75)
Onset Major Democratic Transition	1,375**	2,344**		
	(677.4)	(925.0)		
Onset Minor Democratic Transition	-609.1	470.9		
	(1,193)	(1,248)		
Onset Positive Regime Change	-27.14	968.3		
	(720.4)	(755.2)		
No Change in Polity Score	210.6	171.7		
	(530.1)	(523.2)		
Onset Negative Regime Change	712.3	1,921		
	(1,748)	(1,748)		
Onset Adverse Regime Change	-402.9	288.4		
	(991.8)	(943.9)		
Year after Onset Major Democratic Transition			1,844**	2,559***
			(842.2)	(970.6)
Year after Onset Minor Democratic Transition			-0.119	938.7
			(945.1)	(990.2)
Year after Positive Regime Change			272.8	1,146
			(768.4)	(863.4)
Year after No Change in Polity Score			835.1	731.5
			(1,175)	(1,163)
Year after Onset Negative Regime Change			-212.6	1,595
			(2,051)	(1,508)
Year after Onset Adverse Regime Transition			-452.3	196.8
			(873.3)	(804.0)
Constant	112,286*	96,126*	112,114*	95,741*
	(57,900)	(55,060)	(57,715)	(55,004)
Observations	3,335	3,335	3,335	3,335
R-squared	0.104	0.107	0.104	0.108
Number of Countries	115	115	115	115
Country FE	YES	YES	YES	YES
Year FE	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 10.2: FDI Flows Inward – Regime Change Type – Full Sample

Variables	(37) FE Robust	(38) FE Robust	(39) FE Robust
Ln(GDP)	7,489	8,891*	7,470
	(4,907)	(4,523)	(4,912)
Ln(trade costs)	-6,610***	-6,757***	-6,647***
	(2,109)	(2,107)	(2,112)
Ln(total population)	-15,604***	-17,428***	-15,593***
	(5,829)	(6,228)	(5,829)
Political Constraint Index	-5,664***	-6,964***	-5,570***
	(1,888)	(2,144)	(1,897)
Ln(surrounding-market potential)	10,002	10,246	10,004
	(6,662)	(6,661)	(6,674)
Year prior to Onset Major Democratic Transition		618.7	695.0
		(569.4)	(564.0)
Year prior to Onset Minor Democratic Transition		310.5	295.0
		(659.0)	(676.7)
Year prior to Onset Positive Regime Change		-236.1	-590.9
		(665.6)	(722.4)
Year prior to No Change in Polity Score		-309.8	-275.0
		(357.2)	(352.3)
Year prior to Onset Negative Regime Change		-345.2	-421.5
		(1,808)	(1,897)
Year prior to Onset Adverse Regime Transition		967.9	556.1
		(789.8)	(853.3)
Regime durability	82.74*		82.99*
	(43.32)		(43.57)
Year prior to Onset Regime Change	-14.61		
	(303.6)		
Constant	95,474*	111,013*	95,456*
	(55,319)	(57,621)	(55,328)
Observations	3,335	3,335	3,335
R-squared	0.107	0.104	0.107
Number of Countries	115	115	115
Country FE	YES	YES	YES
Year FE	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 11: Country-Year Regime Type – OECD & non–OECD Samples

	OECD			non-OECD		
Regime Type	**Freq.**	**Percent**	**Cum.**	**Freq.**	**Percent**	**Cum.**
Full Autocracy	0	0.00	0.00	222	16.09	16.09
Partial Autocracy	0	0.00	0.00	345	25.00	41.09
Partial Democracy	21	3.04	3.04	219	15.87	56.96
Partial Democracy w/ factionalism	16	2.32	5.36	443	32.10	89.06
Full Democracy	653	94.64	100	80	5.80	94.86
Interregnum	0	0.00	100	44	3.19	98.04
Interruption	0	0.00	100	1	0.07	98.12
Transition	0	0.00	100	26	1.88	100
Total	**690**			**1380**		

Table 12: Regime Change Type – OECD & non–OECD Samples

	OECD			non-OECD		
Regime Change Type	**Freq.**	**Percent**	**Cum.**	**Freq.**	**Percent**	**Cum.**
Major Democratic Transition	0	0	0	46	23.47	23.47
Minor Democratic Transition	0	0	0	7	3.57	27.04
Positive Regime Change	0	0	0	15	7.65	34.69
No Change in Polity Score	7	100	100	94	47.96	82.65
Negative Regime Change	0	0	100	10	5.10	87.76
Adverse Regime Transition	0	0	100	13	6.63	94.39
Interregnum	0	0	100	10	5.10	99.49
Interruption	0	0	100	1	0.51	100
Total	**7**			**196**		

Table 13: FDI Inward by Country-Group Regime Type – Full Sample

	OECD		non-OECD	
Regime Type	**FDI Flows Inward (Total)**	**FDI Stocks Inward (Total)**	**FDI Flows Inward (Total)**	**FDI Stocks Inward (Total)**
Full Autocracy	0	0	137393.17	1057666.54
Partial Autocracy	0	0	315210.89	3317607.65
Partial Democracy	615055.31	7179133.90	155542	1884246.96
Partial Democracy w/ factionalism	49732.20	651263.35	1528931.55	12691789.45
Full Democracy	13438386.04	176070761.86	239774.09	2995144.61
Interregnum	0	0	3482.68	47428.81
Interruption	0	0	101.57	665.37
Transition	0	0	17846.74	255591.32
Total	**14103173.54**	**183901159.12**	**2398282.7**	**22250140.72**

Note: On net bases. Real USD millions (2009 = 100).

Table 14: FDI Inward by Country-Group Regime Change Type

	OECD		non-OECD	
Regime Change Type	**FDI Flows Inward (Total)**	**FDI Stocks Inward (Total)**	**FDI Flows Inward (Total)**	**FDI Stocks Inward (Total)**
Major Democratic Transition	0	0	40962.98	416921.56
Minor Democratic Transition	0	0	5055.19	164853.02
Positive Regime Change	0	0	9335.78	70897.94
No Change in Polity Score	116668.09	1069182.46	105462.95	819710.06
Negative Regime Change	0	0	6815.94	85266.1
Adverse Regime Transition	0	0	13945.12	206701.12
Interregnum	0	0	1819.74	22235.23
Interruption	0	0	101.57	665.37
Total	**116668.09**	**1069182.46**	**183499.27**	**1787250.4**

Note: On net bases. Real USD millions (2009 = 100).

OECD Sub-sample Results

Table 15: Descriptive Statistics – OECD Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI flows inward	690	20439.38	40579.02	-33513.79	366774.9
GDP	690	1271103.41	2323244.53	13195.54	14531847.68
Trade costs	690	2.100884	1.278561	0.2752416	7.579118
Surrounding-market potential	690	15104.24	7989.269	1756.079	37873.05
Composite risk	690	0.012676	0.0051826	0.0104803	0.1387283
Political risk	690	0.0125161	0.0049549	0.0103093	0.1304348
Polity score	690	9.823188	0.5956165	7	10
Political constraint index	667	0.4541477	0.1201822	0.1198919	0.72
Regime durability	690	67.2913	45.28809	0	204

Table 16: Descriptive Statistics – non–OECD Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI flows inward	1,380	1737.886	5118.685	-6771.729	61672.37
GDP	1,380	62627.01	129529.2	874.1956	1464481
Trade costs	1,380	2.985264	6.856003	0.2185847	81.58581
Surrounding-market potential	1,380	6531.635	3294.323	2259.203	21599.66
Composite risk	1,380	0.0259051	0.0881358	0.0109759	1
Political risk	1,380	0.0269674	0.0879686	0.0112202	1
Polity score	1,380	1.465942	6.347411	-10	10
Political constraint index	1,334	0.2287386	0.2013965	0	0.672
Regime durability	1,380	15.54493	14.19057	0	63

Table 17: FDI Flows Inward – Regime Attributes – OECD Sample

Variables	(40) FE Robust	(41) FE AR(1)	(42) FE Robust	(43) RE AR(1)	(44) FE AR(1)
Ln(GDP)	-735.5	14,805	1,631	8,755	12,716
	(33,624)	(28,564)	(33,853)	(9,146)	(28,531)
Ln(trade costs)	-41,965**	-44,574**	-36,542*	-34,571***	-32,970
	(19,167)	(19,604)	(18,676)	(10,196)	(20,172)
Ln(total population)	39,261	-20,398	40,240	11,844	1,279
	(102,814)	(69,696)	(106,206)	(9,996)	(70,250)
Political Constraint Index	-4,552	-4,935	-4,102	-8,795	-4,115
	(14,704)	(17,508)	(13,407)	(15,512)	(17,465)
Ln(surrounding-market potential)	-4,372	-5,785	37,676	-8,507	86,776*

	(16,735)	(20,550)	(51,822)	(7,298)	(45,523)
Polity score			-8,177	-3,957	-3,531
			(7,538)	(4,287)	(5,450)
Regime durability			-1,029	261.9***	-2,147**
			(968.4)	(84.52)	(943.5)
Constant	-553,860	246,812	-851,625	-165,831	-786,832
	(1.261e+06)	(426,370)	(1.437e+06)	(102,046)	(480,611)
Observations	667	644	667	667	644
R-squared	0.161		0.169		
Number of Countries	23	23	23	23	23
Country FE	YES	YES	YES	NO	YES
Year FE	NO	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 18: FDI Flows Inward – Regime Change Onset – OECD Sample

Variables	(45) RE AR(1)	(46) RE AR(1)	(47) RE AR(1)	(48) RE AR(1)
Ln(GDP)	6,268	6,335	7,073	10,000
	(8,731)	(8,731)	(8,724)	(9,320)
Ln(trade costs)	-34,594***	-34,570***	-34,100***	-32,787***
	(10,043)	(10,040)	(10,022)	(10,115)
Ln(total population)	14,562	14,486	13,637	10,233
	(9,427)	(9,425)	(9,419)	(10,163)
Ln(political risk)	1,086	1,060	455.1	425.7
	(7,668)	(7,669)	(7,647)	(7,649)
Ln(surrounding-market potential)	-8,459	-8,461	-8,422	-8,726
	(7,384)	(7,384)	(7,371)	(7,374)
Regime durability	260.6***	260.8***	260.4***	260.5***
	(85.70)	(85.68)	(85.58)	(85.58)
Onset Regime Change	-2,308			
	(7,854)			
Year prior to regime change onset		305.7		
		(7,862)		
Year after regime change onset			16,780**	16,798**
			(7,839)	(7,847)
Polity score				-3,758
				(4,222)
Constant	-217,084**	-216,846**	-215,858**	-158,816
	(87,245)	(87,269)	(87,086)	(108,137)
Observations	690	690	690	690
Number of Countries	23	23	23	23
Country FE	NO	NO	NO	NO
Year FE	NO	NO	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Non-OECD Sub-sample Results

Table 19: FDI Flows Inward – Regime Attributes – non-OECD Sample

VARIABLES	(49) FE Robust	(50) FE AR(1)	(51) FE AR(1)	(52) FE AR(1)
Ln(GDP)	4,784**	3,283***	3,243***	3,239***
	(2,283)	(1,183)	(1,198)	(1,198)
Ln(trade costs)	-2,924**	-1,006**	-998.2*	-998.4*
	(1,290)	(508.8)	(510.9)	(511.1)
Ln(total population)	-2,439	-5,323**	-5,273**	-5,251**
	(2,757)	(2,272)	(2,270)	(2,267)
Political risk	-17.67	2.138	1.829	1.844
	(20.34)	(13.68)	(13.75)	(13.76)
Ln(surrounding-market potential)	-418.2	6,155**	6,162**	6,185**
	(2,675)	(2,552)	(2,553)	(2,564)
Regime durability			2.993	2.316
			(12.78)	(13.46)
Polity score				-6.106
				(36.32)
Constant	941.3	3,164	2,634	2,142
	(29,487)	(5,986)	(6,009)	(6,045)
Observations	1,380	1,334	1,334	1,334
R-squared	0.215			
Number of Countries	46	46	46	46
Country FE	YES	YES	YES	YES
Year FE	NO	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 20: FDI Flows Inward – Regime Type – non-OECD Sample

VARIABLES	(53) FE AR(1)	(54) FE AR(1)	(55) FE AR(1)
Ln(GDP)	3,435***	3,322***	3,320***
	(1,193)	(1,204)	(1,195)
Ln(trade costs)	-1,039**	-1,015**	-982.1*
	(512.0)	(513.4)	(511.5)
Ln(total population)	-5,783**	-5,712**	-5,383**
	(2,307)	(2,303)	(2,289)
Political risk	3.823	3.134	2.993
	(13.75)	(13.79)	(13.85)
Ln(surrounding-market potential)	6,315**	6,370**	5,695**
	(2,581)	(2,579)	(2,601)
Full Autocracy	-533.9	-711.2	
	(768.8)	(808.0)	
Partial Autocracy	-155.8	-248.3	
	(708.7)	(720.3)	
Partial Democracy	-117.3	-147.1	
	(709.9)	(711.2)	
Partial Democracy w/factionalism	-252.7	-288.6	
	(731.2)	(733.0)	
Full Democracy	-1,295	-1,350	
	(1,290)	(1,292)	
Transition Status	37.21	52.57	
	(714.0)	(714.7)	
Regime durability		10.27	
		(14.26)	
Full autocracy*regime durability			-3.285
			(18.57)
Partial autocracy*regime durability			-6.043
			(17.46)
Partial democracy*regime durability			28.35
			(27.00)
Partial democracy w/factionalism*regime durability			48.95
			(30.30)
Full democracy*regime durability			-33.23
			(54.29)
Constant	7,983	7,379	7,485
	(6,079)	(6,087)	(6,107)
Observations	1,334	1,334	1,334
Number of Countries	46	46	46
Country FE	YES	YES	YES
Year FE	NO	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 21: FDI Flows Inward – Regime Change – non-OECD Sample

VARIABLES	(56) FE Robust	(57) FE Robust	(58) FE AR(1)
Ln(GDP)	4,885**	4,220**	3,277***
	(2,333)	(1,987)	(1,208)
Ln(trade costs)	-2,954**	-3,002**	-1,017**
	(1,319)	(1,290)	(516.2)
Ln(total population)	-2,470	-2,356	-5,272**
	(2,775)	(2,568)	(2,278)
Political risk	-16.84	-17.39	1.805
	(20.21)	(20.62)	(13.79)
Ln(surrounding-market potential)	-552.5	172.1	6,087**
	(2,726)	(2,551)	(2,566)
Regime durability		40.39	3.791
		(29.66)	(12.89)
Year after Onset Major Democratic Transition	301.4	677.6	85.72
	(414.8)	(596.4)	(329.7)
Year after Onset Minor Democratic Transition	876.0*	1,274**	749.6
	(435.4)	(506.2)	(708.0)
Year after Positive Regime Change	1,090**	1,481**	120.6
	(532.9)	(663.7)	(499.2)
Year after No Change in Polity Score	-194.7	-208.8	-91.99
	(195.5)	(200.5)	(214.1)
Year after Onset Negative Regime Change	68.47	921.3	250.0
	(714.3)	(820.0)	(755.3)
Year after Onset Adverse Regime Transition	-48.86	159.0	251.1
	(477.5)	(494.5)	(520.9)
Year after Onset State Failure	939.1	1,210*	178.0
	(644.4)	(717.3)	(595.2)
Year after Onset Interruption	426.6	431.3	22.58
	(736.8)	(732.5)	(1,873)
Constant	1,580	-655.6	2,944
	(29,837)	(28,018)	(6,038)
Observations	1,380	1,380	1,334
R-squared	0.217	0.225	
Number of Countries	46	46	46
Country FE	YES	YES	YES
Year FE	NO	NO	NO

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 22.1: FDI Flows Inward – Spatial Models – OECD Sample

Variables	(59) GS2SLSAR	(60) GS2SLSAR	(61) SEM	(62) SAC
Ln(GDP)	5,905	4,785	7,282	4,396
	(4686)	(7902)	(3782)	(4014)
Ln(trade costs)	-28,981***	-35,112***	-26,962***	-10,674
	(5778)	(7665)	(5617)	(6719)
Ln(total population)	10,424***	8,667	13,675***	12,257***
	(5108)	(8294)	(4207)	(4273)
Ln(political risk)	-492.6	-7,051	6370	-5,032
	(8857)	(8560)	(11354)	(12629)
Ln(surrounding-market potential)	-4,213	-7,019	-4,914	2,960
	(4204)	(6613)	(3378)	(3882)
Regime durability	222.6***	114.1	322.27***	291.5***
	(50.1)	(93.9)	(33.5)	(32.8)
Year after regime change onset	23,572**	23,792***	24,243	22,810**
	(10853)	(10193)	(11863)	(11555)
Spatially weighted FDI (i.e. *W* *FDI)	0.27***	-0.42		
	(0.09)	(0.35)		
Constant	-4.71***	-1.16	-234,048	-315,032
	(1.56)	(0.79)	(69430.53)	(76831)
Observations	690	690	690	690
R-squared	0.680	0.579	0.649	0.636
Number of Countries	23	23	23	23
Country FE	NO	YES	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 22.2: FDI Flows Inward – Spatial Models – OECD Sample

Variables	(63) SDM	(64) SDM	(65) SDM	(66) SDM
Ln(GDP)	6,580	1,286	6,262	2,220
	(8515)	(16315)	(8494)	(16215)
Ln(trade costs)	-36,481***	-33,455**	-36,001***	-35,050***
	(9811)	(13307)	(7931)	(11487)
Ln(total population)	15,476*	50,339	15,520*	49,978
	(9247)	(38023)	(9202)	(37371)
Ln(political risk)	87.4	147.2	66.69	114.7
	(189)	(195.0)	(186.5)	(190.6)
Ln(surrounding-market potential)	-8,911	42,513*	-9,114	41,632*
	(6544)	(24661)	(6488)	(24189)
Regime durability	255.8***	-1,211**	245.2***	-1,201**
	(87.3)	(540.1)	(83.1)	(534.6)
Regime change onset			9,059	9,062

			(10797)	(10861)
Year after regime change onset	22,865**	22,917**		
	(10837)	(10876)		
*W** Regime durability	-84.2	26.23		
	(249)	(516.2)		
*W** Regime change onset			98,807**	99,393**
			(39356)	(39387)
Constant	-237,190***	-1,146,388**	-235,747	-1140630**
	(80779)	(549787)	(81052)	(529494)
Observations	690	690	690	690
R-squared	0.650	0.655	0.652	0.656
Number of Countries	23	23	23	23
Country FE	NO	YES	NO	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 22.3: FDI Flows Inward – Spatial Models – OECD Sample

Variables	(67) SDM	(68) SDM
Ln(GDP)	6,287	1,317
	(8475)	(16216)
Ln(trade costs)	-34,382***	-33,688***
	(7912)	(11478)
Ln(total population)	15,041	50,763
	(9184)	(37398)
Ln(political risk)	93.30	143.3
	(187.3)	(191.4)
Ln(surrounding-market potential)	-8,490	42,754*
	(6474)	(24231)
Regime durability	246.2***	-1,206**
	(82.82)	(535.6)
Polity score		
Regime change onset		
Year after regime change onset	22,839**	22,903**
	(10836)	(10875)
Spatially weighted FDI (i.e. *W* *FDI)		
*W** Regime durability		
*W** Regime change onset		
*W** Year after regime change onset	-15,487	-13,801
	(39305)	(39328)
Constant	-236,230***	-1,154,203**
	(80896)	(530246)
Observations	690	690
R-squared	0.6505	0.655

Number of Countries	23	23
Country FE	NO	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Spatial Models – Non – OECD Sub-sample

Table 23.1: FDI Flows Inward – Spatial Models – non-OECD Sample

Variables	(69) GS2SLSAR	(70) GS2SLSAR	(71) SAC	(72) SEM	(73) SPGMM
Ln(GDP)	2,520***	2,808***	1,282***	1,454***	17,04***
	(500)	(534)	(217.7)	(227.2)	(300.5)
Ln(trade costs)	-3,146***	-4,064***	-4,019***	-3,967***	-5,194***
	(397)	(562)	(427.1)	(461.5)	(475)
Ln(total population)	-544.1	-412.2	511.8**	427.5	749.9**
	(403.5)	(480.3)	(243.4)	(262.4)	(305.4)
Ln(political risk)	135.0	92.70	-583.6	-712.9	-209.5
	(288.1)	(378.5)	(463)	(537)	(421.4)
Ln(surrounding-market potential)	1,213	1,974**	-742.1	-634.5	446.9
	(742.7)	(826.5)	(519.1)	(633)	609.7
Regime durability	43.63***	55.56***	106.1***	114***	94.24***
	(13.2)	(17.1)	(16.1)	(15.9)	(16.0)
Polity score	-62.03*	-53.00			
	(34.9)	(43.99)			
Spatially weighted FDI (i.e. *W* *FDI)	1.09***	-0.60**			
	(0.35)	(0.23)			
Constant	-4.71***	-0.92	-15,326***	-16,548**	-30,876***
	(1.56)	(0.22)	(5428)	(6776)	(5825)
Observations	1380	690	690	690	690
R-squared	0.520	0.568	0.607	0.595	0.614
Number of Countries	46	23	23	23	23
Country FE	YES	YES	NO	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 23.2: FDI Flows Inward – Spatial Models – non-OECD Sample

Variables	(74) SDM	(75) SDM	(76) SDM
Ln(GDP)	12,127***	4,432***	10,972***
	(1398)	(601.6)	(1415)
Ln(trade costs)	-2,845***	-2,965***	-2,751***
	(691.4)	(380)	(691.6)
Ln(total population)	-7,623***	-2,644***	-7,326***
	(1682)	(871.2)	(1688)
Ln(political risk)	-12.64	-25.66	19.96
	(20.4)	(11.2)	(19.8)
Ln(surrounding-market potential)	-4,869	111.3	-2,743
	(2235)	(1089)	(2409)
Regime durability	40.21**	42.02***	17.01
	(18.1)	(11.1)	(21.3)
Polity score			-98.37*
			(59.6)
Democratic change			640.4
			(745.9)
Autocratic change			-619.6
			(1366)
*W** Regime durability	-91.27*	-65.34**	
	(48.36)	(30.86)	
*W** Democratic change			982.0
			(1709)
*W** Autocratic change			12,499***
			(4617)
Constant	51854***	3,937***	36,856
	(19564)	(9733)	(19079)
Observations	690	1380	
R-squared	0.656	0.599	0.660
Number of Countries	23	46	23
Country FE	NO	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Chapter 2

Full Sample – 54 Partner Countries

Table 1: Partner Country/Year Regime Type (1984-2013)

Regime Type	Freq.	Percent	Cum.
Full Autocracy	110	6.79	6.79
Partial Autocracy	103	6.36	13.15
Partial Democracy	173	10.68	23.83
Partial Democracy w/ factionalism	441	27.22	51.05
Full Democracy	784	48.40	99.44
Transition	9	0.56	100
Total	**1,620**		

Table 2: U.S. Partner Regime Change Type (1984-2013)

Regime Change Type	Freq.	Percent	Cum.
Major Democratic Transition	29	28.43	28.43
Minor Democratic Transition	6	5.88	34.31
Positive Regime Change	4	3.92	38.24
No Change in Polity Score	55	53.92	92.16
Negative Regime Change	2	1.96	94.12
Adverse Regime Transition	5	4.90	99.02
Transformation	1	0.98	100
Total	**102**		

Table 3: Bilateral U.S. FDI Outward by Regime Type (1984-2013)

Regime Type	FDI Transactions	FDI Positions
Full Autocracy	95670.78	884191.09
Partial Autocracy	50398.92	522637.98
Partial Democracy	133255.84	1353275.96
Partial Democracy w/ factionalism	596820.52	6068871.06
Full Democracy	3549930.31	40660070.87
Transition	964.61	13125.43
Total	**4427040.99**	**49502172.40**

Note: On net bases. Real USD millions using U.S. Bureau of Economic Analysis Implicit Price Deflator (2009 = 100).

Table 4: Bilateral U.S. FDI Outward by Regime Change Type (1984-2013)

Regime Change Type	FDI Transactions	FDI Positions
Major Democratic Transition	22380.87	190365.99
Minor Democratic Transition	2607.55	20903.49
Positive Regime Change	5773.53	41059.2
No Change in Polity Score	53981.11	464100.13
Negative Regime Change	-85.73	3986.4
Adverse Regime Transition	6491.84	41287.42
Transformation	2197.83	50925.96
Total	**4427040.99**	**49502172.40**

Note: On net bases. Real USD millions using U.S. Bureau of Economic Analysis Implicit Price Deflator (2009 = 100).

Table 5: Bilateral U.S. FDI Outward by Industry (1984-2013)

Industry name	FDI Transactions (mean)	FDI Positions (mean)	FDI Transactions (Total)	FDI Positions (Total)
Banking	123.53	1991.08	176277.08	2409202.46
Chemicals and allied products	621.98	6717.84	987075.92	10056600.92
Electric and electronic equipment	57.82	650.61	84423.24	819116.23
Extraction (Petroleum, Mining, Utilities)	147.52	1682.92	223339.95	2352718.29
Finance (except banking), insurance...	30.67	389.01	43649.86	465251.73
Food and kindred products	59.64	728.01	86950.92	945684.23
Machinery, except electrical	95.70	996.85	141254.20	1397583.67
Manufacturing	53.97	943.25	78631.95	1129070.96
Other industries	137.10	1995.66	188792.87	2083469.23
Other manufacturing	161.66	1856.55	243783.42	2615885.09
Primary and fabricated metals	9.67	1209.90	13881.25	1109478.73
Services	441.43	6061.42	648900.13	7855601.73
Transportation equipment	152.62	1702.83	222212.17	2394176.17
Wholesale trade	943.49	11833.05	1287868.03	13868332.94
All industries	**216.87**	**2796.40**	**4427040.99**	**49502172.40**

Note: On net bases. Real USD millions using U.S. Bureau of Economic Analysis Implicit Price Deflator (2009 = 100).

Table 6: Descriptive Statistics - Full Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
FDI Transactions	20,413	216.8736	1544.875	-19136.81	66335.74
Distance	22,680	7871.074	3928.894	737.0425	16371.12
Population	22,680	7.54E+07	2.12E+08	365998	1.36E+09
Bilateral Size	22,680	16.20642	0.2497568	15.72464	16.784
Similarity Index	22,680	0.0687066	0.0877367	0.0013131	0.4382935
Capital Stocks Ratio	22,680	186.2276	321.6911	1.591938	1738.412
Trade Costs	22,680	1.96782	1.308762	0.2185847	9.446599
Surrounding Market Potential	22,680	10401.96	7107.191	1756.079	37873.05
Inverse Composite Risk	22,680	0.0144889	0.0082553	0.0104803	0.2526316
Inverse Political Risk	22,680	0.0149651	0.0081319	0.0103093	0.2352941
Political Constraints Index	21,924	0.3646409	0.1822965	0	0.72
Polity Score	22,680	6.619753	5.509584	-10	10
Regime Durability	22,596	39.52416	34.66194	0	165

Table 7: Bilateral U.S. FDI Outward Transactions and Positions (OLS)

Variables	(1) Transactions	(2) Positions	(3) Transactions	(4) Positions
Ln(distance)	-284.0***	-3,528***	-283.6***	-3,525***
	(22.84)	(203.0)	(22.85)	(203.1)
Ln(population)	-28.83**	-391.3***	-25.65**	-378.0***
	(12.01)	(107.8)	(12.35)	(110.4)
Ln(bilateral size)	4,077***	69,673***	3,832***	67,812***
	(901.0)	(8,025)	(900.6)	(8,035)
Ln(similarity index)	353.3***	3,821***	346.2***	3,740***
	(48.12)	(460.8)	(48.01)	(460.1)
Ln(capital stocks ratio)	108.5***	995.5***	106.8***	956.8**
	(39.28)	(373.2)	(39.42)	(373.4)
Ln(trade costs)	-303.0***	-3,133***	-297.2***	-3,070***
	(27.67)	(250.1)	(27.55)	(249.2)
Ln(surrounding-market potential)	-42.69	-590.1**	-40.53	-562.7**
	(26.20)	(238.4)	(26.18)	(238.3)
Ln(partner composite risk)	6,153**	67,538***		
	(2,623)	(18,822)		
Ln(partner political risk)			2,245	40,090**
			(2,536)	(18,456)
Constant	-6,955***	-138,940***	-6,315***	-134,028***
	(2,419)	(21,558)	(2,414)	(21,557)
Observations	20,413	17,702	20,413	17,702
R-squared	0.033	0.071	0.033	0.070
Country FE	NO	NO	NO	NO
Industry FE	NO	NO	NO	NO
Robust	NO	NO	NO	NO

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 8: Bilateral U.S. FDI Outward Transactions (Fixed Effects)

Variables	(5) Random Effects	(6) Fixed Effects	(7) Fixed Effects	(8) Fixed Effects
Ln(distance)	-262.4***			
	(54.42)			
Ln(population)	-26.63	-207.9*	-211.2*	-211.2*
	(27.40)	(116.0)	(116.0)	(123.6)
Ln(bilateral size)	6,151***	16,493***	16,292***	16,292*
	(1,296)	(3,710)	(3,707)	(8,708)
Ln(similarity index)	51.57	-135.6	-146.2	-146.2
	(84.11)	(116.6)	(116.0)	(103.5)
Ln(capital stocks ratio)	-126.8*	-172.2	-178.5*	-178.5
	(69.07)	(105.9)	(105.9)	(108.8)
Ln(trade costs)	-239.9***	-202.3***	-200.8***	-200.8***
	(47.97)	(63.85)	(63.83)	(52.48)
Ln(surrounding-market potential)	-50.73	-522.7**	-510.8**	-510.8
	(59.20)	(228.9)	(228.7)	(438.9)
Partner composite risk	3,938*	2,810		

	(2,372)	(2,410)		
Partner political risk			1,810	1,810
			(2,377)	(2,273)
Constant	-12,975***	-37,237***	-36,725***	-36,725*
	(3,132)	(8,507)	(8,499)	(19,728)
Observations	20,413	20,413	20,413	20,413
R-squared		0.011	0.011	0.011
Number of Country-Industry	756	756	756	756
Country FE	NO	YES	YES	YES
Industry FE	NO	YES	YES	YES
Robust	NO	NO	NO	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 9: Bilateral U.S. FDI Outward Transactions & Partner Regime Attributes

Variables	(9) Regime Type	(10) Polity Score	(11) Regime Durability	(12) Polity - Regime Durability
Ln(population)	-229.7*	-223.0*	-177.6	-190.6
	(122.5)	(123.8)	(121.5)	(120.9)
Ln(bilateral size)	15,931*	16,258*	14,269*	14,580*
	(8,676)	(8,692)	(8,167)	(8,195)
Ln(similarity index)	-145.2	-131.8	-124.6	-118.7
	(108.4)	(103.6)	(103.3)	(103.5)
Ln(capital stocks ratio)	-226.6*	-213.5*	-167.3	-192.1*
	(116.9)	(110.7)	(110.1)	(112.7)
Ln(trade costs)	-198.4***	-189.6***	-180.4***	-176.3***
	(52.12)	(51.87)	(50.36)	(50.59)
Ln(surrounding-market potential)	-464.1	-465.0	-504.5	-475.5
	(433.2)	(430.3)	(437.4)	(434.1)
Partner political risk	1,131	1,322	1,903	1,567
	(2,335)	(2,255)	(2,303)	(2,311)
Full autocracy	74.65**			
	(34.05)			
Partial autocracy	35.11			
	(26.61)			
Partial democracy	-38.75			
	(27.29)			
Partial democracy w/ factionalism	-88.76***			
	(29.80)			
Full democracy	-124.8***			
	(41.20)			
Polity score		-13.27***		-8.614***
		(3.846)		(2.679)
Regime durability			4.818***	4.007**
			(1.777)	(1.656)
Constant	-35,542*	-36,565*	-31,888*	-32,584*
	(19,625)	(19,676)	(18,384)	(18,449)
Observations	20,413	20,413	20,339	20,339

R-squared	0.011	0.012	0.012	0.012
Number of Country-Industry	756	756	756	756
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Robust	YES	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 10.1: Bilateral U.S. FDI Outward Transactions, Regime Attributes, & Regime Change

Variables	(13) Regime Type -Durability	(14) Regime Change Onset	(15) Regime Change Type	(16) Year after Regime Change Onset
Ln(population)	-43.35	-187.0	-185.9	-85.06
	(160.3)	(120.7)	(120.9)	(128.6)
Ln(bilateral size)	12,232	14,502*	14,491*	14,815*
	(7,616)	(8,177)	(8,178)	(8,397)
Ln(similarity index)	-186.3*	-115.5	-115.8	-161.3
	(109.8)	(103.5)	(103.5)	(109.2)
Ln(capital stocks ratio)	-233.1**	-188.6*	-190.4*	-231.4**
	(118.6)	(112.8)	(112.9)	(112.9)
Ln(trade costs)	-185.9***	-172.8***	-173.4***	-173.2***
	(50.56)	(50.13)	(50.29)	(50.71)
Ln(surrounding-market potential)	-527.2	-476.2	-475.6	-499.7
	(461.9)	(434.1)	(434.7)	(450.1)
Partner political risk	1,621	1,475	1,491	17,414**
	(2,384)	(2,303)	(2,316)	(7,668)
Full autocracy*durability	0.982			
	(3.317)			
Part autocracy*durability	3.283***			
	(0.685)			
Part democracy*durability	4.166**			
	(1.972)			
Democracy w/fact*durability	4.096**			
	(1.999)			
Full democracy*durability	9.893**			
	(4.081)			
Polity score		-7.702***	-7.913***	-5.039**
		(2.574)	(2.544)	(2.277)
Regime Durability		4.360**	4.377**	4.472**
		(1.748)	(1.768)	(1.877)
Regime change onset		57.99***		
		(17.74)		
Major democratic transition onset			72.99**	
			(28.75)	
Minor democratic transition onset			99.81***	
			(36.32)	
Positive regime change onset			103.2**	
			(49.02)	
No change in polity score onset			49.36***	

			(15.70)	
Negative regime change onset			29.66	
			(23.20)	
Adverse regime transition onset			-5.020	
			(42.55)	
Year after regime change onset				34.76***
				(13.34)
Constant	-28,330	-32,450*	-32,436*	-35,058*
	(17,520)	(18,416)	(18,420)	(19,594)
Observations	20,339	20,339	20,339	19,850
R-squared	0.013	0.012	0.012	0.011
Number of Country-Industry	756	756	756	756
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Robust	YES	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 10.2: Bilateral U.S. FDI Outward Transactions, Regime Attributes, & Regime Change

Variables	(17) Regime Change Onset - Lag durability	(18) Regime Change Onset - Lag durability
Ln(population)	-97.90	-57.08
	(131.6)	(131.5)
Ln(bilateral size)	16,820*	15,113*
	(9,079)	(8,474)
Ln(similarity index)	-179.0	-166.7
	(110.4)	(109.2)
Ln(capital stocks ratio)	-265.4**	-242.5**
	(113.2)	(113.3)
Ln(trade costs)	-184.3***	-171.4***
	(53.03)	(50.25)
Ln(surrounding-market potential)	-501.1	-522.3
	(450.2)	(455.9)
Partner political risk	21,420**	23,213**
	(8,559)	(9,217)
Polity score	-9.109***	-3.630
	(2.722)	(2.330)
Regime durability		4.494**
		(1.879)
Regime change onset*lag durability	1.043**	1.412***
	(0.489)	(0.524)
Constant	-40,184*	-36,221*
	(21,328)	(19,893)
Observations	19,840	19,840
R-squared	0.011	0.012
Number of Country-Industry	756	756

Country FE	YES	YES
Industry FE	YES	YES
Robust	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

OECD Partner Sub-sample

Table 11: Bilateral U.S. FDI Outward by Country Group (1984-2013)

Country Group	FDI Transactions	FDI Positions
OECD	3511110.03	40210039.16
non-OECD	637695.12	6577330.44
new-OECD	278235.84	2714802.80
Total	**4427040.99**	**49502172.40**

Note: Real USD millions using Bureau of Economic Implicit Price Deflator (2009 = 100).

Table 12: OECD Country/Year Regime Type (1984-2013)

Regime Type	Freq.	Percent	Cum.
Full Democracy	623	94.39	94.39
Partial Democracy w/ factionalism	16	2.42	96.82
Partial Democracy	21	3.18	100
Total	**660**		

Table 13: OECD Regime Change Type (1984-2013)

Regime Change Type	Freq.	Percent	Cum.
Major Democratic Transition	0	0	0
Minor Democratic Transition	0	0	0
Positive Regime Change	0	0	0
No Change in Polity Score	7	87.5	87.5
Negative Regime Change	0	0	0
Adverse Regime Transition	0	0	0
Transformation	1	12.5	100
Total	**8**		

Table 14: Descriptive Statistics OECD Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Distance	9,240	7318.951	3007.347	737.0425	15961.95
Population	9,240	2.87E+07	3.20E+07	365998	1.28E+08
Bilateral Size	9,240	16.23716	0.2510659	15.72591	16.77554
Similarity Index	9,240	0.1142268	0.1093508	0.003844	0.4382935
Capital Stocks Ratio	9,240	51.51704	94.1942	1.591938	561.2526
Trade Costs	9,240	1.975176	1.123904	0.2752416	6.72768
Surrounding Market Potential	9,240	15571.09	7846.691	1756.079	37873.05
Inverse Composite Risk	9,240	0.0126878	0.0052933	0.0104803	0.1387283
Inverse Political Risk	9,240	0.0125349	0.0050608	0.0103093	0.1304348
Political Constraints Index	8,932	0.456467	0.1222867	0.1198919	0.72
Polity Score	9,240	9.815152	0.6073724	7	10
Regime Durability	9,156	61.95872	37.89194	0	165

Table 15.1: Bilateral U.S. FDI Outward Transactions – OECD Partners

Variables	(19) OLS	(20) FE	(21) FE Robust
Ln(population)	110.6	577.6	577.6
	(191.0)	(981.2)	(2,087)
Ln(bilateral size)	5,527	4,101	4,101
	(4,345)	(10,782)	(12,062)
Ln(similarity index)	336.9	438.5	438.5
	(392.4)	(470.6)	(562.5)
Ln(capital stocks ratio)	121.8	-752.2*	-752.2
	(282.2)	(455.5)	(631.7)
Ln(trade costs)	-432.7*	244.0	244.0
	(231.5)	(317.1)	(322.4)
Ln(surrounding-market potential)	96.45	-985.7*	-985.7
	(146.0)	(557.5)	(1,302)
Partner political risk	-1,787	-1,582	-1,582
	(6,177)	(6,232)	(6,097)
Polity score	42.71	32.59	32.59
	(76.29)	(85.48)	(44.46)
Regime durability	6.396***	53.88***	53.88
	(1.942)	(17.97)	(46.34)
Constant	-17,836*	-11,541	-11,541
	(10,026)	(30,915)	(34,709)
Observations	8,394	8,394	8,394
R-squared		0.020	0.020
Number of Country-Industry	308	308	308
Country FE	NO	YES	YES
Industry FE	NO	YES	YES

Robust	NO	NO	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 15.2: Bilateral U.S. FDI Outward Transactions – OECD Partners

Variables	(22) Regime Change	(23) Regime Change	(24) Regime Change	(25) Regime Change
Ln(population)	610.6	610.6	591.1	588.2
	(983.7)	(2,092)	(2,089)	(2,090)
Ln(bilateral size)	4,042	4,042	4,169	4,210
	(10,784)	(12,068)	(12,089)	(12,082)
Ln(similarity index)	422.2	422.2	433.2	440.3
	(471.9)	(561.5)	(555.6)	(556.9)
Ln(capital stocks ratio)	-750.9*	-750.9	-751.2	-745.6
	(455.6)	(631.8)	(630.6)	(631.9)
Ln(trade costs)	233.4	233.4	236.5	240.3
	(317.9)	(323.3)	(325.7)	(325.1)
Ln(surrounding-market potential)	-986.7*	-986.7	-989.5	-988.8
	(557.5)	(1,302)	(1,301)	(1,301)
Partner political risk	-1,648	-1,648	-1,147	-1,169
	(6,234)	(6,102)	(5,913)	(5,916)
Polity score	30.62	30.62	34.11	31.46
	(85.58)	(45.43)	(45.04)	(45.34)
Regime durability	53.51***	53.51	53.64	53.66
	(17.99)	(46.33)	(46.35)	(46.39)
Regime change onset	111.2	111.2**		
	(235.4)	(56.14)		
Year prior to regime change onset			80.62*	
			(46.58)	
Year after regime change onset				64.81
				(67.10)
Constant	-11,911	-11,911	-11,935	-11,984
	(30,926)	(34,721)	(34,845)	(34,896)
Observations	8,394	8,394	8,394	8,394
R-squared	0.020	0.020	0.020	0.020
Number of Country-Industry	308	308	308	308
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Robust	NO	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 16: non-OECD Country/Year Regime Type (1984-2013)

Regime Type	Freq.	Percent	Cum.
Transition	7	0.90	0.90
Full Democracy	102	13.08	13.97
Democracy w/ factionalism	337	43.21	57.18
Part Democracy	148	18.97	76.15
Part Autocracy	83	10.64	86.79
Full Autocracy	103	13.21	100.00
Total	**780**		

Table 17: non-OECD Regime Change Type (1984-2013)

Regime Change Type	Freq.	Percent	Cum.
Major Democratic Transition	18	24.32	24.32
Minor Democratic Transition	6	8.11	32.43
Positive Regime Change	3	4.05	36.49
No Change in Polity Score	39	52.70	89.19
Negative Regime Change	2	2.70	91.89
Adverse Regime Transition	5	6.76	98.65
Undefined	1	1.35	100.00
Total	**74**		

Table 18: Descriptive Statistics non-OECD Sample

Variable	Obs	Mean	Std. Dev.	Min	Max
Distance	10,920	8374.598	4738.081	2326.271	16371.12
Population	10,920	1.24E+08	2.96E+08	1155701	1.36E+09
Bilateral Size	10,920	16.18328	0.2470281	15.72464	16.784
Similarity Index	10,920	0.0335104	0.0488801	0.0013131	0.3783202
Capital Stocks Ratio	10,920	324.705	411.3873	2.442876	1738.412
Trade Costs	10,920	1.922411	1.455103	0.2185847	9.446599
Surrounding Market Potential	10,920	6046.314	2016.195	2353.341	11726.71
Inverse Composite Risk	10,920	0.0157014	0.0062652	0.0109759	0.1702128
Inverse Political Risk	10,920	0.016783	0.0065672	0.0112202	0.173913
Political Constraints Index	10,556	0.2837375	0.1884013	0	0.688
Polity Score	10,920	3.915385	6.412863	-10	10

Regime Durability	10,920	25.70513	22.21744	0	94

Table 19.1: Bilateral U.S. FDI Outward Transactions – non-OECD Partners

Variables	(24) OLS	(25) FE	(26) FE Robust
Ln(population)	-12.49	-59.05**	-59.05**
	(8.194)	(28.99)	(28.10)
Ln(bilateral size)	-177.8	-4,092***	-4,092
	(710.3)	(1,289)	(3,839)
Ln(similarity index)	79.59***	126.5***	126.5***
	(20.83)	(29.93)	(39.51)
Ln(capital stocks ratio)	-7.052	-45.63*	-45.63
	(18.47)	(26.70)	(38.63)
Ln(trade costs)	-91.69***	-129.4***	-129.4***
	(12.34)	(17.19)	(30.12)
Ln(surrounding-market potential)	55.74	273.0***	273.0
	(37.28)	(80.36)	(232.6)
Partner political risk	332.4	220.4	220.4
	(634.7)	(640.1)	(517.3)
Polity score	0.507	-3.702***	-3.702**
	(0.944)	(1.144)	(1.468)
Regime durability	0.161	0.133	0.133
	(0.258)	(0.317)	(0.353)
Constant	675.4	10,908***	10,908
	(1,691)	(2,966)	(8,469)
Observations	9,833	9,833	9,833
R-squared		0.036	0.036
Number of Country-Industry	364	364	364
Country FE	NO	YES	YES
Industry FE	NO	YES	YES
Robust	NO	NO	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 19.2: Bilateral U.S. FDI Outward Transactions – non-OECD Partners

