Online Appendix for *Observing the Capitalist Peace*

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APPENDIX A: ADDITIONAL NOTES ON CASE SELECTION

MIDs: High Fatality, High CAPOPENL

Our first selection rule isolated cases in which fatalities were high and capital openness was high. We created a short-list of bilateral MIDs with high fatalities and CAPOPENL>3 (CAPOPENL ranges from 0 to 8). Using Gartzke's dataset, this selection rule gave us the following cases, from which we selected the two cases in bold for best meeting our criteria (high fatality, high CAPOPENL):

Dyad	Year	CAPOPENL	Fatality Level
UK and Argentina	**1982**	**4**	**1000+**
USA and Panama	**1989**	**6**	**101-250**
Uganda and Tanzania	1971	4	101-150
Senegal and Mauritania	1990	5	26-100
USA and Iraq	1987	4	26-100
S. Arabia & Yemen Arab Republic	1980	6	1-25
Yemen Arab Republic and Oman	1987	6	1-25

MIDs: No Fatality, Highest CAPOPENL

With our second criteria we aimed for a middle-ground in which bargaining had partially broken down, and the conflict could have—but did not--spiral into a deadly conflict. We thus selected bilateral non-fishing dispute MIDs with the highest level of CAPOPENL. We eliminated fishing disputes, because, as Jessica Weeks and Dara Cohen have demonstrated, they are unlikely to exhibit further escalation. We also added a second subjective filter to mitigate this potential selection bias: if the case(s) we looked at exhibited either a) an unrepresentatively un-costly MID or b) could not have plausibly escalated to a more costly conflict, we eliminated it and selected another case. In our study this second filter was not used (but nonetheless important to declare in advance). From the three remaining cases, we selected the first and second.

Dyad	Year	Problems
Bahrain and Qatar	**1986**	
Malaysia and Singapore	**1992**	
Saudi Arabia and Qatar	1992	
USA and Canada	1974,75, 1979, 89, 91	All were fishing disputes.

High Probability of MID, Fatal MID and War, and High CAPOPENL

Our third selection rule aimed to collect cases in which we could most expect to see market-mediated signaling effectively averting a conflict. We calculated the probability of a MID, a deadly MID, and war using a recent dataset and statistical model by Gartzke. Though wanting to stay as faithful to Gartzke's statistical model as possible, the dilemma arose that if we included the "peace-years" variables our results would be heavily biased towards those years immediately following a MID. Since this selection rule could generate the same selection bias as the previous selection criteria, we opted to exclude "peace-years" variables. We thus used Gartzke's fifth, seventh and ninth models, absent the peace-year variable and temporal splines, to calculate, respectively, the probability of a MID, of a deadly MID (pdeadly), and of a war (pwar). We display below the five dyads with a CAPOPENL>6 and the highest pMID, pdeadly, or pwar.

Ranked by pMID:

Dyad	Year	CAPOPENL	pMID	pdeadly	pwar
U.S.A. and U.A.E.	1984-89	8	0.03-0.05	0.001-0.002	~2.2 x 10^{-5}
U.S.A. and Panama	1973-75	7-8	0.03-0.05	0.006-0.007	~5.6 x 10^{-6}
Kuwait and U.A.E.	**1974-79**	**8**	**0.03**	**0.023-0.024**	**0.018-0.033**
Honduras & Nic.gua	**1966-76**	**7-8**	**0.03-0.05**	**0.005-0.008**	**~5 x 10^{-4}**
USA & Mexico	1966-92	6-7	0.03-0.11	0.003-0.01	<0.00011

Ranked by pdeadly:

Dyad	Year	CAPOPENL	pMID	pdeadly	pwar
Kuwait & U.A.E.	**1973-1979**	**8**	**0.03**	**0.023-0.024**	**0.018-0.033**
U.A.E. & Oman	1992	8	0.03	0.023	0.0062
S. Arabia & Kuwait	1967-1971	7	0.03	0.020-0.021	<0.00082
Gambia & Senegal	1990, 1992	6	0.04	<0.023	<0.0004
S. Arabia & Yemen A.R.	1975	6	<0.03	