VARIABLES	(27) Regime Change	(28) Regime Change	(29) Regime Change
Ln(population)	-59.03**	-59.35**	-56.28**
	(28.12)	(28.07)	(28.57)
Ln(bilateral size)	-4,089	-4,094	-4,218
	(3,839)	(3,840)	(3,923)
Ln(similarity index)	126.5***	127.1***	125.7***
	(39.50)	(39.54)	(37.97)
Ln(capital stocks ratio)	-45.44	-45.88	-57.46
	(38.62)	(38.63)	(40.80)
Ln(trade costs)	-129.3***	-129.4***	-126.1***
	(30.15)	(30.10)	(30.37)
Ln(surrounding-market potential)	272.8	273.2	281.2
	(232.6)	(232.6)	(236.1)
Partner political risk	215.5	234.3	1,608
	(516.7)	(517.8)	(1,556)
Polity score	-3.655**	-3.995***	-3.987***
	(1.433)	(1.465)	(1.303)
Regime durability	0.151	0.116	0.115
	(0.356)	(0.351)	(0.364)
Regime change onset	2.568		
	(6.575)		
Year prior to regime change onset		-10.38*	
		(5.506)	
Year after regime change onset			-1.217
			(5.893)
Constant	10,900	10,925	11,173
	(8,468)	(8,469)	(8,729)
Observations	9,833	9,833	9,592
R-squared	0.036	0.036	0.035
Number of Country-Industry	364	364	364
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Robust	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 19.3: Bilateral U.S. FDI Outward Transactions – non-OECD Partners

Variables	(30) Regime Change	(31) Regime Change	(32) Regime Change
Ln(population)	-60.18**	-75.41***	-55.24**
	(28.00)	(26.36)	(27.94)
Ln(bilateral size)	-4,099	-3,772	-4,130
	(3,863)	(3,544)	(3,941)
Ln(similarity index)	125.9***	122.2***	125.8***
	(39.44)	(39.39)	(37.95)
Ln(capital stocks ratio)	-46.55	-35.21	-57.20
	(38.63)	(40.98)	(41.07)
Ln(trade costs)	-128.7***	-128.1***	-125.2***
	(30.10)	(30.47)	(30.33)
Ln(surrounding-market potential)	272.9	265.0	276.8
	(234.0)	(215.9)	(237.2)
Partner political risk	262.5	130.4	1,771
	(513.2)	(509.2)	(1,615)
Polity score	-3.514***	-3.649**	-3.952***
	(1.342)	(1.566)	(1.372)
Regime durability	0.195	-0.000477	0.118
	(0.369)	(0.337)	(0.370)
Major democratic transition onset	-12.70		
	(13.80)		
Minor democratic transition onset	3.503		
	(8.977)		
Positive regime change onset	59.98**		
	(28.47)		
No change in polity score onset	5.574		
	(8.419)		
Negative regime change onset	4.849		
	(17.95)		
Adverse regime transition onset	23.59		
	(38.72)		
Year prior to Onset Major Democratic Transition		-25.99**	
		(13.07)	
Year prior to Onset Minor Democratic Transition		2.609	
		(16.27)	
Year prior to Positive Regime Change		17.25	
		(25.02)	
Year prior to No Change in Polity Score		-15.92**	
		(7.076)	
Year prior to Onset Negative Regime Change		33.48***	
		(9.922)	
Year prior to Onset Adverse Regime Transition		37.01	
		(39.41)	
Year after Onset Major Democratic Transition			-7.911
			(15.11)
Year after Onset Minor Democratic Transition			18.21
			(22.49)
Year after Positive Regime Change			-8.967
			(17.78)

Year after No Change in Polity Score			2.356
			(8.061)
Year after Onset Negative Regime Change			3.045
			(21.31)
Year after Onset Adverse Regime Transition			-4.580
			(28.01)
Constant	10,947	10,301	10,945
	(8,525)	(7,744)	(8,772)
Observations	9,833	9,472	9,592
R-squared	0.036	0.033	0.035
Number of Country-Industry	364	364	364
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Robust	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 19.4: Bilateral U.S. FDI Outward Transactions – non-OECD Partners

Variables	(33) non-OECD	(34) non-OECD	(35) non-OECD
Ln(population)	-67.29**	-69.35**	-107.9**
	(28.51)	(28.40)	(48.85)
Ln(bilateral size)	-4,121	-4,274	-4,185
	(3,803)	(3,875)	(3,426)
Ln(similarity index)	125.8***	123.5***	177.1***
	(42.49)	(41.89)	(49.33)
Ln(capital stocks ratio)	-62.08	-61.04	-10.39
	(41.51)	(41.40)	(36.66)
Ln(trade costs)	-132.1***	-132.2***	-126.5***
	(29.91)	(29.88)	(29.60)
Ln(surrounding-market potential)	273.3	280.3	302.9
	(232.3)	(235.4)	(199.9)
Partner political risk	-159.3	-123.8	317.1
	(569.9)	(573.4)	(475.9)
Polity score			-1.601
			(1.464)
Regime durability		0.339	
		(0.354)	
Full autocracy	14.35	6.201	
	(15.32)	(17.30)	
Partial autocracy	16.84	11.56	
	(12.61)	(13.81)	
Partial democracy	0.966	-3.489	
	(11.54)	(13.21)	
Partial democracy w/ factionalism	-31.91***	-36.06***	
	(12.21)	(13.66)	
Full democracy	-59.68***	-63.71***	
	(21.33)	(22.41)	
Full autocracy*durability			1.837
			(1.658)
Partial autocracy*durability			1.410***
			(0.347)

Partial democracy*durability			0.247
			(0.609)
Democracy w/fact*durability			-0.253
			(0.510)
Full democracy*durability			-2.504***
			(0.710)
Constant	11,219	11,600	11,771
	(8,368)	(8,555)	(7,406)
Observations	9,833	9,833	9,833
R-squared	0.037	0.037	0.038
Number of Country-Industry	364	364	364
Country FE	YES	YES	YES
Industry FE	YES	YES	YES
Robust	YES	YES	YES

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Chapter 3

Table 1: Country Origin of Acquirer

Acquirer	Deal Freq.	Percent	Cum.	Acquirer	Deal Freq.	Percent	Cum.
ARE	12	0.07	0.07	ITA	120	0.7	40.83
AUS	2,000	11.68	11.75	JPN	474	2.77	43.6
AUT	55	0.32	12.07	KOR	64	0.37	43.97
BEL	140	0.82	12.89	KWT	19	0.11	44.08
BHS	11	0.06	12.95	LBY	18	0.11	44.19
BRA	12	0.07	13.02	LUX	86	0.5	44.69
CAN	245	1.43	14.45	MEX	43	0.25	44.94
CHE	1,530	8.93	23.39	MYS	36	0.21	45.15
CHL	7	0.04	23.43	NGA	3	0.02	45.17
CHN	55	0.32	23.75	NLD	145	0.85	46.02
CYP	8	0.05	23.8	NOR	448	2.62	48.63
DNK	90	0.53	24.32	NZL	12	0.07	48.7
EGY	14	0.08	24.4	PER	3	0.02	48.72
ESP	144	0.84	25.25	PHL	4	0.02	48.74
FIN	146	0.85	26.1	POL	3	0.02	48.76
FRA	901	5.26	31.36	PRT	17	0.1	48.86
GBR	1,118	6.53	37.89	QAT	32	0.19	49.05
GHA	2	0.01	37.9	RUS	30	0.18	49.22
GRC	44	0.26	38.16	SAU	6	0.04	49.26
HKG	62	0.36	38.52	SGP	66	0.39	49.64
HUN	16	0.09	38.61	SVN	1	0.01	49.65
IDN	3	0.02	38.63	SWE	227	1.33	50.98
IND	74	0.43	39.06	THA	17	0.1	51.07
IRL	40	0.23	39.3	TTO	17	0.1	51.17
ISL	90	0.53	39.82	TWN	105	0.61	51.79
ISR	53	0.31	40.13	USA	8,179	47.76	99.55
				ZAF	77	0.45	100
			Total	**53**	**17,124**	**100**	

Table 2: Country Origin of Target

Target	Deal Freq.	Percent	Cum.	Target	Deal Freq.	Percent	Cum.
AGO	1	0.01	0.01	KEN	1	0.01	82.05
ARE	3	0.02	0.02	KOR	196	1.14	83.2
ARG	3	0.02	0.04	KWT	5	0.03	83.23
AUS	1,738	10.15	10.19	LBN	3	0.02	83.25
AUT	40	0.23	10.42	LKA	2	0.01	83.26
BEL	206	1.2	11.63	LTU	6	0.04	83.29
BMU	385	2.25	13.88	LUX	56	0.33	83.62
BRA	73	0.43	14.3	LVA	6	0.04	83.65
BWA	3	0.02	14.32	MAR	4	0.02	83.68
CAN	233	1.36	15.68	MEX	18	0.11	83.78
CHE	194	1.13	16.81	MHL	2	0.01	83.79
CHL	32	0.19	17	MKD	1	0.01	83.8
CHN	507	2.96	19.96	MLT	11	0.06	83.86
COL	7	0.04	20	MUS	2	0.01	83.88
CRI	3	0.02	20.02	MYS	82	0.48	84.36
CYM	245	1.43	21.45	NGA	2	0.01	84.37
CYP	80	0.47	21.92	NLD	452	2.64	87.01
DEU	452	2.64	24.56	NOR	224	1.31	88.31
DNK	204	1.19	25.75	NZL	33	0.19	88.51
DOM	2	0.01	25.76	PAN	1	0.01	88.51
EGY	8	0.05	25.81	PER	3	0.02	88.53
ESP	306	1.79	27.59	PHL	7	0.04	88.57
EST	70	0.41	28	PNG	15	0.09	88.66
FIN	462	2.7	30.7	POL	49	0.29	88.95
FRA	767	4.48	35.18	PRT	215	1.26	90.2
GBR	6,036	35.25	70.43	RUS	49	0.29	90.49
GEO	2	0.01	70.44	SGP	124	0.72	91.21
GRC	29	0.17	70.61	SVK	5	0.03	91.24
HKG	144	0.84	71.45	SVN	9	0.05	91.29
HRV	15	0.09	71.54	SWE	474	2.77	94.06
HUN	69	0.4	71.94	SYR	2	0.01	94.07
IDN	14	0.08	72.02	THA	9	0.05	94.13
IND	290	1.69	73.72	TTO	1	0.01	94.13
IRL	213	1.24	74.96	TUR	53	0.31	94.44
ISL	8	0.05	75.01	TWN	92	0.54	94.98
ISR	97	0.57	75.57	UKR	3	0.02	95
ITA	784	4.58	80.15	USA	635	3.71	98.7
JOR	31	0.18	80.33	VGB	92	0.54	99.24

JPN	290	1.69	82.03	VNM	25	0.15	99.39
KAZ	4	0.02	82.05	ZAF	105	0.61	100
			Total	**80**	**17124**	**100**	

Table 3: Acquirer NAICS Industry (Top 10)

NAICS Industry	Freq.	Percent	Cum.
Other Financial Investment Activities	5,137	30	30
Management of Companies and Enterprises	3,373	19.7	49.7
Depository Credit Intermediation	1,734	10.13	59.83
Support Activities for Mining	1,194	6.97	66.8
Metal Ore Mining	937	5.47	72.27
Insurance Carriers	916	5.35	77.62
Monetary Authorities-Central Bank	414	2.42	80.04
Other Investment Pools and Funds	271	1.58	81.62
Pharmaceutical and Medicine Mfg.	240	1.4	83.02
Other Telecommunications	140	0.82	83.84
Total	**14,356**	**83.84**	

Table 4: Target NAICS Industry (Top 10)

NAICS Industry	Freq.	Percent	Cum.
Metal Ore Mining[a]	1,630	9.52	9.52
Support Activities for Mining[b]	1,563	9.13	18.65
Management of Companies and Enterprises	728	4.25	22.9
Depository Credit Intermediation	578	3.38	26.28
Pharmaceutical and Medicine Mfg.	561	3.28	29.56
Other Telecommunications	557	3.25	32.81
Computer Systems Design and Related S..	463	2.7	35.51
Semiconductor and Other Electronic Co..	438	2.56	38.07
Newspaper, Periodical, Book, and Dire..	300	1.75	39.82
Lessors of Real Estate	271	1.58	41.4
Total	**7,089**	**41.4**	

[a]OECD for Metal Ore Mining = 1,524 & non-OECD for Metal Ore Mining = 106
[b]OECD for Support. Act. Mining = 1,546 & non-OECD for Support. Act. Mining = 17

Table 5: Cross-border Deals in Metal Ore Mining in 2010-2013 (EUR millions)

Acquirer Country	Freq.	Attempted Deal Value	Completed Deal Value	Completed Value Percent	Completed Value Cum.
Australia	647	955193.00	937346.00	57.31	57.31
Canada	29	67212.00	66192.00	4.05	61.36
Chile	3	6279.00	6279.00	0.38	61.74
China	6	14271.00	14271.00	0.87	62.62
Finland	3	5001.00	5001.00	0.31	62.92
India	1	3690.00	0.00	0.00	62.92
Korea, Republic of	8	16753.00	9885.00	0.60	63.53
Norway	12	15162.00	15162.00	0.93	64.45
Peru	3	30.00	30.00	0.00	64.46
Poland	1	1645.00	0.00	0.00	64.46
Singapore	3	6549.00	6549.00	0.40	64.86
South Africa	9	20613.00	20613.00	1.26	66.12
Switzerland	30	62637.00	62637.00	3.83	69.95
United Kingdom	24	47906.00	34071.00	2.08	72.03
United States of America	184	461514.00	457428.00	27.97	100.00
Total	**963**	**1684455.00**	**1635464.00**		

Table 6: Support Activities for Mining Cross-border Deals in 2010-2013 (EUR millions)

Acquirer Country	Freq.	Attempted Deal Value	Completed Deal Value	Completed Value Percent	Completed Value Cum.
Australia	272	516785.00	509295.00	72.92	72.92
Canada	3	9120.00	9120.00	1.31	74.23
France	7	21641.00	21444.00	3.07	77.30
Hungary	1	168.00	0.00	0.00	77.30
India	2	146.00	0.00	0.00	77.30
Indonesia	3	4581.00	0.00	0.00	77.30
Japan	1	3164.00	0.00	0.00	77.30
Norway	6	5577.00	5577.00	0.80	78.10
Sweden	3	11889.00	11889.00	1.70	79.80
Switzerland	25	57684.00	57684.00	8.26	88.06
United States of America	37	83408.00	83408.00	11.94	100.00
Total	**360**	**714163.00**	**698417.00**		

Table 7: Cross-border Final Deal Distribution

Final Deal Status	Freq.	Percent	Cum.
Announced	561	3.28	3.28
Completed	15,629	91.27	94.55
Pending	39	0.23	94.77
Pending - awaiting regulatory approval	110	0.64	95.42
Pending - awaiting shareholder approval	41	0.24	95.66
Rumor	126	0.74	96.39
Rumor - Analyst Speculation	4	0.02	96.41
Rumor - Expired	387	2.26	98.67
Rumor - Withdrawn	42	0.25	98.92
Rumor - informal offer	12	0.07	98.99
Withdrawn	173	1.01	100
Total	**17,124**		

Table 8: Cross-border Final Deal Distribution by Origin Country Group

Final Deal Status	non-OECD	OECD	Total
Announced	74	487	561
Completed	567	15062	15629
Pending	12	27	39
Pending - awaiting regulatory approval	26	84	110
Pending - awaiting shareholder approval	9	32	41
Rumor	23	103	126
Rumor - Analyst Speculation	0	4	4
Rumor - Expired	56	331	387
Rumor - Withdrawn	13	29	42
Rumor - informal offer	2	10	12
Withdrawn	49	124	173
Total	**831**	**16293**	**17124**

Table 9: Regime Type per Cross-border Deal (1997-2013)

Regime Type	Origin	Percent	Host	Percent
Full Autocracy	122	1%	538	3%
Partial Autocracy	38	0%	69	0%
Partial Democracy	120	1%	288	2%
Partial Democracy w/ factionalism	381	2%	1041	6%
Full Democracy	16,299	96%	14,301	88%
Total	**16,960**		**16,237**	

* Missing observations due to absence of Polity IV measures for 4 countries.

Table 10: Deals During Regime Change Events (1997-2013)

Regime Change Type	Freq.	Percent	Cum.
Major Democratic Transition	0	0	0
Minor Democratic Transition	0	0	0
Positive Regime Change	7	6	6
No Change in Polity Score	103	94	100
Negative Regime Change	0	0	0
Adverse Regime Transition	0	0	0
Interregnum	0	0	0
Interruption	0	0	0
Total	**110**		

Table 11: Deals in Regime Change Countries

Country	Year	Freq.	Percent
Israel	1999	14	13%
Estonia	2000	3	3%
Poland	2002	5	5%
China, Taiwan Province of	2004	4	4%
Chile	2006	7	6%
Belgium	2007	43	39%
Georgia	2007	2	2%
Jordan	2007	7	6%
Papua New Guinea	2007	5	5%
Russian Federation	2007	5	5%

Malaysia	2008	4	4%
Egypt	2011	1	1%
Turkey	2011	10	9%
Total		**110**	

Table 12: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Bilateral Size	17,124	9119228	6356370	25092.8	1.95E+07
Similarity	17,124	0.2539566	0.1444366	0.0000219	0.4999995
Trade Costs	17,124	1.71417	0.6865854	0.2185847	4.7486
Distance	17,124	7661.535	5649.202	117.3451	19147.14
Host Composite Risk	16,395	0.0126595	0.0007859	0.0108254	0.0189949
Host Political Risk	16,395	0.0124377	0.0011464	0.0104076	0.0220791
Origin Polity Score	16,961	9.680149	1.883265	-10	10
Host Polity Score	16,237	9.093983	3.324291	-8	10
Host Regime Durability	16,237	92.82928	45.22732	0	204

Table 13: Case wise Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Ln(bilateral size)	1								
(2)	Ln(similarity index)	-0.3703	1							
(3)	Ln(trade costs)	0.3001	0.2503	1						
(4)	Ln(distance)	0.4557	-0.2011	0.2828	1					
(5)	Host composite risk	-0.0429	0.0728	0.271	0.0739	1				
(6)	Host political risk	0.0023	0.0555	0.1085	0.0777	0.7956	1			
(7)	Polity score (origin)	0.2354	-0.0335	0.0819	0.0957	-0.0947	-0.0763	1		
(8)	Polity score (host)	-0.0124	0.0034	0.2194	-0.0913	-0.0977	-0.4653	0.1059	1	
(9)	Regime Durability (host)	0.2064	0.1637	0.4041	0.2089	-0.1058	-0.3141	0.0755	0.2634	1

Table 14: Pairwise Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1)	Ln(bilateral size)	1.0000								
(2)	Ln(similarity index)	-0.1989	1.0000							
		(0.0000)								
(3)	Ln(trade costs)	0.3343	0.3100	1.0000						
		(0.0000)	(0.0000)							
(4)	Ln(distance)	0.3718	-0.0620	0.2368	1.0000					
		(0.0000)	(0.0000)	(0.0000)						
(5)	Host composite risk	-0.0257	0.0783	0.2764	0.0735	1.0000				
		(0.0010)	(0.0000)	(0.0000)	(0.0000)					
(6)	Host political risk	0.0087	0.0606	0.1040	0.0791	0.7912	1.0000			
		(0.2638)	(0.0000)	(0.0000)	(0.0000)	(0.0000)				
(7)	Polity score (origin)	0.2499	0.0123	0.1058	0.0788	0.0903	0.0726	1.0000		
		(0.0000)	(0.1102)	(0.0000)	(0.0000)	(0.0000)	(0.0000)			
(8)	Polity score (host)	-0.0112	0.0015	0.2203	-0.0926	-0.0986	-0.4653	0.1058	1.0000	
		(0.1527)	(0.8516)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)		
(9)	Regime Durability (host)	0.2136	0.1601	0.4068	0.2089	-0.1021	-0.3120	0.0754	0.2632	1.0000
		(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	

Table 15: Cross-border deals – baseline specification - Logistic regression

Variables	(1) Completed	(2) Withdrawn	(3) Completed	(4) Withdrawn
Ln(bilateral size)	0.170***	-0.604***	0.378***	-0.746***
	(0.0465)	(0.112)	(0.0345)	(0.0893)
Ln(similarity index)	-0.0378	-0.136	0.183***	-0.514***
	(0.0551)	(0.124)	(0.0405)	(0.105)
Ln(trade costs)	0.654*	4.213***	0.0812	0.647***
	(0.348)	(0.855)	(0.0745)	(0.212)
Ln(distance)	0.0749*	0.179	-0.0488	0.254**
	(0.0388)	(0.109)	(0.0339)	(0.102)
Host political risk	-278.9***	-533.7***	-229.3***	50.44
	(67.49)	(170.2)	(23.04)	(59.09)
Constant	1.784	8.139***	-1.941*	2.735
	(1.234)	(3.049)	(1.095)	(1.711)
Observations	16,322	15,202	15,327	9,085
Country DV	YES	YES	NO	NO
Industry DV	NO	NO	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 16: Cross-border deals and origin regime type - Logistic regression

Variables	(5) Completed	(6) Withdrawn	(7) Completed	(8) Withdrawn	(9) Completed	(10) Withdrawn
Ln(bilateral size)	0.193***	-0.828***	0.0402	-0.554***	-0.0216	-0.509***
	(0.0511)	(0.134)	(0.0546)	(0.147)	(0.0568)	(0.152)
Ln(similarity index)	-0.0285	-0.357**	-0.0715	-0.197	-0.148**	-0.180
	(0.0597)	(0.151)	(0.0613)	(0.160)	(0.0617)	(0.158)
Ln(trade costs)	0.723*	4.069***	0.512	4.384***	0.356	4.458***
	(0.373)	(0.958)	(0.375)	(0.973)	(0.375)	(0.968)
Ln(distance)	0.0924**	0.222*	0.175***	0.191	0.157***	0.163
	(0.0437)	(0.130)	(0.0448)	(0.134)	(0.0443)	(0.132)
Host political risk	-246.4***	-796.0***	-280.3***	-813.2***	-264.7***	-766.2***
	(71.91)	(187.5)	(72.73)	(190.7)	(72.46)	(187.9)
Full autocracy (origin)			-1.960***	1.581**		
			(0.306)	(0.671)		
Partial autocracy - (origin)			-2.205***	3.734***		
			(0.525)	(0.922)		
Partial democracy - (origin)			0.0669	1.176		
			(0.314)	(0.737)		
Partial democracy w/ factionalism (origin)			-1.462***	1.784***		
			(0.150)	(0.345)		
Full democracy - (origin)					1.256***	-1.464***
					(0.124)	(0.298)
Constant	-0.603	13.13***	1.805	8.245**	1.312	8.955**
	(1.604)	(3.434)	(1.634)	(3.722)	(1.625)	(3.587)
Observations	15,218	8,351	15,218	8,351	15,218	8,351
Country DV	YES	YES	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 17: Cross-border deals and host regime type - Logistic regression

Variables	(11) Completed	(12) Withdrawn	(13) Completed	(14) Withdrawn
Ln(bilateral size)	0.181***	-0.826***	0.324***	-0.723***
	(0.0514)	(0.136)	(0.0363)	(0.0938)
Ln(similarity index)	-0.0238	-0.385**	0.132***	-0.470***
	(0.0601)	(0.150)	(0.0427)	(0.112)
Ln(trade costs)	0.747**	4.147***	-0.0283	0.934***
	(0.373)	(0.953)	(0.0815)	(0.231)
Ln(distance)	0.104**	0.207	-0.0175	0.187*
	(0.0437)	(0.130)	(0.0344)	(0.103)
Host composite risk	-357.9***	-433.2**	-51.85	-264.6**
	(74.07)	(198.1)	(41.40)	(109.6)
Full autocracy (host)	-18.72		-0.0567	-0.312
	(4,613)		(0.210)	(0.766)
Partial autocracy - (host)			-0.504	-1.104
			(0.322)	(1.078)
Partial democracy - (host)	-0.651	-0.0188	-0.644***	2.203***
	11(0.623)	(1.086)	(0.198)	(0.439)
Partial democracy w/ factionalism (origin)	-0.588	-16.36	-1.111***	1.385***
	(0.547)	(2,330)	(0.107)	(0.283)
Constant	1.468	24.20	-3.160***	6.398***
	(1.678)	(2,330)	(1.196)	(2.123)
Observations	15,218	8,351	15,327	9,085
Country DV	YES	YES	NO	NO
Industry DV	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 18: Cross-border deals and origin and host risk - Logistic regression

Variables	(15) Completed	(16) Withdrawn	(17) Completed	(18) Withdrawn
Ln(bilateral size)	0.336***	-0.849***	0.198***	-0.725***
	(0.0525)	(0.132)	(0.0510)	(0.136)
Ln(similarity index)	0.0125	-0.351**	-0.0218	-0.215
	(0.0595)	(0.150)	(0.0594)	(0.153)
Ln(trade costs)	0.403	4.452***	0.129	4.710***
	(0.377)	(0.968)	(0.378)	(0.976)
Ln(distance)	0.176***	0.155	0.150***	0.197
	(0.0441)	(0.133)	(0.0436)	(0.133)
Origin composite risk	-434.4***	251.0**		
	(44.03)	(117.2)		
Host composite risk	-332.8***	-450.5**		
	(74.85)	(202.4)		
Origin political risk			-419.0***	399.2***
			(30.80)	(75.01)
Host political risk			-273.8***	-804.4***
			(72.81)	(185.8)
Constant	3.617**	5.280	5.070***	6.178*
	(1.647)	(3.772)	(1.680)	(3.708)
Observations	15,218	8,351	15,218	8,351
Country DV	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 19: Cross-border deals and origin country group and host risk - Logistic regression

Variables	(19) Completed	(20) Withdrawn	(21) Completed	(22) Withdrawn
Ln(bilateral size)	-0.0199	-0.424***	-0.0186	-0.420***
	(0.0551)	(0.148)	(0.0551)	(0.148)
Ln(similarity index)	-0.113*	-0.194	-0.109*	-0.201
	(0.0602)	(0.154)	(0.0601)	(0.154)
Ln(trade costs)	0.692*	4.722***	0.689*	4.790***
	(0.376)	(0.946)	(0.376)	(0.946)
Ln(distance)	0.146***	0.170	0.144***	0.167
	(0.0446)	(0.134)	(0.0446)	(0.134)
Non-OECD*Host composite risk	-118.9***	160.3***		
	(9.572)	(22.02)		
Non-OECD*Host political risk			-119.3***	163.1***
			(9.745)	(22.49)
Constant	-1.099	-5.445**	-1.076	-5.657**
	(1.241)	(2.468)	(1.242)	(2.479)
Observations	15,218	8,351	15,218	8,351

Country DV	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 20: Cross-border deals and origin and host polity attributes - Logistic regression

Variables	(23) Completed	(24) Withdrawn	(25) Completed	(26) Withdrawn
Ln(bilateral size)	0.183***	-0.856***	-0.357***	-0.422**
	(0.0516)	(0.138)	(0.0672)	(0.183)
Ln(similarity index)	-0.0193	-0.362**	-0.0148	-0.435***
	(0.0605)	(0.153)	(0.0631)	(0.154)
Ln(trade costs)	-0.489	1.434	-0.310	3.950***
	(0.536)	(1.485)	(0.556)	(0.969)
Ln(distance)	0.0974**	0.237*	0.0463	0.267**
	(0.0441)	(0.134)	(0.0440)	(0.134)
Host composite risk	-261.3***	-148.0	-251.7***	-442.6**
	(88.90)	(228.9)	(90.79)	(199.9)
Polity score (origin)			0.0821***	-0.0575*
			(0.0147)	(0.0331)
Regime durability (origin)			0.0112***	-0.00960***
			(0.000860)	(0.00230)
Polity score (host)	-0.601***	0.176	-0.574***	
	(0.164)	(0.341)	(0.168)	
Regime durability (host)	-0.0487***	-0.113**	-0.0529***	
	(0.0154)	(0.0449)	(0.0160)	
Constant	6.218***	5.405	11.95***	2.794
	(2.178)	(5.038)	(2.280)	(3.848)
Observations	15,053	8,303	14,949	8,306
Country DV	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 21: Cross-border deals, origin country group, polity attributes - Logistic regression

Variables	(27) Completed	(28) Withdrawn	(29) Completed	(30) Withdrawn
Ln(bilateral size)	0.148***	-0.371***	0.241***	-0.584***
	(0.0336)	(0.0893)	(0.0342)	(0.0919)
Ln(similarity index)	0.208***	-0.323***	0.255***	-0.493***
	(0.0358)	(0.0912)	(0.0380)	(0.0931)
Ln(trade costs)	0.0927	0.728***	0.0128	1.182***
	(0.0705)	(0.208)	(0.0839)	(0.239)
Ln(distance)	0.0723***	0.0388	0.0606**	0.0404
	(0.0272)	(0.0766)	(0.0280)	(0.0775)
Host composite risk	-236.1***	107.6	-240.7***	47.45
	(34.18)	(88.09)	(23.66)	(63.58)
Host political risk			0.0766***	-0.0550**
			(0.0108)	(0.0234)
Polity score (origin)			-0.0162	-0.0172
			(0.00984)	(0.0290)
Polity score (host)				
Non-OECD (origin)	-1.544***	1.790***		
	(0.0978)	(0.213)		
Constant	2.922***	-1.696		
	(0.684)	(1.861)		
Observations	16,395	16,395		

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 22: Cross-border deals in non-OECD countries - Logistic regression

Variables	(31) Completed non-OECD	(32) Withdrawn non-OECD	(33) Completed non-OECD	(34) Withdrawn non-OECD	(35) Completed non-OECD	(36) Withdrawn non-OECD
Ln(bilateral size)	0.778***	-0.478	0.665***	-0.492	0.724***	-0.563
	(0.198)	(0.790)	(0.204)	(0.794)	(0.202)	(0.816)
Ln(similarity index)	0.447*	-0.102	0.468*	-0.0307	0.428	-0.198
	(0.260)	(1.017)	(0.262)	(1.023)	(0.261)	(0.995)
Ln(trade costs)	2.307***	7.190***	2.236***	7.238***	2.230***	7.197***
	(0.771)	(2.456)	(0.776)	(2.495)	(0.777)	(2.579)
Ln(distance)	0.303*	-0.418	0.214	-0.504	0.270	-0.543
	(0.181)	(0.425)	(0.188)	(0.463)	(0.185)	(0.447)
Host political risk	-690.0***	-44.80	-735.1***	-42.01	-692.1***	40.48
	(171.1)	(573.5)	(172.7)	(574.7)	(171.7)	(591.9)
Non-OECD (origin)			-1.093***	-0.529		
			(0.390)	(1.068)		
Polity score (origin)					0.0476	0.146
					(0.0411)	(0.138)
Constant	-4.790	2.770	-1.237	3.954	-4.022	2.194
	(3.698)	(13.50)	(3.924)	(13.72)	(3.733)	(13.42)
Observations	1,204	325	1,204	325	1,190	320
Country DV	YES	YES	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 23: Cross-border deals and regime change onset - Logistic regression

Variables	(37) Completed	(38) Withdrawn	(39) Completed	(40) Withdrawn
Ln(bilateral size)	0.193***	-0.827***	0.193***	-0.827***
	(0.0511)	(0.134)	(0.0511)	(0.134)
Ln(similarity index)	-0.0284	-0.351**	-0.0279	-0.351**
	(0.0597)	(0.151)	(0.0597)	(0.151)
Ln(trade costs)	0.710*	4.082***	0.718*	4.082***
	(0.373)	(0.961)	(0.373)	(0.961)
Ln(distance)	0.0931**	0.223*	0.0927**	0.223*
	(0.0437)	(0.130)	(0.0437)	(0.130)
Host political risk	-255.7***	-838.7***	-256.3***	-838.7***
	(72.38)	(190.4)	(72.41)	(190.4)
Positive regime change onset			-0.330	
			(1.157)	
No change in polity onset			0.481	0.919
			(0.394)	(0.723)
Regime change onset	0.413	0.919		

	(0.376)	(0.723)		
Constant	-0.683	13.76***	-0.710	13.76***
	(1.610)	(3.468)	(1.612)	(3.468)
Observations	15,218	8,351	15,218	8,351
Country DV	YES	YES	YES	YES
Industry DV	YES	YES	YES	YES

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 24: Cross-border deals during regime change by origin group - Logistic regression

Variables			(41) Completed	(42) Withdrawn	(43) Completed	(44) Withdrawn
Ln(bilateral size)			0.149***	-0.371***	0.149***	-0.371***
			(0.0337)	(0.0896)	(0.0337)	(0.0896)
Ln(similarity index)			0.210***	-0.316***	0.210***	-0.316***
			(0.0358)	(0.0918)	(0.0358)	(0.0918)
Ln(trade costs)			0.0975	0.746***	0.0975	0.746***
			(0.0706)	(0.209)	(0.0706)	(0.209)
Ln(distance)			0.0727***	0.0403	0.0727***	0.0403
			(0.0272)	(0.0767)	(0.0272)	(0.0767)
Inverse host composite risk			-239.8***	96.93	-239.8***	96.93
			(34.39)	(88.58)	(34.39)	(88.58)
Non-OECD (origin)	#	Regime change onset				
0	#	0	0	0		
			(0)	(0)		
0	#	1	0.339	0.918		
			(0.377)	(0.738)		
1	#	0	-1.543***	1.805***		
			(0.0981)	(0.214)		
1	#	1	-1.257*	1.896*		
			(0.657)	(1.094)		
OECD (origin)	#	Regime change onset				
0	#	0			0	0
					(0)	(0)
0	#	1			0.286	0.0915
					(0.656)	(1.083)
1	#	0			1.543***	-1.805***
					(0.0981)	(0.214)
1	#	1			1.882***	-0.886
					(0.386)	(0.751)
Constant			2.945***	-1.585	1.402**	0.220
			(0.685)	(1.860)	(0.665)	(1.802)
Observations			16,395	16,395	16,395	16,395

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 25: Cross-border deals during regime change type by origin group - Logistic regression

Variables			(45) Completed	(46) Withdrawn	(47) Completed	(48) withdrawn
Ln(bilateral size)			0.150***	-0.372***	0.150***	-0.372***
			(0.0336)	(0.0893)	(0.0337)	(0.0897)
Ln(similarity index)			0.210***	-0.324***	0.210***	-0.317***
			(0.0358)	(0.0913)	(0.0358)	(0.0918)
Ln(trade costs)			0.0910	0.726***	0.0967	0.749***
			(0.0705)	(0.208)	(0.0706)	(0.209)
Ln(distance)			0.0719***	0.0380	0.0722***	0.0398
			(0.0272)	(0.0766)	(0.0272)	(0.0767)
Inverse host composite risk			-236.3***	107.8	-239.8***	95.25
			(34.16)	(88.03)	(34.38)	(88.54)
Non-OECD (origin)	#	Positive change onset				
0	#	0	0	0		
			(0)	(0)		
0	#	1	0	0		
			(0)	(0)		
1	#	0	1.537***	-1.789***		
			(0.0979)	(0.214)		
1	#	1	0	0		
			(0)	(0)		
OECD (origin)	#	No change in polity onset				
0	#	0			0	0
					(0)	(0)
0	#	1			0.619	0.136
					(0.717)	(1.087)
1	#	0			1.547***	-1.804***
					(0.0980)	(0.214)
1	#	1			1.792***	-0.783
					(0.387)	(0.753)
Constant			1.366**	0.108	1.390**	0.260
			(0.664)	(1.801)	(0.665)	(1.804)
Observations			16,388	16,388	16,395	16,395

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 26: Cross-border acquisitions (100%) during regime change - Logistic regression

Variables	(49) Acquisition 100%	(50) Acquisition 100%	(51) Acquisition 100% Regime Change	(52) Acquisition 100% Regime Change
Ln(bilateral size)	-0.187***	-0.174***	0.867	0.944
	(0.0502)	(0.0557)	(0.675)	(0.767)
Ln(similarity index)	-0.336***	-0.333***	0.308	-0.229
	(0.0526)	(0.0565)	(0.637)	(0.475)
Ln(trade costs)	0.114	-0.0888	-3.628***	-1.879**
	(0.112)	(0.133)	(1.374)	(0.793)
Ln(distance)	-0.106**	-0.0768*	0.114	-0.381
	(0.0429)	(0.0446)	(0.526)	(0.539)
Host composite risk	-98.94*	-64.63	0.447	-131.1
	(57.35)	(59.66)	(621.7)	(618.4)
Polity score (origin)		-0.0512***	-0.147	
		(0.0194)	(0.101)	
Polity score (host)		0.0957***	0.260*	
		(0.0269)	(0.151)	
Regime change onset	0.349			
	(0.429)			
Non-OECD (origin)				2.347
				(1.543)
Constant	0.986	-0.192	-22.44*	-18.35
	(1.031)	(1.170)	(12.48)	(12.86)
Observations	16,395	16,118	16,118	16,395

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

List of Figures

Figure 1: Egypt – Risk vs. FDI Flow Inward

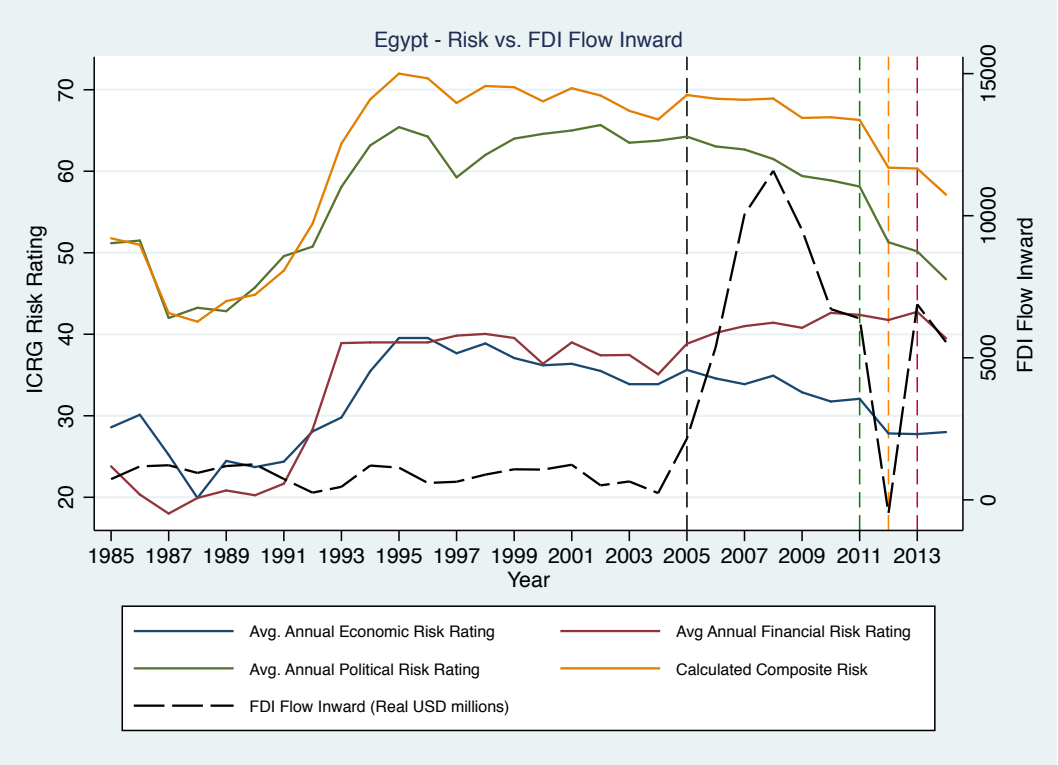


Figure 2: Egypt – Polity vs. FDI Flow Inward

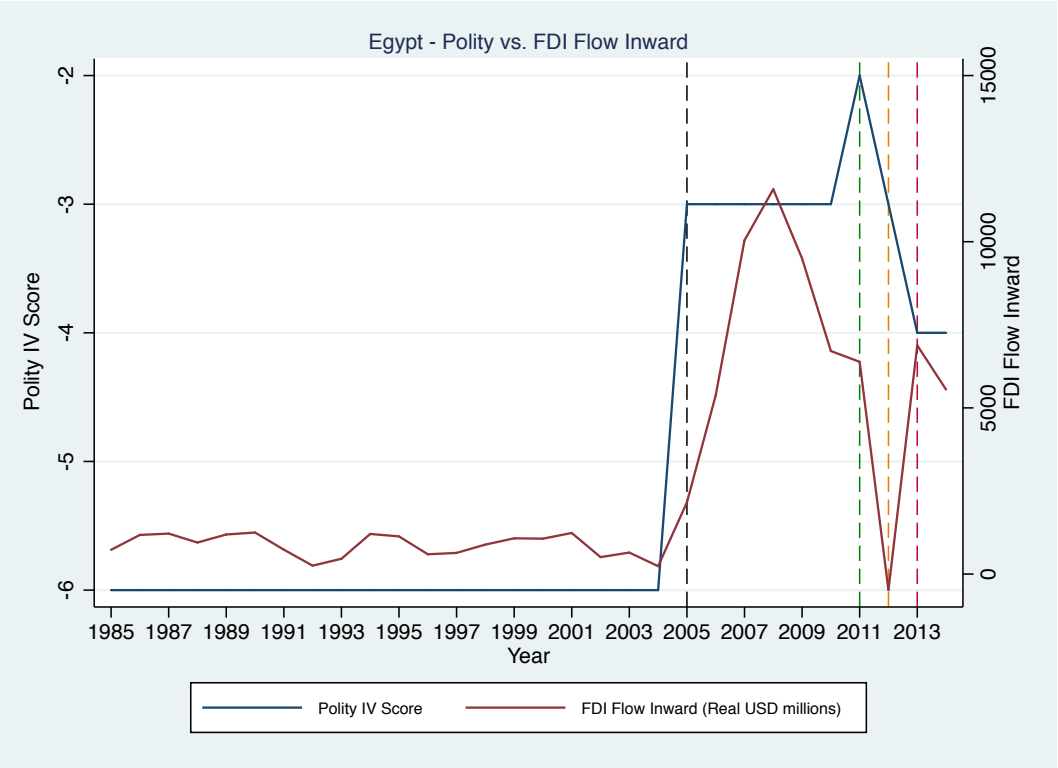


Figure 3: Egypt – State Fragility vs. FDI Flow Inward

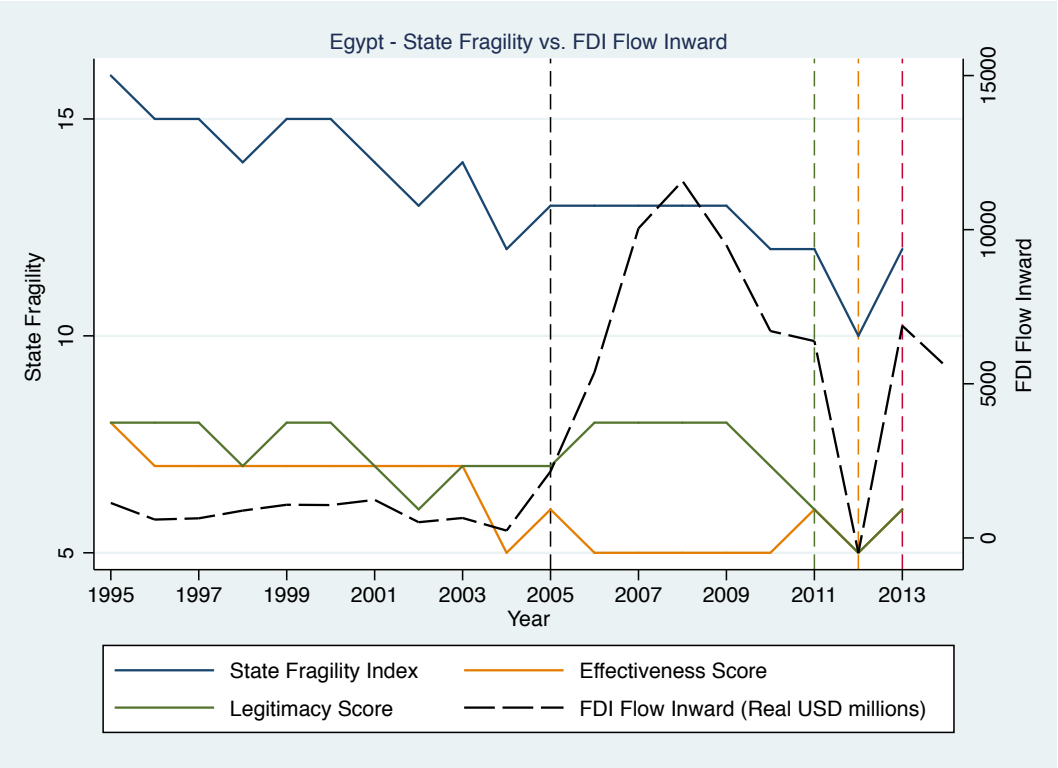


Figure 4: Sudan – Risk vs. FDI Flow Inward

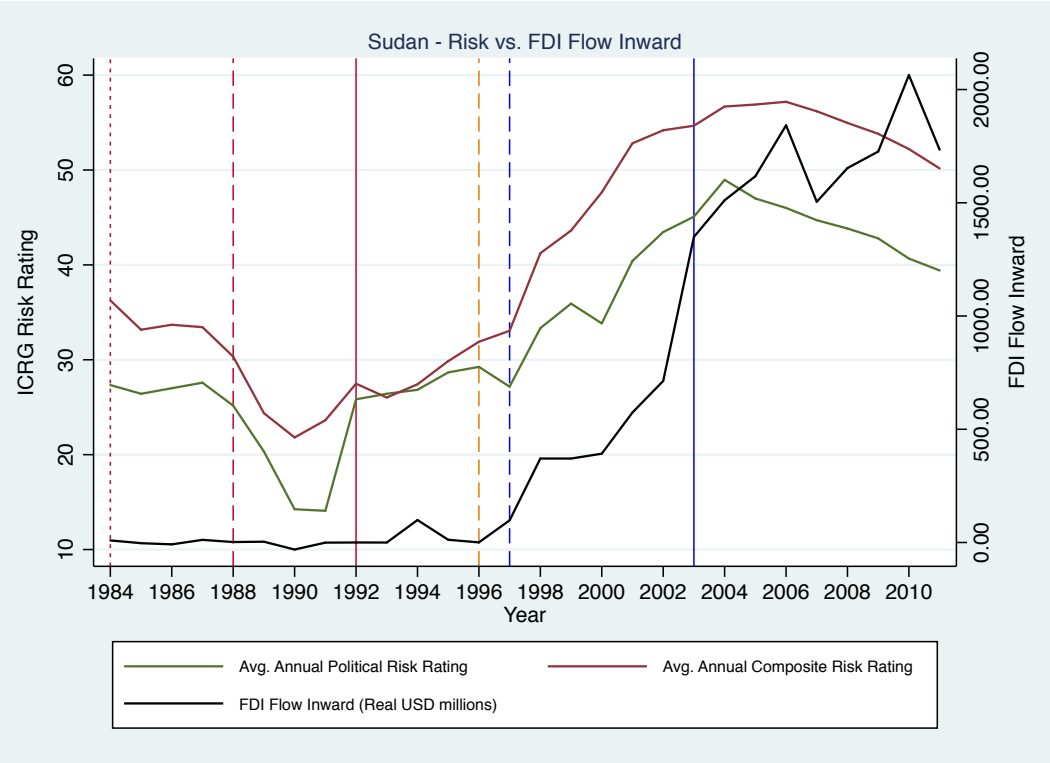


Figure 5: Sudan – Risk vs. FDI Flow Inward

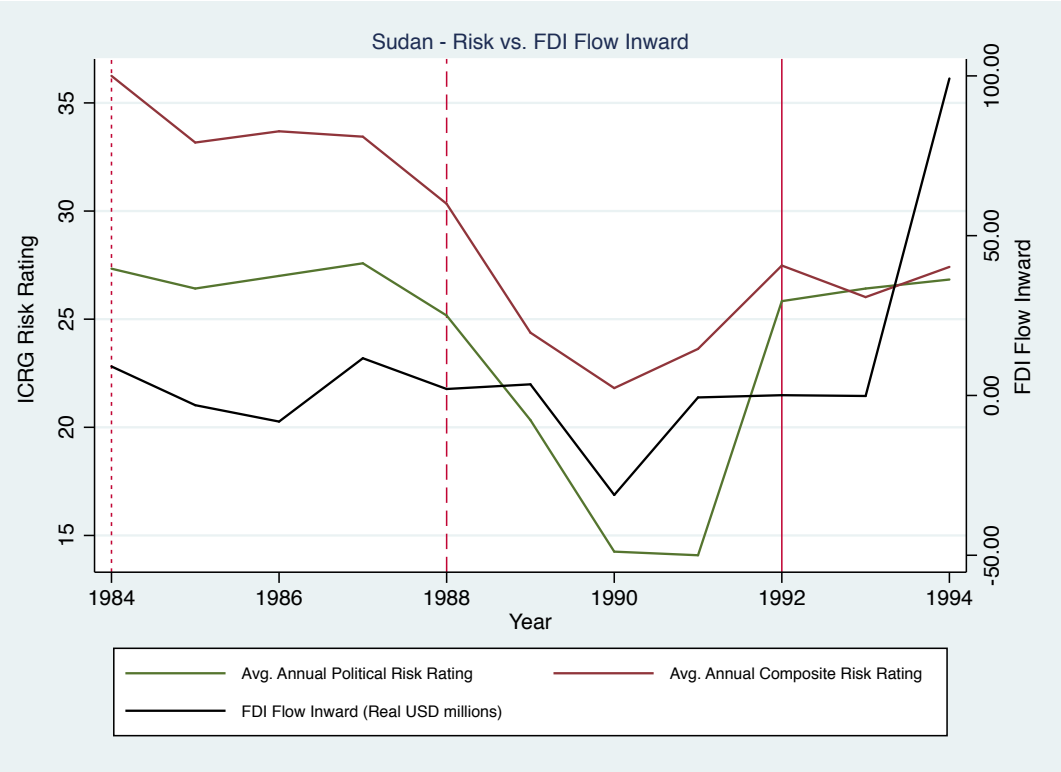


Figure 6: Sudan – State Fragility vs. FDI Flow Inward

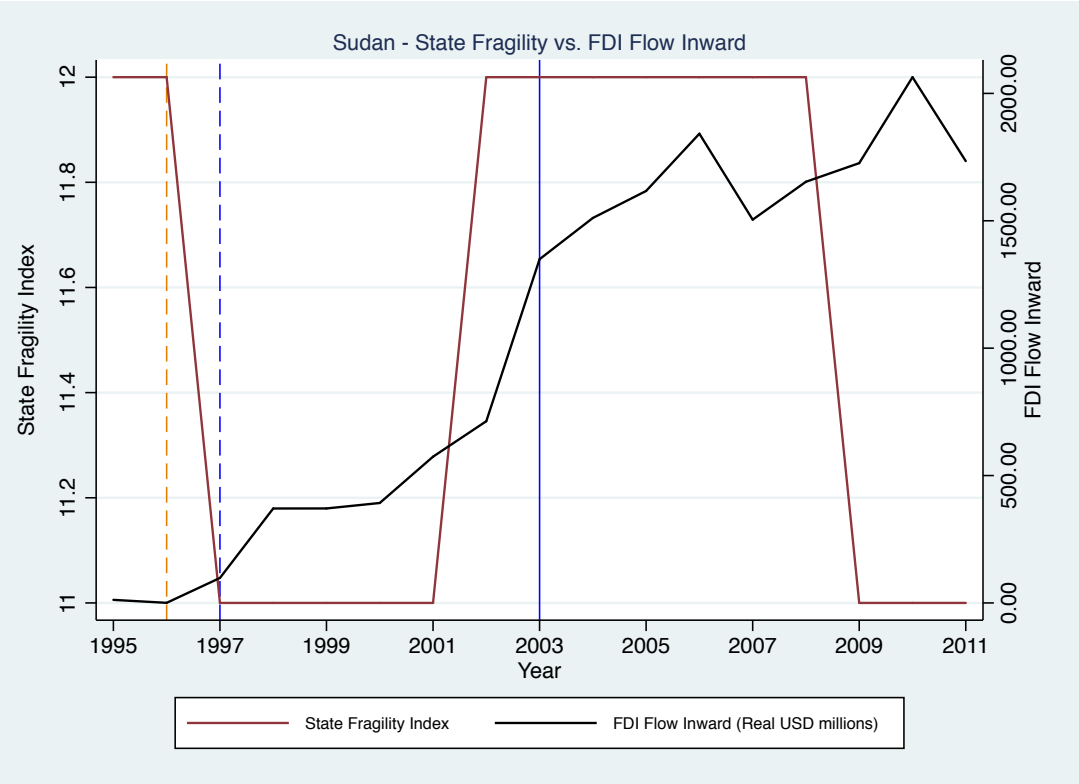


Figure 7: Sudan – Oil Price vs. FDI Flow Inward

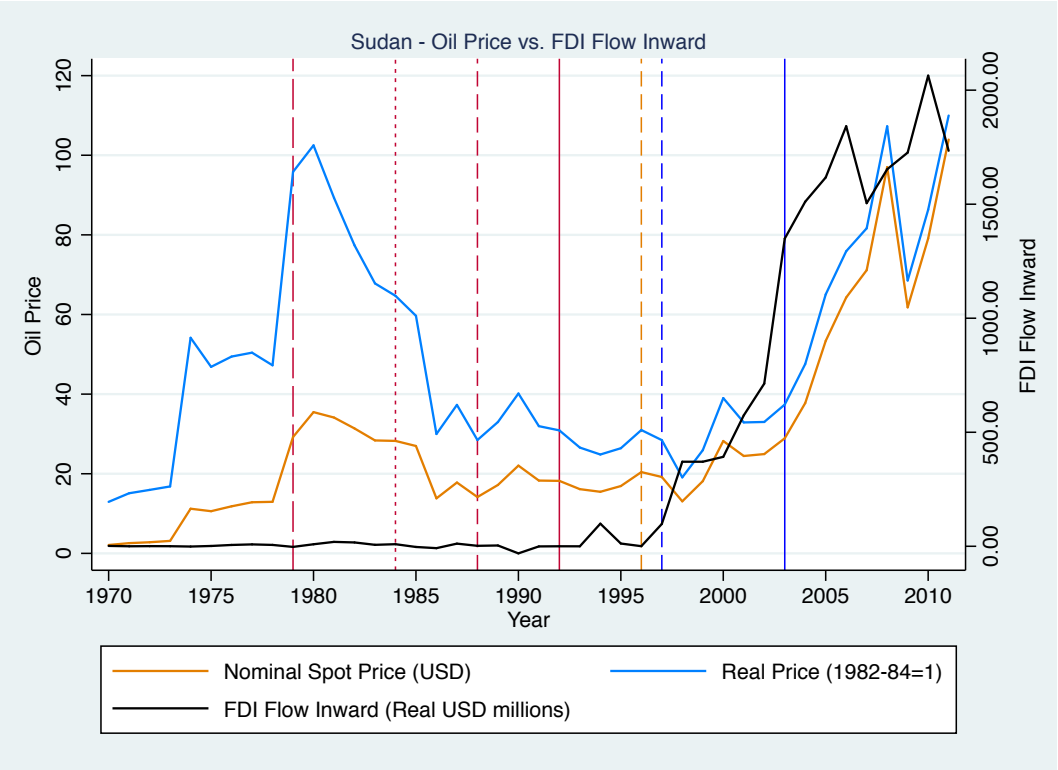


Figure 8: Oil Futures Price vs. Volatility 1984-1994

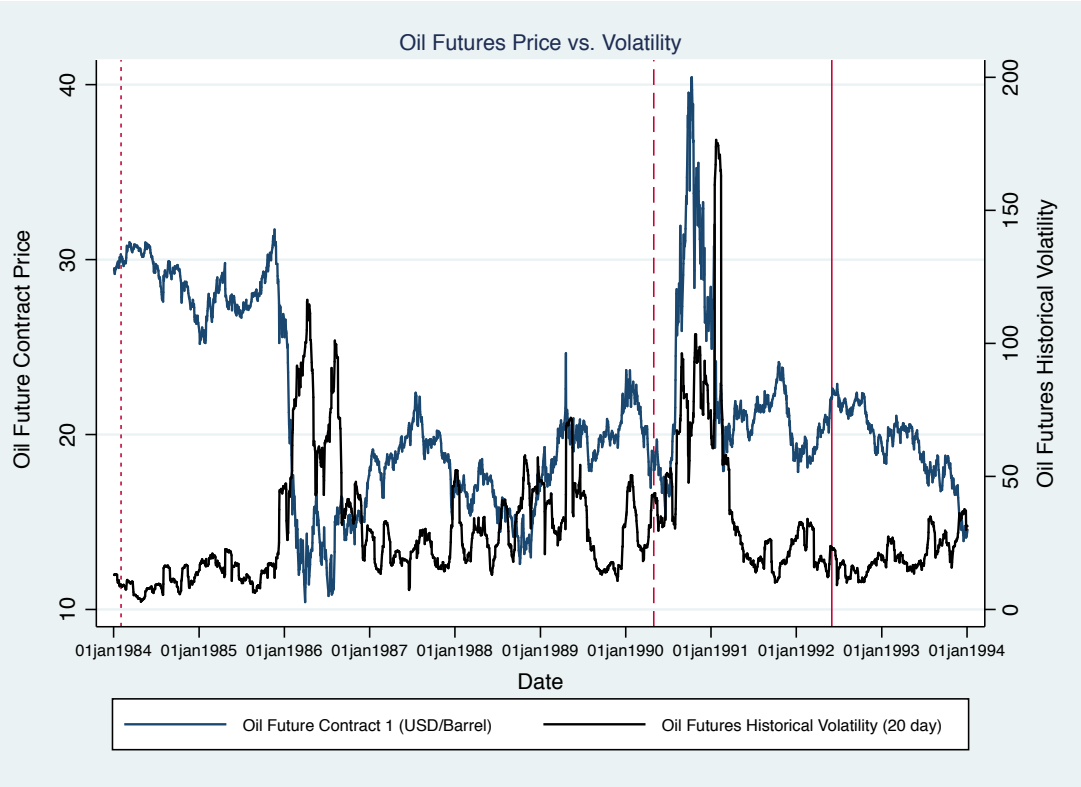
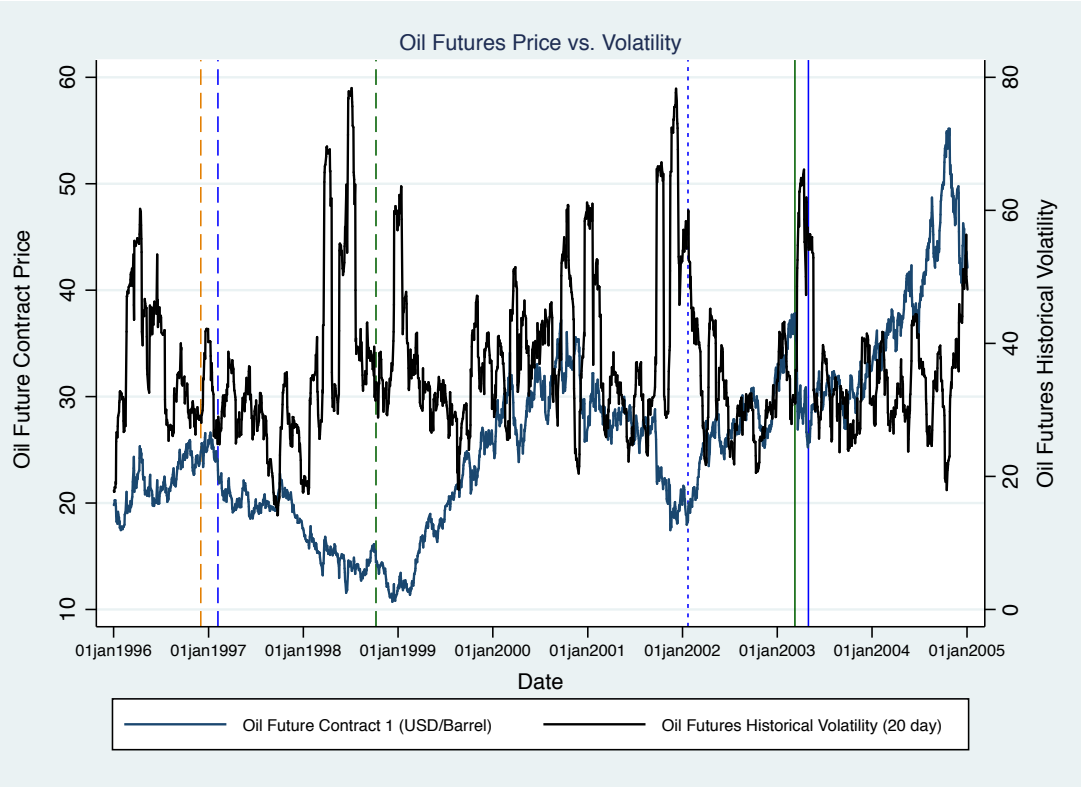


Figure 9: Oil Futures Price vs. Volatility 1996- 2005



Chapter 1: Multinational Integration Strategies and Political Uncertainty

Section 1: Political Risk, Uncertainty, And Foreign Direct Investment

> "*The fundamental political dilemma of an economic system is this: A government strong enough to protect property rights and enforce contracts is also strong enough to confiscate the wealth of its citizens."* (Weingast, 1995)

In the decision to pursue foreign direct investment, a multinational enterprise (MNE) faces a trade-off between the inherent disadvantages of foreign operation and the ownership, location, and internalization advantages presented. When evaluating location characteristics, an MNE will not only consider technologies, endowments, and input factor prices, but also the political, institutional, and legal environment. The decision to pursue foreign direct investment, therefore, must account for all relevant and discernable country-specific attributes. This is particularly important for FDI decisions because as Dixit (2011: 192) notes,

> *"… insecurity is greater, and has new dimensions, when activity and transactions cross national border… the added insecurity when trading with, or investing in, another country creates a concomitant need for added ex ante precautionary actions to mitigate some of its effects, as well as attempts to devise new institutions for ex post remedial or enforcement measures."*

Accordingly, the added considerations of doing business in a foreign country are not necessarily limited to direct costs, tariffs, and social barriers, but include a

political dimension in the form of the credibility of the standing regime to commit[1] to existing economic and legal structures and policies. This credibility must reflect both the incumbent regime's propensity to violate established laws and policies, as well as its capability to persist, i.e. resistance to regime change.

An investment, whether domestic or foreign, inherently faces variation in the economic or institutional environment that may adversely affect its future returns. But it is important to distinguish between market variation and sovereign opportunism or sovereign discontinuity. With the former, changes in fiscal and monetary policy, or labor and industrial regulations, are entitlements of an operating government. A firm acknowledges these entitlements and compensates for the risk associated with them. In the latter, sovereign opportunism subjects the firm to violations of explicit rules and agreements by an unconstrained[2] governmental authority, while sovereign discontinuity exposes it to uncertainty concerning the legitimacy or authority of the central political regime. This raises the distinction between political risk and political uncertainty.[3]

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[1] See North and Weingast (1989) and Weingast (Weingast, 1995). On the credible commitment to federalism, Weingast (Weingast, 1995) states, "In the language of game theory, we are searching for an equilibrium to a game in which the government has the opportunity to violate constraints but chooses not to do so."

[2] A governmental authority may commit transgressions, but constitutional, judicial, or legislative constraints on its power may overturn these actions or compensate the victimized firm. Hence, there is variation in the level of political constraints. I use the term "unconstrained" not in its absolute sense, but to distinguish between routine disputes and the political risks described in the following section. Also, see Henisz (Henisz, 2000a, 2000b, 2002b) and Jensen (2008) for the significance of political constraints on limiting political risk.

[3] For a formal distinction between risk and uncertainty, see Frank Knight's (1921) seminal work: *Risk Uncertainty, and Profit*. In essence, risk is measurable, while "true uncertainty" is not. Knight (1921: I.I.26) elaborates, "It will appear that a measurable uncertainty, or 'risk' proper, as we shall use the term, is so far different from an unmeasurable one that it is not in effect an uncertainty at all. We shall accordingly restrict the term 'uncertainty' to cases of the non-quantitive type. It is this 'true' uncertainty, and not risk, as has been argued, which forms the basis of a valid theory of profit and accounts for the divergence between actual and theoretical competition."

There is an inclination among some scholars to equate political risk with political uncertainty. Although under certain circumstances there exists a direct relationship between them, they are not necessarily commensurate. For instance, ignoring for now regime type or governance structure, one country may have a history of frequent sovereign opportunism, to the degree that there is the expectation of government transgression. This same country, however, may be controlled by an established, enduring regime with evidently little exposure to internal or external challenges to its authority.[4] Another country may be characterized by relatively greater institutional transparency and enforcement of contracts and laws, yet experience a coup d'états or a populist rebellion.[5] The first country exhibits a high level of political risk, while at present, there is little uncertainty as to the legitimacy and persistence of its central authority. In contrast, the second country had a lower level of political risk while experiencing a high level of political uncertainty, culminating in sovereign discontinuity. Certainly, a country may exhibit high levels of both, and a further examination of their definitions and features is warranted.

Subsection 1: Political Risk

Political risk encompasses a set of potential transgressions that transfer current or future assets or rents from an operating firm. This set of transgressions can be categorized into three types. The first takes the form of direct expropriation or nationalization of firm assets. Direct expropriation is the governmental seizure of

[4] Examples include high-income monarchies marked by extensive clientelism and corruption.
[5] A number of democratically elected regimes attempting radical reforms have experienced coups, as in Guatemala in 1954, Brazil in 1964, and Chile in 1973 (Acemoglu and Robinson, 2001).

property or the arbitrary termination of a contract or concession agreement. Expropriation may be legal, as every state possesses the sovereign right to expropriate assets in its territory assuming it meets four distinct conditions. A legal expropriation must be non-discriminatory, it must be for a public purpose, it must be in accordance with due process of law, and it must be accompanied by full compensation that is prompt and adequate (UNCTAD, 2012a). As a precaution, firms will typically specify these conditions in contracts. In practice, a lawful expropriation requires payment of the fair market value at the date of seizure. Appropriately, a lawful expropriation should not be specified as a transgression, as it is a universal parameter that firms face in principle. Conversely, an unlawful expropriation is a breach of contract that violates any of the necessary conditions of legality. Whereas the qualification of the first three conditions is partial to legal interpretation, it is in the valuation of full reparation, which may include lost future profits, where most disputes arise (UNCTAD, 2012a). Direct expropriation as a political risk was more prevalent in the 1970s and 1980s (OECD and Yannaca-Small, 2005), but more recent examples reveal its subsistence.[6]

Presently, a more prevalent type of political risk involves state measures that substantially deprive the firm of its expected returns without a formal transfer of title. This indirect expropriation may be in the form of regulatory interference, such as the revocation of a license without sufficient cause, or as "creeping expropriation" that erodes a firm's rights or expected revenues. Examples of the latter include

[6] Kesternich and Schnitzer (2010) note two recent examples in Zimbabwe in 2007 and Venezuela in 2008. Zimbabwe enacted legislation that required all foreign investments be majority owned by Zimbabwean shareholders within five to ten years. The Venezuelan government expropriated a Mexican cement company and Venezuela's largest steel producer without appropriate reparation.

inadequate enforcement of contracts, absent protection of intellectual property rights, and political violence that adversely affects market conditions. The risk associated with ineffective enforcement of contracts is of particular concern to MNEs. Inadequate contract enforcement provides the opportunity for a local partner to engage in holdup, technology theft, and free-riding on the MNE's reputation (Dixit, 2011). Notably, there can exist tension between what constitutes indirect expropriation and governmental regulation. Accordingly, not all regulatory interference amounts to a compensable indirect expropriation (UNCTAD, 2012a).

The third type of political risk is direct extraction, specified as governmental actions that directly diminish the profits of an investment. Direct extraction may be through discriminatory and confiscatory taxation, bribery and corruption, or the restriction of capital flows such as the blocking of repatriation of funds to the home country (Kesternich and Schnitzer, 2010).

To protect against the presence of political risk, MNEs will employ a variety of mechanisms and strategies. The inclusion of arbitration clauses in contracts permits contract disputes to be settled by a third-party arbitrator. Arbitration as a safety against political risk, nonetheless, is unreliable, as governments have in many cases ignored arbitration settlements or not fully complied with arbitration awards (Jensen, 2008). Another hedging mechanism available to MNEs is political risk insurance (PRI) offered in three broad types of coverage: war and political violence, expropriation/breach of contract, and currency inconvertibility and transfer restriction.[7] The insurance market for political risk, however, is incomplete, as many

[7] See MIGA (2013).

types of political risk are not contractible[8] or covered by providers and "the market suffers from severe asymmetric information (Kesternich and Schnitzer, 2010: 208)." Moreover, where coverage is available, PRI is viewed as expensive (Hamdani, Liebers, and Zanjani, 2005) and many investors are either unwilling to purchase it, or are unaware of its existence (Kesternich and Schnitzer, 2010). A non-contractual approach to mitigating political risk is proactive involvement in the political process to influence governmental authority. Through direct and indirect lobbying or political contributions an MNE may influence policy and decision-making, or establish alliances with public and private institutions and individuals, to minimize political risk (Feinberg and Gupta, 2009). This approach varies in efficacy with the type of political regime (Jensen, 2008), and presents the potential for repercussions if the country experiences a substantive regime change.[9] Additionally, replication of production in multiple countries can provide "operational flexibility" (Kogut, 1985), allowing MNEs to shift production to other locations when faced with an increase in political risk. This horizontal diversification also strengthens an MNE's leverage if the host country government endeavors to renegotiate as in an "obsolescing bargain" (Aizenman and Marion, 2004; Janeba, 2000; Vernon, 1971).

[8] The failure to hedge against these events and their consequences substantiates the distinction between political risk and political uncertainty.

[9] Feinberg and Gupta (2009) note the example of Wal-Mart's alliance with a member of the Suharto family forcing their market exit from Indonesia after his regime was deposed in 1997.

Subsection 2: Political Uncertainty

Whereas the degree of political risk indicates the propensity for sovereign opportunism, and may be measured on the basis of well-defined empirical data, political uncertainty, in contrast, corresponds to the absence of appropriate information necessary for the "empirical classification of instances (Knight, 1921: III.VII.37)." An evaluation of political uncertainty, therefore, is limited to ex ante intuitive estimation of ex post conditions pertinent to investment decisions.[10] In addition to this specification, political uncertainty can be distinguished as two general types. The more common type is uncertainty about government regulatory, fiscal, and monetary policy, the implications of which are an inability to determine future direct and indirect costs and potential alterations in consumption habits. The other less prevalent, but potentially more volatile form, entails ambiguity concerning the authority, or capacity to govern, of the central political regime. This type of political uncertainty may result from direct conflict among competing factions within a country, as in a civil war or coup d'états, or from external intervention by a foreign power interrupting the existing political authority. Among the ensuing effects of this sovereign discontinuity is greater political uncertainty of the former type. Yet, while the first type of political uncertainty arises from the absence of information about future government actions, it is weakly associated with political risk. As previously reasoned, changes in government policy that are not transgressions intended to

[10] The variables constructed by the *International Country Risk Guide* (ICRG) are the most prominent measures of political risk featured in the literature. The index assigns risk measures to a number of economic, financial, and political variables, including "direct investment risk." It also attempts to forecast the "most likely regime" scenarios in 18 months and five years. The probability scores for three regimes in each forecast period become unreliable, if not obsolete, in many cases of political transition.

transfer assets or rents from firms do not qualify as sovereign opportunism and are within the legitimate powers of an operating government. In contrast, sovereign discontinuity engenders an escalation in political risk. An endangered or nascent government is an inherently weak government, and is principally ineffective in its ability to formulate and implement policies and enforce contracts, as it must allocate much of its resources to resisting regime change or consolidating power. Consequently, sovereign discontinuity, or vulnerability, is a greater magnitude of political uncertainty than the type concerning macroeconomic policy. Moreover, the first type of political uncertainty is universal, existing in varying degrees in all nation-states. In contrast, sovereign discontinuity or vulnerability is generally restricted to a subset of nations characterized by the absence of democratic consolidation. These "natural states," to use the terminology of the North, Wallis, and Weingast (North, Wallis, and Weingast, 2008) framework, are characterized by a lack of perpetuity. The idea of perpetuity in this context is "to create aspects of the state that live beyond the lives of the current officeholders so that the institutions do not depend upon the identity of the officials that hold them (Weingast, 2009: 10)." The central hazard of sovereign discontinuity is that as the central political regime changes, "so too do fundamental aspects of the state (Weingast, 2009: 10)." The new regime often dramatically alters institutions, rights, and policies (Weingast, 2009), extensively transforming the economic environment for investment. It is this inability to credibly commit to uphold existing rights and rules that constitutes the greatest uncertainty for an investment. The extent of potential alterations to the political economy, and the absence of credible information on these alterations and the mechanisms directing

them, inhibits the capability for precise risk assessment during political transition, thereby relegating a multinational to intuitive estimates of a volatile environment.

As a nascent regime transitions to an established authority, the corresponding political uncertainty should diminish, barring a sudden shock. Transparency regarding the dominant coalition and its political, legal, and economic policies tends to increase. Political uncertainty is thus in one aspect inversely related to the maturity of a regime. Nevertheless, the regime's power may never be fully consolidated, leaving a residual uncertainty regarding its perpetuity. If the country does not achieve democratic consolidation, the magnitude of this uncertainty will vary with economic conditions, with the likelihood of sovereign discontinuity being greatest during recessionary periods (Acemoglu and Robinson, 2001).

Subsection 3: Political Risk, Political Uncertainty, and FDI

There is a wealth of literature demonstrating the negative effects of political risk on foreign direct investment and MNE investment strategy. Among the first to explore the mechanisms of sovereign opportunism is Vernon's (1971) theory of "obsolescing bargaining." A government has the ex ante incentive to attract FDI by demonstrating a credible commitment to not expropriate. However, firms are exposed to opportunism ex post, leaving the initial agreement "obsolete." Expropriation (Kobrin, 1979) or attempts to renegotiate contracts may result (Gatignon and Anderson, 1988; Williamson, 1996). Early research was primarily concerned with this risk of nationalization and how reputation can sustain foreign direct investment (Eaton and Gersovitz, 1984). Other research established the negative effects on FDI of creeping expropriation in the form of corruption (Habib

and Zurawicki, 2002; Shleifer and Vishny, 1993; Wei, 2000). Globerman and Shapiro (2002) find that better governance attracts significantly more FDI inflows and increases outflows of FDI. Examining FDI from the United States, they also show that the probability of FDI to a foreign country and the conditional amount of FDI it receives is positively related to its quality of governance (Globerman and Shapiro, 2003). Henisz (2000a) distinguishes between types of political risk and the interaction of their effects on two forms of FDI: joint ventures and majority-owned subsidiaries. Contractual hazards incentivize the establishment of a majority-owned subsidiary; while political hazards such as the various forms of expropriation can be mitigated through a joint venture that utilizes the local partners influence and experience with the host country government. However, in the context of joint ventures, the local partner may use this influence and experience for opportunistic purposes, particularly in contractual disputes. Henisz (2000a) finds that these circumstances intensify the effects of contractual hazards on the choice of a majority-owned subsidiary.

Dixit (2011) notes that some of the above work neglects that institutions tend to improve with increases in GDP per capita, resulting in ambiguity as to whether institutions or income are responsible for the estimated effects. In an attempt to address this limitation, Bénassy-Quéré et al (2007) use instruments to control for the endogeneity of institutions in a gravity-type model. They find that along with governance institutions, the industrial laws and regulations of a country significantly affect FDI inflows. Moreover, as institutional distance increases, measured as the

difference between two countries' institutions, bilateral FDI flows decrease (Bénassy-Quéré *et al.*, 2007).

A number of papers have examined the impact of political risk on MNE investment strategy. The presence of political risk may induce the multinational to choose an inefficient technology (Eaton and Gersovitz, 1984) or inefficient investment paths (Schnitzer, 1999; Thomas and Worrall, 1994). Further work investigates the effect of political risk on ownership structure. Asiedu and Esfahani (2001) show that the probability of whole ownership decreases with the risk of expropriation, while Javorick and Wei (2009) show that corruption reduces the probability of whole ownership. Kesternich and Schnitzer (2010) find that increases in all three general types of political risk decreases the ownership share of MNEs in their foreign subsidiaries, while the level of leverage varies with the type of political risk.

Also of interest is more recent research on how MNEs mitigate political risk. Konrad and Lommerud (2001) and Mueller and Schnitzer (2006) contend that sales of shares to locals may reduce the risk of confiscatory taxation or creeping expropriation, and Feinberg and Gupta (2009) find that MNEs will increase levels of operational integration with subsidiaries as a mitigating strategy against political risk. Janeba (2000) shows that a horizontal MNE structure can provide excess capacity to countervail the hazards in high-risk countries. He notes examples of automobile assemblers following this strategy by building quasi-identical plants with joint capacity that are likely to exceed demand in multiple developing countries (Janeba, 2000). MNEs may also protect against the threat of expropriation by artificially

making the investment more capital intensive or skill intensive (Dixit, 2011). The host country government may not possess the capabilities for the operation, maintenance, and management of the investment. Dixit (2011) proposes that for this same reason, MNEs often resist the host country's demands for technology transfer and training programs for local skill development. Another device noted by Dixit (2011) is MNE control of the supply of an essential input or the distribution channels for exported outputs, rendering an expropriated investment, at the least, temporarily inoperable. Finally, Dixit (2011) proposes that investors exposed to sovereign opportunism may utilize their country's diplomatic and military power to secure their investments. He contends, "this was more common in the days of empires, but even now the property and contracts of agents of major powers are probably better respected in the third world than those from less powerful countries (Dixit, 2011: 204)."

Whereas the negative effect of political risk on FDI is strongly supported, the literature on the impact of democracy and governance structure on FDI is inconclusive. The inconsistency stems from conflicting theories and findings on the relationship between the level of democracy and political risk. Jensen (2008) provides an extensive summary of the arguments for democracy reducing political risk and increasing political risk. He identifies four specific mechanisms for democracy decreasing political risk: (1) policy stability, (2) the influence of firms on policy outcomes, (3) the level of political transparency, and (4) "how reputation costs affect leaders' incentives to expropriate multinational assets (Jensen, 2008: 1041)." The arguments for democracy increasing political risk focus on two main

mechanisms: (1) policy instability and (2) the influence of competing interest groups on government policy (Jensen, 2008). Thus, Jensen (2008: 1043) concludes "a survey of both the theoretical and empirical literature fails to confirm either a negative or positive influence of democratic political institutions on political risk." In an attempt to address this inconsistency, Jensen (2008) utilizes political risk insurance premiums in a cross-sectional analysis to show that democratic institutions decrease political risk, with the level of constraints on the executive being the main driver.

In the literature examining the effects of uncertainty on economic measures, scholars have chosen to focus on policy uncertainty and its direct effects on growth and cross-border capital flows. Many have utilized the real options approach where investment is irreversible, a rational assumption in the case of FDI, and uncertainty increases the value of waiting for information, thus incentivizing withholding investment (Dixit and Pindyck, 1994). Rodrik (1991) demonstrates that the endogeneity between policy uncertainty and irreversible private investment in developing countries can result in the uncertainty about the effectiveness and permanence of policy reforms acting as a tax on investment, even when investors are risk neutral. As a result, for FDI to be undertaken in an uncertain environment, the return on investment must be much greater than the user cost of capital. Rajan and Marwah (1998) show that when firms view the policies of the government of a foreign market as weakly credible, the irreversibility of FDI leads them to choose exporting over FDI to service the market. Utilizing the period just prior to an election as a proxy for government policy uncertainty, Julio and Yook (2013) find that FDI flows from US based MNEs decline significantly under uncertainty. Furthermore, they show that the effect is more

pronounced in countries with a greater inclination for policy reversals and when the outcome of the elections is more uncertain (Julio and Yook, 2013). Interestingly, as theorized by the real options approach, this uncertainty only affects irreversible FDI flows and not foreign portfolio investment flows (Julio and Yook, 2013). Other research has examined the impact of exchange rate volatility as a type of uncertainty on FDI. Results have varied with some scholars reporting a negative relationship (Bénassy-Quéré, Fontagné, and Lahréche-Révil, 2001; Campa, 1993; Jeanneret, 2014; Kiyota and Urata, 2004; Schmidt and Broll, 2009), and others a positive relationship (Cushman, 1985 and 1988; Goldberg & Kolstad, 1995).

On the effect of political transition on economic performance, Rodrik and Wacziarg (2005) use a panel-data to examine the within-country effects of a transition to democracy on economic growth. Controlling for other types of regime transitions and ethnic fractionalization, they demonstrate that democratization is associated with a short-run increase in growth and a reduction in economic volatility (Rodrik & Wacziarg, 2005).

Section 2: Foreign Direct Investment and Political Uncertainty

Subsection 1: Irreversible Investment and Knightian Uncertainty

Theoretically, the distinction between the effects of political risk and political uncertainty on FDI is analogues to that of risk and ambiguity, or *Knightian uncertainty,* on irreversible investments. The standard assumption in models of investment under uncertainty is that future markets conditions are described by an objective probability measure over states of nature and therefore the firm is *perfectly certain* of this particular probability measure (Nishimura and Ozaki, 2007). Alternatively, the decision-maker's beliefs about future states may be represented by a Bayesian prior or single subjective probability measure. In either case, Knightian uncertainty is excluded *a priori.* In the event of sovereign discontinuity, or the less discrete state of an elevated degree of sovereign vulnerability, where economic conditions are governed by a state of political uncertainty, it is implausible that the firm is certain or indifferent[11] to this probability. Political uncertainty, therefore, can not be reduced to a single probability measure, whereas political risk, as sovereign opportunism, may be measured as a single probability with known parameters. This assumption amounts to suppressing the categorical component of political risk that varies with changes in political uncertainty. The idiosyncratic opportunism that corresponds to a measure of political risk characterizes the prevailing polity; that is, actual political risk is conditional on the regime, not the country. That is not to say that a measure of political risk is unique to each regime, such that a change in regime corresponds to a change in political risk, whether positive or negative. During

[11] As implied by the Savage axioms. See Ellsberg (1961) for an important early contribution.

periods of political transition, uncertainty about the durability of the new regime and its future policies, or credibility to commit to declared policies, implies uncertainty as to the plausibility of a single measure of political risk. This actuality introduces challenges to the theoretical treatment of risk and uncertainty in the FDI decision. A reasonable approach would be to assume that MNEs do not face a single probability measure given by, for example, a commonly accepted composite political risk measure, but rather a set of probability measures reflecting Knightian uncertainty as in the multiple-priors utility approach proposed by Gilboa and Schmeidler (1989) and further developed by Epstein and Wang (1994).[12] In this case, the MNE's beliefs about the likelihoods of future states of the world are represented by sets of one-step-ahead probabilities that capture the degree of ambiguity and ambiguity aversion.[13] Nishimura and Ozaki (2007) and Miao and Wang (2011) have applied this approach to the irreversible investment problem in continuous-time. In both treatments, the firm is assumed to be risk-neutral and *ambiguity-averse*. That is, the firm computes the expected profit according to the worse-case scenario. The Miao and Wang (2011) model is particularly appropriate for FDI under political uncertainty because it incorporates ambiguity about continuation and termination payoffs in the case of real investment and firm exit. They demonstrate that in contrast to the purely risky world in which an increase in risk raises the value of the option, ambiguity about the continuation and termination payoffs for an investment lowers the option value (Miao and Wang, 2011). The effect of ambiguity on the timing of option exercise, however,

[12] An alternative approach based on robust control theory is proposed by Hansen and Sargent (2001) and Anderson et al. (2003).

[13] See Epstein (1999), Epstein and Zhang (2001), and Ghirardato and Marinacci (2002) for a formal definition of ambiguity aversion. In the multiple-priors model the degree of ambiguity and the ambiguity aversion of the agent are confounded.

is not so clear. If the firm faces ambiguity from waiting only and uncertainty is fully resolved once it exercises the option, then the lower option value induces the ambiguity-averse firm to exercise the option earlier than a firm maximizing expected utility. In this case, there is no future uncertainty about termination payoffs, when in reality, FDI projects are pursued to generate a stream of future profits (Miao and Wang, 2011). During periods of heightened political uncertainty, the firm is likely to be uncertain about the future profits generated from the project and hence, there is ambiguity about both continuation and termination payoffs. When there exists both sources of uncertainty, the overall impact on the timing of option exercise depends on which effect dominates. If the firm is more uncertain about the future profits from investment than the value of the option to invest, then it will delay investment. When the degree of ambiguity approaches the limit, the firm is completely uncertain about the true distribution of profit. In this case, ambiguity completely erodes the value of the option from waiting and the firm adopts the myopic NPV investment rule, computing the NPV of the project according to the worst-case scenario[14] (Miao and Wang, 2011).

Subsection 3: Firm Exit and Knightian Uncertainty

In the real investment decision, the firm determines whether or not to exercise an option to pursue upside potential. Conversely, in the exit problem, the firm determines whether or not to exercise an option to avoid downside loss and seek outside opportunities (Miao and Wang, 2011). For an operational business facing risk but not Knightian uncertainty, the standard real options approach predicts the exit

[14] That is, it believes the future cash flow in each period takes the minimum value.

trigger is lower than that proposed by the textbook Marshallian NPV principle (Miao and Wang, 2011). The implication is that the firm will continue to operate and absorb losses until the upside potential gain is low enough to trigger exit. In this case, an increase in risk in the sense of the mean preserving spread raises the value of the option and lowers the exit trigger. Thus, a firm should stay in business longer in riskier situations, even when they suffer substantial losses.[15] Incorporating Knightian uncertainty, however, leads to contrasting results. If the value of outside opportunities is assumed to be constant, then when there is ambiguity about industry demand or the firm's productivity, the option value is lower and the exit trigger is higher, thereby inducing the firm to exit earlier. When there is uncertainty about the outside value, for example the scrapping value of the operation or the profit opportunity of a new business, then *ceteris paribus*, the firm will be more hesitant to exit. Therefore, the overall effect of ambiguity on the exit timing is determined by the relative degrees of ambiguity about different sources (Miao and Wang, 2011).

An MNE operating in a country that experiences sovereign discontinuity, or an incidence of conflict, also possesses the possibility to suspend operations. Suspension forgoes the future profit stream without gaining the outside value, but allows for the reduction of operational costs and hence, temporary losses. If the political uncertainty continues to rise, the value of the option lowers and the exit trigger rises, and the MNE will abandon operations in the country. If the political uncertainty dissipates as the credibility of the new regime and its effective policies are established, then, *ceteris paribus*, the option value rises and the exit trigger

[15] Miao and Wang (2011) note that this is inconsistent with the some empirical evidence, notably the substantial amount of quick exit in the IT industry.

lowers, potentially leading the MNE to resume operations. However, this prediction relies on the assumption that the MNE is indifferent to the type of regime and its economic policies. This implies that the MNE will behave uniformly irrespective of the direction of the transition, or if the new regime were to pursue policies that raise the MNE's operational costs or dampen demand. Therefore, an increase in political risk may dominate the decrease in political uncertainty, inducing the MNE to exit. Alternatively, following sovereign discontinuity, there may remain a state of high sovereign vulnerability, but a low level of political risk, with the new regime agreeing to policies that promote investment or increase asset returns. The credibility of the new regime's ability to commit to these policies becomes a determining factor in the MNE's decision.

Section 3: Empirical Illustrations

Subsection 1: Egypt: 1984-2013

A recent example illustrating these dynamics is the period of political transformation in Egypt over the last decade. Following an event of sovereign discontinuity in 2011, when a revolution overthrew a military-led autocracy, the new regime was democratic but highly vulnerable, culminating in a coup in 2013 that restored sovereignty to the military. The flow of FDI to Egypt completely halted in 2012, with indicators reflecting an overall net disinvestment (UNCTAD, 2014a). Following the coup, a number of multinationals suspended operations, however, FDI inward flows eventually rose to pre-revolution levels. Although the new regime pursued repression to consolidate its power, opposition violence and internal conflict

continue to persist. Nonetheless, the country managed to attract a significant commitment for FDI from a consortium of nations (Rohan, 2015).

In figure 1 we see measures of economic, financial, and political risk and their composite score[16] plotted against FDI inward flows[17] to Egypt. The black dashed-vertical line at year 2005 represents an election event, when the regime, in response to pressures for democratic reform, held multi-party presidential elections. Although questionable in their legitimacy, the elections were perceived as a positive step towards democratization by the United States (Williams and Wright, 2005). The green dashed line at year 2011 indicates the revolution beginning in January and culminating in the first non-military elected president in June 2012 (orange dashed line). The red dashed line represents the coup of July 2013, when the military-led autocracy was formally reestablished. In figure 2 the combined Polity IV score[18] is plotted against FDI inward flows over the same period. Figure 3 plots the Center for Systemic Peace's State Fragility Index (SFI)[19] against FDI inward flows. A comparison of the figures illustrates the contrasting relationships between FDI inward flows and measures of risk and governance. The elections of 2005 resulted in the incumbent remaining in power, signaling a persistence of regime and likely

[16] The ratings are taken from The PRS Group's International Country Risk Guide (ICRG). The higher the score, the lower the risk.

[17] FDI data is taken from the United Nations Conference on Trade and Development (http://unctadstat.unctad.org/).

[18] The Polity IV Project is produced by the Center for System Peace (CSP) as a coding scheme measuring the concomitant democratic and autocratic authority characteristics of states (Marshall, Gurr, and Jaggers, 2010). The combined Polity IV score is computed by subtracting the autocracy score from the democracy score. The variable used here is the "Revised Combined Polity score" that is modified for use in time-series analyses.

[19] The CSP State Fragility Index (SFI) is a measure of state capacity and systemic resilience. It is computed as the sum of the polity's effectiveness and legitimacy scores. The SFI ranges from 0 "no fragility" to 25 "extreme fragility." Thus, the higher the score, the more fragile the state. Currently available measures span 1995 to 2013.

continuation of economic policies. The average annual composite and political risk ratings improved the year prior to the election, but began a general decline afterwards. Concurrently, the combined Polity IV measure jumped to its least autocratic score since 1951, while conversely, the level of the regime's fragility increased as a result of less state effectiveness. During this period, investors responded positively, as FDI inward flows began a dramatic increase that peaked in 2008. Throughout the period of 2005 to 2008, when FDI inward flows increased by over 500 per cent, risk ratings indicated greater political and economic risk, but less financial risk. The Polity IV score remained at its post-2005 election level, as did the SFI, with less regime legitimacy offset by greater effectiveness. With the exception of greater political risk that incongruously increased during the boom period, none of the indicators seemed to suggest the trend would reverse.

The negative trend in FDI inward flows began one year prior to the onset of the Arab Spring in Tunisia. Interestingly, the drop from 2009 to 2011 was marginal, in contrast to the rapid decline the previous two years. The 2012 trend, however, saw an even more extreme drop in FDI flows that sharply reversed in 2013. In contrast, the SFI reflected a reciprocal image of the FDI trend during the transition period; the drop in state fragility coincided with a drop in FDI inward flows in 2012 and vice versa in 2013. This is in contrast to theory predicting that an increase in risk concurring with a decrease in government legitimacy and effectiveness should cause a decrease in real investment. The inflection point for FDI inward flows coincides with the onset of the counterrevolution in 2012. Although viewed as more fragile and more autocratic during this period, investors responded positively, implying a

preference for the previous regime. This suggests an association of less uncertainty with the non-democratic regime, however, FDI inward flows dropped by 19 percent in 2014 despite presidential elections held in May of the same year in an attempt to legitimize the return to military rule. In response, the new regime held an international investment conference in March 2015 aimed at securing FDI. The conference was perceived as a coordinated international intervention, with German Economic Minister Sigmar Gabriel stating, "economic engagement here in Egypt is important in order to stabilize the country (DW.com, 2015)." The presumed direction of causality is that lower levels of political risk and political uncertainty attract more FDI. Following a political transition, there is a self-reinforcing mechanism for the durability of the new regime. That is, if agents are confident the new regime will persist, they will increase investment, and this will in effect increase the durability of the regime (Acemoglu and Robinson, 2001). In Egypt's case, investment was promoted with the objective of ensuring the persistence of the regime. The counterfactual being that without coordinated transnational intermediation, a persistent economic downturn would extend the period of political turmoil, thereby potentially contributing to undesirable geopolitical consequences.

Egypt's case raises two important considerations. The first, as proposed by Acemoglu and Robinson (2001), is the endogeneity of FDI and the durability of a new regime. The second is the importance of considering "Galton's" problem in studies of FDI. That is, the interdependence of units in cross-national comparative studies (Ross and Homer, 1976). This extends beyond the multilateral decision-making nature of FDI (Baltagi, Egger, and Pfaffermayr, 2007; Blonigen *et al.*, 2007)

to incorporate the mechanisms of direct and indirect international influence and coercion substantiated in studies of transnational policy diffusion (Henisz, Zelner, and Guillén, 2005; Simmons and Elkins, 2004). Theoretical and empirical analyses, therefore, should preferably incorporate these considerations.

Subsection 2: Sudan: 1970-2011

Another relevant case initially identified by Powell (2013) as an illustration of contrasting approaches to managing concessions, or equivalently, compound real options, is oil investment in Sudan during its second civil war (1983 – 2005). Oil was first discovered in the southern provinces of Sudan during the 1970s and Chevron Corp. was granted the first concessions in 1974. Drilling began in 1977 with the two largest fields, the Heglig and Unity, discovered in 1982. In addition to Chevron, Franco-Belgian company Total was given concessions in 1980 by the Sudanese government. In contrast to Chevron, however, Total did not develop its concessions, preferring to wait until a sufficient level of security was established (Collins, 2008). In 1984, Chevron suspended operations after three of its workers were killed in the violence following the outbreak of civil war in 1983. Chevron requested additional security from the Sudanese government, and after receiving assurances from Khartoum, attempted to resume operations in 1988 (Korbin, 2004). Dissatisfied with security considerations, Chevron dismantled all operations by 1990, eventually selling its concessions in 1992 (Human Rights Watch, 2003). Figure 4 presents measures of composite and political risk and FDI inward flows in Sudan covering the period 1984 until 2011, when the country split into separate states. The red vertical

lines represent Chevron's investment decisions during the civil war. The short-dashed line indicates Chevron's suspension of operations, the long-dashed line the attempted resumption of operations, and the solid line the sale of its concessions. In 1996, a consortium of parastatal (state-owned oil companies) from China, Malaysia, and Sudan purchased a majority stake in the only operating oil company in Sudan (orange dashed line).[20] The following year, Swedish company Lundin acquired concessions to develop oil fields (blue dashed line). Although Lundin made major discoveries, after frequent stoppages due to security concerns, it exited Sudan by selling its concessions to Petronas in 2003 (blue solid line). A year earlier, after the U.S. house of representatives passed a bill condemning human rights abuses in Sudan and placing capital market sanctions on non-U.S. oil companies operating in the country, Talisman sold the remainder of its stake in GNPOC to the Indian parastatal Oil and Natural Gas Corporation (ONGC). Since then, the consortium of parastatal from less-developed countries (LEDC) now account for over 90% of Sudan's total oil output (Coalition for International Justice, 2006)

In figure 4, risk ratings were steady after Chevron's suspension of operations in 1984, but a sharp increase in risk shortly preceded and continued after resumption in 1988, until reversing in 1990. Clearly the reversal was not enough to induce reentry and prevent the sale of their concessions in 1992. Throughout this period, FDI inward flows seemed to exhibit little change, however, a closer look in figure 5 illustrates a different picture. Increases in risk seem to precede decreases in FDI

[20] The consortium, called the Greater Nile Petroleum Operating Company (GNPOC), consisted of share holders China National Petroleum Company (CNPC) with 40%, Petronas of Malaysia (30%), and the Sudanese national oil company, Sudapet (5%). The other 25% of the shares belonged to Arakis, which originally purchased the concessions from Chevron. Arakis was ultimately absorbed by another Canadian company, Talisman Energy.

inward flows, with the riskiest rating in 1990[21] coincided with a substantial net disinvestment. Returning to figure 4, risk ratings seem to correspond with the rise in FDI during the next ten year period from 1994 to 2004. After 2004, however, the investment environment became riskier, while FDI inward flows fluctuated. Lundin's purchase of concessions in 1997 coincided with an improvement in risk ratings, while its sale of concessions in 2003 seemed to preempt the steady increase in risk that would begin the following year. The SFI in figure 6 remains within a unit range through the measurement period, but fluctuates periodically. A drop in state fragility preceded the entry of Lundin in 1997, while a rise preceded its exit in 2003.

As predicted by theory, the price of oil appears to influence investment decisions in this case (Kellogg, 2014). In figure 7 we see a substantial increase in the real price of oil[22] in 1979 triggered by an oil shock that year. The first oil discovery in Sudan was made by Chevron that year, with major discoveries to follow in 1982. Chevron suspended operations in 1984 for security reasons, but only completely abandoned them in 1990, when the real price had dropped below pre-entry levels. Concessions were finally sold in 1992, a period of decline in the real price. In contrast to Chevron, GNPOC and Lundin entered during a period when the real price was at its lowest level in twenty years. Although both the nominal and real price began to steadily increase after a brief drop in 1998, Lundin sold its concessions in

[21] In June 1989 the Sudanese government was overthrown by Colonel Omar al-Bashir who established a military led-autocracy and declared his intention to defeat the Sudan People's Liberation Army in the southern civil war, signaling a protracted conflict.

[22] South Sudan produces both a light and heavy blend of crude petroleum. The nominal oil price plotted in figure 7 is the crude petroleum average of UK Brent (light), Dubai (medium), and Texas (heavy), equally weighted ($/barrel) taken from the UNCTAD annual commodity price averages. The real price is computed according to the U.S. Energy Information Administration's preferred base period, 1982-1984.

2003, one year prior to a rapid rise that would continue until reaching historic levels in 2008. The flow of FDI to Sudan hovered at near zero levels before GNPOC and Lundin's entrance in the mid-nineties, at times becoming negative. During this period, FDI inward flows did not seem to respond to the price trend. It was only after 1997 that FDI began to increase substantially in accordance with the price trend. This is evident in the contrast between the pairwise correlations of the price of oil and FDI inward flows and stock to Sudan during the two periods. For the period of 1970 to 1990, the pairwise correlation between the nominal price of oil and FDI inward flows to Sudan was 0.0711, while the pairwise correlation between the real price of oil and FDI inward flows to Sudan was -0.0069, with neither significant. In contrast, from 1996 to 2011, the respective pairwise correlations between the nominal and real price and FDI inward flows to Sudan were 0.8345 and 0.8336. Both are significant at the one percent level for the full sample.

An additional factor predicted by theory to influence real investment decisions is the volatility of the output's price. Along with spot and forward prices, the volatility of oil futures should determine the value of oil concessions, with greater volatility increasing the value of the real option, thereby inducing delays in investment or resumption (Dixit and Pindyck, 1994). Figures 8 and 9 plot the oil futures contract prices[23] and their 20 day historical volatility during two separate periods, 1984 – 1993 and 1996 – 2004. In figure 8 we see the price and volatility when Chevron suspended operations on February 2, 1984, when it abandoned operations in May of 1990, and finally when it sold its concessions in June of 1992.

[23] The price used is the Cushing, OK Crude Oil Future Contract 1 (Dollars per Barrel) traded on the New York Mercantile Exchange (NYMEX) and taken from the U.S. Department of Energy's Energy Information Administration.

Clearly the volatility was higher and the price lower at sale than at purchase. While the volatility was lower and the price higher at sale than at abandonment. It is notable that Chevron invested $880 million in Sudan, but sold its concessions for only $25 million (Human Rights Watch, 2003). Figure 9 reveals that Lundin sold its concessions when volatility was more than twice the level at purchase, while slightly lower than at abandonment. In contrast, Talisman, under external pressure, sold its concessions at a lower volatility than at purchase.

The Sudan case illustrates the contrasting approaches of investing firms of different origin when exposed to the riskiest and most uncertain of possible environments, civil war. Chevron, Lundin, and Talisman all abandoned operations, while the GNPOC not only continued operations, but expanded through the acquisition of exiting firms' concessions. Moreover, it is only after the entrance of GNPOC that FDI inward flows began to steadily rise.

There are three notable points raised by this case. The first is that certain firms are willing to enter or continue operations in the riskiest and most uncertain of environments, even when the real option is compound and suspension is an alternative to exit. The second is that among these firms, those willing and capable of continuing operation may be unique, in that they are state-owned enterprises from LEDCs. In fact, many of Lundin's employees in Sudan were subcontracted from Chinese firms (Human Rights Watch, 2003). The final point is that the type of industry may induce entry and continued operation in exceptionally hazardous environments.

Section 4: Multinational Integration Strategies and Spatial Interdependence

Early research in the theory of international trade and foreign direct investment identified two general forms of MNE activity: vertical MNEs that geographically separate various stages of production, and horizontal MNEs that replicate most or all of the production processes at different locations. Vertical MNEs arise when firms choose to save on production costs by exploiting cross-country differences in factor prices (Helpman and Krugman, 1985a; Helpman, 1984). They locate headquarters in a skilled-labor endowed parent country, *p*, and engage in unskilled-labor production in an unskilled-labor endowed host country, *i* (Baltagi *et al.*, 2007). Vertical MNEs aim to serve the parent market through exports from *i* to *p* (Helpman and Krugman, 1985a; Helpman, 1984). In contrast, horizontal MNEs save on transport and trading costs through serving markets locally, but incur higher fixed investment costs than exporting national firms (Lael Brainard, 1997; Markusen and Venables, 1999, 2000; Markusen, 1984). A horizontal integration strategy is characterized by plants in both *p* and *i,* with each plant exclusively serving demand in the local country.

Recent developments in the organization of MNEs have considered a number of extensions. Baltagi et al. (2007) raise two particularly important considerations relevant to this investigation. First, both types of MNE entry strategies have been integrated in the "knowledge-capital" model of multinationals (Carr, Markusen, and Maskus, 2001; Markusen, 2002). Along with trade and investment impediments, the relative factor endowments of countries determines the equilibrium configuration of national firms and horizontal and vertical MNEs. Second, more recent empirical

analysis (Feinberg and Keane, 2006; Hanson, Mataloni, and Slaughter, 2003) has shown that a greater range of integration strategies is more common among MNEs. In a sample of U.S. MNEs with affiliates in Canada, Feinberg and Keane (2006) find that only 12 per cent of firms reflect a purely horizontal MNE form, while 19 per cent can be considered purely vertical MNEs. This leaves 69 per cent that exhibit what they call a "hybrid" structure. Examples of these hybrid structures include "export-platform FDI" (Ekholm, Forslid, and Markusen, 2007), where an MNE produces in one foreign country and exports the output to other countries, and a "complex integration strategy" (Yeaple, 2003), where intermediate stages of production occur in one country to save on production costs and other stages in multiple countries to lessen transport costs (Grossman, Helpman, and Szeidl, 2006).

The choice of MNE entry strategy is, therefore, not restricted to bilateral considerations, and FDI decisions across various host countries may be interdependent. As Baltagi et al. (2007) contend, the existence of *third-country effects* are important because, even when considering a large parent's outward FDI, the average country pair is relatively small in comparison with the rest of the world. If trade frictions between the parent country *p* and host economy *i* are relatively high, while the opposite is true for trade frictions between *p* and third country *j,* then the MNE may choose to serve market *i* through a horizontal integration strategy with a plant in *i,* while serving market *j* through exports from the parent country *p.* I term this MNE configuration an export-horizontal type strategy, or *e-h type* MNE. An example of an *e-h type* strategy is the production of a finished good requiring skilled-abundant labor in the parent country *p* that is exported to other markets, but because

of trade frictions in the form of trade barriers or transportation costs to target market *i*, the MNE will establish a plant in host country *i*. This strategy, however, is conditional on the endowment of appropriate skilled-labor in the host country. For an *e-h type* MNE, the magnitude of FDI from the parent to the host country is determined bilaterally and hence, is independent of the magnitude of exports from the parent country to other countries, *ceteris paribus*. Thus, an *e-h type* MNE generates no third-country effects (Baltagi *et al.*, 2007) on outbound FDI from a parent country.

Alternatively, if trade protection and trade costs between target countries *i* and *j* is low enough relative to trade frictions between the parent country *p* and the two target markets, then an MNE may choose to serve both destinations through export-platform FDI, or an *e-p type* strategy (Ekholm *et al.*, 2007). In this case, the MNE will serve its parent market through production in *p* and will locate a production plant in *i* (*j*) and serve *i* (*j*) through local sales while exporting from *i* (*j*) to *j* (*i*). The choice of the single platform location will consider the relative market size and endowments of the destination markets *i* and *j*, as well as the trade frictions between them. FDI from the parent *p* to the platform host country *i* would then be in substitute of FDI to the third country *j*. However, the market size of *j* would impact FDI from the parent *p* to the platform location *i*. Blonigen et al. (2007) name this the "surrounding-market potential effect." Therefore, an *e-p type* MNE generates two types of third-country effects, FDI from the parent to the host country is inversely related to FDI from parent to the third country, while the surrounding-market potential of the third country is positively related to FDI from the parent to the host country.

A similar, yet unique configuration is what I term a hybrid strategy, or *h-type* MNE. An *h-type* MNE integrates both vertical and horizontal modes with finished goods plants in host countries *i* and *j* serving their corresponding local markets, and parent country demand served through exports from *i* or *j*. A horizontal strategy is pursued in both host countries, however one, or both, host countries is used for vertical production. The magnitude of FDI from parent to each host country may be interdependent if *i* and *j* each export, or possess the capacity to export, to the parent country. An increase in FDI from *p* to *i* relative to *j* not associated with greater demand in *i* may indicate a preference for one location, either due to factors internal to the MNE, e.g. greater productivity in plant *i*, or external factors specific to the host countries such as environmental limitations or changes in endowments. If one host location is strictly preferred to another for export to the parent country, then either there is heterogeneity in the finished good, and tastes and preferences of the parent and exporting host are similar, or there is a substantial difference in trade costs between the parent and each host country. Consequently, the third-country effects generated by an *h-type* strategy may be ambiguous.

When an MNE fragments the production process with activities located in separate countries, then it is pursuing a complex-vertical, or *c-v type* strategy (Baltagi *et al.*, 2007; Davies, 2005). In this case the MNE will establish an intermediate input plant in *i* (*j*), finished product plant in *j* (*i*), with exports from *j* (*i*) to *p* and *i* (*j*). Along with factor endowments, the relative market sizes and the presence of suppliers in the host countries may determine the configuration of *c-v type* operations. Suppliers of inputs to intermediate goods production may be concentrated in country

i, while suppliers of inputs to finished good production are concentrated in country *j*, yet, an MNE pursing a *c-v type* strategy will still consider the market size for the finished good and the trade costs from each host location to the importing markets when determining the locations of plants. In addition to supplier networks, there may be other agglomeration incentives influencing the configuration of *c-v type* MNE activity (Blonigen *et al.*, 2007). The location of immobile resources, e.g., extraction of natural resources, may impose restrictions on the choice and flexibility of MNE integration strategies. Nonetheless, in the presence of *c-v type* MNE activity, unless production processes are altered, FDI from parent to host countries is complementary.

The direction and magnitude of third-country effects, therefore, is the consequence of a trade-off between a *demand effect* and a *supply effect* (Baltagi *et al.*, 2007). The demand effect refers to changes in country *j*'s size, as measured in terms of GDP, resulting in changes to its local demand and concurrently changing its attractiveness relative to country *i* for *p*-based investors (Baltagi *et al.*, 2007). The supply effect emerges with changes in country *j*'s factor endowments relative to country *i*. It explains the possible partial reallocation of MNE activity to *j*, and changes in the world markets due to the increased supply of *j*-based exporting firms (Baltagi *et al.*, 2007). The overall magnitude of these effects and the impact of changes in country *j*'s endowments on bilateral FDI from *p* to *i* is conditional upon the active mode of MNEs.

Much of the existing empirical work on the determinants of FDI seems to ignore theoretical findings on the role of third countries and the general interdependence of host markets (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007). Early

work by Head et al. (1995) provides robust evidence of agglomeration effects in the location of Japanese FDI in the US. Additional empirical analysis on Japanese FDI patterns into Europe by Head and Mayer (2004) finds a positive effect on FDI of surrounding-market potential using measures that include the GDP of adjacent regions weighted by distance and other trade frictions. Although allowing for potential interdependence of FDI location decisions, their models are limited to a discrete measure of FDI choice and are subject to restrictive assumptions such as the independence of irrelevant alternatives (Blonigen *et al.*, 2007). As a result, scholars have sought to incorporate more flexible econometric techniques that account for the *spatial* interdependence of proximate locations.

Coughlin and Segev (2000) were first to use spatial econometric techniques[24] to examine FDI decisions. They find that US FDI to Chinese provinces is positively correlated with FDI into neighboring provinces, which they attribute to agglomeration economies. Blonigen et al. (2004) examine US outward FDI to developed economies at the country-level and find a negative spatial lag of FDI, that is, greater FDI to a host country is associated with less FDI from the US to geographically proximate countries. Baltagi et al. (2007) develop a three-factor model of MNE integration strategies, mapping each type to its implied spatial interactions. They predict bilateral and third-country effects of changes in the capital endowment ratio, skilled-labor endowment ratio, and unskilled-labor endowment ratio of the parent to the corresponding destination. The resulting econometric specification uses a panel of manufacturing and non-manufacturing industries and allows for spatial correlation in

[24] A brief introduction to spatial econometric theory is provided in the following section that describes the econometric approach.

the independent variables and the error term. The estimation results provide substantial evidence of spatial interactions in outbound FDI, suggesting the presence of complex MNE integrations strategies, though they cannot identify the prevalence of export-platform (*e-h type*) or complex-vertical (*c-v type*) FDI over the other (Blonigen *et al.*, 2007).

In a similar approach to Baltagi et al. (2007), Blonigen et al. (2007) include a spatial lag and surrounding-market potential variable within a gravity-type model to perform spatial analysis with both a cross-section and time dimension. They hypothesize the signs on the spatial lag of FDI and the surround-market potential variable associated with four types of FDI integrations strategies: pure horizontal, export-platform, pure vertical, and vertical specialization. Using a spatial maximum likelihood estimation on a sample of US outbound FDI to 35 developed and less-developing countries, they find that the spatial lag term is significant and positive, suggesting the presence of complex-vertical MNE activity. The host GDP and the surrounding-market potential were found to have opposite effects on outbound FDI from the US. In agreement with established literature, host country GDP has a strong positive effect on FDI, however, there is a significantly negative third-market size effect. When controlling for country fixed-effects, both spatial terms in the full sample are no longer significant. Whether the spatial effects are present but stable over time or the spatial terms are correlated with unobserved country effects is inconclusive. The findings are inconsistent with their expectations of MNE motivations. Recognizing the potential inappropriateness of pooling observations from a diverse set of countries, they divide the full sample into sub-samples based on

Organization for Economic Co-operation and Development (OECD) and non-OECD destinations. Although the results of the sub-samples are qualitatively similar in the sign of the spatial lag and surround-market potential, there were some notable differences. First, the skill endowment variable of the host country is positive for FDI into OECD countries and negative for FDI to non-OECD countries. They interpret this to mean that FDI to low-skilled locations within non-OECD countries seeks to exploit lower wages, while FDI seeking high-skilled labor tends to locate in OECD countries. Second, they find that after controlling for time-invariant country effects, the surrounding-market potential for the non-OECD sample remains statistically negative and grows in absolute magnitude. By testing the interaction between the surrounding-market potential and a trade-cost measure, they conclude that border costs, or a *border effect*, is responsible for this phenomenon. That is, if an MNE were to choose an *e-p type* strategy to serve a group of markets in less-developed nations, then if there are no border costs and only transport costs, it would locate the platform in the geographic center of the group. If there are border costs between the group, then it is likely to locate the plant in the country with the largest market. In a group of countries characterized by little to no border costs, such as the European Union, the border effect should be insignificant. Indeed, Blonigen et al. (2007) find evidence for this. Moreover, they find that including country fixed effects in the European OECD sample results in a switching of sign and significance of the spatial terms. Without county dummies, the spatial lag on FDI is negative, but not significant, while the surrounding-market potential variable is positive and statistically significant, suggesting the prevalence of *e-p type* FDI from the US to the EU. Including the

country dummies leads to a positive and significant spatial lag and a negative and insignificant surrounding-market potential, providing evidence for the prevalence of *c-v type* strategies for US outbound FDI to the EU. When disaggregating the data by industry, however, the results show stronger evidence for *e-p type* FDI from the US to the EU. The exception being petroleum, where both the spatial lag is significantly positive and the surrounding-market potential is insignificant. This is unsurprising given that it is the only industry in the sample characterized by immobile endowments, and thus geographic proximity to oil fields determines FDI location. What is not raised in their analysis, however, are changes in their *host investment costs* measure across the various sub-samples.

The Blonigen et al. (2007) host investment costs measure is the inverse of a composite index of operations risk, political risk, and remittance and repatriation risk.[25] In the full sample, as predicted, the coefficient is significantly negative and robust to the inclusion of country dummies. The results are the same for the OECD sample, however, without the country dummies, the sign of the host investment costs coefficient is positive and insignificant for the non-OECD sample. It is only after including the country dummies that the sign is negative and statistically significant, and the magnitude of the effect becomes stronger than for the OECD sample. Additionally, the magnitude of the significantly negative coefficient for the OECD sample decreases after including the country dummies. Conversely, in their pooled country type sample, Baltagi et al. (2007) find no significant effect of host country investment risk, whether as a bilateral determinant or a spatially weighted third-

[25] The source of the indices is Business Environment Risk Intelligence S.A.

country effect.[26] These puzzling results suggest a number of possible explanations that will be discussed in the next section.

Subsection 1: FDI, Political Risk, and Political Uncertainty

The existing literature on the determinants of MNE entry strategy provide strong evidence for the multilateral nature of FDI decision-making. There is significant omitted variable bias when not accounting for both the market size and the volume of FDI of geographically proximate countries (Blonigen *et al.*, 2007). Additionally, the traditional determinants of FDI are robust to incorporating terms capturing spatial interdependence, even when spatial interdependence is found to be significant (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007). However, spatial interdependence in FDI has been found to be sensitive to both the geographic scope and the level of disaggregation (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007). As Blonigen et al. (2007: 1323) point out, "the fragility of estimated spatial interdependence in the country-level data suggests that tying such results back to motivations of FDI is a difficult task and depends crucially on the sample chosen."

More surprisingly, the traditional determinants of FDI are also not very robust to the sample of countries. In particular, the inclusion of spatial terms among the determinants of US outbound FDI to non-OECD countries in the Blonigen et al. (2007) gravity model results in a positive, but insignificant measure of host country investment risk. This is in stark contrast to theoretical predications and other empirical findings on bilateral FDI. It is only after controlling for country-specific effects that Blonigen et al. (2007) find the host investment risk measure significant

[26] They use the "investment risk" variable from the International Country Risk Guide.

and reflecting its predicted negative sign. Conversely, although remaining significantly negative, the magnitude of the host investment risk measure in their estimation becomes substantially weaker for OECD and European OECD samples when including country dummies. As country fixed-effects are meant to capture time-invariant country-specific characteristics, the effect of host country investment risk on FDI is highly sensitive to other, unobserved country-specific determinants of FDI. Moreover, these determinants seem to have opposite influences on the effects of host country investment risk in developed and less-developed countries. For developed countries, including country dummies in the Blonigen et al. (2007) model dampens the negative effect of host country investment risk, suggesting that time-invariant factors specific to OECD and EU countries mitigate investment risk for FDI. Furthermore, without country dummies, the statistically negative magnitude of host investment risk in their EU OECD sample was strongest among the three sub-samples. After they include country fixed effects, it becomes the weakest. The opposite is true for the non-OECD sample; their inclusion of country fixed-effects not only switches the sign to negative and the effect to significant, but the magnitude becomes strongest among the three sub-samples (Blonigen *et al.*, 2007). The effect of host investment risk on outbound US FDI to less-developed countries, therefore, only becomes a significant cross-country determinant when country heterogeneity is controlled for in the model. That is, there are additional factors unique to less-developed countries that, if not accounted for, completely subsume the effect of host investment risk on FDI. These findings suggests an effect associated with risk that is not appropriately captured by the traditional determinants of FDI. This may be due to

the aggregation of industrial sectors, given that Blonigen et al.'s (2007) inclusion of industry-specific controls for the European OECD sample resulted in the negative effect of host investment cost becoming no longer significant for five of the eleven industrial sectors. However, this is for their European OECD sample only, as industry-level results for the non-OECD countries were not provided (Blonigen *et al.*, 2007). And with the inclusion of country dummies generating opposite changes for the effect of host investment risk in their OECD and non-OECD samples, it would be presumptuous to draw conclusions as to any changes in the effect of host investment risk on the non-OECD sample when including both country-specific and industry-specific fixed effects.

An alternative hypothesis to aggregation bias is the existence of an omitted variable bias that is country-specific but also relatively stable over time. If this were true, then including country fixed-effects should not considerably impact the trend effect on FDI. Yet, this is not the case for the sub-sample results estimated by Blonigen et al. (2007). Including country dummies substantially changes either the sign or the significance of the trend and quadratic trend variables in their various sub-samples (Blonigen *et al.*, 2007). For their non-OECD sample, the trend term is significantly negative and the quadratic trend term is significantly positive. When they include country dummies, the trend term becomes insignificant and the quadratic trend term remains significantly positive, changing little in magnitude (Blonigen *et al.*, 2007). Thus, the negative effect of the trend term becomes subsumed by their inclusion of country fixed-effects, while simultaneously, the host investment risk term changes from positive and insignificant to statistically negative (Blonigen *et al.*,

2007). This suggests that time sensitive, unobserved country heterogeneity related to investment risk is a determinant of FDI to less-developed countries.

The likely source of this country heterogeneity that has thus far been absent from econometric models of FDI is uncertainty. And more specifically, political uncertainty. As Bloom (2014) finds in a panel of 60 countries, "low income" countries (less than $10,000 GDP per capita) experienced 50 percent higher volatility of growth rates, 12 percent higher stock-market volatility, and 35 percent higher bond-market volatility. These changes in volatility, or second moment shocks, are proxies for uncertainty. Overall, less-developed countries experience roughly one-third greater macro uncertainty. Bloom (2014) offers three mechanisms as the primary reasons for this higher uncertainty in lower-income countries. First, because their economies are typically less-diversified, fluctuations in the output and price of their exported goods may cause macro-level shocks. Second, many of the goods they export are commodities, which are known to exhibit relatively high price volatility. Finally, developing countries are more susceptible to natural disasters like epidemics and floods, and experience more domestic political shocks like regime changes and violent civil conflicts. In related work, Baker and Bloom (2013) examine the effects of uncertainty on GDP growth using natural disasters, terrorist events, and political shocks as instruments for uncertainty in a panel of 60 countries from 1970 – 2012. The events are defined in terms of a minimum share of the population killed, a minimum share of GDP lost, or as resulting in a political regime change. Using stock market and news data, they show these events were not expected. As individual instruments, they find a significant positive effect for political shocks and revolutions,

while natural disasters and terrorist attacks are not significant. For stock market returns they find negative effects for revolutions and terrorist attacks, but a positive effect for political shocks, defined as coup d'états. They contend this stems from coups typically resulting in right-wing military governments, while revolutions consist of left-wing governments overthrowing military or right-wing governments (Baker and Bloom, 2013).

Of the reasons for greater uncertainty in developing countries, only political uncertainty resulting from sovereign discontinuity and sovereign vulnerability is unaccounted for by the traditional determinants of FDI in the gravity model. Variation in income growth is explained by the inclusion of GDP and GDP per capita. Sensitivity to certain industrial sectors and volatility in output prices are controlled for by industry-specific fixed effects. Other exogenous shocks such as natural disasters and terrorist attacks are one-off events that are not associated with a greater level of economic uncertainty.[27] The interrelated nature of political risk and political uncertainty, particularly in less-developed countries, and the opposing effects on stock market returns of the direction of political transitions provide reasonable explanations for the results in Blonigen et al. (2007) and Baltagi (2007). Without accounting for country-specific heterogeneity, host investment risk is not a determinant of FDI to non-OECD countries. The inclusion of country dummies in samples of less-developing countries, therefore, likely disentangles political uncertainty from the direct effect of investment risk, thereby restricting the opposing effects of political shocks from subsuming host investment risk measurements.

[27] Citing Fomby, Ikeda, and Loyaza (2013) Baker and Bloom (2013) posit that following natural disasters, increased foreign aid and reconstruction offset some of the capital destruction.

Baker and Boom's (2013) findings suggest that the effect on inward FDI from domestic political shocks may be conditional on the direction of the political transition, in spite of the subsequent increase in uncertainty. They argue that there is a preference by investors for regime types that are likely not to pursue redistributive policies. This preference, however, may not be universal. The frequency of previous political transitions, and whether they involved violent conflict, along with the duration of the conflicts and the subsequent magnitude of endowment destruction, may be considered priors that inform the perceived level of political uncertainty and political risk by an MNE. If a coup were to occur in a semi-consolidated democracy, the duration of the previous polity is likely to influence the scope and persistence of organized groups opposed to the new military led-autocracy. The likelihood of economically disruptive protest campaigns or extensive domestic conflict is highest in these circumstances. If the new military-led autocracy were to suppress political opposition, the possible ensuing exodus of skilled labor is likely to negatively affect economic performance and deter FDI.[28] As the parent-to-host skilled and unskilled endowment ratios are determining factors in the type of integration strategies MNEs choose (Baltagi *et al.*, 2007), the loss of skilled labor may lead to the partial re-allocation of operations to more appropriately endowed countries. Thus, I hypothesize that even in the absence of an onset of political instability, inward FDI flows are determined in part by the previous political transition experiences of a country. Specifically, the duration of the regime, or regime durability, is a significant determinant of inward FDI vis-à-vis its impact on political uncertainty.

[28] For example, the crackdown on political opposition by the military regime in Argentina in late 1960s and early 1970s lead to a mass emigration of Argentine scientists (Ades and Chua, 1997).

Subsection 2: FDI, Spatial Interdependence, and Political Uncertainty

In view of the spatial interdependence of FDI, it is important to consider that political shocks are in some circumstances non-local. That is, elevated political uncertainty in one country may *diffuse* to geographic and socio-politically proximate countries. Within the field of international relations there is an abundance of literature demonstrating how domestic decision making is shaped through "transnational diffusion processes" (Gilardi, 2013). International interdependence among political transition events in the form of *waves* of democratization were first proposed by Huntington (1991). Early studies focused on general patterns in the geographic distribution and clustering of democratic transitions (Brinks and Coppedge, 2006; Gleditsch and Ward, 2000). The findings showed that, after controlling for the country-specific determinants of democracy, the level of democracy in one country is significantly related to that of neighboring countries (Gilardi, 2013). Although empirically robust, other research has shown that this effect may be relatively small in magnitude (Leeson and Dean, 2009). Further studies have provided qualitative evidence of the processes of democratic diffusion. Weyland (2009, 2010, 2012) contends that examples of foreign success increase confidence in domestic opposition movements, in spite of an overestimated probability of success. Moreover, Weyland (2010) proposes that beyond the rare possibility of successful replication of democratization, a wider range of outcomes results from democratic diffusion. Among these outcomes are preemptive responses of autocratic governments aimed at impeding democratization efforts. These

responses typically take the form of social or economic reforms or expanded campaigns of repression.

The possible diffusion of democratic reforms can be a motivating factor behind autocratic government actions and policies that in turn may transform the institutional environment for investment. These domestic changes in response to a potential of democratic diffusion are typically reactive and rapid in their implementation, imitating small scale political shocks. Social or economic reforms may dissipate the potential of democratization, ameliorating the grievances of the citizenry and eroding the arguments for reform advanced by opposition groups.[29] From this perspective, they may lessen political uncertainty by signaling a greater likelihood of perpetuity of the incumbent regime. Alternatively, reactive social and economic reforms may signal trepidation on the part of an autocratic regime, the magnitude of which is reflected by the degree of deviation from long-standing policies; or how *radical* the implemented reforms are. Additionally, the reforms may diminish the attractiveness of the host country for FDI vis-à-vis alternative locations. Extensive changes in labor compensation or regulation of labor activity not directly subsidized by the state are viewed as transfers from employers. The increase in input costs may deter FDI, while the prospect of more radical reforms in response to future periods of elevated sovereign vulnerability raises investment risk.

If autocratic regimes choose repression over reform, then the dominant opposition voice may shift from groups calling for democratization through political

[29] Saudi Arabia's response to the Arab Spring in 2011 is a quintessential example.

and civil means, to those advancing armed conflict as the appropriate mechanism.[30] The results are limited accessibility to infrastructure and greater political risk from elevated insecurity and potential capital destruction. An additional short-term consequence of both repression and increased insecurity is the flight of skilled labor (Ades and Chua, 1997). Although the direct effect may not be pronounced for efficiency-seeking FDI, growth rates and the efficacy of public and private sector services procured by MNEs are likely to diminish (Murphy, Kevin M and Shleifer, Andrei and Vishny, 1991).

Even without formidable domestic opposition, the potential for democratic diffusion can generate *indirect effects* on the business environment in autocratic countries. The overall direction and magnitude on FDI of these effects can be ambiguous, as the campaigns and policies regimes pursue in response to their elevated vulnerability are reactive and possibly haphazard, thereby potentially leading to the unintended consequences of raising the degree of political uncertainty and political risk perceived by MNEs.

There is also the potential for more *direct effects* on inward FDI to a country resulting from political transitions in neighboring countries. Ades and Chua (1997) cover many of these negative externalities in an examination of regional instability on economic performance. Defining regional instability by an index capturing the average number of revolutions or coups among bordering countries, they show that the impact on steady-state income is approximately equal to that of an equivalent rise in the index of domestic instability (Ades and Chua, 1997). They identify two main

[30] Following the military coup of 2013 and the subsequent increase in repression of a broad range of opposition groups, Egypt has experienced multiple, large-scale terrorist attacks, some targeting tourism, one of the country's primary sources of income.

channels through which regional instability affects economic performance. First, regional instability disrupts trade flows through the blocking of external trade routes and the destruction of transport networks.[31] The disruption of trade channels may result in shortages of basic necessities such as food and energy, thereby disrupting production processes across a broad range of sectors. Additionally, shortages or uncertainties about the obtainability of intermediate inputs interrupt production processes or divert FDI, particularly from MNE's pursuing more complex integration strategies, such as *e-p type* and *c-v type* strategies. Communication channels may also be inhibited, with internal and external networks becoming inoperable or unreliable, thus disrupting operations and diminishing the capacity for control by headquarters. Ades and Chua (1997) provide evidence of these effects by showing that the shares of merchandise and manufactures trade in countries with high regional instability is lower.

The second channel through which regional instability adversely affects economic performance is it induces increases in military expenditures. In order to prevent the conflict from spreading across political boundaries and the mass entry of refugees, countries facing regional instability will substantially increase military outlays (Ades and Chua, 1997).[32] Early work by Knight, Loayza, and Villanueva (1996) shows that increases in military spending have a significantly negative effect on economic growth. They argue that military expenditures have the dual effect of

[31] Ades and Chua (1997) note the example of Slovenia after war erupted between its neighbors Croatia and Serbia in 1992. Although not involved in the conflict, Slovenia experienced a 15 percent drop in GNP that year, in part caused by a fall of 32 percent in trade with the rest of the former Yugoslavia during that period.

[32] For example, Rwanda increased military spending in the late 1970s when the conflict between Uganda and Tanzania threatened to spillover and refugees began entering from Uganda (Ades and Chua, 1997).

crowding out private investment and causing the misallocation of resources, directly suppressing growth (Knight *et al.*, 1996). Although defense spending may be necessary for the protection of national resources and property rights in response to political shocks (Ades and Chua, 1997; Barro, 1991; Thompson, 1974), the redirection of resources from other productive activities may have adverse effects on investment and growth. In particular, Ades and Chua (1997) find that the share of government spending on education is lower in countries exposed to regional instability. They also provide further evidence that regional instability has a strong positive impact on military outlays while domestic political instability does not, implying that defense spending responds more to external rather than to internal threats (Ades and Chua, 1997). Additionally, after controlling for the "ratcheting effect," where countries attempt to match military buildups by neighbors, regional instability still has a positive and significant impact on defense spending (Ades and Chua, 1997). They conclude that "political crisis in neighboring countries that are *not* deliberate acts of aggression have a strong and positive impact on domestic defense spending (Ades and Chua, 1997: 295)." More recent work by Nordhaus, Oneal, and Russett (2012) examines the influence of a countries' external security environment on their military expenditures. In a panel of 165 countries from 1950 to 2000 they find that a one percentage point increase in the aggregate probability of a militarized dispute, as predicted by their model, leads to a three percent increase in a country's military expenditures (Nordhaus *et al.*, 2012).

Conversely, a country uninvolved in regional conflict may benefit from positive spillovers that increase overall foreign investment. If nations compete for

FDI, then the country external to the regional conflict may receive a larger share of FDI to the region (Ades and Chua, 1997). FDI flows may be redirected and operational plants may be reallocated from neighboring countries involved in armed conflict. Furthermore, MNEs may choose to serve the country through a pure horizontal or *e-p type* integration strategy to insulate themselves from the risk of inaccessibility to intermediate inputs. Such integration strategies may necessitate larger capital investment or greater labor requirements that may boost economic growth. Additionally, if a country is engaged in oligopolistic competition with its neighbors in the market of a good or resource, then operational disruptions in a rival country may lead to an enhancement in the terms of trade and an expanded share of the export market for that good (Ades and Chua, 1997). The flight of skilled labor from countries experiencing political instability may also benefit neighboring countries. For example, Brazil received many of the Argentine scientists fleeing the crackdown on political opposition by the military junta in the late 1960s and early 1970s (Ades and Chua, 1997).

The presence of political instability in a country's region, therefore, has both direct and indirect effects on the environment for investment. The operational processes of MNEs may be directly disrupted as a result of greater insecurity and logistical impediments. Economic performance may be negatively affected as a result of the redirection of endowments and expenditures from productive activities to support security efforts. If the host country is non-democratic, even in the absence of domestic political conflict, the possibility of democratization events in proximate countries diffusing across borders leads the incumbent regime to enact campaigns and

policies that may adversely affect the returns on investment. Consequently, the possibility of negative spillovers from neighboring countries may generate elevated levels of political risk and political uncertainty in a host country. Alternatively, to the degree that a country is insulated from regional instability, conflict in neighboring countries may generate positive spillovers that improve economic performance. Spatial interdependencies are, therefore, not limited to the surrounding-market potential or inward FDI of neighboring countries, but also reflect the regional political environment. In some instances, the polity, or regime type, of the host country may also be a determining factor. If the host country is a consolidated democracy, then geographically proximate democratization events will not be perceived as a threat requiring reactive policies. Indeed, geographically proximate political shocks may consolidate regionally targeted inward direct investment to the most credible regimes. The perception of the credibility of a regime by MNEs, however, may be less to do with its regime type, and more a consequence of its durability, or institutionalized persistence. Nonetheless, if political transitions in neighboring countries are characterized by persistent armed conflict, the instability may still generate negative externalities that spillover to impartial countries. Additionally, the resulting increases in political risk and political uncertainty in the host country may not only deter new inward FDI, but also cause the suspension or abandonment of operations by MNEs. Furthermore, the potential exposure to insecurity and the disruption of trade flows may lead to restructuring of MNE integration strategies in the region. Thus, I hypothesize that political shocks that are external to a host country, but geographically proximate, negatively affect the

aggregate flow of inward FDI if the predominant MNE integration strategy is complex-vertical, and positively affect the aggregate flow of inward FDI to the host country if the predominant MNE integration strategy is export-platform.

A summary of the hypotheses is presented in table A. The hypothesized effects for regime durability are stated for both the local (host country) and spatial context (neighboring countries).

Table A: Hypotheses

	Local	**Spatial**
Hypothesis 1: *Regime Durability is a significant determinant of inward FDI flows to a host country.*	+	-
Hypothesis 2a: *Political shocks that are external to a host country, but geographically proximate negatively affect the aggregate flow of inward FDI if the predominant MNE integration strategy is complex-vertical.*	.	-
Hypothesis 2b: *Political shocks that are external to a host country, but geographically proximate positively affect the aggregate flow of inward FDI to the host country if the predominant MNE integration strategy is export-platform.*	.	+

Section 5: Econometric Approach

The most commonly used specification in research examining the determinants of cross-country FDI activity is the "gravity" equation (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007; Eaton and Tamura, 1994; Lael Brainard, 1997). The gravity equation, originally developed to empirically measure bilateral trade (James E. Anderson, 1979), models the outbound volume of FDI from an origin country to a host country as a function of their economic sizes and the distance between them. The specification for country-pair-year FDI typically includes both origin and host independent variables. The GDP of each country is used as the investment attracting

measure of economic size, while the distance between them is included as a cost-increasing measure that proxies for transactions costs. Additionally included is a vector of dummy variables capturing cost-reducing affinities such as common language and geographic contiguity, or institutional affinities such as the presence of bilateral or regional trade agreements. More recent specifications have adopted the "knowledge-capital" model and incorporated measures of the relative factor endowments of the origin and host countries (Carr *et al.*, 2001; Markusen, 2002). The inclusion of origin-to-host ratios of capital endowment, human capital endowment, and labor endowment not only provide predictive power for the bilateral volume of FDI, but also insights into the integration strategies of MNEs, i.e., the configuration of MNE operations as horizontal or vertical arrangements (Carr *et al.*, 2001; Egger and Pfaffermayr, 2004).

Along with distance, other measures of investment "frictions" have been incorporated in gravity models to account for the degree of risk associated with the host country's economic and political environment. This typically involves the inclusion of a "host country investment risk" variable predicted to have a negative effect on bilateral direct investment. The basis for the bilateral gravity model of FDI, however, has little theoretical support (Blonigen *et al.*, 2007). As with the gravity equation for trade, estimations suffer from omitted variable bias and comparative statics analysis is tenuous (Anderson and Van Wincoop, 2003). The development of multi-country and multi-sector general equilibrium models (Egger and Pfaffermayr, 2004; Ekholm *et al.*, 2007; Grossman *et al.*, 2006; Helpman, Melitz, and Yeaple, 2004; Yeaple, 2003) and the emergence of empirical findings of hybrid or complex

integration strategies (Feinberg and Keane, 2006) have emphasized the role of endowments and investment costs in the rest of the world in determining bilateral FDI (Baltagi *et al.*, 2007). Consequently, more recent applications of the gravity model for FDI have sought to follow theoretical extensions by relaxing the two-country assumption and accounting for the multilateral nature of trade and investment (Baltagi *et al.*, 2007; Blonigen and Davies, 2004; Blonigen *et al.*, 2007; Head and Mayer, 2004). Among these specifications are models that utilize spatial econometric techniques to estimate the effects of neighboring countries on FDI patterns. The gravity model is subsequently modified to allow for the spatial interdependence of FDI flows across countries (Blonigen *et al.*, 2007), or for the effects of third-country size and relative factor endowments (Baltagi *et al.*, 2007).

Conversely, the first paper to use spatial econometric techniques to model FDI behavior did not incorporate bilateral variables in a traditional gravity-type framework. Coughlin and Segev (2000) estimate inward FDI flows across Chinese provinces using a spatial error (autocorrelation) model[33] and maximum likelihood methods. They include independent variables measuring the investment attracting characteristics that differentiate Chinese provinces.[34] They find that a province's FDI is positively correlated with FDI into contiguous provinces, which they attribute to agglomeration economies. Similarly, in specifying my econometric models, I choose FDI inward flows as my dependent variable and focus on the investment inducing endowments and investment frictions of the host country, as well as those of other countries. The objective of the econometric model is to identify and estimate the

[33] A background of spatial econometric models is covered in the next section.

[34] Among the variables included by Coughlin and Segev (2000) in their spatial error model are those measuring wage, productivity, literacy, and infrastructure.

effect of both the local and spatial political environment on inward FDI to a host country. Thus, it is systematic variation across a host country and geographically proximate countries that are exclusively specified in the model.

In the following part of this section I introduce the initial econometric specification for FDI inward flows in what I term the "local" models. Then I provide a brief overview of spatial econometric techniques and introduce the "spatial" models for measuring multilateral FDI decision-making in the presence of externally originating political uncertainty.

Subsection 1: The Local Econometric Models

The baseline local model includes many of the traditional host variables substantiated as significant determinants of FDI, but as a variant, I include a "spatially" constructed variable introduced by Blonigen et al. (2007) to capture theoretically and empirically established multilateral effects. In this sense, "local" and "spatial" refer to the source of political uncertainty. This approach is advantageous when comparing estimation results across the local and spatial models, as non-economic factors emerge as salient in addition to the multilateral frictions and agglomeration effects typically predicted and estimated in prior FDI models. The local models, therefore, are not restricted to host country domestic measures, yet do not employ spatial econometric techniques in their estimation procedures.

The baseline local model is specified in the following equation:

$$FDI_{it} = \alpha_0 + \alpha_1 Host\ Variables_{it} + \alpha_2 Surrounding\ Market\ Potential_{it} + \varepsilon_{it}, \quad (1)$$

where FDI is an $n\ x\ 1$ vector with row i equal to inward FDI flows to host country i for year t. The "*host variables*" include GDP and population as measures of economic size, and trade costs and host country political risk as measures of trade/investment frictions. The "*surrounding-market potential*" of geographically proximate countries is included to capture multilateral demand and supply effects. In keeping with the existing literature, my priors are that the greater the GDP of the host country, the more inward FDI flows it is expected to receive. Following Blonigen et al. (2007), because holding GDP constant and increasing the country's population reduces its per capita GDP and thus, its inward FDI as well, total population measures are also included to control for the propensity for FDI to flow between wealthy markets. Hence, the coefficient on total country population is expected to be negative.

In the absence of Knightian uncertainty, pure real options effects should generate less irreversible investment in response to increases in risk. The value of the option on FDI is predicted to rise with risk, thereby inducing delay and reducing new direct investment. Alternatively, for existing MNE operations in the host country, an increase in risk lowers the exit trigger. Thus, MNEs are predicted to remain operational longer in riskier situations, even when suffering substantial losses. Furthermore, MNEs have the possibility to suspend operations, which results in less transactions between the parent and its foreign affiliates. If the downside loss from continuing operations or the upside potential of outside opportunities exceed the value of the option and expected future returns, then abandonment of operations is the

most likely consequence. As characteristically observed in prior estimations of FDI, the coefficient on the host country political risk variable is expected to be negative.

Trade costs as barriers to imports may induce horizontal-type FDI to serve host country markets more cheaply. Alternatively, if FDI is pursued to exploit vertical linkages or in an *e-p type* strategy, then higher trade costs reduce the attractiveness of the host country relative to substitute locations. The direct effect of trade costs, therefore, is dependent on the choice of MNE integration strategy, which itself is determined in equilibrium by the relative factor endowments and investment impediments of the world-wide market. Accordingly, the combination of the relative factor endowments of a country, either in the form of immobile resources or skilled-abundant labor, and its relative market size within a targeted geographic cluster, are additional factors that may magnify or dominate the effect of trade costs on inward FDI. To account for these third-country effects the relative economic sizes of neighboring countries are included in the specification. I adopt the Blonigen et al. (2007) variable that broadly measures the market potential surrounding host country i in year t as the sum of the inverse-distance-weighted GDPs of all other $j \neq i$ countries in year t in the sample. The functional form of the distances for constructing the surrounding-market potential variable (*SMP*) is equivalent to that used for the spatial lag term discussed in the following section. As it is a separate regressor in the model, the host GDP is not included in the *SMP*. Similar to trade costs, the effect of the *SMP* is conditional on the aggregate choices of MNE integration strategies. In so far as distance is directly proportional to trade costs between potential host countries, a larger *SMP* for country i may motivate MNEs to

choose it as an export-platform. Alternatively, as Blonigen et al. (2007) have shown, the presence of a border effect between countries may place greater value on the relative market size of potential hosts at the expense of their geographic proximity to other markets.

In order to estimate the effects of political uncertainty, the baseline specification in Eq. (1) is modified to include host country political characteristics and political shocks. As hypothesized, the durability of a regime is predicted to positively impact inward FDI flows, *ceteris paribus*. The effect on inward FDI flows of the degree to which democracy is institutionalized in a host country, however, is ambiguous in the local model. As previously discussed, more democratic institutions are axiomatically more inclusive and place greater constraints on executive power. These attributes may, or may not be inviting to MNE investment vis-à-vis substitute locations. Subsequently, the respective effect of the type, or category, of regime, e.g. autocracy or democracy, is also ambiguous. However, certain regime types are associated with greater durability and stability. For instance, consolidated democracies exhibit the greatest durability and least instability. New democracies, however, are less durable than full autocracies. Hence, the interaction of the regime type and regime durability variables are also included the model. To estimate the effect of local political shocks, the onset of a regime change and the onset of distinct types of regime changes, i.e., democratic transitions or adverse regime changes, are operationalized and incorporated in the specification. The onset of sovereign discontinuity is associated with greater political uncertainty, and thus is expected to negatively impact inward FDI flows. Furthermore, when there are sudden shifts in

the Polity score, but a full transition to a new regime type does not follow, the effect is still that of an uncertainty shock. Hence, the onset of such a regime change is predicted to negatively effect inward FDI flows. Nonetheless, the direction of the regime change may signal less sovereign opportunism, and depending on the credibility and durability of the new regime, the introduction of policies that promote investment, such as greater liberalization of capital or labor markets, may attract more FDI. The construction of the political regime and transition variables is discussed in detail in the data section. The specification of the baseline local model modified to include political regime and transitions variables is the following:

$$FDI_{it} = \alpha_0 + \alpha_1 Host\ Variables_{it} + \alpha_2 Surrounding\ Market\ Potential_{it} + \alpha_3 Regime\ Durability_{it} + \alpha_4 Polity\ Score_{it} + \alpha_5 Regime\ Type_{it} + \alpha_6 Regime\ Change\ Onset_{it} + \varepsilon_{it}, \quad (2)$$

Subsection 2: The Spatial Econometric Models

The inclusion of the *SMP* resolves one dimension of the multilateral effects theoretically and empirically identified to shape aggregate inward FDI flows. The distance weighted average of all third-country GDPs captures the interdependence of economic sizes and the trade costs between them. In addition to this demand effect, agglomeration economies are also presumed accounted for by third-country market potential variables (Head and Mayer, 2004). Yet, there exist other non-local factors that may generate spillover effects on local FDI. Third-country effects also result

from a supply effect (Baltagi *et al.*, 2007), which refers to production-cost related alterations from changes in the relative factor endowments of substitute host countries. To estimate such effects, Baltagi et al. (2007) have included spatially-weighted variables measuring the relative factor endowments of third-countries in addition to the relative endowments of host countries. From an econometric perspective, these third-country effects are important because they may alter the bilateral environment owing to their general equilibrium effects on product and factor prices (Baltagi *et al.*, 2007). Drawing from the knowledge-capital model of multinationals, the theoretical basis for incorporating these variables necessitates that their construction include measures of the origin-to-host and origin-to-third country ratios of the relevant endowments. As FDI inward flows is the dependent variable in model, rather than bilateral outbound FDI, the inclusion of relative factor endowments is left to the analysis in the second essay of this dissertation.

The hypothesized effects on economic activity of variations in political uncertainty are not delimited to local incidences of sovereign discontinuity or degree of sovereign vulnerability. In parallel to the demand effect and supply effect, the spatial interdependence of political environments generates real options effects that impact MNE activities. Models aiming to estimate the spillover effects of non-local political uncertainty must also account for the geographic proximity of the *emanation point*. The underlying assumption being that the more spatially proximate the host country to the origin of uncertainty, the stronger the effect on its inward FDI. However, connectivity across polities transcends geographic distance. Akerlof (1997) notes that countries may be considered localized in some general economic

space defined by a range of socio-political factors. As Behrens et al. (2012: 774) contend, "what really matters, in the end, is to identify the appropriate space and the most relevant associated interaction measure." Nevertheless, although national political characteristics may be heterogeneously dispersed, socio-cultural attributes are predominantly geographically clustered. In studies of transnational diffusion of political transformations, geographic distance consistently emerges as a robust determinant. Although acknowledging that in this context distance need not be exclusively defined in geographic terms, Gilardi (2013: 11) argues that, "in many cases geography is a useful starting point… [that] offers a straightforward way to integrate interdependencies into a standard regression model." With this in mind, socio-political propinquity is assumed to be captured by the geographic connectivity of countries.[35]

The application of spatial econometric techniques as the most appropriate approach to estimating non-local political spillover effects necessitates justification. A brief overview of spatial econometric theory[36] and its application in prior work on trade and FDI provides a good starting point. To begin, it is important to identify the features distinguishing spatial econometrics from traditional econometrics. When considering sample data that is collected with reference to locations measured as points in space, two unique concerns arise: (1) spatial dependence between the observations and (2) spatial heterogeneity in the relationships modeled (LeSage,

[35] Researchers have experimented with conceptually different weighting schemes. Behrens et al. (2012) employ a "theory-based interaction matrix" that does than include any form of geographic connectivity, but rather similarity measures based on the relative population shares of regions. As a robustness check, Baltagi et al. (2007) use spatial weights based on the average volume of bilateral trade flows in their estimation of third-country effects on complex models of FDI.

[36] See Anselin (1988) and Arbia and Baltagi (2009) for a detailed introduction. See LeSage (1999) for applied illustrations of spatial models and methods.

1999). These two issues have largely been ignored by traditional econometrics, likely because they violate the Gauss-Markov assumptions used in regression analysis (LeSage, 1999). The Gauss-Markov theorem assumes that in repeated sampling, explanatory variables remain fixed and observations are described by a single linear relationship with constant variance. Spatial dependence in sample data means that observations at location i vary with other observations at locations $j \neq i$. Spatial heterogeneity refers to the lack of stability of the estimated relationships over space. That is, the functional forms or the parameters may vary across countries. In cross-sectional data observations of countries, the multilateral nature[37] of FDI decision-making and the potential for transnational policy diffusion clearly imply dimensions of locational interdependence (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007; Coughlin and Segev, 2000). The distribution of individual country observations may not display constant variance as we move across observations, nor zero covariance between the observations. The presence of underlying geographic interactions suggests the need to quantify and model the nature of spatial dependence in cross-sectional observations (LeSage, 1999). The hypothesized heterogeneous effects of political uncertainty on countries differing in polity traits, and the decaying strength of these effects with distance from the emanation point, require alternative estimation procedures to adequately model the variation and draw appropriate inferences.

With regards to spatial dependence, it may take two forms in an econometric specification. In the spatial lag form, the spatial dependence is analogous to including a lagged dependent variable as an explanatory variable, and thus, is

[37] As Behrens et al. (2012: 774) assert, "controlling for cross-section correlations with the help of spatial econometric techniques amounts to controlling for 'multilateral resistance' and yields improved estimates of the gravity equation."

typically named a spatial autoregression (SAR) (Coughlin and Segev, 2000). In standard notation, the SAR is expressed as:

$$y = \rho W y + X\beta + \varepsilon, \tag{3}$$

where y is an $n\ x\ 1$ vector of observations on the dependent variable; X is an $n\ x\ k$ matrix of k exogenous variables; β is a $k\ x\ 1$ vector of coefficients, and ε is an $n\ x\ 1$ vector of error terms. The $\rho W y$ term is the spatial lag, or spatial autoregression term, where W is the spatial lag weighting matrix and ρ is the spatial autoregressive parameter to be estimated and assumed to lie between -1 and +1. The spatial weighting matrix, W, is a symmetric matrix of dimension $n\ x\ n$, with elements capturing the connectivity between the entities observed. That is, the values of the cells of W constitute an explicit hypothesis regarding the strength of inter-location connection (Corrado and Fingleton, 2012). For example, W can be a "contiguity matrix," recording the contiguity relations for each country. That is, if country i borders country j, then the matrix element in row i and column j would record the presence of the contiguity relationship (represented by a 1). Otherwise, the absence of contiguity between countries would be denoted by 0.

Alternatively, elements of W may capture an *a priori* determined distance relationship between countries. The relationship is defined by the functional form of the weights on the distance between any two countries. Formally, W may be defined as:

$$W = \begin{bmatrix} 0 & w_y(d_{i,j}) & w_y(d_{i,k}) \\ w_y(d_{j,i}) & 0 & w_y(d_{j,k}) \\ w_y(d_{k,i}) & w_y(d_{k,j}) & 0 \end{bmatrix}, \tag{4}$$

where the element $w_y(d_{i,j})$ defines the functional form of the weights of the distance, $d_{i,j}$, between countries i and j. Interpreting the matrix, a non-zero value in the kth column of row j means that the kth observation will be used to modify the prediction on the jth observation for $j \neq k$. The diagonal elements are zero so that no observation of the dependent variable for a country predicts itself (Blonigen *et al.*, 2007). The conceptual relationship is assumed to be declining in the distance between any two countries, with the weights typically calculated as the simple inverse distance between capital cities. The function form of the weights reflects the *rate of decay* of the spatial effect. Therefore, a spatial weighting matrix that relies on squared inverse distances implies a faster decay of spatial effects, while conversely, weights based on the inverse square roots of distances assumes a much slower decay (Baltagi *et al.*, 2007).

When the sample is cross-sectional panel data, then W is a block-diagonal $n\ x\ n$ matrix with blocks W_t capturing observations for time period t. Because distances are time-invariant, it is usually the case that $W_t = W_{t+1} = \cdots = W_T$.[38] The full spatial weight matrix would then be defined as:

$$W = \begin{bmatrix} W_t & 0 & 0 \\ 0 & \cdot & 0 \\ 0 & 0 & W_T \end{bmatrix} \qquad (5)$$

[38] If there are missing observations for years, then the dimensions of the blocks W_t will differ.

W is commonly row-standardized so that each row sums to unit. Hence, when W is multiplied by the vector of dependent variables y, its row-sums indicate the proximity-weighted average of y in other countries. The scalar parameter ρ, therefore, indicates the strength and sign of this spatial relationship on the dependent variable.

The other form of spatial dependence is expressed by a spatial error model, or spatial autocorrelation model (SEM). An SEM can be formally expressed as:

$$y = X\beta + \varepsilon\,; \quad \varepsilon = \lambda W\varepsilon + \mu, \tag{6}$$

where λ is the spatial autoregressive parameter and is assumed to lie between -1 and +1, W is an $n\ x\ n$ spatial weight matrix, and μ is an n element vector of error terms. The spatial autoregressive term differs in interpretation from the spatial lag in that it measures how observations of the dependent variable for one country are affected by a shock to the dependent variable in neighboring countries. That is, λ captures the degree to which a shock in a proximate location spills over to a country (Coughlin and Segev, 2000). A spatially-treated error structure improves standard errors and helps ensure that parameter estimates are unbiased, however, it does not affect point estimates (Blonigen *et al.*, 2007). As a result, an SEM is commonly used to address the spatial dependence due to omitted variables or errors in measurement.

The presence of spatial effects may not necessarily be restricted to the dependent variable or the error structure. In what is referred to as a spatial Durbin model (SDM) (Anselin, 1988), a spatial lag of explanatory variables may be constructed in addition to the spatial lag of the dependent variable. The model in Eq.

(3) would then be augmented to include the matrix product of WX as in the following equation:

$$y = \rho Wy + X\beta_1 + WX\beta_2 + \varepsilon, \quad (7)$$

where X represents the usual $n\ x\ k$ data matrix containing explanatory variables. The term WX, then, becomes the distance-weighted averages of the explanatory variables from other locations, while β_2 is a $k\ x\ 1$ vector of parameters measuring the sign and strength of these spatial effects on y. Not all explanatory variables in the model need be contained in X. It is theory that informs the construction of X, and other exogenous variables that are not hypothesized to have spatial effects on the dependent variable can be included as auxiliary variables. In this case, the specification of the SDM would be expressed as:

$$y = \rho Wy + X\beta_1 + WX\beta_2 + Z\beta_3 + \varepsilon, \quad (8)$$

where Z is an $n\ x\ k$ data matrix containing auxiliary variables with associated parameters β_3. It is apparent from the structure of Eq. (8) that X generates both direct (β_1) and indirect (β_2) effects on y. The two independent effects may not only differ in magnitude, but also in sign. The total effect of the explanatory variables in X would therefore be the sum of the two independent effects.

The spatial dependence in the SAR and SDM models displays many parallels to the more familiar time-wise dependence in autoregressive models. Therefore, the expectation is that the same properties of least squares estimation for models with lagged dependent variables and/or serial residual correlation directly apply to the

spatial case (Anselin, 1988). As Anselin (1988: 58) demonstrates, this is not the case due to the two-dimensional and multidirectional characteristics of dependence in space. This is apparent in equations (3), (7), and (8), where the linear combination of dependent variables on right-hand side of the equations are clearly endogenous and correlated with the error term. Consequently, the ordinary least squares estimator will be both biased and inconsistent for the parameters of the spatial models, regardless of the properties of the error term (Anselin, 1988). Consequently, the literature recommends estimation using maximum likelihood (ML) methods, which may include robust standard errors (Anselin, 1988; Blonigen *et al.*, 2007; Coughlin and Segev, 2000). However, ML estimation of spatial models with a large number of cross sectional units involves substantial computational problems (Kapoor, Kelejian, and Prucha, 2007). As such, Kelejian and Prucha (1998, 1999) have suggested an alternative instrumental variable estimation based on a generalized moments (GM) estimator. This procedure was extended in Kapoor, Kelejian, and Prucha (2007) to panel data models with a first order spatially autoregressive disturbance term. The spatial panel autoregressive generalized method of moments regression (SPGMM) of Kapoor et al. (2007) also has the advantage of consistent estimation when the disturbances are not only spatially and time-wise correlated, but also heteroskedastic. The limitation of this approach is the absence of the estimation of a spatial autoregressive parameters, i.e. spatial lags. More recent work by Kelejian and Prucha (2010) has developed methods of inference for cross-sectional spatial models containing spatial lags in the dependent variable, exogenous variables, and the disturbance terms, with potential heteroskedasticity in the innovations. The extension

of these procedures to panel data, however, has yet to be developed. Furthermore, the implementation of these procedures in statistical software packages is also a work in progress. An alternative to estimating the spatial lag of the dependent variable when ML is not feasible is a modification of Kapoor et al. (2007) in the form of a generalized spatial panel autoregressive two-stage least squares estimation (GS2SLSAR). As shown by Anselin (1988: 156), simultaneous models in space-time may allow for both explicit spatial dependence and its incorporation in the error term. The estimation can be carried out by means of either ML, or two stage/three stage least squares, in the standard manner (Anselin, 1988). The GS2SLSAR model allows for a spatially weighted, endogenous right-hand side dependent variable estimated as an initial GMM model with exogenous variables that are also used as instruments. The limitation of this method is that estimation of the parameters of spatially weighted explanatory variables, as in a spatial Durbin model, is not possible.

The choice of estimation method, therefore, depends on the hypothesized relationships and the properties of the data sample, as well as computational limitations. For instance, if the purpose of the estimation is to identify and directly measure spillover effects of the dependent variable from geographically-proximate countries, then a spatial lag (SAR) is required and the preferred estimation procedure is ML. If there exists spatial autocorrelation in the dependent variable, but the spatial dependence of interest derives from explanatory variables, then a spatial Durbin model estimated with ML is the most appropriate approach. In such cases, when the ML estimator will not converge because the number of cross-sectional units is large, an SPGMM model may provide consistent estimates, but will not allow for inference

of the direct effects of the spatial dependencies. If theory indicates that only the dependent variable exhibits spatial dependence, the GS2SLSAR is an alternative. However, if spillover effects from explanatory variables are the phenomena of interest, then a regression model that both allows for estimation of spatial autoregressive parameters and controls for time-invariant unobserved heterogeneity is suitable. Acknowledging that the estimation technique is not ideal, a comparison of the estimated parameters of the explanatory and auxiliary variables of this spatial panel fixed-effects or random-effects Durbin model with those of other models, for example an SPGMM, may provide validation for inferences.

Having established the reasoning for the application of spatial econometric techniques as appropriate to model the phenomena of interest, the base spatial autoregression model (SAR) is specified as the following:

$$FDI_{it} = \alpha_0 + \alpha_1 Host\ Variables_{it} + \alpha_2 Surrounding\ Market\ Potential_{it} + \rho WFDI_{it} + \varepsilon_{it}, \tag{9}$$

where $\rho WFDI_{it}$ is the spatial lag on the FDI to host country i for year t. The spatial weights matrix W is defined for a sample of N_t countries as a block diagonal matrix of dimension $n\ x\ n$, with blocks W_{N_t} and $n = \sum_{t=1}^{T} N_t$. The blocks W_{N_t} are row-normalized with elements $w_{ij} = \frac{d_{ij}^{-1}}{\sum_{j=1}^{N_t}(d_{i,j}{}^{-1})}$ if $i \neq j$ and $w_{ij} = 0$ if $i = j$. The distance $d_{i,j}$ is the great circle distance between the capital cities of i and j. The weighting scheme, therefore, is a simple inverse distance spatial decay. It is important to note that $\rho WFDI_{it}$ captures the proximity of host country i to other host

countries $j \neq i$, and therefore should not be confused with the standard gravity measure of bilateral distance between the parent and host countries (Blonigen *et al.*, 2007). The spatial lag coefficient ρ, therefore, characterizes the contemporaneous correlation between inward FDI flows to host country i and FDI inward flows to other geographically-proximate countries.[39] In this sense, a significantly negative ρ can be interpreted to mean that FDI inward flows to geographically neighboring countries is at the expense of FDI to the observed host country, and vice versa. If the coefficient on the *SMP* were simultaneously estimated to be positive and significant, then at the aggregate level, the dominant MNE configuration in the observed host county is likely an *e-p type* strategy (Blonigen *et al.*, 2007). That is, FDI to the host country substitutes for FDI to other destination markets, while the positive correlation of FDI with proximate destination markets implies they are served through exports from the host country. Alternatively, if the spatial lag is still estimated to be negative, while the *SMP* is insignificant, then the dominant integration strategy is likely vertical. In this case, while FDI to the host country is at the expense of FDI to proximate countries, their market potential does not explain the volume of FDI to the host. With regards to more complex vertical fragmentation strategies (*c-v type*), agglomeration incentives from supplier networks or proximity to immobile resources suggest that the coefficient on the spatial lag of FDI be positive (Baltagi *et al.*, 2007; Blonigen *et al.*, 2007). The *SMP* may also be positive, implying that its correlation with FDI is in actuality capturing the relationship with one of its components, in all likelihood gross fixed capital formation. Otherwise, it may be insignificant because

[39] Of important consideration is that as Blonigen et al. (2007) state, the correlation is "contemporaneous only from the econometrician's perspective, given that the sequential observations are only observed in aggregate on an annual basis."

correlation of FDI with the economic size of proximate countries is not a necessary condition for the presence of agglomeration effects. The absence of a significant sign on the spatial lag of FDI, therefore, implies that MNE activity in the host country is predominantly horizontal. As Blonigen et al. (2007) acknowledge, because there are likely a combination of motivations behind country-level data, directly testing for one form over the other is unachievable. Nonetheless, confirmatory evidence of the net effects can provide insight into MNE activity.

Extending the base spatial model to incorporate polity characteristics and regime changes dictates choosing a spatial model that satisfies two requirements. First, it must allow for the direct estimation of external political shocks on host country inward FDI flows. That is, as opposed to controlling for the transmission of shocks across host countries to improve standard errors and ensure the parameter estimate of the spatial lag of FDI is unbiased, it is precisely the effects of these types of uncertainty shocks that are meant to be estimated. Including spatial autoregressive errors would conflate heterogeneous stochastic shocks while restricting the identification of their elasticity and marginal effects on host country FDI.[40] Furthermore, as Baker and Bloom (2013) have shown, only political shocks as instruments, and not natural disasters or terrorist attacks, have significant effects on economic growth, implying that one-off stochastic shocks are unlikely to require spatial treatment through the error term.

[40] Baltagi et al. (2007) allow for spatial autocorrelation in the error term to control for regional interdependencies and the transmission of shocks between host countries. Their hypotheses relate to the type of MNE integration strategies, and not the impact of uncertainty shocks. Blonigen et al. (2007) also aim to identify dominant forms of FDI, however, they reject the inclusion of spatially-correlated errors reasoning that they do not inform theory.

The second requirement is that the spatial model control for time-invariant, unobserved country heterogeneity. This restriction assures that unobserved country-specific effects are not conflated with those of the explanatory variables of interest. Certainly, in contrast to time series analysis, where no natural ordering of cross-sectional observations exists, the spatial weights matrix imposes an appropriate ordering through an exogenous pattern (Behrens *et al.*, 2012). Nonetheless, because a component of the spatial terms is distance, which is clearly time-invariant, controlling for unobserved country heterogeneity by means of country-fixed effects may eliminate a bias in these variables (Blonigen *et al.*, 2007). However, when the random effects estimator is more efficient, it will be preferred. Nonetheless, country-level fixed effects in a panel setting have been demonstrated to adequately control for multilateral resistance in gravity models of trade (Feenstra, 2002). Hence, the preferred model is a spatial panel fixed-effects Durbin model. The inclusion of a spatial lag on specific explanatory variables in a country-fixed effects panel setting satisfies the specified requirements. The full spatial model, thus, is expressed as:

$$\begin{aligned} FDI_{it} = \ & \alpha_0 + \alpha_1 Host\ Variables_{it} + \alpha_2 Surrounding\ Market\ Potential_{it} \\ & + \rho_1 W \cdot FDI_{it} + \rho_2 W \cdot Regime\ Durability_{it} + \rho_3 W \\ & \cdot Polity\ Score_{it} + \rho_4 W \cdot Regime\ Type_{it} + \rho_5 W \\ & \cdot Regime\ Change\ Onset_{it} + \varepsilon_{it} \end{aligned} \tag{10}$$

As the regime type and Polity score variables are composites constructed from the same categorical variables, they are endogenous and therefore not estimated simultaneously. Furthermore, only the spatial lag of one explanatory variable is estimated in each variant of the model.

Section 6: Data

The data presented is categorized into three types. Economic and social variables include national economic indicators and country population data. Data utilized as measures of political risk are then presented. Finally, data used to construct political regime characteristics and transitions is discussed.

Subsection 1: Economic and Social Variables

I use foreign direct investment (FDI) data on inward flows from the World Investment Report published by the United Nations Conference on Trade and Development (UNCTAD, 2014b).[41] The data sample covers 115 countries over the thirty-year period of 1984-2013. The UNCTAD defines FDI according to the Balance of Payments Manual: Fifth Edition (BPM5) (International Monetary, 1995) as an investment involving a lasting interest in and control by a direct investor or parent enterprise from one economy in an affiliate enterprise or foreign affiliate in a different economy. The foreign entity or group of entities that make the investment are referred to as the "direct investor." The branch, subsidiary, or foreign affiliate, in which direct investment is made is termed a "direct investment enterprise." The

[41] The UNCTAD FDI data can be accessed at: http://unctadstat.unctad.org/.

investment involves the initial transaction, i.e., entry into the foreign economy, and all subsequent transactions between the parent and foreign entities. A direct investment enterprise is defined according to the Detailed Benchmark Definition of Foreign Direct Investment: Third Edition (BD3) (OECD, 2013) as an incorporated or unincorporated enterprise in which the direct investor, based in another economy, owns 10 percent or more of the ordinary shares or voting power, or the equivalent that allows for an effective voice in management (UNCTAD, 2014b). The distinguishing characteristic between FDI and foreign portfolio investment is that it is undertaken with the purpose of exercising control over the direct investment enterprise. As this is the primary intention of FDI, only capital that is allocated by the direct investor directly to the foreign affiliate or enterprise is classified as FDI. Therefore, other means in which the direct investor may acquire an effective voice that do not involve an equity stake, including franchising, subcontracting, leasing, and licensing, are not recorded as FDI. FDI inflows are comprised of equity capital, reinvested earnings, and intra-company loans. Equity capital involves the direct investor's purchase of shares of an enterprise in a foreign country. Reinvested earnings comprise the direct investor's share of earnings that are not issued as dividends or remitted to the direct investor by affiliates. Such retained profits are reinvested in the direct investment enterprise. Intra-company loans or intra-company debt transactions include short or long-term borrowing and lending of funds between direct investors and foreign affiliate enterprises. The data on FDI flows are presented on net bases, that is, credits less debits of all capital transactions between direct investor and their foreign affiliates. Both net decreases in assets and net increases in liabilities are recorded as

credits, while debits are recorded as either net increases in assets or net decreases in liabilities. Thus, negative FDI flows indicate that at minimum one component of FDI is negative and not offset by positive values of the other components. Negative FDI is referred to as reverse investment or disinvestment. The alternative measure of FDI is FDI stock, or positions, and is comprised of the value of the share of direct investors' capital and reserves, including retained profits, plus the net indebtedness of foreign affiliates to the parent enterprises. In contrast to FDI inward flows, there is missing data on FDI stock. Furthermore, the use of FDI stocks in empirical models has been criticized because they are historical cost positions based on book value. Both FDI flows and stock are expressed in U.S. dollars at current prices and current exchange rates in millions in the UNCTAD database, however, the estimation methods of FDI stock are inconsistent across countries and no indication is given of whether, for example ,the perpetual inventory method is used with a specified base year. The values are converted to constant terms using the U.S. Bureau of Economic Analysis implicit price deflator[42] seasonally adjusted with 2009 as the base year. The annual values range from a maximum of over 366 billion USD to a net disinvestment of over 33 billions USD. Negative and zero values are not omitted from the data sample. Disinvestment or delay of investment are theoretically predicted responses to increases in risk and uncertainty. Consequently, left truncation of the dependent variable destroys information essential for the testing of the hypotheses.[43]

[42] The price deflator can be found at the U.S. Bureau of Economic Analysis National Income and Product Accounts Tables (NIPA) "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product."
[43] Moreover, but of less consequence, eliminating observations results in an unbalanced panel and disturbs the estimation of the spatial model in statistical package.

Data on national accounts including GDP and GDP by type of expenditure is also sourced from the UNCTAD statistics data center. GDP, exports, and imports in constant (2005) prices and constant exchange rates (2005) are utilized in the computation of the trade-cost and surrounding-market potential measures. Similar to Blonigen et al. (2007), the trade-cost measure is calculated as the inverse of an "openness" measure,[44] which itself is equivalent to exports plus imports divided by GDP. Population data is from the World Population Prospects[45] (The 2015 Revision) of the United Nations Department of Economic and Social Affairs Population Division.

Subsection 2: Political Risk and Political Constraint Variables

The country composite and political risk variables are computed as the inverse of the twelve month average of the corresponding monthly composite and political risk ratings published by The PRS Group International Country Risk Guide (ICRG). The ICRG political risk rating attempts to assess the political stability of countries on a comparable basis by assigning risk points for a series of component factors, including among others, government stability, law and order, democratic accountability, and bureaucracy quality. The ratings are ubiquitous in empirical studies of cross-country FDI and regularly used by firms to inform investment decisions in foreign markets. The risk ratings range from a maximum of 100, indicating the least risk, to a minimum of 0, signifying the highest risk. The ICRG composite risk rating is equal to the sum of three separate risk ratings (political risk,

[44] The openness measure used in Blonigen et al. (2007) is reported by the Penn World Tables. To maintain consistency, data from the UNCTAD statistics data center is used instead.
[45] The World Population Prospects can be found at: http://esa.un.org/unpd/wpp/.

financial risk, and economic risk) divided by two. The composite risk ratings in the full sample of 115 countries range from 0 to approximately 95, while the political risk ratings range from 0 to 97. The lowest risk ratings, other than 0, are 4 for composite risk and 4.25 for political risk. The inverse of the measures are adjusted such that the riskiest rating is 1. Hence, the natural logarithm of the rating results in a measurement of 0 for the riskiest political environment. As an alternative to the ICRG risk ratings, the 2012 version of the Political Constraint Index (POLCON) POLCONIII variable (Henisz, 2002a) is used as measure of political risk. The POLCONIII variable is an annual index that aims to estimate the degree of political constraints within a state, and therefore, is a measure of the credibility of a government to support policy commitments. Regimes that are entirely unconstrained in their choice of future policies are rated as 0.

Subsection 3: Political Regime and Political Transitions Variables

Data on political regime characteristics and transitions is sourced from the Polity IV[46] annual time-series data set. The Polity IV data set codes general institutionalized authority traits for a distinct polity. The polity as the unit of analysis is conceptualized as a class of "authority patterns" that are "equivalents of state-organizations (Eckstein and Gurr, 1975: 25)." Although authority patterns include "a set of asymmetric relations among hierarchically ordered members of a social unit that involves the direction of the unit (Eckstein and Gurr, 1975: 22)," the Polity IV project focuses specifically on the most formal class of polities, "states operating within the world's state system (Marshall, Gurr, and Jaggers, 2014: 1)." The state is

[46] The Polity IV data can be found at: http://www.systemicpeace.org/inscrdata.html.

defined as the spatially delimited central authority for a social unit. Polity IV, therefore, codes only information about the authority patterns of the state regime and excludes information on the territorial scope of the state authority or the traits of non-state polities within its borders. As the dependent variable and many of the explanatory variables are sourced from the UNCTAD statistics database, the recognition of a state entity by the United Nations determines the countries included in the sample. The *Polity score* variable used in the data sample is equivalent to the revised combined Polity score measure, or POLITY2 variable in the Polity IV data. The combined Polity score of a country is computed by subtracting an operational indicator measuring the degree of institutionalized autocracy ranging from 0 (least autocratic) to 10 (most autocratic) from an equivalently operationalized variable measuring institutionalized democracy. Hence, the variable ranges from -10 (strongly autocratic) to +10 (strongly democratic).

The five categories of regime types are constructed from the Polity IV data based on their definitions in "A Global Model for Forecasting Political Instability" by Goldstone et al. (2010). Goldstone et al. (2010) use two variables[47] from the Polity IV data set to derive a two-dimensional space in which the five categories are identified. *Full autocracies* include repressive one-party states, absolutist monarchies, and authoritarian dictatorships. *Full democracies* are characterized by free and fair elections with institutionalized and open access to political participation. Between the two extremes are the intermediate categories of *partial autocracies* and *partial democracies*. Partial autocracies are characterized by either competitive

[47] The Polity IV scale for a regime's openness of executive recruitment (EXREC) is used as a measure of contestation and the scale of the competitiveness of political participation (PARCOMP) is used to capture the extent and variation of inclusiveness.

national elections with repression, or substantial political participation but without legitimate competitive elections for the office of chief executive. Regimes that do hold competitive elections and allow political competition without repression, but where elections are not truly legitimate or political participation is not well institutionalized, are categorized as partial democracies. The final category is *partial democracies* that exhibit politically consequential degrees of *factionalism*. Polity refers to factionalism as "a pattern of sharply polarized and uncompromising competition between blocs pursuing parochial interests at the national level… often accompanied by confrontational mass mobilization (Goldstone *et al.*, 2010: 196)." Additionally, there are periods during which a regime can not be placed within the two-dimensional space. These include *interruption* periods, where a country is occupied by foreign powers and is therefore under the authority of an external polity, *interregnum* periods, during which there is a complete collapse, or failure, of central state authority, and *transition* periods, during which new political institutions are planned and implemented. The frequency of country-years of each regime type are presented in table 1. Roughly one quarter of all countries have been full democracies for at least one year during the period of 1984-2013. The second most common type is partial democracy with factionalism, while both full autocracies and partial autocracies were more prevalent than partial democracies. Over one-third of all county-years in the full sample are categorized as autocratic. In 2013, the final year of the sample, the majority of countries (30 percent) are categorized as partial democracies with factionalism. Full democracies are the second most prevalent regime type (27.8 percent), followed by partial autocracies (21 percent). The number

of full autocracies per year has gradually decreased from a maximum of forty-five in 1984 to only seven in 2013. The number of full democracies per year increased from twenty-six in 1984 to peak at thirty-three in 2006. Since then, the frequency has remained steady at thirty-two per year.

Polity IV defines a "regime transition" as a three or more point change in the same general direction of either the democracy score or autocracy score of a polity occurring within three years or less of the previous change (Marshall *et al.*, 2014). A *major democratic transition* involves a six-point Polity score change in three years or less including a shift from autocracy to partial democracy or to a full democracy. A *minor democratic transition* is defined by a three to five point increase in the Polity score within a three year period and accompanied by a shift from an autocracy to a partial democracy, or a partial democracy to a full democracy. A *positive regime change* is denoted by a three or more point increase in the Polity score but without a shift in regime type. A *negative regime change* involves a three to five point decrease in the Polity score, while an *adverse regime change* is defined by a six or more point decrease in the Polity score or a revolutionary transformation in the mode of governance that is not a democratic transition. In the case where there is a three point change in either the democracy or autocracy score, and there is little to no change in the Polity score, the regime change type is specified as "no change in Polity score." In addition to these regime transition types, certain countries experience substantial changes in regime that involve a period of *interruption* or *interregnum.* There are two cases of regime change that I categorize as undefined. These include Sudan in 2011 which Polity IV specifies by a special auxiliary code for "state demise," and

Egypt in 2012 where no value has been assigned for the regime transition variable. Table 2 presents the frequency of regime change types during the sample period. The majority of regime changes resulted in little or no change in the Polity score. Autocratic transitions accounted for less than ten percent of all regime changes, while democratic transitions accounted for over thirty percent of regime changes. A quarter of all regime changes are categorized as major democratic transitions. The general trend is clear: in the previous three decades, the majority of substantive regime transitions have been towards more democratic polities rather than autocratic polities.

To operationalize the dummy variable indicating the onset of a regime change, I use the Polity IV variable denoting the ending year of the previous regime and the beginning of a regime transition (EYEAR). All country-years with values for the variable are codified as experiencing the onset of a regime change. The specific type of regime change onset is determined by the value of the *regime transition* variable in the Polity IV data set when the onset of a regime change occurs. The *lag of the onset of regime change* is a dummy variable denoting the year prior to the onset of a regime change. The lead of the variable is the year after the onset of a regime change. The *lead of regime change onset* may indicate the year after the completion of a regime change, if the transition was completed in the same year of its onset. Alternatively, in a multi-year transition, the lead of regime change onset may indicate a year within the transition period. A variable denoting the year of completion of a regime change was also constructed and include in some of the econometric models, but did not produce any statistically significant results.

The regime transition standard is used to define the dissolution of an established polity and the initiation of a new polity, and delivers a measure of the vulnerability and durability of a specific regime and its authority patterns (Marshall *et al.*, 2014). The *regime durability* variable thus, measures the total number of years since the most recent regime change. The calculation of the regime durability variable assigns a zero value to the first year following a regime change during which a new polity is established. The average durability of all regimes in the sample is roughly twenty-eight years, with a standard deviation of over thirty-two years. The most durable regime is the United States, with two hundred and four consecutive years without a substantive regime change. Switzerland comes in a distant second with one hundred and sixty-five years without a regime change. Notably, the pairwise correlations between each regime type and regime durability vary considerably. Only the pairwise correlation between regime durability and full democracy and full autocracy are positive. However, full democracies have a substantially higher correlation with regime durability (0.5521) than full autocracies (.0039). All other regime types have negative correlations, with partial democracies with factionalism demonstrating the least durability (-0.2044). Partial autocracies (-0.2020) exhibit on average slightly less durability than partial democracies (-0.1781).

A number of scholars have found substantial differences in the determinants of FDI across samples of developed versus less-developed countries (Blonigen and Davies, 2004; Blonigen, 2005; Blonigen *et al.*, 2007). Additionally, as Blonigen et al. (2007) note, developed countries tend to be clustered north of the equator and primarily in Europe, while less-developed countries are geographically more

dispersed. This is also true of political characteristics and proximity to political shocks. Consequently, three samples are used in the empirical analyses. The full sample is uncensored and includes 3,450 observations for 115 countries for the full thirty-year period. The sample is then split into two sub-samples, one including observations on twenty-three members of the OECD for the full thirty-year period, and the other observations for the same period for forty-six countries not members of the OECD. The non-OECD sub-sample is a fifty percent randomly generated sample of the full non-OECD group of countries, which number 96 in the full sample. This sub-sample was generated out of necessity, as the weights matrix, W, for a panel of 96 countries over 30 years was too large to use in the spatial econometric estimations. Descriptions of the two sub-samples are provided in tables 11 – 16. The contrast between the two samples is apparent, particularly in tables 11 and 12 that tabulate regime type and regime changes. Almost ninety-five percent of all OECD members are full democracies, with none of the members categorized as autocratic. The non-OECD sample, however, indicates that slightly over fifty-percent of the country-years were more democratic than autocratic. When including the frequency of interregnum, over forty-four percent of the non-OECD countries were not democratic during the sample time period. The OECD sample includes only seven instances of regime change, with all seven events resulting in little to no net change in the Polity score. Conversely, the non-OECD members experienced nearly two-hundred occasions of regime change. Like the OECD sample, the majority resulted in no change in the Polity score, however, roughly thirty-five percent of all transitions were toward more democracy, as opposed to only seventeen percent resulting in less democracy.

Overall, OECD members have received nearly six times as much FDI flows as non-OECD countries (table 13). Also of interest is the volume of FDI to the different country groups during their respective periods of regime change (table 14). During their limited number of regime change-years, OECD members received approximately sixty percent as much FDI inflows as non-OECD countries. Descriptions of polity traits in tables 15 and 16 also reveal substantial differences. The average durability of a regime in non-OECD countries was only fifteen years, while OECD-member regimes lasted on average sixty-seven years. Notably, the maximum regime durability in the non-OECD sample is less than the average regime durability in the OECD sample.

Section 7: Empirical Results

The estimation results of the local models for the full sample are first presented and discussed, followed by the results of the sub-sample OECD and non-OECD local models. Finally, the results of the spatial models for the separate OECD and non-OECD samples are subsequently reviewed.

Subsection 1: Local Model Estimation Results – Full Sample

The estimation results of the local models for the full sample are presented in eleven tables beginning with the base model results in table 6.1. The results in table 6.1 are presented as a comparison of the different estimation approaches for model 1. The results in column (1) are country-fixed effects estimates, while the results in column (2) are random effects estimates. The Hausman specification test provides

strong evidence to reject the null hypothesis that differences in coefficients are not systematic. Therefore, a fixed-effects model is preferred for the full data sample. Furthermore, the modified Wald test for group wise heteroskedasticity in the fixed effects regression also strongly rejects the null, and hence robust standard errors are used in the estimation. The results of the fixed-effects estimation with robust standard errors are presented in column (3). The Wooldridge test for autocorrelation in panel data provides evidence for the presence of autocorrelation in the base model. Hence, a fixed-effects model with a first-order autoregressive disturbance[48] [AR(1)] is estimated and presented in column (4). As evident in table 6.1, the significance and sign of the coefficients on most of the explanatory variables do not vary with the different estimation techniques. The GDP of the host country is significantly positive as predicted, while trade costs have a significant negative effect on FDI inward flows. Also as predicted, the total population is negative and significant in all models with country fixed-effects. Although negative, the coefficient on host country population is not significant in the random effects model. Additionally, the magnitude of the effects are substantially lower for the random-effects estimation. Surprisingly, an increase in political risk is associated with an increase in FDI inward flows in all estimations except the AR(1), where it is positive but not significant. The surrounding-market potential variable is positive and significant in all estimations except the fixed-effects robust results in column (3). It is interesting to note that the use of robust standard errors eliminates the significance of this variable, while the alternative AR(1) estimation finds it significant. Without further evidence, it is

[48] The Durbin-Watson estimator of ρ is used in all autoregressive estimations.

difficult to determine as to why this is the case. Accordingly, exploratory models are estimated and presented in table 6.2.

As an alternative to political risk, the composite risk rating is used as a measure of host country investment risk in the estimation results presented in table 6.2. Additionally, the Wald test provides evidence to reject the null that the coefficients for all years are jointly equal to zero. Therefore, in addition to country-fixed effects, the base local model is estimated with time-fixed effects with alternative risk ratings in columns (7) and (8). The results in column (5) are almost identical to those in (3), but with the magnitude on the composite risk rating indicating an even stronger positive effect on FDI inward flows. The significance of the risk rating again disappears when using an AR(1) estimation in (6). When controlling for a possible time-trend, the robust fixed-effects results in (7) and (8) are similar to those in previous estimations. The exception being the negative sign on the *SMP*, and GDP becoming significant only at the 0.1 level. The coefficient of determination (R^2) is greater for the estimations including time-fixed effects, although neither are particularly high. The positive and statistically significant sign on both risk ratings remains with the inclusion of year dummies. To investigate whether it is the specific variables, or their construction, rather than risk *per se* that is positively correlated with FDI, the Political Constraint Index (PolCon) is used as an alternative proxy of host country investment risk in the estimations in table 6.3. Recall that the lower the value of the PolCon variable, the less the constraints on state actors, and therefore, the greater the risk of sovereign opportunism. Thus, it is expected that a higher PolCon value would correlate with more inward FDI flows, however, the

results in table 6.3 indicate otherwise. Additionally, the AR(1) estimation results in (10) indicate that it is insignificant. The R^2 improves with the inclusion of the PolCon variable, however, the low value, along with the opposing estimations of the *SMP,* suggest that even when controlling for country-specific and time-specific heterogeneity, there is likely omitted variable bias in the base local models.

In the estimation results in tables 7.1 and 7.2, I introduce the regime attributes variables to the base model. The results in table 7.1 are country-fixed effects AR(1) estimations, while those presented in table 7.2 include year dummies. The Polity score and regime durability variables are not significant in the AR(1) estimations either when included separately or simultaneously. In the country-year, robust fixed effects estimates in table 7.2, however, they emerge as significant. Equally unexpected as the findings for risk, a higher Polity score is associated with a lower volume of FDI inward flows. Conversely, as hypothesized, the regime durability variable in estimation (16) is positive and significant. When estimating both simultaneously in (17), the Polity score seems to subsume the effect of regime durability. The pairwise correlation between the two variables is only 0.2211, eliminating the likelihood that they are capturing the same effect. The alternative hypothesis is that an additional, unobserved effect is present. This finds some support in the change of significance of the PolCon variable when dropping the Polity score and including regime durability. In estimation (18) in table 7.3, the PolCon variable is insignificant, but in (20) it is again negative and significant. It ceases to be significant in estimation (22) in table 7.4, when both variables are included in the estimation. When time-fixed effects are included in (24), both variables are

significant. It is noteworthy that regime durability is a temporal measure, and even with the inclusion of time-fixed effects, it is significant.

The local base model is then extended to include regime types in the estimations in table 8. The robust country-fixed effects results in (25) indicate that more democratic polities are associated with less FDI inward flows. However, it is noteworthy that as Goldstone et al. (2010) find, partial democracies with factionalism are exceptionally prone to incidents of instability. They further explain:

> *The relative odds of instability for such regimes were over 30 times greater than for full autocracies, other things being equal. This high level of relative risk was similar for the onset of civil wars, and even greater for adverse regime changes. Thus not all "anocracies" have similar properties; the relative risks of instability vary depending on specific combinations of regime characteristics* (Goldstone *et al.*, 2010: 197).

Moreover, they find that of all the categories of regime type, only full democracies were not significantly associated with the future onset of instability (Goldstone *et al.*, 2010). Therefore, it is unsurprising that, as the least stable regime type, partial democracies with factionalism are negatively related to FDI inward flows. However, it is striking that the most stable regime type, full democracies, are associated with an even stronger negative effect on inward FDI. When including the regime durability variable in (26), the coefficient for partial autocracy also becomes negative and significant, while the sign on full autocracy switches to negative,

although it remains insignificant. The regime durability variable in (26) is significantly positive, suggesting that the effect of regime type is influenced by regime durability. Accordingly, the interaction of regime type and regime durability is tested in the estimations presented in (27) and (28). Somewhat unsurprisingly, more durable full autocracies seem to attract more FDI inward flows in (27). Till now, the *SMP* has been significant, but in the estimations with regime types in table 8, it is only significant in the AR(1) results in (28), where it is once again positive.

In table 9, the effects of an onset of a regime change are presented in robust country fixed-effects estimations. Interestingly, the onset of regime change is insignificant in (29), but becomes significant when including the regime durability variable in (30). The results imply that the onset of a regime change is associated with more inward FDI flows. Simultaneously, the more durable the regime, the more FDI it is expected to receive. This suggests that their effect may have mutual sources. The more regime changes a country experiences, the less durable its regimes, and therefore, the greater the sovereign vulnerability associated with its incumbent regime. Conversely, as hypothesized, the durability of its regime prior to the onset of a political transition may indicate its likelihood to complete the transition, or to revert to its previous regime type. However, this is conditional on the direction of the transition, i.e., towards democracy or autocracy. As an initial investigation of these hypotheses, in (31) and (32) I test whether the durability of the regime prior to the onset of regime change has any effect on FDI inward flows. In both estimations the interaction effect is insignificant, although including the Polity score in (32) results in changes in the significance level of other variables. The interpretation is that pooling

all regime changes conflates the different effects of unique types of regimes changes. Accordingly, in table 10.1, I examine the effects of the six different types of regime changes on FDI inward flows.

The estimation results in (33) show that only the onset of a major democratic transition has a significant effect on FDI inward flows. Countries undergoing a major democratic transition appear to receive more FDI inward flows. The significantly positive effect remains when regime durability is included in (34). This seems to be in contrast to the results in (25) and (26), where partial democracies with factionalism and full democracies were associated with less FDI. The interpretation of these seemingly conflicting results is that the onset of these transitions are associated with a degree of institutional reform that generate a wave of inward FDI. Yet, given their relatively low levels of sovereign vulnerability and thus unlikely potential for sovereign discontinuity, the general investment-related policies of consolidated democracies leave them at a disadvantage in attracting FDI relative to alternative regime types. This is especially true for more durable full autocracies.[49] The institutional reforms achieved following a major democratic transition may also reflect the dissipation of previously existing sovereign vulnerability. That is, they indicate a decrease in political uncertainty, and hence, a more attractive investment environment, *ceteris paribus*. The planning and implementation of these reforms, however, are likely to only be fully realized in the subsequent years of the onset of the transition. Moreover, perceptions of the credibility of the regime's commitment to these reforms is in part determined by assessments of its future durability. These

[49] Among these durable full autocracies are China, Qatar, Saudi Arabia, and the United Arab Emirates.

assessments improve with information revelation. As such, in the next two estimations presented in (35) and (36), I test whether the year after the onset of each type of regime change affects inward FDI flows. The results are similar, with again major democratic transitions appearing positive and significant. The magnitude of this effect, however, is relatively stronger than in the previous year, i.e., that of the onset of the transition. This is consistent with the hypothesis that the onset of these institutional reforms attract more inward FDI, but even greater FDI is received after further information is revealed about the credibility and durability of the new regime. Furthermore, as apparent in table 10.2, the year prior to the onset of regime change is insignificant, whether regime durability is included in the estimation or not.[50] Thus, it is only during and after the onset of a major democratic transition that FDI inward flows significantly increase. This further substantiates the presence of real options effects, as there is no indication of significantly greater FDI prior to the year of the transition.

Subsection 2: Local Model Estimation Results – Sub-samples

The local model estimations for the full sample are revealing, but ambiguous as to the overall effects of political characteristics and political transitions on inward FDI flows when different estimation techniques are employed. In some instances, when the traditional determinants of FDI demonstrate explanatory power, more durable regimes appear to attract FDI. However, regime durability is not significant

[50] Of additional interest is that when estimating the effects of regime changes, including the regime durability variable results in GDP becoming no longer significant. The same result appears when examining the response of FDI inward flows one year prior to the onset of different types of regime changes in estimation (39).

in any of the models estimated with AR(1) disturbances. As other scholars have suggested (Blonigen and Davies, 2004; Blonigen, 2005; Blonigen *et al.*, 2007), this may be the consequence of the pooling of observations from developed and less-developed countries in empirical FDI studies. Accordingly, the local models are subsequently estimated for OECD and non-OECD sub-samples across the same period. The Hausman test indicates that we can not reject the null hypothesis, and therefore the inclusion of the fixed-effects estimator is not appropriate for the OECD sub-sample. The data does, however, display the presence of autocorrelation. In table 17, country-fixed effects estimations with robust standard errors are compared with random effects and fixed-effects autoregressive estimations. The various tests indicate that the most appropriate estimation is (43), in which an AR(1) with random effects model is estimated. Unusually, the only significant variables in this local model are trade costs and regime durability; GDP, total population, PolCon, and *SMP* are no longer significant. When including country-fixed effects in the AR(1) estimation in (44), trade costs are no longer significant, while the *SMP* becomes significant. Interestingly, regime durability remains significant, but becomes negative. The random-effects model with AR(1) is the correct specification for this data sample, and random-effects estimators are considered more efficient than their fixed-effects alternative.

Having only experienced one type of regime change, estimation of the effect of regime change on FDI inward flows is not disaggregated in the OECD sample. In table 18, the year of, the year prior to, and year after a regime change onset are estimated with random effects and first-order autoregressive disturbances. The

estimation results in (45) and (46) indicate that the onset and the year prior to an onset of regime change are not associated with a significant effect on inward FDI flows to OECD members. The year following the onset of a regime change, however, is significant and positive in (47), with a relatively substantial magnitude. Moreover, the parameter estimates of regime durability remain relatively constant in the different estimations in table 18. Recall that OECD members experienced only seven regime changes during the sample period, all of which resulted in little change in the Polity score (see table 12). Further inquiry into these regime changes reveals that four of the seven regime changes resulted in an increase in the Polity score, i.e., more institutionalized democracy.[51] The remaining three regime changes involved Turkey in 1993 and 1997, during which the Polity score decreased from 9 to 8 and 8 to 7 respectively, and Belgium in 2007, when the Polity score dropped from 10 to 8. In Belgium's case, FDI inward flows increased by a considerable sixty-five percent in the year of the onset of regime change, and another fifty-six percent the year after the onset. Although Turkey experienced only a one unit decrease in Polity score for both incidences, FDI inward flows increased by four percent in 1993 from the previous year and dropped by over twenty-five percent the year after the onset. Conversely, the opposite trend occurred for the 1996 incident. FDI inward flows to Turkey decreased by over eighteen percent from the previous year, only to increase the year after the onset by eleven percent. It is noteworthy that another onset of regime change occurred in Turkey in 1989. The incident resulted in an increase in the Polity score from 7 to 9, which remained until the next onset in 1993. The drop in the Polity

[51] These include France and Greece in 1986, and Turkey in 1990 and 2011. Recall that the threshold for a positive regime change is a three point increase in the Polity score, and a negative regime change requires a three point decrease in the Polity score.

score in 1993, therefore, was a deviation from the previous case. The subsequent drop in the Polity score three years later in 1997 was similar in direction and magnitude to the previous case in 1993. This suggests that although both the 1993 and 1997 incident resulted in decreases in the Polity score, these cases are likely not viewed in isolation. Rather, the frequency, recency, and direction of previous events are priors that shape MNEs' perceptions of the degree of political uncertainty.

The overall effect of the year after the onset of regime changes continues to be positive and significant when regime durability or the Polity score are included in the estimations in table 18. Thus, although they are all democratic polities with relatively low levels of political risk, the absence of an effect for the year prior to, or the year of the onset of these polity changes[52] in OECD members implies the presence of ambiguity aversion in MNE investment decisions. That is, MNE's choose to withhold FDI in response to elevated political uncertainty, delaying investment until the uncertainty is resolved, after which an influx of FDI is observed. The primary inference drawn from these results is that even modest political transformations in developed countries generate real options effects.

In contrast to the OECD sub-sample, the Hausman test indicates that the within estimator is more suitable for the non-OECD sub-sample. The data does, however, also exhibit serial correlation. Consequently, the appropriate estimation technique for the non-OECD sub-sample requires a fixed-effects estimator with an AR(1) disturbance term. The estimation results in table 19 present more predictable findings than their OECD sub-sample equivalents. The GDP, trade costs, total

[52] Note that the sign on the onset of regime change in estimation (45) is negative.

population, and surrounding-market potential variables are all significant, with expected signs, and robust to the inclusion of measures of polity attributes. Contrary to the OECD sub-sample, regime durability and the Polity score of non-OECD countries are not significant in any of the estimations. This is also the case when including categories of regime type in table 20. Additionally, the significantly positive effects of both the year after the onset of minor democratic transitions and the year after the onset of a positive regime changes in the robust fixed-effects estimations of (56) and (57) in table 21 vanish when serial correlation is corrected for in (58).

It is not surprising that controlling for both time-invariant country-specific heterogeneity and modeling FDI inward flows as a stochastic difference equation, i.e., a random, time-varying linear function of their previous values, should result in the suppression of the effects of multi-year incidences of sovereign vulnerability and sovereign discontinuity. As an autoregressive process, a one-time shock affects FDI inward flows infinitely far into the future and thus current values are affected by shocks occurring infinitely far into the past, although if the process is stationary, the effect will diminish toward zero in the limit. FDI inward flows are modeled to depend linearly on their one-year lagged value and a stochastic term. The combination of a common stochastic shock and the suppression of non-random, unobserved country-specific heterogeneity dissolves the cross-country common response in pooled observations of more heterogeneous country samples. The use of gravity-type equations that structurally model the attraction of FDI to host countries as a function of bilateral considerations, such as relative factor endowments, is more

likely to capture the theoretically predicted motivations of outbound FDI from the parent to the host countries. This actuality potentially explains the differences in the effect of regime change onset in the OECD and non-OECD sample. In the OECD sample, country-specific heterogeneity is not systematic, and allowing for random-effects assumes the country-specific effects are uncorrelated with the other covariates in the model. The onset of regime change, therefore, is modeled as an indirect uncertainty shock with unique, direct effects on host country FDI. Regime durability is positive in the OECD sub-sample estimations because these incidences are associated with a transformation of regime, rather than an actual episode of sovereign discontinuity. That is, the durability measure does not reset in these circumstances, indicating the perpetuity of the regime rather than its dissolution. The fixed-effects estimator for the non-OECD sample, however, controls for the country-specific effects, allowing for common response effects to regime changes to be detectable in estimations (56) and (57). Including first-order disturbance terms thus subsumes these effects as they are captured by the stochastic term. As will become apparent when estimating bilateral gravity-models of outbound FDI in a forthcoming section, regime attributes and regime changes are highly robust determinants when controlling for both country-specific and industry-specific heterogeneity.

Subsection 3: Spatial Models Estimation Results – OECD Sub-sample

Estimation of spatial models (9) and (10) involves the full OECD sub-sample and a fifty percent randomly generated sample from the full non-OECD sub-sample. The non-OECD sub-sample is further reduced to a fifty percent randomly generated sample. As explained in the data section, this is out of necessity due to computational

limitations. Consequently, the OECD sub-sample includes the original 23 cross-sectional units across the thirty-year time period of 1984-2013, while the two non-OECD spatial samples include 46 and 23 cross-sectional units across the same time period. As indicated, the application of spatial models serves three purposes: (1) to account for general spatial dependence and spatial heterogeneity in the estimation of FDI inward flows, (2) to identify and directly estimate the nature of the spatial interdependence of FDI inward flows among host countries, and (3) to test if regime characteristics and incidents of regime changes in geographically proximate countries generate spillover effects on FDI to host countries. The second objective requires estimating a spatial lag model (SAR) as in Eq. (9), and the third objective necessitates the same for a spatial Durbin model (SDM) as in Eq. (10). The preferred estimation procedure is ML, however, for both the SAR and SDM models, the statistical package could not find feasible values when all explanatory variables are included, irrespective of the algorithm technique used for the maximization of the log likelihood function.[53] Consequently, for the OECD sub-sample, a generalized spatial panel autoregressive 2SLS with random-effects is estimated. For testing spillover effects from explanatory variables, a spatial panel random-effects Durbin regression is estimated. With the exception of the spatial lags, estimations of the explanatory variables are then compared to those estimated by a spatial error model (SEM), a spatial autocorrelation model (SAC), and a spatial panel autoregressive generalized method of moments model (SPGMM).

[53] The spatial panel regression econometric models STATA module toolkit developed by Shehata and Mickaiel (2013) was used for the estimation of all spatial models. The algorithm techniques used for the MLE models are the Newton-Raphson, the Berndt-Hall-Hall-Hausman, the David-Fletcher-Powell, and the Broyden-Fletcher-Goldfarb-Shanno algorithms.

The estimation results of the GS2SLSAR with random effects for the OECD sub-sample are presented in column (59) of table 22.1. The coefficient on the spatial lag of inward FDI flows is positive and significant at the one percent level, indicating complementarity among FDI to geographically-proximate OECD countries. This is similar to the findings in Blonigen et al. (2007), however, unlike their results, the surrounding-market potential is negative, but not significant. This is consistent with the predominance of *c-v type* MNE integration strategies, providing evidence that agglomeration effects from supplier networks influence MNE activity in OECD countries. Also relevant are the positive and significant coefficients on the indicator variable for the year after the onset of a regime change and the regime durability variable. Thus, when accounting for spatial autocorrelation, the same effect of domestic political uncertainty on inward FDI is present as identified in the local model. When the same model is estimated with fixed-effects in column (60), the coefficient of the spatial lag switches to negative and is no longer significant. This finding is also consistent with Blonigen et al. (2007). The indicator for the year after the onset of regime change, however, remains positive and significant, further demonstrating the robustness of the real options effects. Also, regime durability remains positive, but is no longer significant. The R^2 for the random-effects model is substantially higher than that of the fixed-effects model. The results of the spatial panel autocorrelation tests for both models decisively indicate the presence of general spatial autocorrelation. Comparing these results with those of the SEM and SAC models estimated with ML methods presented in columns 61 and 62 respectively, the indicator for the year after the onset of regime change continues to be significant and

positive with little variation in the magnitude of its coefficient for the SAC model.[54] The SEM, however, as expected, captures the cross-country shocks in the spatial error term, and thus the year after the onset of regime changes is positive with similar magnitude as in the other spatial models, but is not significant. Conversely, for regime durability, while trade costs also exhibit a similar significant sign and magnitude across the different models, with the exception of the SAC where it is not significant. Although not significant in any of the spatial estimations, the political risk variable displays substantial variation in the sign and magnitude of its coefficients.

As previously stated, ML estimation of the SDM model does not find feasible values. Hence, a spatial panel random-effects Durbin regression is used to test the presence of spillover effects from proximate regime attributes and polity changes. As regime durability appears to be a significant and positive determinant of inward FDI flows in the OECD countries, the spatial lag of regime durability, i.e., spatially-weighted average of the regime durability of geographically-proximate OECD countries, is introduced to model (10). In the random-effects SDM results presented in column (63) of table 22.2, the direct effect of host country regime durability remains positive and significant with a similar magnitude as in the previously estimated spatial models. The spatial lag of regime durability, however, is negative and not significant. The fixed-effects estimation in column (64) presents contrasting results, with host country regime durability appearing negative and significant and the spatial lag of regime durability positive and insignificant. Again, in both models, the

[54] Results of the SPGMM estimation were similar, but are not presented.

year after the onset of a regime change in a host country is associated with a significant and positive effect on its inward FDI flows. The robustness of this effect, and the evidence for the prevalence of *c-v type* integration strategies in OECD countries, suggest that polity changes in neighboring countries may generate spillover effects. To test this hypothesis, model (10) is estimated with the spatial lag of the year of the onset of a regime change and compared with the estimation of the spatial lag of the year after the onset of regime change. That is, the spillover effect of the onset of polity changes in spatially proximate OECD countries is contrasted with those of the year after the onset of a polity change. The results are presented in table 22.2, columns (65) and (66), where an onset of a regime change in geographically-proximate OECD countries is related to a significant and positive spillover effect on FDI inward flows to OECD members. Also, consistent with the findings of the local model, the onset of a regime change in the host country is not significant. These findings hold for both the random-effects and fixed-effects SDM estimations. The spatial lag of the year after the onset of regime change, however, is negative and not significant, while the indicator of the year after the onset in the host country is once again positive and significant, with a reasonably consistent magnitude. Again, this holds for both the random-effects and fixed-effects estimations in table 22.3.

The results of the spatial models imply the partial re-allocation of FDI from OECD host countries during the year of their polity changes to neighboring OECD countries, only to revert back to the host country after the political uncertainty is at least partially, if not fully, resolved. This *overshoot* of FDI following a drop caused by uncertainty is predicted by real-options theory and consistent with the findings of

Bloom (2009). Additionally, the evidence for partial re-allocation in response to elevated uncertainty within a relatively short time period suggests the replication of some activities for which additional capacity is available, as opposed to complete fragmentation of operational activities across neighboring OECD countries. If the later were the case, then in the presence of agglomeration effects, delays in investment during the onset of a regime change in one host country should instead be negatively correlated with FDI inward flows to geographically-proximate hosts. Comprehensively, the estimation results of the spatial models imply that uncertainty arising from polity changes is not delimited to local effects on inward FDI flows to OECD members, but non-local spillover effects are also of significant consequence.

Subsection 4: Spatial Models Estimation Results – non-OECD Sub-sample

The spatial lag of inward FDI flows to non-OECD members is estimated with G2SLSAR for both the 46 and the 23 country sub-samples. Likewise for the spatial fixed-effects Durbin regression and the SPGMM model. The ML estimations of the SAC and SEM, however, are restricted to the 23 country sample due to the software package's inability to find feasible values. The results of the G2SLSAR for the 46 non-OECD country sub-sample are presented in column (69) of table 23.1 and indicate a positive spatial lag of inward FDI flows. However, the estimated coefficient of spatial lag exceeds the bounded value of 1, which is a consequence of the statistical package not restricting the constant term in the panel 2SLS model. Thus, the G2SLSAR estimations for the 23 non-OECD country sub-sample is preferred for interpretation. In column (70), the results indicate a negative and significant spatial lag for inward FDI and a positive and significant *SMP* and regime

durability. This implies that FDI inward flows to geographically proximate non-OECD countries comes at the expense of FDI to non-OECD host countries. The negative spatial interdependence of FDI combined with the positive effect of the surrounding-market potential suggest that *e-p type* MNE integration strategies are prevalent in non-OECD countries. That is, MNEs choose one non-OECD country to locate operations and use it as a platform to export to nearby non-OECD countries. This is in contrast to Blonigen et al. (2007) who find a positive and insignificant spatial lag on outbound FDI from the US to non-OECD countries. As an assessment of the robustness of these results, the coefficients of the G2SLSAR are compared to those estimated by SAC, SEM, and SPGMM in columns 71, 72, and 73 respectively. The GDP, trade costs, and regime durability variables share the same sign and are all significant with comparable magnitudes. The difference is that only the G2SLSAR and SPGMM results indicate a positive *SMP*, although it is only significant for the G2SLSAR estimation. The positive and significant *SMP* is consistent with the results of the local models. Also, the total population variable is negative and not significant in the G2SLSAR results, but positive and significant in the SAC and SPGMM results. The accompanying tests indicate the presence of spatial autocorrelation in both the spatially lagged dependent variable and the errors, and the only model accounting for both is the G2SLSAR. Therefore, the general conclusion is that, at the aggregate level, MNE activities in non-OECD countries are predominantly of the export-platform type (*e-p type*).

The results of the fixed-effects SDM models in table 23.2 provide evidence for spillover effects on non-OECD host countries from regime attributes and regime

changes in geographically-proximate non-OECD countries. The direct effect of host country regime durability is positive and significant, while the spatial lag of regime durability is negative and significant in column 74. The inclusion of the Polity score in the estimation causes the direct effect to be insignificant, but magnifies the negative indirect effect. The results imply that non-OECD countries with more durable regimes will divert inward FDI from neighboring non-OECD countries. Estimation of the same fixed-effects SDM for the 46 non-OECD country sub-sample generates similar results. In column 75, more durable regimes in proximate non-OECD countries result in less FDI to a non-OECD host country. The net effect of regime durability is negative in both the 23 and 46 country sub-samples. That is, the negative effect of more durable neighboring regimes dominates the positive effect of a more durable host country. Moreover, when including the Polity score, the direct effect is no longer significant.

Additional fixed-effects SDM were estimated with the Polity score and the onset of a regime change as the spatial lag. Both results indicated no significant spillover effect from other proximate regime attributes or the pooled regime change variable. When disaggregating the regime change variable into democratic changes and autocratic changes in column 76,[55] the direct effect of such onsets of regime change in the host country are not significant, but the sign on autocratic change is negative. However, the indirect effect of autocratic changes in geographically-proximate non-OECD countries generates positive spillovers to non-OECD host countries. This holds true for both the 23 and 46 country sub-samples. Furthermore,

[55] Democratic changes include the onset of a major democratic transition, minor democratic transition, and positive regime change. Autocratic changes include the onset of a negative regime change and the onset of an adverse regime change.

the year prior to, and the year after the onset of an autocratic change in proximate non-OECD countries exhibit no significant spillover effects on non-OECD hosts. These results are further evidence of the prevalence of *e-p type* strategies in non-OECD countries. Autocratic changes are associated with a diversion of FDI to more durable regimes, and unlike OECD members, the FDI is not delayed only to be allocated the year after the onset. This is because it is primarily for *e-p type* operations, and once direct investment is made, proximate non-OECD countries are served through exports. Consequently, the loss of inward FDI to non-OECD countries during the onset of autocratic changes is never recovered.

A summary of the results of the hypotheses tests are presented in table B.

Table B: Hypotheses Results

	Local		Spatial	
	Hypothesis	**Result**	**Hypotheses**	**Result**
Hypothesis 1: *Regime Durability*	+	+	-	-
Hypothesis 2a: *Political shocks and c-v type.*			-	-
Hypothesis 2b: *Political shocks and e-p type.*			+	+

Section 8: Conclusions

Recent developments in the general equilibrium theory of multinationals emphasize the importance of multilateral considerations. MNEs serve foreign markets through a variety of integration strategies determined in equilibrium by the relative factor endowments and investment impediments of the world-wide market. Consequently, empirical estimations of MNE activity has extended beyond bilateral determinants to consider third-country effects. The application of spatial econometric

techniques has allowed for greater insight into the patterns of MNE integration strategies in different regions and among different economic groups. The literature has provided evidence of the existence and nature of the spatial interdependencies of FDI across host countries. However, it has also largely ignored the real options effects induced by the presence of both locally and externally originating political uncertainty. The level of political uncertainty in a host country, either captured in the form its regime type or the durability of its current regime, directly affects its inward FDI flows. While the level of the regime attributes of geographically-proximate countries produce spillover effects that impact FDI to the host country. Domestic and regional political shocks in the form of elevated sovereign vulnerability or an incident of sovereign discontinuity generate real options effects that lead to the delay or redirection of MNE investment activity. The magnitude and direction of these effects is conditional upon the host country regime type and the predominant MNE integration strategies in the region.

In OECD member countries, MNEs primarily pursue complex-vertical (*c-v type*) integration strategies motivated by agglomeration incentives. Consequently, internal shocks to the level of political uncertainty result in the simultaneous delay of investment to an OECD host country and the partial re-allocation of MNE activity to neighboring OECD members. Once the uncertainty is adequately resolved, a subsequent spike in inward FDI is experienced in the host country. Thus, the relatively minor alterations in polity characteristics within these developed and democratic countries still generate real options effects. In these instances, the

durability of the regime as a proxy for its credibility to commit to economic policies becomes a significant determinant of inward FDI flows.

In contrast to FDI activity in OECD members, MNEs predominantly choose one non-OECD country within a region to serve as an operational platform for exports to proximate non-OECD markets. The degree of heterogeneity across non-OECD countries and the autoregressive nature of inward FDI flows subsumes the collective impact of political uncertainty shocks in local estimations. When accounting for the spatial dependence and spatial heterogeneity of inward FDI to non-OECD hosts, however, the durability of their regimes and those of proximate regimes emerge as significant determinants. Analogous with FDI patterns to OECD members, the direct effect of more durable non-OECD country regimes is positive, but the negative indirect effect on inward FDI of more durable proximate non-OECD countries dominates. Furthermore, negative and adverse regime changes in proximate non-OECD countries generate positive spillover effects on inward FDI to non-OECD hosts. The negative net effect of regime durability and the substantial positive spillover effects of regional autocratic changes implies considerable MNE sensitivity to sovereign vulnerability when pursuing *e-p type* integration strategies. The restrictions of a solitary platform and the subsequent incapacity to partially re-allocate activity places a premium on lower levels of uncertainty. The onset of political uncertainty shocks in developing countries typically entail greater deviation from *ex-ante* polity attributes. The *ex-post* elevation in political uncertainty is, therefore, of greater magnitude, and when combined with the greater frequency of these shocks, the associated political uncertainty in less stable regime types acts as an implicit tax

on foreign direct investment. Although greater regime durability offsets these effects in the medium-term, the full consolidation of democratic institutions is the definitive means for the eradication of this implicit tax, and thus the removal of a considerable barrier towards economic development.

Section 9: Supply Chain Implications

Many of the same factors that have allowed for the operation of more complex integration strategies that span multiple countries and serve multiple markets also increase exposure to supply chain disruptions. Longer paths and shorter clock speeds have not only allowed for more opportunities for operational disruptions, but also reduced the margin of error if a disruption were to take place (Kleindorfer and Saad, 2009). Furthermore, the very efficiencies or immobile resources that MNEs seek when locating in less developed countries likely expose them to greater potential for sovereign opportunism. Such political risk is mitigated through various means previously discussed. However, an elevation in political uncertainty, either within the country of operations, or in neighboring countries, may present more complex challenges. Because these jumps are "shocks," they are unanticipated and their effects are theoretically described by a set of indistinguishable probability measures. Hence, an MNE is severely restricted in its capability to assess the likelihood of the potential types of disruptions to its operations, as well as the extent of damage caused by these disruptions. Therefore, building the capabilities to address such political shocks is also constrained by ambiguity. If we assume that MNEs are risk-neutral and ambiguity-averse, the degree of ambiguity that results from political shocks may

induce early suspension or even exit (Murphy and Willhite, 2013). However, the adverse effects are not limited to exiting MNEs, but may extend to entire supply chain network. Thus, managing the direct and indirect effects of a jump in political uncertainty when supply chain networks are international requires coordination within and across firms.

Empirical evidence suggests that MNE operations in OECD countries have built in additional capacity, even when the predominant MNE integration strategy is *c-v type*. That is, although production is fragmented across OECD countries, there seems to exist some modularity that allows for the continuation of operations. The minimal deviation in polity changes after political shocks in OECD countries is associated with a limited, although evident, impact on MNE operations. Because such increases in political uncertainty in OECD countries are limited in duration, MNEs can delay or partially re-allocate investment until the uncertainty is resolved. Furthermore, with potential alternative partners available in such countries, supply chain networks can maintain stability under nominal regime changes and brief periods of uncertainty.

In contrast, in political environments characterized by greater frequency and impact of political uncertainty shocks, supply chain networks are likely less flexible. The prevalence of *e-p type* MNE integration strategies and the absence of agglomeration incentives entails an incapacity to temporarily re-allocate operations or quickly find alternative partners. If the uncertainty spills-over to multiple countries in the region, identifying a new platform becomes a greater challenge. Consequently,

MNEs may choose to serve the region from more remote locations, thereby raising logistics costs and further adversely affecting returns.

The prevailing methodology of managing supply chain disruption risks relies on the three main tasks as noted by Kleindorfer and Saad (2009): (1) probabilistic risk assessment; (2) vulnerability assessment; and (3) decision analysis. Acknowledging that probabilistic assessment "presents major difficulties (Kleindorfer and Saad, 2009: 55)" for uncertainty shocks such as terrorist events, the approach recommended then becomes the use of "worst case analysis and contingent response scenarios (Kleindorfer and Saad, 2009: 55)." However, in periods of political transitions, when ambiguity prevails, and where uncertainty may also be non-local, the inability to form priors due to the absence of relevant information and the irreversibility of investment reduce such approaches to one of two possible responses; suspension or exit. The availability of alternative opportunities, and the ambiguity about those external opportunities, thus become additional factors that affect the exit timing decision (Miao and Wang, 2011).

Chapter 2: Bilateral Extensions – U.S. Direct Investment Abroad and Political Uncertainty

Section 1: Introduction

As the dominant political and economic power in the international system since the latter part of the twentieth century, U.S. economic activity abroad may not be motivated purely by market considerations, but also the exertion of hegemonic influence over institutions and policy decisions in foreign states. The "second-image reversed (Gourevitch, 1978)" literature within international relations studies has emphasized the interdependency of the international system and domestic politics and structures. Specifically, the international system is not only a consequence of domestic institutions and policies, but also a cause of them (Gourevitch, 1978). The economic and military relations between nation-states and across formal and informal country groups constrain an array of domestic behaviors through the mechanisms of coercion, influence, and emulation (Gilardi, 2013; Henisz *et al.*, 2005; Simmons and Elkins, 2004). The preceding chapter focused on the effects of domestic and geographically-proximate political shocks on inward FDI flows. Within this context, the strength of spillover effects are theorized to decay with the geographic distance from the emanation point. Connectivity between countries is subsequently operationalized through the spatial-weights matrix, capturing the proximity-weighted influence of alternative countries. Within the domain of the international system, the influence of hegemonic power, although shaped to some degree by geographic considerations, is not primarily distance determined (Beck, Gleditsch, and Beardsley,

2006). Vertical influences are dispersed[56] and more so a consequence of historical developments and socio-political interactions than bilateral distance (Kennedy, 1989; Waltz, 1979).

A *hegemon* as a paramount state is characterized by its superior political and military power which imparts the effective "capacity to impose regimes, influence other great powers, and to inspire institutional imitators (Gunitsky, 2014: 564)." Thus, sovereign vulnerability or sovereign discontinuity may have internal proximate causes, but in so far as they reflect a disequilibrium, the ultimate cause may be in some instances external. Among the mechanisms by which hegemonic coercion and influence are exercised, economic relations are deemed particularly effective (Gunitsky, 2014; Simmons and Elkins, 2004). Though there is little consensus as to the effect of trade on democratization,[57] Gunitsky (2014) shows that following rapid shifts in the distribution of power among states in the international system, the marginal effects of U.S. trade on democratization is significantly positive. The increase in trade that follows these "hegemonic shocks" results in an average one to two unit increase in the Polity score (Gunitsky, 2014). As evident in the aforementioned case of Egypt, vertical influence may determine domestic economic conditions, rather than purely reinforce them. Thus, in contrast to the previously examined inward FDI flows of indeterminate origin, outbound FDI from the U.S. to partners countries may exhibit unique patterns that necessitate interpretation within the context of its hegemony. As such, the following examination of U.S. outbound

[56] The geographic scope of U.S. military outposts is case in point.

[57] López-Córdova and Meissner (2008) identify a positive effect of trade on democratization, but only after World War I, while Li and Reuveny (2009) and Rigobón and Rodrik (2005) find a negative relationship.

FDI patterns in the presence of political uncertainty is not intended to identify its MNE's predominant integration strategies, which has already received extensive treatments by Baltagi et al. (2007) and Blonigen et al. (2007). Rather, bilateral, gravity-type estimations of the effects of polity characteristics and political shocks in host countries on FDI from the U.S. is contrasted with the previously estimated local results of inward FDI flows of pooled origins. The principal hypothesis is that these effects differ across estimations; FDI flows from the U.S. exhibit idiosyncratic responses to its partner countries' regime attributes and regime changes. Of course, the inferences should be treated with caution, as some of the samples of host countries differ, and the very existence of outbound FDI from the U.S. may in itself indicate a selection bias. That is, the absence or presence of U.S. FDI to certain countries may reflect precisely the type of hegemonic coercion and influence theorized.[58] Therefore, such influence may be endogenous, and rather than reveal its importance, estimations of bilateral outbound FDI would only incorporate its antecedent impact. Furthermore, whether any contrasts truly indicate effective foreign policies formulated and directed at the state level, or simply real options effects on U.S. MNE's decisions within a dynamic competitive equilibrium, is likely indeterminable with aggregate data. Given the theoretical and empirical evidence, a combination of both are expected to prevail in varying degrees. Nonetheless, in the presence of political uncertainty shocks, evidence of systematic deviation of U.S. outbound FDI activity from aggregate, world-wide MNE behavior necessitates further inquiry. The results of such a comparative analysis may suggest that examinations of

[58] For example, sanctions imposed on foreign states would not appear as zero or missing values in any official data collections.

FDI patterns would benefit from not only disaggregating its origins, but accounting for their polity attributes and status within the international system.

This chapter proceeds as follows. First the econometric approach is presented and the corresponding models are specified. Then, the data is described, with sources shared with chapter 1 reintroduced. The estimation results are then presented and contrasted with the those of the local models in the preceding chapter. Finally, the concluding remarks discuss the implications of the study.

Section 2: Econometric Approach

The specification of the gravity model estimating U.S. outbound FDI includes the traditional determinants of bilateral FDI. These include bilateral variables that capture the absolute economic size, similarity in size, and relative factor endowments of the U.S. and its partner countries. The bilateral economic size measures the absolute sum of the GDPs of the U.S. and its partner country i for year t: $Bilateral\ size_{\ i,t} = (GDP_{US,t} + GDP_{i,t})$. Outbound FDI from the U.S. to partner countries is predicted to increase with bilateral size. The similarity index of country size was proposed by Helpman and Krugman (1985b) and Helpman (1987) for bilateral trade models and has featured in gravity models of FDI (Baltagi *et al.*, 2007). The index is given by: $Similarity\ index_{\ i,t} = \left(1 - s_{US,t}^2 - s_{i,t}^2\right)$ where $s_{US,t}^2 = \frac{GDP_{US,t}}{GDP_{US,t} + GDP_{i,t}}$ denotes the share of the U.S. and $s_{i,t}^2 = \frac{GDP_{i,t}}{GDP_{US,t} + GDP_{i,t}}$ denotes the share of the partner country i in bilateral size. As with bilateral size, the more similar the partner country is to the U.S., the more outbound FDI it is predicted to receive.

Previous gravity-type estimations of FDI have included two or three variables each measuring the ratio of the parent to host endowment of a specific factor proposed by the knowledge-capital model. The factor endowments typically include capital stocks, human capital (skilled labor), and unskilled labor. The skilled labor variable is customarily proxied by some measure of educational attainment, such as the average years of schooling or the share of labor with a tertiary education. The unskilled labor measure then, would simply be the remaining share. Along with potentially improving point estimates, the inclusion of the relative labor endowments may provide insight into the motivations of MNEs.[59] The construction of these proxies, however, require linear interpolation, as available time series data is usually recorded on a five-year basis. Furthermore, the assumption is that skilled labor, as proxied by tertiary education, is exogenous. While a plausible assumption, findings suggest that on average, more than half of GDP growth in OECD countries is related to labor income growth among tertiary graduates (OECD, 2014). Even in years when GDP shrank, labor income growth among tertiary-educated individuals still generated a positive effect on GDP (OECD, 2014). Although the relative endowment of skilled-labor is a theoretically grounded determinant of certain types of FDI, it is also an important determinant of GDP. Moreover, partner country GDP is incorporated in the construction of four of the eight explanatory variables in the baseline specification. Given that the stated objective of the model is not to extricate U.S. MNE integration strategies, parent country human capital endowment is assumed captured by the explanatory variables derived from GDP and its components.

[59] For example, a negative and significant coefficient on the human capital variable would imply efficiency-seeking FDI.

Therefore, for the purposes of this estimation, I choose to include the U.S.-to-host capital stocks ratio as a measure of bilateral factor endowment, and the surrounding-market potential to capture the multilateral and spatial influences on U.S. outbound FDI. The U.S. and partner country capital stocks for year t are estimated by the perpetual inventory method as outlined in Baltagi et al. (2007), which is further defined in the data section. The surrounding-market potential (*SMP*) is adopted from Blonigen et al. (2007) and broadly measures the market potential surrounding partner country i in year t as the sum of the inverse-distance-weighted GDPs of all other $j \neq i$ countries in year t. The *SMP* is given by $SMP_{i,t} = \sum_{j=1}^{N} GDP_{j,t} * (d_{i,j}^{-1})$, where $d_{i,j}$ is the distance between the capital cities of partner country i and all other $j \neq i$ countries. As it is a separate regressor in the model, the host GDP is not included in the *SMP*. The effect of the *SMP* is conditional on the aggregate choices of U.S. MNE integration strategies. In so far as distance is directly proportional to trade costs between potential host countries, a significant negative sign on the *SMP* is indicative of the prevalence of horizontal or complex-vertical (*c-v type*) integration strategies. In contrast, a larger *SMP* for country i suggests U.S. MNEs predominantly pursue an export-platform integration strategy. Similar to Blonigen et al. (2007), the trade-cost measure is calculated as the inverse of an "openness" measure,[60] which itself is equivalent to exports plus imports divided by GDP. The trade cost variable is predicted to be negative, as the greater the trade costs of a partner country, the less FDI it is expected to receive from the U.S. Finally, the distance between the U.S. and its partner country, the total population of the partner country, and the political risk

[60] The openness measure used in Blonigen et al. (2007) is reported by the Penn World Tables. To maintain consistency, data from the UNCTAD statistics data center is used instead.

associated with the partner country are included in the baseline specification. The bilateral distance between the U.S. and its partner country is included as a proxy for higher management costs and thus, is predicted to negatively impact FDI. Partner country total population is expected to have a negative effect on U.S. outbound FDI, as holding GDP constant and increasing the country's population reduces its per capita GDP. An increase in risk is theorized to reduce irreversible investment. Hence, the expectation is that the riskier the political environment of a partner country, the less outbound FDI from the U.S. it will receive. The baseline specification where all variables with the exception of the dependent variable are measured in natural logs is expressed as:

$$\begin{aligned} FDI_{i,t} = \alpha_0 + \ & \alpha_1 Distance_{i,t} + \alpha_2 Population_{i,t} + \alpha_3 Bilateral\ size_{i,t} \\ & + \ \alpha_4 Similarity\ index_{i,t} + \alpha_5 Capital\ stocks\ ratio_{i,t} \\ & + \ \alpha_6 Surrounding\ Market\ Potential_{i,t} + \ \alpha_7 Political\ risk_{i,t} \\ & + \varepsilon_{i,t}, \end{aligned} \tag{1}$$

where $FDI_{i,t}$ measures aggregate U.S. FDI transactions, or flows, to partner country i for year t.

In order to estimate the effects of political uncertainty, the baseline specification in Eq. (1) is modified to include host country political characteristics and political shocks. As hypothesized, the durability of a regime is predicted to positively impact U.S. outbound FDI flows, *ceteris paribus*. The effect on U.S. outbound FDI flows of the degree to which democracy is institutionalized in a partner

country, however, is ambiguous. As previously argued, more democratic institutions are axiomatically more inclusive and place greater constraints on executive power. These attributes may, or may not be inviting to U.S. MNE direct investment vis-à-vis substitute locations. Subsequently, the respective effect of the type, or category, of regime, e.g. autocracy or democracy, is also ambiguous. However, certain regime types are associated with greater durability and stability. For instance, consolidated democracies exhibit the greatest durability and least instability. New democracies, however, are less durable than full autocracies. Hence, the interaction of the regime type and regime durability variables are also included the model. To estimate the effect of local political shocks, the onset of a regime change and the onset of distinct types of regime changes, i.e., democratic transitions or adverse regime changes, are operationalized and incorporated in the specification. The onset of sovereign discontinuity is associated with greater political uncertainty, and thus is expected to negatively impact inward FDI flows. Furthermore, when there are sudden shifts in the Polity score, but a full transition to a new regime type does not follow, the effect is still that of an uncertainty shock. Hence, the onset of such a regime change is predicted to negatively effect inward FDI flows. Nonetheless, the direction of the regime change may signal less sovereign opportunism, and depending on the credibility and durability of the new regime, the introduction of policies that promote investment, such as greater liberalization of capital or labor markets, may attract more FDI. Moreover, if the onset of a regime change is partly a consequence of hegemonic coercion or influence, i.e., externally direct or supported democratization campaigns, then an influx of U.S. FDI to the partner country may result. The construction of the

political regime and transition variables is discussed in detail in the data section. The specification of the baseline local model where all non-discrete variables are measured in natural logs is the following:

$$FDI_{i,t} = \alpha_0 + \alpha_1 Distance_{i,t} + \alpha_2 Population_{i,t} + \alpha_3 Bilateral\ size_{i,t} + \alpha_4 Similarity\ index_{i,t} + \alpha_5 Capital\ stocks\ ratio_{i,t} + \alpha_6 Surrounding\ Market\ Potential_{i,t} + \alpha_7 Political\ risk_{i,t} + \alpha_8 Regime\ Durability_{i,t} + \alpha_9 Polity\ Score_{i,t} + \alpha_{10} Regime\ Type_{i,t} + \alpha_{11} Regime\ Change\ Onset_{i,t} + \varepsilon_{it}, \quad (2)$$

The estimation techniques employed are determined by the properties of the data sample. If the customary Hausman test results in the rejection of the null hypothesis, then a fixed-effects estimator is preferred, and as a time-invariant measure, the distance variable will be dropped in the estimation. If the data exhibits heteroskedasticity, then robust standard errors are included, however, if serial-correlation is also a property, then autoregressive estimations with first-order disturbances are employed.

Section 3: Data

The data presented is categorized into three types. Economic and country variables include FDI, national economic indicators, bilateral distance, and country population data. Data utilized as measures of political risk are then presented.

Finally, data used to construct political regime characteristics and transitions is examined.

Subsection 1: Economic and Country Variables

Data on U.S. outbound FDI is sourced from the U.S. Bureau of Economic Analysis (BEA) comprehensive statistics on U.S. direct investment abroad.[61] The statistics are derived from BEA conducted mandatory surveys completed by U.S. MNEs. U.S. direct investment abroad is defined by the BEA as at least 10 percent ownership of a foreign business by a U.S. investor. The direct investor is referred to as a *U.S. parent* and the foreign business is termed a *foreign affiliate.* The combined global operations of a U.S. parent company and its foreign affiliates comprise a U.S. MNE.

The BEA publishes two comprehensive sets of statistics on U.S. direct investment abroad (USDIA): (1) "balance of payments and direct investment position data," and (2) "activities of multinational enterprises (AMNE)." The AMNE reports details about the financial structure and operations of foreign affiliates, including foreign affiliate sales and compensation of employees. The AMNE records overall activity of foreign affiliates, irrespective of the percentage of U.S. parent ownership. Direct investment position data include cumulative stocks measured as the total outstanding level of U.S. direct investment in the partner country at year end. Both the balance of payments data and the direct investment position data are presented without current-cost adjustment, thus they are on a historical cost-basis. The balance

[61] The BEA data can be found at http://www.bea.gov/iTable/index_MNC.cfm.

of payments, or financial transactions data, record foreign affiliates' transactions with their U.S. parents. Therefore, they concentrate on the U.S. parent's share, or interest, in its affiliates as opposed to the affiliates' total size or level of operations. The financial transactions data is composed of capital flows and income. Capital flows are the funds provided to foreign affiliates by their U.S. parents, while income is the return on those funds. The financial transactions data are available on a quarterly or annual basis, and by country detail, industry detail, and country-by-industry detail. Financial transactions are on net bases, meaning outflows from U.S. parents to their foreign affiliates are recorded as positive capital flows, while inflows from the foreign affiliate to its U.S. parent are recorded as negative capital flows.

For the purposes of this study, the financial transactions data are preferred because they capture capital flows between the U.S parent and its foreign affiliates, rather than the characteristics of the affiliate. Thus, they are more sensitive to the investment environment and allow for estimation of U.S. parents' responses to political uncertainty shocks. Moreover, they are comparable to the UNCTAD inward FDI flows data used in the previous chapter. The data is observed for fifty-four countries and covers the same thirty-year period as the UNCTAD inward FDI flows samples: 1984-2013. The values are converted to constant terms using the U.S. BEA implicit price deflator[62] seasonally adjusted with 2009 as the base year. As a result of the discontinuity in the time series at 1999, when the estimates changed from Standard Industrial Classification (SIC) to North American Industry Classification Systems (NAICS), the content of the data tables has changed over time.

[62] The price deflator can be found at the U.S. Bureau of Economic Analysis National Income and Product Accounts Tables (NIPA) "Table 1.1.9. Implicit Price Deflators for Gross Domestic Product."

Consequently, estimates were aggregated for classifications that were disaggregated following the change in industrial classification.[63] The resulting data sample includes estimates for fourteen industrial classifications and an aggregate estimate for all industries.

Along with zero values, the data includes unspecified, nonzero values between -$500,000 and $500,000, and values suppressed to avoid disclosure of data of individual companies. Consequently, there are missing FDI observations and unlike previous research, missing values are not converted to zero, or vice versa. Negative or zero values are indicative of U.S. MNEs' investment decisions and therefore essential when examining real options effects on irreversible investment. Inference drawn from estimations with erroneously truncated or censored FDI data would be tenuous at best.

Details on the total and average annual transactions and positions per industry in millions of U.S. dollars are presented in table 5. The largest share of U.S. outbound FDI transactions and positions over the previous thirty-year period have been within the wholesale trade industry. Chemicals and allied products are second, followed by services. The maximum observation of U.S FDI transactions occurred in 2011 and involved six-hundred and sixty-four billion USD of outbound capital flows to the Netherlands for the "other industries" classification. The minimum amount is over nineteen billion USD in net disinvestment also from the Netherlands for "other industries."

[63] For example, prior to 1999, "computer and electronic products" was not recorded as a separate industry classification, but rather was included in the classification, "electrical equipment, appliances, and components." As such, all estimates after 1999 of the two separate classifications were combined to maintain consistency.

Bilateral distance is sourced from the Centre d'Études Prospectives et d'Informations Internationales (CEPII) GeoDist database[64] developed by Mayer and Zignago (2011). The variable measures the great circle distance in kilometers between Washington D.C. and the capital city of the partner country. Population data is from the World Population Prospects[65] (The 2015 Revision) of the United Nations Department of Economic and Social Affairs Population Division. Data on national accounts including GDP and GDP by type of expenditure is also sourced from the UNCTAD statistics data center. GDP, gross-fixed capital formation, exports, and imports in constant (2005) prices and constant exchange rates (2005) are utilized in the computation of the bilateral size, similarity index, trade-costs, surrounding-market potential, and capital stocks ratio measures. Similar to Blonigen et al. (2007), the trade-cost measure is calculated as the inverse of an "openness" measure,[66] which itself is equivalent to exports plus imports divided by GDP. The capital stock of a country is estimated by the perpetual inventory method using gross-fixed capital formation (investment). Following Baltagi et al. (2007), the initial value of capital stocks is chosen so as not to impact the estimated time series. Choosing 1972 as the initial year, a country's capital stock is given by $K_{1972} = 2\sum_{1974}^{1976} I_t$, where I_t denotes investment in year t. The depreciation rate (δ) is assumed to be 7%, and the annual capital stocks are computed by the perpetual inventory method: $K_t = (1-\delta)K_{t-1} + I_t$. The U.S. to partner country i capital stocks ratio for year t is therefore given by $k_i = K_{US,t}/K_{i,t}$.

[64] The GeoDist can be found at: file://localhost/(http/::www.cepii.fr:anglaisgraph:bdd:distances.htm.
[65] The World Population Prospects can be found at: http://esa.un.org/unpd/wpp/.
[66] The openness measure used in Blonigen et al. (2007) is reported by the Penn World Tables. To maintain consistency, data from the UNCTAD statistics data center is used instead.

Subsection 2: Political Risk Variables

The country composite and political risk variables are computed as the inverse of the twelve month average of the corresponding monthly composite and political risk ratings published by The PRS Group International Country Risk Guide (ICRG). The ICRG political risk rating attempts to assess the political stability of countries on a comparable basis by assigning risk points for a series of component factors, including among others, government stability, law and order, democratic accountability, and bureaucracy quality. The ratings are ubiquitous in empirical studies of cross-country FDI and regularly used by firms to inform investment decisions in foreign markets. The risk ratings range from a maximum of 100, indicating the least risk, to a minimum of 0, signifying the highest risk. The ICRG composite risk rating is equal to the sum of three separate risk ratings (political risk, financial risk, and economic risk) divided by two. The composite risk ratings in the full sample of fifty four countries range from slightly under 4 to slightly over 95, while the political risk ratings range from 4.25 to 97. The composite and political risk variables used in the estimations are the inverse of the ICRG risk ratings. Hence, the maximum political risk value of 0.235 indicates the riskiest political environment in the data sample.

Subsection 3: Political Regime and Political Transition Variables

Data on political regime characteristics and transitions is sourced from the Polity IV[67] annual time-series data set. The Polity IV data set codes general institutionalized authority traits for a distinct polity. The polity as the unit of analysis is conceptualized as a class of "authority patterns" that are "equivalents of state-organizations (Eckstein and Gurr, 1975: 25)." Although authority patterns include "a set of asymmetric relations among hierarchically ordered members of a social unit that involves the direction of the unit (Eckstein and Gurr, 1975: 22)," the Polity IV project focuses specifically on the most formal class of polities, "states operating within the world's state system (Marshall *et al.*, 2014: 1). The state is defined as the spatially delimited central authority for a social unit. Polity IV, therefore, codes only information about the authority patterns of the state regime and excludes information on the territorial scope of the state authority or the traits of non-state polities within its borders. As the dependent variable and many of the explanatory variables are sourced from the UNCTAD statistics database, the recognition of a state entity by the United Nations determines the countries included in the sample. The *Polity score* variable used in the data sample is equivalent to the revised combined Polity score measure, or POLITY2 variable in the Polity IV data. The combined Polity score of a country is computed by subtracting an operational indicator measuring the degree of institutionalized autocracy ranging from 0 (least autocratic) to 10 (most autocratic) from an equivalently operationalized variable measuring institutionalized democracy.

[67] The Polity IV data can be found at: http://www.systemicpeace.org/inscrdata.html.

Hence, the variable ranges from -10 (strongly autocratic) to +10 (strongly democratic).

The five categories of regime types are constructed from the Polity IV data based on their definitions in "A Global Model for Forecasting Political Instability" by Goldstone et al. (2010). Goldstone et al. (2010) use two variables[68] from the Polity IV data set to derive a two-dimensional space in which the five categories are identified. *Full autocracies* include repressive one-party states, absolutist monarchies, and authoritarian dictatorships. *Full democracies* are characterized by free and fair elections with institutionalized and open access to political participation. Between the two extremes are the intermediate categories of *partial autocracies* and *partial democracies*. Partial autocracies are characterized by either competitive national elections with repression, or substantial political participation but without legitimate competitive elections for the office of chief executive. Regimes that do hold competitive elections and allow political competition without repression, but where elections are not truly legitimate or political participation is not well institutionalized, are categorized as partial democracies. The final category is *partial democracies* that exhibit politically consequential degrees of *factionalism*. Polity refers to factionalism as "a pattern of sharply polarized and uncompromising competition between blocs pursuing parochial interests at the national level… often accompanied by confrontational mass mobilization (Goldstone *et al.*, 2010: 196)." Additionally, there are periods during which a regime can not be placed within the two-dimensional space. These include *interruption* periods, where a country is

[68] The Polity IV scale for a regime's openness of executive recruitment (EXREC) is used as a measure of contestation and the scale of the competitiveness of political participation (PARCOMP) is used to capture the extent and variation of inclusiveness.

occupied by foreign powers and is therefore under the authority of an external polity, *interregnum* periods, during which there is a complete collapse, or failure, of central state authority, and *transition* periods, during which new political institutions are planned and implemented. The frequency of country-years of each regime type are presented in table 1. In contrast to the UNCTAD full data sample where roughly one quarter of all countries were full democracies, nearly half of all U.S. partner countries were full democracies for at least one year during the period of 1984-2013. While partial democracy with factionalism is also the second most common type in the UNCTAD full data sample, unlike the UNCTAD full sample, partial democracies were more prevalent than full autocracies and partial autocracies.

Polity IV defines a "regime transition" as a three or more point change in the same general direction of either the democracy score or autocracy score of a polity occurring within three years or less of the previous change (Marshall *et al.*, 2014). A *major democratic transition* involves a six-point Polity score change in three years or less including a shift from autocracy to partial democracy or to a full democracy. A *minor democratic transition* is defined by a three to five point increase in the Polity score within a three year period and accompanied by a shift from an autocracy to a partial democracy, or a partial democracy to a full democracy. A *positive regime change* is denoted by a three or more point increase in the Polity score but without a shift in regime type. A *negative regime change* involves a three to five point decrease in the Polity score, while an *adverse regime change* is defined by a six or more point decrease in the Polity score or a revolutionary transformation in the mode of governance that is not a democratic transition. In the case where there is a three point

change in either the democracy or autocracy score, and there is little to no change in the Polity score, the regime change type is specified as "no change in Polity score." In addition to these regime transition types, certain countries experience substantial changes in regime that involve a period of *interruption* or *interregnum.* Table 2 presents the frequency of regime change types during the sample period. Over half of regime changes resulted in little or no change in the Polity score. The second most frequent regime change type was major democratic transitions, accounting for over twenty-eight percent of the total regime changes in the sample. Autocratic transitions accounted for less than seven percent of all regime changes, while democratic or positive changes accounted for almost forty percent.

To operationalize the dummy variable indicating the onset of a regime change, I use the Polity IV variable denoting the ending year of the previous regime and the beginning of a regime transition (EYEAR). All country-years with values for the variable are codified as experiencing the onset of a regime change. The specific type of regime change onset is determined by the value of the *regime transition* variable in the Polity IV data set when the onset of a regime change occurs. The *year after regime change onset* is a dummy variable denoting the year following to the onset of a regime change. The *year after regime change onset* may indicate the year after the completion of a regime change, if the transition was completed in the same year of its onset. Alternatively, in a multi-year transition, the lead of regime change onset may indicate a year within the transition period. Variables denoting the year prior to the onset of a regime change and the completion of a regime change were also

constructed and include in some of the econometric models, but neither produced any statistically significant results.

The regime transition standard is used to define the dissolution of an established polity and the initiation of a new polity, and delivers a measure of the vulnerability and durability of a specific regime and its authority patterns (Marshall *et al.*, 2014). The *regime durability* variable, thus measures the total number of years since the most recent regime change. The calculation of the regime durability variable assigns a zero value to the first year following a regime change during which a new polity is established. The average durability of all regimes in the sample is approximately thirty-nine years, roughly ten years more than the mean of the UNCTAD full sample. The most durable regime is in the sample is Switzerland, with one hundred and sixty-five years without a regime change.

As in the previous chapter, three samples are used in the empirical analyses. The full sample is uncensored and includes 22,680 observations for 54 countries for 14 industries across the full thirty-year period. The sample is then split into two sub-samples, one including observations on twenty-two members of the OECD for the full thirty-year period, and the other observations for the same period for twenty-six countries not members of the OECD. Descriptions of the OECD sub-sample are provided in tables 11 – 14, and non-OECD sub-samples are presented in tables 16 – 18. The contrast between the two samples is apparent, particularly for tables that tabulate regime type and regime changes. In table 12, almost ninety-five percent of all OECD members are full democracies, with none of the members categorized as autocratic. The non-OECD sample, however, indicates that only thirteen percent are

full democracies. The most frequent regime type in the non-OECD sample is democracy with factionalism with over forty-three percent, which, recall, were found to be the most unstable regime type in the Goldstone et al. (2010) study. The frequency of autocratic regimes was approximately one quarter of the total in the non-OECD sample. The OECD sample includes only seven instances of regime change, with all seven events resulting in little to no net change in the Polity score. One case of transformation was observed denoting the unification of Germany in 1990. Conversely, the non-OECD members experienced seventy-three cases of regime change. Like the OECD sample, the majority resulted in no change in the Polity score, however, unlike the UNCTAD non-OECD sub-sample, where seventeen percent resulted in less democracy, less than ten percent were negative or adverse regime changes in the U.S. non-OECD partner sub-sample Overall, OECD members have received nearly five and one-half times as much FDI flows as non-OECD countries (table 11). Descriptions of Polity traits in tables 14 and 18 also reveal substantial differences. The average durability of a regime in non-OECD countries was only twenty-five years, while OECD-member regimes lasted on average sixty-two years.

Section 4: Empirical Results

The estimation results of the bilateral gravity models for the full sample are first presented and discussed, followed by the results for the OECD sub-sample. The results for the non-OECD samples are subsequently reviewed. As a consequence of the number of missing values, spatial econometric techniques could not be applied.

Estimation of spatial econometric models with missing dependent variable observations require either conversion to zero, or the use of Tobit regression. As previously argued, in either case, interpretation of the estimation results would not only be unsound, but also incomparable to those of the spatial models in chapter 1. Nonetheless, as specified in Eq. (1) and (2), the *SMP* variable is included to capture a key dimension of spatial dependency. Accordingly, the bilateral gravity models are estimated with standard econometric techniques.

Subsection 1: Estimation Results – Full Sample

Estimation results for the full, 54 country sample are presented in tables 7-10.2. In table 7, the baseline specification in Eq. (1) is estimated with both FDI transactions and FDI positions as the dependent variable. The results in table 7 are OLS estimates with random-effects and presented for comparison purposes. The distance, population, bilateral size, similarity index, and trade costs variables are significant and indicate the expected negative sign. The capital stocks ratio is positive for both transactions and positions, while the *SMP* is negative for positions only. The positive effect of a greater capital stocks ratio combined with the negative effective of a larger surrounding-market potential suggest the prevalence of vertical integration strategies motivated by efficiency seeking. That is, at the aggregate level, U.S. MNE's seem less interested in exploiting capital endowments in partner countries, or serving regions through an export-platform strategy, and more likely searching for low-cost environments to locate stages of productions. Paradoxically, and similar to the results in the previous chapter, the greater the investment risk in the partner country, the more U.S. outbound FDI it seems to receive. The estimations in

table 7 include the log of the inverse of the ICRG Composite Risk Rating and Political Risk Rating of the partner countries. For future estimations, just the inverse of the risk measures are used without taking the log.

The result of a Hausman test indicates that a fixed-effects estimator should be used. Consequently, the distance variable is dropped when Eq. (1) for FDI transactions (capital flows) is estimated by OLS with both country and industry-fixed effects. In table 8, the baseline specification is estimated with the composite risk and corresponding political risk of the partner country. The results in column (6) are different than those of the random-effects estimations in (1). The similarity index, capital stocks ratio, and partner composite risk are all no longer significant. When estimating the OLS fixed-effects model with the partner political risk variable, the capital stocks ratio becomes significant again. However, the data exhibits heteroskedasticity and thus, robust standard errors are required in the estimation procedure. Accordingly, the appropriate estimation results for the baseline specification are in column (8). The results show that U.S. outbound FDI increases with bilateral size and decreases with both trade costs and the population of the partner country. Notably, the partner political risk variable is not significant, while the *SMP* and capital stocks ratio also lose statistical significant when using robust stand errors. Consequently, the same inferences regarding U.S. MNE integration strategies made for the random-effects results in column (5) may be drawn for the fixed-effects results in (7). However, when correcting for heteroskedasticity as in (8), the results do not provide evidence of the predominance of any one configuration type.

The partner regime characteristics are introduced into the baseline specification and the OLS fixed-effects estimation results with robust standard errors are presented in table 9. The results indicate that full autocracies receive more U.S. outbound FDI than other regime types. Additionally, full democracies and partial democracies with factionalism receive less FDI, with full democracies, on average, receiving the least. Recall that for the equivalent specification of the local model for the full sample estimations of the previous chapter (table 8), similar results were found. That is, irrespective of the origin of the direct investor, partial democracies with factionalism and full democracies receive less inward FDI flows. The difference is that unlike for outbound FDI from the U.S., the full autocracy variable was not significant for inward FDI flows. Moreover, when including the regime durability variable in the previous chapter's local model, partial autocracy became significantly negative. This is in contrast to the U.S. outbound results in column (9), where without including regime durability, it is positive, but insignificant. Additionally, when the various categories of regime type are included in the estimation, the negative capital stocks ratio variable becomes significant again. Given these results, a more detailed investigation is appropriate before making any inferences.

When disaggregating U.S. outbound FDI capital flows by partner countries categorized as full autocracies across the four previous decades, eight countries appear. Since 2000, only China, Egypt, Saudi Arabia, and the United Arab Emirates (UAE) were categorized as full autocracies. Of that group, China, Saudi Arabia, and the UAE feature in all four decades. Only China received positive capital flows for each year in the sample, while Saudi Arabia and the UAE both saw a net

disinvestment of U.S. MNE capital for nine of the thirty-years. Yet, only two years resulted in an aggregate net disinvestment for full autocracies. Furthermore, all three consistently autocratic countries have not experienced the onset of regime change during the thirty-year sample period. The detailed data reveals that U.S. FDI to China is the principal cause for the significantly positive coefficient on the full autocracy variable, while regime durability seems be an additional factor. As such, regime durability is included in the model estimations and emerges as positive and significant in columns (11) and (12) in table 9. The estimations in column (12) also include the Polity score, which has a negative and significant sign. Hence, the less democratic the polity, the more FDI it will receive from the U.S. This is also consistent with the results in the previous chapter, where the Polity score variable was negative across all three samples, but only significant for the full sample.

As a further test of the impact of regime durability on U.S. outbound FDI flows, the interaction of regime type and regime durability is included in the OLS fixed-effects estimations in column (13) of table 10.1. Interestingly, with the exception of full autocracies, all other regime types receive more FDI from the U.S. when their regimes are more durable. This is in contrast to the results in chapter 1, where the more durable the full autocracy, the more inward FDI flows it is expected to receive. It is notable that this is the first estimation for which bilateral size is not significant and the negative similarity index variable is significant. Additionally, the negative capital stocks ratio variable is now significant at the 5 percent level, while it was previously only so at the 10 percent level. A comparison of the results in estimations (9) and (13) implies two possible outcomes: (1) U.S. outbound FDI to full

autocracies is predominantly motivated by factors other than regime durability, and (2) new democracies are less likely to receive FDI from the U.S. than more durable democracies. The estimation results in (15), however, suggest that the second inference may be premature. The year of the onset of a democratic transition in a partner country is associated with an increase in FDI from the U.S, while neither onsets of autocratic changes are significant. The results for the same variables in the full sample, local model in chapter 1 indicate that only the onset of a major democratic transition was positive and significant. Additionally, for both U.S. outbound FDI flows and the inward FDI flows estimations for the full sample in chapter 1, the onset of regime change and the year after the onset of a regime change resulted in more FDI to the host country. However, in table 9 of chapter 1, the interaction of the onset of a regime change and the lag of durability, i.e., the durability of the regime one year prior to the onset of the regime change, was not significant. Conversely, in estimation results (18) in table 10.2 for bilateral U.S. outbound FDI, the more durable the regime prior to the onset, the more FDI it received from the U.S.

The results of the bilateral, gravity-type estimations of U.S. outbound FDI to all partner countries suggest that, similar to the results for inward FDI flows in chapter 1, regime durability is a significant determinant. However, the two results differ considerably as to the effect of regime durability for specific regime types. For the local estimations in chapter 1, only a full autocracy seems to attract greater FDI inflows when it is more durable. Conversely, the only regime type that does not attract more U.S. FDI capital when it is more durable is a full autocracy. In addition

to this distinction, U.S. outbound FDI responds positively to the onset of any move towards more democratic institutions, while inward FDI flows of pooled origin only increase during the onset of a major democratic transition. Furthermore, the durability of a regime in the year prior to any changes in its polity attributes is a significant determinant of U.S. outbound FDI, but not of inward FDI flows of indeterminate origin. Before making any inferences about the similarities and contrasts of the full sample results, further comparisons of the analyses of their OECD and non-OECD sub-samples may be pertinent.

Subsection 2: Estimation Results – OECD and non-OECD Sub-samples

The OECD sub-sample used for the bilateral U.S. outbound FDI estimations is nearly equivalent to that used in the previous chapter. The previous chapter's OECD sample included 690 observations for 23 countries for the period 1984-2013. The USDIA sample includes 660 observations for 22 countries for the same period. Both samples include the same seven instances of a regime change that resulted in little to no change in the Polity score. The USDIA OECD sample, however, does include one instance of transformation,[69] while the cross-sectional units are defined by both country and industry. Consequently, the two OECD sub-samples are highly comparable and allow for valid cross-model inferences.

The baseline results with polity attributes for bilateral U.S. outbound FDI capital flows to OECD partner countries are presented in table 15.1. The results in column (19) are OLS estimations without fixed-effects and robust standard errors, while those in columns (20) and (21) include country and industry fixed-effects. Due

[69] Recall this refers to the unification of Germany in 1990.

to the outcome of the Hausman test and the presence of heteroskedasticity, the appropriate estimation includes fixed-effects and robust standard errors and is presented in (21). In contrast to the results in (19) and (20), none of the explanatory variables are significant in estimation (21) when including the Polity score and regime durability variables. Although not presented in table 15.1, the baseline fixed-effects estimation with robust standard errors, i.e., without both polity attributes, does result in a positive and significant coefficient on bilateral size. Interestingly, as evident in table 15.2, the onset a regime change variable becomes the only significant regressor in the same model. When disaggregating the onset of a regime change into its two component types, the onset of little to no change in the polity score is positive and significant, but the onset of the one transformation event is not.[70] Surprisingly, the year prior to the onset of a regime change is positive and significant, while the year after the onset of a regime change is not significant. In chapter 1, the opposite was true, and the conclusion drawn was that real options effects were causing a delay in investment, which then rebounded after the level of political uncertainty diminished. The results of the estimations in table 15.2 indicate that OECD countries that experienced regime change received, on average, more capital flows from U.S. MNEs the year prior to the onset of regime change, and during the year of the onset, but not the year after the onset. This implies divergent behavior from the aggregate on the part of U.S. MNEs during these regime changes. Recall that none of the OECD regime changes resulted in more than a change of two points in the Polity score. Yet, these relatively modest changes were enough to result in a negative,

[70] These results were excluded from table 17.

although not significant, onset of regime change variable, and an insignificant year prior to the onset of regime change variable in the OECD sub-sample estimations in chapter 1. What is perplexing is that U.S. MNEs did not follow the trend and increase capital flows the year after the onset, but rather did so the year during the onset, when uncertainty is expected to be at its maximum. This suggests one of two possible explanations for the divergence in timing of option exercise: (1) U.S. MNEs did not exhibit ambiguity aversion and thus, did not compute their expected profit according to the worst-case scenario, or (2) U.S. MNEs were more certain about the likelihoods of future states following the regime change and therefore, pursued investment during the onset as a strategic decision. The first explanation assumes that, as in the multiple-priors model proposed by Gilboa and Schmeidler (1989) and further developed by Epstein and Wang (1994), the degree of ambiguity from these regime changes and the ambiguity aversion of the agent are confounded. That is, the degree of ambiguity perceived by MNEs is consistent, irrespective of their origin, and only U.S. MNE's did not exhibit ambiguity aversion. The second explanation assumes that U.S. MNEs formed a different set of one-step-ahead probabilities and determined that the termination payoffs were greater than the value associated with waiting. Hence, U.S. MNEs were induced to exercise the option earlier. To evaluate which of the two explanations is likely more valid, an examination of U.S. outbound FDI patterns during different types of regime changes is essential. If U.S. MNEs exhibit similar behavior to other MNEs, and prefer to delay investment during other types of regime changes, then it is unlikely that they do not exhibit ambiguity

aversion. As such, U.S. outbound FDI activity to non-OECD partners is subsequently examined.

A total of twenty-one non-OECD countries experienced seventy-four incidents of regime change. In table 17, the frequency of each type of regime change for non-OECD countries is presented. The majority of cases resulted in little to no change in the Polity score, while the second most frequent type were major democratic transitions.[71] The baseline specification estimations with polity attributes are presented in table 19.1. As with the OECD sub-sample, the various tests of the non-OECD sub-sample data indicate that a fixed-effects estimator and robust standard errors should be included in the estimation procedure. In contrast to the OECD results, where none of the explanatory variables were significant, the population, trade costs, and Polity score variables are all negative and significant, while the similarity index is positive and significant. Although insignificant for the robust estimation in (26), the bilateral size and capital stocks ratio variables are negative. This represents the first estimation results where the bilateral size variable is negative. Moreover, although positive, the regime durability variable is not significant. As with the full sample, the lower the Polity score, the more FDI from the U.S. the partner country is expected to receive.

In table 19.2, the effect of the onset of a regime change in non-OECD countries on U.S. outbound FDI is estimated. The results in column (27) indicate that the year of an onset has no significant effect on U.S outbound FDI to non-OECD countries. This is in contrast to both the full sample and OECD sub-sample results,

[71] The undefined event is Egypt in 2012, where the Polity IV has yet to designate a regime change outcome.

where the regime change onset variable was positive and significant. While the year prior to the onset of regime change in OECD countries resulted in a positive effect on U.S. outbound FDI, it has a negative effect for non-OECD countries. Furthermore, the year after the onset of regime change is negative, but insignificant for non-OECD countries. When disaggregating regime change onset into its six categories as presented in column (30) of table 19.3, only a positive regime change in a partner country results in more FDI from the U.S. This is substantially different from the full sample results in table 10.1, column (15), where all changes towards more democratic institutions, and little to no change in the Polity score, resulted in more FDI from the U.S. Furthermore, in column (31), the indicators for the year prior to the onset of a major democratic transition and the year prior to little or no change in the Polity score are negative and significant, while the year prior to the onset of a negative regime change is positive and significant. None of the indicators for the year after any of the regime change types is significant. For the local model estimations of the non-OECD sub-sample in chapter 1, only the year after the onsets of a minor democratic transition and positive regime change were significantly positive. The FDI activity of U.S. MNEs during regime change onsets is once again divergent from that of aggregate, world-wide MNE FDI activity. A closer look at some of these cases may provide more valuable insight.

There are two cases of the onset of a negative regime change in the non-OECD sub-samples: (1) Ecuador in 2000 and (2) Thailand in 1991. In 1999, Ecuador had a Polity score of 9 and was categorized as a partial democracy with factionalism. The following year it experienced a coup, which resulted in its Polity score dropping

to 6 and its regime type changing to a partial democracy. In 2001, the year after the onset of its negative regime change, its Polity score and regime type did not change. In the case of Thailand, in 1990 it was categorized as a partial democracy with a Polity score of 3. The following year, it experienced a military coup resulting in a Polity score of -1 and partial autocracy. The year following the coup, Thailand's Polity score substantially increased to 9 and it transitioned to a democracy with factionalism. The results of estimation (31) in table 19.3 reveal that both countries received, on average, more FDI from the U.S. the year prior to their military coups. While, as is apparent in the estimation results in (32), no significant increase in FDI from the U.S. to these countries was observed the year after their coups. Again, this is in contrast to the results in chapter 1, where for an additional eight cases of the onset of a negative regime change, no such significant increase in inward FDI flows was observed, before, during, or after the onset.

Similar to the results in the full sample, non-OECD partner countries categorized as full democracies or partial democracies with factionalism are, on average, associated with less FDI from the U.S (table 19.4). However, in contrast to the full sample, full autocracies are not associated with significantly more FDI. Furthermore, the more durable the partial autocracy, the more FDI it should receive from the U.S., while the more durable the full democracy, the less FDI it should receive. This is, again, in contrast to the full sample results, where, with the exception of full autocracies, the more durable the regime type, the more FDI it is expected to receive from the U.S. These results reveal a disparity between U.S. MNE FDI flows to OECD and non-OECD partner countries.

The results of the estimations of bilateral U.S. outbound FDI to non-OECD countries support the assertion that U.S. MNEs do exhibit divergent behavior from aggregate, global FDI activity. U.S. outbound FDI to OECD partners was greater during the onset of a regime change and the year prior to the onset of a regime change. For non-OECD countries, however, it was significantly negative for the year prior to the onset of a regime change, while insignificant for the year of an onset of regime change, and the year after an onset. Upon disaggregation of regime change type, only positive regime changes were associated with greater FDI flows from the U.S. during their onset. Moreover, the year prior to the onset of a major democratic transition and that of little to no change in the Polity score were associated with less FDI from the U.S. While, in contrast, the year prior to a negative regime change onset, i.e., two cases of military coups, is associated with significantly more FDI flows from the U.S. Recall that the divergence in the timing of option exercise during the onset of regime changes in OECD countries suggested one of two possible explanations. The first stated that U.S. MNEs did not exhibit ambiguity aversion, and thus did not estimate their expected future profits according to the worst-case scenario. The second conjectured that U.S. MNEs formed a different set beliefs about the future states of these countries leading them to exercise the option earlier than non-U.S. MNEs. In the non-OECD sub-sample estimation results, U.S. MNE FDI activity responds during and prior to the onset of regime changes, but never after. If U.S. MNE FDI activity exhibits a lack of ambiguity aversion, then controlling for political risk, all onsets of regime change in non-OECD countries would be associated with more FDI. In particular, the same type of regime change as in the

OECD estimations, i.e., onset of little to no change in the Polity score, should be associated with more FDI from the U.S. Yet, this is clearly not the case. Although the cases of regime change onsets are different than those in the non-OECD sub-sample in chapter 1, the results suggest that U.S. MNEs seem to form different sets of probability measures about the future states in these countries, even prior to the actual onset of the regime change. That is, they perform assessments with a different set of uninformative priors,[72] and hence, likely a different information set. If this were not the case, then U.S. MNEs, on average, should behave similarly to other MNEs with regards to these events, particularly the year prior to their onset when uncertainty should be lower than during the year of the onset. The implications are that U.S. MNEs seem to incorporate different, or additional, sets of information when making their decisions during these periods of political instability in partner countries.

Section 5: Conclusions

Existing explanations and corresponding estimations of outbound FDI activity primarily focus on two principal causes: (1) bilateral and multilateral determinants that capture the economic motivations of MNEs and (2) investment impeding characteristics of host countries. The first category considers economic-size related factors (demand) and production cost-related factors (supply). The second mostly relates to entry barriers and the degree of risk associated with an irreversible investment in the host country. Such risk is essentially determined by the likelihood

[72] In Bayesian inference, an uninformative prior, or "objective prior," refers to specific choices of *a priori* probabilities, and are in contrast to informative priors that express precise, definite information about a variable.

of opportunism by local partners and government institutions. In theory, the likelihood of the various types of opportunism and their associated losses may be described by a single probability measure. When political shocks occur in the form sovereign discontinuity or rapid shifts in the polity attributes of host countries, the engendered political uncertainty induces MNEs to delay or redirect investment. This predicted behavior derives from the inability of MNEs to form accurate probability assessments of the relevant future conditions of the host country. Theoretical explanations rely on confounding the degree of ambiguity in these environments with the ambiguity aversion of MNEs. Under this assumption, there should be little cause for systematic deviation from predicted behavior in these circumstance. Yet, there is empirical evidence of divergent patterns of U.S. outbound FDI to host countries in the periods surrounding their regime changes.

Preceding estimations of inward FDI flows of pooled origin identified real options effects on FDI to OECD countries during regime changes. Although relatively modest in degree, these political shocks seem to induce delays in investment during their onset, and spikes in investment the year after their onset. In contrast, for the same seven instances of regime changes, U.S. MNE capital outflows exhibit unpredicted behavior. U.S. outbound FDI to OECD countries experiencing regime change were characterized by a statistically significant increase in both the years prior to, and the year of the onset of the change, rather than the year after the onset. Furthermore, U.S. outbound FDI to non-OECD countries during the periods before and after regime changes also displayed distinct patterns. Non-OECD countries, on aggregate, saw significantly less FDI from the U.S. the year prior to the

onset of a regime change. When evaluating the effect for different types of regime changes, the year prior to the onset of a major democratic transition in non-OECD countries was associated with significantly less FDI from the U.S. Conversely, the year prior to the onset of a negative regime change in non-OECD countries was related to significantly more FDI.

There seems to be no indication in the results that U.S. MNEs do not exhibit ambiguity aversion, but during some instances of regime change, they engage in FDI activity that, theoretically, would imply a different set of priors informing their probability assessments. This evidence of divergent behavior on the part of U.S. MNEs begs the question of its ultimate causes. At present, commenting on the sources of these unique information sets would be purely speculative. Yet, the distinct status of the U.S. as the paramount hegemon should not be ignored in any future investigations of this phenomenon.

Chapter 3: Firm Level Extensions – Cross-border Deals and Political Uncertainty

Section 1: Introduction

The uncertainty in environments characterized less durable, non-democratic regimes ordinarily incentivizes holding the option to invest so as to wait for new information that may "affect the desirability or the timing of the expenditure (Dixit and Pindyck, 1994: 3)." Thus, it is reasonable to expect that MNEs will either delay foreign direct investment during the onset of polity changes, or choose alternative locations absent of higher uncertainty. The impetus to enter markets under these conditions is weak, however, MNEs with capabilities developed in challenging environments may choose the investment option as a strategic action (Cuervo-Cazurra and Genc, 2008; Darby, Desbordes, and Wooton, 2010; Dixit, 2011; Lall, 1983; Wells, 1983). The experience and competencies of MNEs from emerging markets may encourage a willingness to pursue a first mover strategy in transition countries. Lending credibility to this prospect is that South African, Chinese, and Indian firms made the majority of cross-border mergers and acquisitions in sub-Saharan Africa in 2013. South Africa and China alone accounted for 46 percent of purchases (Reuters, 2014). While most of these deals were in the energy and materials sector, the emergence of a middle class is attracting FDI in services such as banking, retail, and telecommunications (UNCTAD, 2012a). Accordingly, firms pursuing FDI under political transition may differ in their characteristics from those choosing to withhold investment. Moreover, investing MNEs may alter their optimal capital structure when faced with the presence of political uncertainty. In particular, the choice of

initial ownership structure must consider not only the effects on agency costs and the value of the affiliate, but also the exposure to political risk (Kesternich and Schnitzer, 2010).

At present, examinations of the impact of the political attributes of host countries on their inward FDI flows have been exclusively at the aggregate level. As such, in order to further identify if the regime types and regime changes of host countries affect the FDI they receive, and to evaluate whether there is also evidence that the attributes of the direct investor's country impact FDI patterns, firm-level data is utilized in gravity-type econometric models. Specifically, as one of two modes of MNE entry, a detailed sample of cross-border mergers and acquisition deals are examined for evidence of systematic variation across the different economic and political types of the host and origin countries.

The chapter will proceed as follows. First, the motivations behind MNE choices of FDI modes are explored. Next, the various effects of different aspects of the political environment on cross-border deal activity are examined. The econometric approach is then presented, followed by the data. The empirical results are subsequently discussed, and finally, concluding remarks are provided.

Subsection 1: Choices in Foreign Direct Investment Modes

If a firm chooses direct investment to serve a foreign market over exporting or licensing agreements, it must still determine how it will establish operations in the foreign country. Two options are available to the firm, building an establishment in the foreign country, referred to as a greenfield investment, or acquiring (or merging with) an existing firm in what is known as a cross-border merger and acquisition

(M&A). Theoretical arguments have been proposed to explain the motivations behind the choice of FDI mode of entry. The resource-based view identifies access to heterogeneous and complementary intangible assets, or "capabilities," as the key driver for M&As. Nocke and Yeaple (Nocke and Yeaple, 2008) argue this view is supported by the fact that the majority of M&As in the U.S. are not at the corporate level, but rather involve individual plants and divisions (Maksimovic and Phillips, 2001). They assert, "these observations show that firms are in the business of buying and selling corporate assets and that these assets are heterogeneous and complementary (Nocke and Yeaple, 2008)." When M&As are cross-border, firms look to complement their intangible assets with imperfectly mobile country-specific capabilities (Nocke and Yeaple, 2007). In contrast, a greenfield investment is not intended to exploit complementarity in capabilities across firms but rather to transfer capabilities to another economic environment while maintaining internalization of operations. It is primarily location advantages such as cost savings in input factors and transportation that induce MNEs to build operational capacity in a foreign country.

Nocke and Yeaple (Nocke and Yeaple, 2008) develop a more formal extension of this view as an assignment theory of FDI to explain MNE's choice of FDI mode. They first identify that an important feature of the two modes of FDI is that they differ significantly in "the characteristics of the firms that engage in these modes as well as in the characteristics of the host countries in which firms invest (Nocke and Yeaple, 2008)." They present three key empirical findings as evidence for this systematic variation in the mode of entry for U.S. MNEs. First, U.S. MNEs

that choose greenfield investment are, on average, more efficient that those choosing cross-border M&A. Second, the more developed the host country, the more likely a U.S. parent firm will choose cross-border M&A over greenfield investment as the mode of entry. And third, the greater the geographical proximity of the host country to the U.S., the less likely U.S. MNEs choose cross-border M&A over greenfield investment. Consequently, these findings suggest that MNEs do not view cross-border M&A and greenfield investment as perfect substitutes (Nocke and Yeaple, 2008).

Building upon these empirical findings, Nocke and Yeaple (Nocke and Yeaple, 2008) develop a formal model where heterogeneous firms trade in heterogeneous corporate assets to exploit complementarities in the absence of trade costs. The importance of the host country's level of development in determining FDI mode choice implies differences in their wage levels, labor productivity, and in the distributions of entrepreneurial abilities (Nocke and Yeaple, 2008). Cross-country differences in wage and productivity give rise to both greenfield FDI, as firms transfer productive capacity from the high-cost to the low-cost country, and cross-border acquisitions, where two-way flows arise. Differences in entrepreneurial abilities, however, only give rise to cross-border acquisitions. The model proposes a number of empirical predictions. First, as production-cost differences between countries decrease, FDI will likely take the form of cross-border acquisitions. Second, firms in the high-cost country will prefer greenfield investment to cross-border acquisitions when the relative supply of corporate assets decreases in the low-cost country. Both predictions are consistent with the empirical finding that U.S. MNEs

are more likely to choose cross-border acquisition in developed countries and greenfield investment in developing countries. The other key prediction is that as set up costs for new production plants in the host country increases, firms will choose cross-border acquisitions over greenfield investment. This is also empirically supported, to the extent that set up costs increase with the distance between the U.S. and host country, U.S. MNEs will favor cross-border acquisition to greenfield investment the farther the host country.

In an empirically based examination of the determinants of M&A activity, di Giovanni (2005) identifies a number of key macroeconomic and financial variables. He finds that the size of financial markets, which is proxied by the stock market capitalization to GDP ratio, is positively associated with domestic firms investing abroad (di Giovanni, 2005). di Giovanni's (2005) results point to the significance of domestic financial conditions, or financial deepening, in driving cross-border M&A activity. In addition to these findings, Hijzen et al. (2008) show that although trade costs reduce cross-border merger activity at the aggregate level, the impact differs across horizontal and non-horizontal mergers. For horizontal mergers, the negative impact of trade costs is less than that for non-horizontal mergers, which is consistent with tariff-jumping motivations.

Section 2: Cross-border M&As and the Political Environment

Subsection 1: Cross-border Deals, Capital Structure, Political Risk and Political Uncertainty

Although there may be different motivations for MNEs pursuing cross-border deals rather than greenfield investment, as a type of irreversible investment, the real options effects of increases in risk, or uncertainty shocks (Bloom, Bond, and Van Reenen, 2007), should not differ among FDI modes of entry. Yet, the exposure to sovereign opportunism may induce firms to choose one entry mode over the other. In their examination of the effects of corruption on cross-border investment in emerging markets, Javorcik and Wei (2009) find that conditional on FDI taking place, greater corruption in host countries is associated with a greater probability of a joint-venture as the entry mode rather than a wholly-owned foreign affiliate. Furthermore, empirical findings establish that the ownership share of MNEs decreases with political risk (Asiedu and Esfahani, 2001; Javorcik and Wei, 2009; Kesternich and Schnitzer, 2010). Moreover, utilizing local partners in high-risk countries can help mitigate the exposure to creeping expropriation and direct extraction (Feinberg and Gupta, 2009; Konrad and Erik Lommerud, 2001; Müller and Schnitzer, 2006). Despite agency costs that may incentivize full vertical integration, the heightened political uncertainty and political risk during periods of political transition may induce alternative sub-optimal investment strategies. Partly owned subsidiaries and joint ventures may provide acceptable options as initial investment strategies. As the level of political uncertainty and political risk fall, an MNE may choose to increase its investment stake to enhance efficiency and counter agency costs.

Additionally, while a minority ownership may allow for mitigation of political risk, it can also present an increased risk and cost of knowledge or technology leakage. This can be particularly damaging in environments with high political risk, as poor enforcement of contracts and inadequate protection of intellectual property rights provides the opportunity for a local partner to engage in holdup, technology theft, and free-riding on the MNE's reputation (Dixit, 2011). Thus, when products are new or complex and R&D intensive, an MNE is more likely to prefer a greater initial ownership share. Consequently, the most appropriate structure will trade-off the risks and costs of sovereign opportunism with the risks and costs of agent opportunism.

Subsection 2: Cross-border Deals and Acquirer Origin

The levels of political uncertainty and political risk in a country have so far been assumed as homogenously evaluated by MNEs. This assumption, however, ignores the heterogeneity of MNEs' proficiencies in establishing foreign operations; MNEs are likely to differ in their capabilities and experience with FDI. Furthermore, the capabilities and experience may vary with the political and institutional environment. An MNE may have a history of FDI in more economically developed countries (MDC), but lack familiarity with investment in environments of poor governance. Alternatively, MNEs from less-developed countries (LEDC) emerged from environments of relatively high political risk and political uncertainty, allowing them to cultivate the capabilities to navigate in similar political settings. Their technologies and managerial skills may be better adapted for poor governance and low-skilled workers (Dixit, 2011). Furthermore, they are likely less constrained by

their own country's legal restrictions on bribery (Dixit, 2011). Consequently, the origin of MNEs may determine the parameters of their direct investment decisions; their tolerance for political risk and political uncertainty derives from their maturation environment. This contention is in line with empirical findings of variation in MNEs' investment activities on the basis of their origin. Cuervo-Cazurra and Genc (2008) propose that MNEs from LEDCs can transform the disadvantages of coping with risk and uncertainty in their home environments into advantages for adeptly establishing operations in other LEDCs. Moreover, they find that most large foreign firms in least-developed economies (LDCs), where corruption is highest, originate from LEDCs. Darby et al. (Darby *et al.*, 2010) find that poorer governance reduces FDI, but this effect is mitigated for investments from countries with comparably poor institutional quality. Further research has established the importance of ethnic networks for mitigating political risk (Fan, 1998; Li, Shuhe, Lian, 2001; Rauch, 2001), and the influence of cultural and political affinity on outward FDI from China (Chen, Edward K.Y., Lin, 2008).

The large inflows of FDI from LEDCs to commodity rich LDCs also imply a strategic imperative by the origin country to acquire natural resources (Reuters, 2014). Thus, while an MNE from an MDC may choose not to invest in an LDC on account of excessive levels of political uncertainty and political risk, an MNE from an LEDC may be more resilient to the political environment, or accept the associated risk to fulfill a strategic national objective. A strategic objective for an MNE from an LEDC may also be to acquire innovative technology that is only available in MDCs. This would be reflected in the value of endowments of the potential host countries.

Absent this location advantage, the critical value of FDI for the MNE will always be less than the value from investing in the country.

The ownership strategy of MNEs may also be influenced by their origin; MNEs from less-developed countries (LEDC) may possess capabilities suited to operating in high-risk environments. Hence, they may choose greater initial ownership shares than MNEs from more economically developed countries (MDC). Alternatively, MNEs from LEDCs may have experience in managing partners in such environments. Moreover, they may choose to utilize ethnic and other social networks as enforcement mechanisms to mitigate political risk. As Dixit (2011: 209) notes,

> *A network within a country can facilitate trade among its members and therefore act as an informal barrier to trade with other countries. But networks that link people across countries – based on common interests or features such as business connections, ethnic origin, religion, or language – can facilitate international trade and provide ways to overcome informational and governance barriers to trade.*

Consequently, an initial ownership structure that involves greater partner influence may allow MNEs to offset the risk of sovereign opportunism during political transition.

The direction of the transition, whether towards democracy or autocracy, may also influence the ownership structure. Recall that the amount of FDI affects the duration of democracy, which in turn affects the profitability of investment.

Expectations about the durability of the regime, or alternatively, the degree of sovereign vulnerability, may determine an MNE's estimation of future political risk. A country rapidly establishing democratic institutions may induce an MNE to choose a majority owned, or possibly fully owned, subsidiary when agency costs are high, or as a first mover strategy in an economic environment with potential for robust growth.

Section 3: Econometric Approach

The purpose of the econometric analysis is to identify how political risk and political uncertainty affect the acquisition behavior of MNEs of different origin countries and groups of origin countries. The econometric models are categorized into two principal models distinguished by their dependent variables. The first model involves whether an attempted acquisition is completed or withdrawn. The second focuses on the likelihood that a completed acquisition results in a full, one-hundred percent acquired stake. Thus, both models include binary dependent variables, and therefore, should be estimated by logistic regression. The baseline specification of model 1 where all explanatory variables except political risk are measured in logs is the following:

$$Completed_{h,i}\ (Withdrawn_{h,i}) =$$

$$\alpha_0 + \alpha_1 Bilateral\ size_{o,h} + \alpha_2 Similarity\ index_{o,h} + \alpha_3 Trade\ costs_{o,h} +$$

$$\alpha_4 Distance_{o,h} + \alpha_5 Political\ risk_{o(h)} + \varepsilon, \qquad (1a)$$

where the subscript h denotes the host country, or target firm's country, the subscript i denotes the target firm's industry, and the subscript o denotes the origin country, or acquiring firm's country. The time subscripts are ignored for notational purposes.

The baseline specification for model 1 is then modified to include polity attributes of the origin and host countries in the following:

$$Completed_{h,i}\ (Withdrawn_{h,i}) =$$
$$\alpha_0 + \alpha_1 Bilateral\ size_{o,h} + \alpha_2 Similarity\ index_{o,h} + \alpha_3 Trade\ costs_{o,h} +$$
$$\alpha_4 Distance_{o,h} + \alpha_5 Political\ risk_{o(h)} + \alpha_6 Regime\ type_{o(h)} +$$
$$\alpha_7 Polity\ score_{o(h)} + \alpha_7 Regime\ durability_{o(h)} + \varepsilon, \qquad (1b)$$

Estimation of the likelihood of an attempted cross-border acquisition being completed or withdrawn by MNEs of non-OECD origin country is tested with the inclusion of a non-OECD indicator variable. Model 1 is further modified to test the impact of the onset of a regime change on the likelihood of completion or withdrawal. As there are only two types of regime changes in the sample, the onset of each type is also tested with the inclusion of indicator variables. Further regressors and modifications of the dependent variable are made and discussed in the empirical results section.

For model 2, the dependent variable records if the acquisition involved a full, one-hundred percent stake, or not. The first estimation of model 2 tests the effects of the Polity score of the origin and host countries on the likelihood of a full acquisition, while the second tests the effect of the onset of a regime change on the likelihood of a

full acquisition. Finally, whether non-OECD based acquirer firms are more likely to acquire a full stake is also estimated. The specification of model is as follows:

$$Full\ Acquisition_{h,i} = \alpha_0 + \alpha_1 Bilateral\ size_{o,h} + \alpha_2 Similarity\ index_{o,h} + \alpha_3 Trade\ costs_{o,h} + \alpha_4 Distance_{o,h} + \alpha_5 Political\ risk_{o(h)} + \alpha_6 Regime\ type_{o(h)} + \alpha_7 Polity\ score_{o(h)} + \alpha_7 non - OECD_0 + \varepsilon\ , \quad (2)$$

Section 4: Data

The data used to construct the sample of cross-border acquisition is first described. Next, data on the bilateral economic and country specific variables is presented. Finally, data utilized as measures of political risk and data used to construct political regime characteristics and transitions are discussed.

Subsection 1: Cross-border Acquisition Variables

Cross-border acquisition data is sourced from the Zephyr database through the Orbis[73] product, procured from Bureau van Dijk. The Zephyr database includes comprehensive information on mergers and acquisitions, including deal types, deal status, and initial, acquired, and final stakes. The sample covers the seventeen year period of 1997-2013. The sample includes 17,124 deals for 53 different acquirer country origins and 80 different origins of target countries. There are 155 different NAICS industry codes for acquiring firms and 220 NAICS codes for target firms. Each deal is specified by a *deal number* unique to the acquirer, target, acquirer

[73] More information on the Orbis product can be found at: http://www.bvdinfo.com/en-gb/our-products/company-information/international-products/orbis.

industry, and target industry. For a deal number there may be multiple *deal id*'s which are unique identifiers for different statuses of the same deal at different points in time. Each deal number has one deal id denoting the *final deal status*, which may take on one of seven states: (1) rumored; (2) rumored – expired; (3) announced; (4) pending; (5) pending – awaiting regulatory approval; (6) withdrawn; or (7) completed. If a deal is completed, it will be given an *initial stake*, *current stake*, and *final stake*. For example, if the deal was never rumored, and involved a full, one-hundred percent initial acquisition, then it will be associated with two deal id's, the first for the announcement date, and the second for the acquisition date. In this case, the deal's initial stake, current stake, and final stake will all indicate a value of one-hundred percent. If the deal is rumored, then announced, but ultimately withdrawn without the acquisition of any equity in the target firm, then it will be associated with three deal id's. The first denotes the date the rumor began, the second the date of announcement, and the third the date of withdrawal. In this case, the initial stake, current stake, and final stake, are all zero. Thus, the data is nested, with multiple observations per deal, per industry, per country, per year.

Indicator variables are created for two types of final deal status, one for deals completed, and the other for deals withdrawn. Another indicator variable is created for deals that involved a full, one-hundred percent initial acquisition. Therefore, if a deal involved multiple, increasing stakes until full acquisition, it was not identified with a value of 1 for the variable, but rather 0. These two indicator variables are used as the dependent variable in models 1 and 2 respectively. Additionally, dummy

variables to control for host country-specific heterogeneity and target industry-specific heterogeneity are created.

The origin country of the acquiring firms and the frequency of deals for each origin country are presented in table 1. Nearly one half of all cross-border deals originated from the U.S. Australia is second with roughly twelve percent, Switzerland is third with approximately nine percent, and Great Britain is fourth with six and one-half percent. Hence, MNEs from the top four countries constituted three-fourths of all acquirers. In contrast, U.S. firms accounted for less than four percent of all targeted firms as seen in table 2. British firms were by far the most targeted with over thirty-five percent of the total, while Australia was second with slightly over ten percent. The distribution of targeted firms' countries is substantial greater, with the top four accounting for only fifty-three percent.

In table 3, the top ten most frequent NAICS industrial classifications of acquirer firms are presented. The top ten industry classifications of acquirers account for over eight-percent of all deal attempts. The most frequent are "other financial investment activities," which refers mainly to private equity firms. Second are firms engaged in the "management of companies and enterprises," which primarily describes holding companies, and third are "depository and credit intermediation," or banking institutions. The only commodity related industries that appear in the top ten industries list of acquirers are those involved in mining. These industrial classifications, however, represent the top two of target firms. As depicted in table 4, firms classified as "metal ore mining" and "support activities for mining," account for roughly twenty percent of all target firms. The top ten industrial classifications of

targeted firms account for forty-one percent of the total, which is less than half of that for acquirers. Below table 4, the distribution of acquirer firms of metal ore mining and support activities for mining is provided for OECD and non-OECD countries. Acquirers from OECD countries account for ninety-nine percent of all metal ore mining deal attempts, and ninety-four percent of all support activities for mining deal attempts. As displayed in tables 5 and 6, since 2010, non-OECD countries accounted for only 2.3 percent of attempted deals in metal ore mining, and 2.5 percent of the total value of completed deals. For support activities for mining, non-OECD countries accounted for 1.4 percent of total deals attempts from 2010-2013, with none of the attempts resulting in completed deals. The data seems to negate the prevailing perception that firms from developing countries are engaged in a frenzy of commodity-related cross-border deals. Although this is for only two industries, they do represent twenty percent of all deal attempts.

Table 7 presents the distribution of the final statuses of all cross-border deals in the sample. Over ninety percent of the deals resulted in completed acquisitions or mergers, while only one percent were withdrawn. Table 8 presents the distribution of final deal statuses by origin country group. Of the deals completed, ninety-six percent were by OECD countries, while they accounted for seventy-two percent of deals withdrawn. Evidently, the disparity between the OECD and non-OECD countries in cross-border deal activity is substantial.

Subsection 2: Bilateral Economic and Country Variables

The bilateral size, similarity index, and trade costs variables are all constructed using country-level economic data, including GDP and GDP by type of

expenditure, sourced from the UNCTAD statistics data center. Similar to Blonigen et al. (2007), the trade-cost measure is calculated as the inverse of an "openness" measure,[74] which itself is equivalent to exports plus imports divided by GDP. Bilateral distance is sourced from the Centre d'Études Prospectives et d'Informations Internationales (CEPII) GeoDist database[75] developed by Mayer and Zignago (2011). The variable measures the great circle distance in kilometers between the capital cities of the origin country and the host country involved in each deal.

Subsection 3: Political Risk Variables

The country composite and political risk variables are computed as the inverse of the twelve month average of the corresponding monthly composite and political risk ratings published by The PRS Group International Country Risk Guide (ICRG). The ICRG political risk rating attempts to assess the political stability of countries on a comparable basis by assigning risk points for a series of component factors, including among others, government stability, law and order, democratic accountability, and bureaucracy quality. The ratings are ubiquitous in empirical studies of cross-country FDI and regularly used by firms to inform investment decisions in foreign markets. The risk ratings range from a maximum of 100, indicating the least risk, to a minimum of 0, signifying the highest risk. The ICRG composite risk rating is equal to the sum of three separate risk ratings (political risk, financial risk, and economic risk) divided by two.

[74] The openness measure used in Blonigen et al. (2007) is reported by the Penn World Tables. To maintain consistency, data from the UNCTAD statistics data center is used instead.
[75] The GeoDist can be found at: file://localhost/(http/::www.cepii.fr:anglaisgraph:bdd:distances.htm.

Subsection 4: Political Regime and Political Transitions Variables

Data on political regime characteristics and transitions is sourced from the Polity IV[76] annual time-series data set. The Polity IV data set codes general institutionalized authority traits for a distinct polity. The polity as the unit of analysis is conceptualized as a class of "authority patterns" that are "equivalents of state-organizations (Eckstein and Gurr, 1975: 25)." Although authority patterns include "a set of asymmetric relations among hierarchically ordered members of a social unit that involves the direction of the unit (Eckstein and Gurr, 1975: 22)," the Polity IV project focuses specifically on the most formal class of polities, "states operating within the world's state system (Marshall *et al.*, 2014: 1). The state is defined as the spatially delimited central authority for a social unit. Polity IV, therefore, codes only information about the authority patterns of the state regime and excludes information on the territorial scope of the state authority or the traits of non-state polities within its borders. As the dependent variable and many of the explanatory variables are sourced from the UNCTAD statistics database, the recognition of a state entity by the United Nations determines the countries included in the sample. The *Polity score* variable used in the data sample is equivalent to the revised combined Polity score measure, or POLITY2 variable in the Polity IV data. The combined Polity score of a country is computed by subtracting an operational indicator measuring the degree of institutionalized autocracy ranging from 0 (least autocratic) to 10 (most autocratic) from an equivalently operationalized variable measuring institutionalized democracy.

[76] The Polity IV data can be found at: http://www.systemicpeace.org/inscrdata.html.

Hence, the variable ranges from -10 (strongly autocratic) to +10 (strongly democratic).

The five categories of regime types are constructed from the Polity IV data based on their definitions in "A Global Model for Forecasting Political Instability" by Goldstone et al. (2010). Goldstone et al. (2010) use two variables[77] from the Polity IV data set to derive a two-dimensional space in which the five categories are identified. *Full autocracies* include repressive one-party states, absolutist monarchies, and authoritarian dictatorships. *Full democracies* are characterized by free and fair elections with institutionalized and open access to political participation. Between the two extremes are the intermediate categories of *partial autocracies* and *partial democracies*. Partial autocracies are characterized by either competitive national elections with repression, or substantial political participation but without legitimate competitive elections for the office of chief executive. Regimes that do hold competitive elections and allow political competition without repression, but where elections are not truly legitimate or political participation is not well institutionalized, are categorized as partial democracies. The final category is *partial democracies* that exhibit politically consequential degrees of *factionalism*. Polity refers to factionalism as "a pattern of sharply polarized and uncompromising competition between blocs pursuing parochial interests at the national level… often accompanied by confrontational mass mobilization (Goldstone *et al.*, 2010: 196)." Additionally, there are periods during which a regime can not be placed within the two-dimensional space. These include *interruption* periods, where a country is

[77] The Polity IV scale for a regime's openness of executive recruitment (EXREC) is used as a measure of contestation and the scale of the competitiveness of political participation (PARCOMP) is used to capture the extent and variation of inclusiveness.

occupied by foreign powers and is therefore under the authority of an external polity, *interregnum* periods, during which there is a complete collapse, or failure, of central state authority, and *transition* periods, during which new political institutions are planned and implemented. The frequency of country-years of each regime type are presented in table 9. Acquirers from full democracies were involved in ninety-six percent of all cross-border deal activity in the sample period, with no other regime type exceeding two percent. For host countries, target firms in full democracies accounted for eighty-eight percent of all deal attempts, while firms in partial democracies with factionalism accounted for six percent of the total targeted. Clearly the overwhelming flow of cross-border deals is from full democracies to other regime types.

Polity IV defines a "regime transition" as a three or more point change in the same general direction of either the democracy score or autocracy score of a polity occurring within three years or less of the previous change (Marshall *et al.*, 2014). A *major democratic transition* involves a six-point Polity score change in three years or less including a shift from autocracy to partial democracy or to a full democracy. A *minor democratic transition* is defined by a three to five point increase in the Polity score within a three year period and accompanied by a shift from an autocracy to a partial democracy, or a partial democracy to a full democracy. A *positive regime change* is denoted by a three or more point increase in the Polity score but without a shift in regime type. A *negative regime change* involves a three to five point decrease in the Polity score, while an *adverse regime change* is defined by a six or more point decrease in the Polity score or a revolutionary transformation in the mode of

governance that is not a democratic transition. In the case where there is a three point change in either the democracy or autocracy score, and there is little to no change in the Polity score, the regime change type is specified as "no change in Polity score." In addition to these regime transition types, certain countries experience substantial changes in regime that involve a period of *interruption* or *interregnum.*

Table 10 presents the frequency of deals during different regime change types during the sample period. Of the one-hundred and ten cross-border deals during regime change events, ninety-four percent occurred in countries experiencing little to no change in the Polity score. The only other regime change type during which cross-border deals occurred was positive regime changes. In table 11, countries that experienced the onset of a regime change are listed along with the respective frequency of cross-border deals during these onsets. The top two countries, Belgium and Israel, account for over half of the cross-border deals during the onset of a regime change. The next two, Turkey and Jordan, account for fifteen percent.

To operationalize the dummy variable indicating the onset of a regime change, I use the Polity IV variable denoting the ending year of the previous regime and the beginning of a regime transition (EYEAR). All country-years with values for the variable are codified as experiencing the onset of a regime change. The specific type of regime change onset is determined by the value of the *regime transition* variable in the Polity IV data set when the onset of a regime change occurs. The *year after regime change onset* is a dummy variable denoting the year following to the onset of a regime change. The *year after regime change onset* may indicate the year after the completion of a regime change, if the transition was completed in the same year of its

onset. Alternatively, in a multi-year transition, the lead of regime change onset may indicate a year within the transition period. Variables denoting the year prior to the onset of a regime change and the completion of a regime change were also constructed and include in some of the econometric models, but neither produced any statistically significant results.

The regime transition standard is used to define the dissolution of an established polity and the initiation of a new polity, and delivers a measure of the vulnerability and durability of a specific regime and its authority patterns (Marshall *et al.*, 2014). The *regime durability* variable, thus measures the total number of years since the most recent regime change. The calculation of the regime durability variable assigns a zero value to the first year following a regime change during which a new polity is established. The average durability of all regimes in the sample is approximately thirty-nine years. The most durable regime in the sample is the United States, with two hundred and four years without a regime change.

Section 5: Empirical Results

The baseline specification results of model 1 for completed and withdrawn cross-border deals are presented in table 15 for comparison purposes. The estimations of the first two columns include host country dummies only, while the estimations in the last two columns include target industry dummies only. The results with both country and industry dummies are presented in the first two columns of table 16. The larger the bilateral size, the more likely the deal will be completed, while the opposite effect is found for withdrawn deals; an increase in bilateral size is

associated with a lower likelihood that a cross-border deal attempt will be withdrawn. The higher the trade costs, the more likely a deal will be completed, however, the positive effect on the likelihood of withdrawal is substantially greater. The same effect is found for distance; a greater distance between origin and host country results in a greater likelihood of both completion and withdrawal, with a stronger effect on withdrawal. Moreover, the more similar in economic size are the acquirer and target countries, the less the likelihood of withdrawal, but no effect was found on the likelihood of completion. The greater the political risk associated with the target firm's country, the less likely the deal will be completed or withdrawn. The effect of political risk on completed deals is intuitive, however, the considerably stronger negative effect of greater political risk on the likelihood of withdrawal is unexpected. The same relatively stronger negative effect of host political risk on withdrawn deals is found for most of the other estimations. The baseline specification results for model 1 show that certain determinants have similar effects on the likelihood of both the completion and withdrawal of a cross-border deal, but with substantially different magnitudes. With the exception of the stronger negative effect of an increase in political risk on the likelihood of a cross-border deal to be withdrawn, all other variables exhibit the expected signs. As for the effect of political risk on the likelihood of a cross-border deal being withdrawn, the following more detailed investigation into the statistics presented in table 8 provide further insight.

Of the one-hundred and seventy-three deals withdrawn, one-third occurred in either the United States, Great Britain, or Australia. The U.S. and Great Britain were both associated with roughly five percent less political risk than the average of all

countries with withdrawn deals, while Australia was associated with nine percent less political risk. Conversely, the three countries with the highest level of political risk among those with withdrawn deals - Lebanon, India, and China - had only a total of ten deals withdrawn. Although non-OECD countries account for twenty-eight percent of all withdrawn deals, the much greater frequency of cross-border deals in full democracies with relatively low political risk, and hence the greater frequency of withdrawn deals in these countries, is the most plausible explanation of the strong negative effect of political risk on the likelihood of cross-border deals being withdrawn.

In addition to the baseline specification results, the effect of the regime type of the origin country on cross-border deal completion and withdrawal are tested in column (7) and (8) of table 16, with full democracies as the base case. Acquirer firms from full autocracies, partial autocracies, and partial democracies with factionalism are associated with a lower likelihood of completing cross-border deals than those from full democracies. Furthermore, the same three regime types are more likely to withdraw an attempted cross-border deal than firms from full democracies. In the estimation results in column (9) and (10), the full democracy variable is included with the objective of evaluating the effects of the other explanatory variables on the likelihood of completion and withdrawal. The bilateral size and similarity index variables have negative signs, but only the similarity index is significant. The distance variable is positive and significant and the host political risk variable is negative and significant. Interestingly, the trade costs variable is positive, but not significant. For deals withdrawn by acquirer firms from full democracies, the larger

the bilateral size, the less likely the deal will be withdrawn. Furthermore, a one percent increase in a host country's trade costs is associated with an almost four and one-half percent increase in the likelihood that a cross-border deal will be withdrawn. The effect and magnitude of the trade costs variable is robust to the different estimations of withdrawn deals in table 16. Recall that the trade costs variable is the inverse of the openness measure. Hence, the less open a country is to world trade, the more likely an attempted cross-border deal will be withdrawn in that country. In the estimation results in columns (9) and (10), the political risk variable is again significantly negative with more than triple the effect on withdrawn deals. The results indicate that acquirer firms from full democracies are less likely to complete cross-border deals in less economically similar target-firm countries, and more likely to withdraw a deal when the host country is less open to trade.

Having estimated the effect of origin country regime type on the likelihood of cross-border deal completion and withdrawal, the same estimations are performed for the regime types of the host countries and presented in table 17. When using full democracy as the base case and including dummy variables for both host countries and target firm industries, the estimation of the logistic regression for completed deals drops the partial autocracy variable due to collinearity. Moreover, it drops the full autocracy and partial autocracy variables in the withdrawn deals estimation. In both estimation results none of the host regime type variables are significant. As this is likely due to the inclusion of host country dummies, the models are estimated with target industry dummies only and presented in columns (13) and (14). Without host country dummies, only the significance and sign of the bilateral size variable is

consistent with the estimations with host country dummies in (11) and (12). The similarity index, trade costs, and host composite risk variables are consistent for the withdrawn estimations. The magnitude of the trade costs variable, however, is substantially less without host country dummies. In estimation results (13), the likelihood of a cross-border deal being completed in partial democracies or partial democracies with factionalism is less than in full democracies. While both are also associated with a greater likelihood of a deal being withdrawn than in full democracies. Notably, the negative magnitude on partial democracies with factionalism is greater for completed deals, while the positive magnitude of partial democracies is greater for withdrawn deals. Because these results do not control for country-specific heterogeneity, the effects of the polity attributes of the host country are also tested.

In table 18, the effects of the composite risk and political risk of the origin and host countries on the likelihood of a cross-border deal being completed and withdrawn are estimated. The results indicate that great composite risk and political risk in the origin country of the acquirer is associated with a lower likelihood of completion. Furthermore, the greater the composite risk in the origin country, the more likely the deal will be withdrawn. However, the greater the composite risk of the host country, the less likely the deal will be withdrawn. The results for political risk are same, except the magnitude of the effects are greater except for that of the host country on the likelihood of completion. Thus, greater risk in the countries of the acquirer and the target are associated with a lower likelihood of completion of cross-border deals. While greater risk in the country of the acquirer is associated with

a greater likelihood that a deal will be withdrawn. In contrast, greater political risk in the host country results in a lower likelihood that the deal will be withdrawn. It is clear that both the host country and the origin country risk profiles have a significant effect on cross-border deal outcomes.

To test whether firms from developing countries are more resilient to risk, or alternatively, less sensitive to risk, the interaction of an indicator variable for acquirer firms of non-OECD origin and the composite (political) risk of the host country is included in the models estimations. The results in table 19 indicate that greater composite risk in the target firm's country results in a lower likelihood that non-OECD firms will complete a cross-border deal than OECD firms, and a greater likelihood they will withdraw a deal than OECD firms. The same effect is found for the interaction of non-OECD acquirer firms and host country political risk. The riskier the political environment in the host country, the less likely non-OECD based firms will complete an acquisition, and the more likely they will withdraw an acquisition than firms from OECD countries. The results clearly imply that non-OECD firms are neither more likely to successfully complete an acquisition, or less likely to withdraw acquisition, in riskier environments than OECD firms. Thus, for cross-border deals, firms from less developed countries either do not exhibit riskier behavior than OECD firms, or alternatively, do not possess better capabilities to complete cross-border deals in riskier environments.

In table 20, the estimation results for the effect of origin and host polity attributes on cross-border deal completion and withdrawal are presented. Interestingly, the more democratic the host country, and the more durable its regime,

the less likely the deal will be completed. For withdrawn deals, the more durable the regime of the host country, the less likely the deal will be withdrawn, while the host Polity score variable is positive, but not significant. The estimation results in column (25) include both the polity attributes of the host and origin countries. The more democratic the country of the acquirer and the more durable its regime, the more likely the deal will be completed. While the opposite effect is present for the polity attributes of the host country. The coefficients on the polity attributes of the host country are robust to the inclusion of the polity attributes of the origin, as their signs and magnitudes are alike. Only the effects of the polity attributes of the origin are tested in estimation (26) because the logistic regression does not converge for withdrawn deals when including the polity attributes of both the host and origin. The results indicate that the more democratic the host country of the acquirer, and the more durable its regime, the less likely that the deal will be withdrawn. The results of the impact of acquirer and target country polity attributes indicate that more democratic and more durable countries are more likely to complete a cross-border deal and less likely to withdraw a deal. The opposite is true for the impact of the polity attributes of host countries on deal completion; the more democratic and the more durable the host country, the less likely the deal will be complete. The effect of the durability of the host country regime on the likelihood of withdrawal, however, is similar to that for the origin country.

As evident in table 21, acquirer firms from non-OECD countries are less likely to complete a cross-border deal and more likely to withdraw a deal than acquirer firms from OECD countries. In the next two estimations, the host composite

risk, political risk, and the Polity score of the origin country are tested simultaneously for completed and withdrawn deals. The Polity score the origin country is negative in both estimation results, but not significant. The composite risk and political risk of the host country have opposite effects on the likelihood of deal completion. The greater the composite risk of the host country, the less likely the deal will be completed, while the great the political risk, the more likely the deal will be completed. The opposite effect is found for withdrawn deals, the riskier the political environment of the host country, the more likely the deal will be withdrawn.

To test whether acquirers from developing countries are more likely to complete a deal in other developing countries, the dependent variable is modified to reflect completed and withdrawn deals in non-OECD countries. The results in columns (31) and (32) of table 22 show that the greater the bilateral size and the more similar in economic size the origin and host countries, the more likely a deal will be completed in non-OECD countries. Furthermore, the greater the distance between origin and non-OECD country, and the greater the trade costs and political risk in non-OECD countries, the more likely a deal will be completed. For deals withdrawn in non-OECD countries, only the trade costs variable is significant, with a much stronger positive effect on the likelihood of withdrawal than completion. A one percent increase in trade costs is associated with a seven percent greater likelihood of a cross-border deal being withdrawn in non-OECD countries. In columns (33) and (34), the indicator variable for acquirers of non-OECD origin is included among the regressors. The results indicate that acquirers from non-OECD countries are less likely to complete deals in other non-OECD. Although the sign on the non-OECD

indicator variable is negative, there is no significant effect on the likelihood of deal withdrawal in non-OECD hosts. As a further exploration of the effects of acquirer country attributes on cross-border deal activity in non-OECD countries, the Polity score of the origin is introduced to the model. The results in columns (35) and (36) show a positive, but not significant coefficient on the origin Polity score. The results in table 22 provide further evidence that non-OECD firms are not more likely to complete acquisitions in countries that, on average, are associated greater political uncertainty.

The effect of the onset of a regime change in the host country on the likelihood of completion and withdrawal of cross-border deals is estimated in table 23. The onset of a regime change, and the onset of both types of regime changes, had no significant effect on the likelihood of completion or withdrawal. In table 24, the interaction of the country group of the acquirer and the onset of regime change are included in the estimation. The results indicate no difference in the cross-border deal behavior of non-OECD firms during the onset of regime changes. Consistent with the general results, firms from non-OECD countries were less likely to complete a cross-border deal and more likely to withdraw a cross-border deal during the onset of regime change than firms from OECD countries. Furthermore, in table 25, the same estimation is performed, but for non-OECD acquirers and the onset of a positive regime change, and OECD acquirers and the onset of little to no change in the Polity score. Firms from non-OECD countries did not complete any deals during the onset of a positive change, while firms from OECD countries were more likely to complete a deal than non-OECD countries during the onset of little to no change in the Polity

score. These result suggest that there is no evidence that firms from non-OECD countries demonstrate greater capability to complete acquisitions during periods of elevated political uncertainty than OECD-based firms. In fact, firms from OECD countries are not only more likely than firms from non-OECD countries to complete a cross-border deal during the onset of regime changes, but they are more likely to do so than in more stable political environments. However, while firms from OECD countries were less likely to withdraw a deal in general, the same effect during the onset of a regime change is not present. Hence, the onset of regime change does have a distinct effect on cross-border deal activity.

The estimation results for model 2 are presented in table 26. The effect of an onset of regime change on the likelihood that a cross-border deal will result in a full, 100 percent acquisition is tested in column (49). The regime change onset variable is positive, but not significant. Furthermore, the larger the bilateral size and more similar in economic size the origin and host countries, the less likely a full acquisition will be made. Furthermore, the greater the distance between the origin and host, and the riskier the investment environment of the host, the less likely a full acquisition will be made. As evident in column (50), when including the Polity score of the origin and host countries in the estimation of model 2, the composite risk of the host country is no longer significant. Moreover, the more democratic the origin country of the acquirer, the less likely it will make a full acquisition. While conversely, the more democratic the host country, the more likely the target firm will be fully acquired. In columns (51) and (52), the dependent variable reflects full acquisitions during the onset of a regime change. Unlike the results in columns (49) and (50),

bilateral size, the similarity index, distance, and host composite risk had no significant effect. In contrast, greater trade costs were associated with a lower likelihood of a full acquisition during the onset of a regime change. The more democratic the host country, the more likely that a full acquisition was made during the onset of a regime change. Furthermore, no effect was found for the likelihood that firms from non-OECD countries would complete a full acquisition during the onset of regime change.

Section 6: Conclusions

Stories abound in the popular press with assertions of more aggressive cross-border acquisition behavior by emerging giants. The prevailing belief is that these MNEs from developing countries are pursing more reliable, or potentially unrestricted, access to commodities. And with their greater resiliency to operate in more hazardous environments, they possess an advantage in their pursuits over the incumbents from developed countries. However, the results of the likelihood of completed and withdrawn cross-border deals in environments of higher political risk and periods of elevated political uncertainty suggest otherwise. Firms from non-OECD countries are still less likely to complete a cross-border deal, and more likely to withdraw a deal, during the onset of a regime change. While conversely, MNEs from OECD countries are more likely to complete a deal in a host country during the year it experiences an onset of a regime change than in more stable political periods. Furthermore, greater risk in the country of the targeted firm, whether composite or political, results in non-OECD firms being less likely than OECD firms to complete a

cross-border deal, and more likely than OECD firms to withdraw a deal. Even for cross-border deals targeting firms in non-OECD countries, acquirers of non-OECD origin are still less likely to a complete a deal than firms of OECD origin. Additionally, during the most recent three years of the sample period (2010-2013), less than four percent of the acquisitions of metal ore mining firms and firms providing support activities for mining were attempted by acquirers from developing countries. Of those acquisitions that were completed, acquirers from developing countries accounted for only 2.4 percent of the total value of the deals. Lastly, firms from non-OECD countries did not demonstrate a greater likelihood than OECD MNEs to complete full, 100 percent acquisitions during periods of elevated political uncertainty.

There may very well be an increase in cross-border activity in developing countries by firms from similar countries (Reuters, 2014), however, the estimation results presented show that MNEs from OECD countries still have a significant advantage in both volume and likelihood to complete deals in risker and more uncertain political environments. It may be useful in the future to identify the specific capabilities or endowments of OECD MNEs that allow them these considerable advantages. The difference may be that firms from non-OECD countries may have developed capabilities to navigate in their own internal environments, but OECD-based MNEs developed capabilities externally, operating in more dissimilar environments allowing them to attain a wider range of capabilities.. This internal vs. external adaptation process is a possible explanation for the discernible differences in cross-border deal activity among the two country group.

Additionally, along with less experience with such deals, non-OECD firms may face greater barriers when attempting to complete cross-border acquisitions. These barriers may be of domestic origin, such as comparatively limited access to capital or financing, i.e., less financial deepening than OECD countries, or they may be exclusive to host countries. If so, the features and sources of these barriers are topics for future exploration.

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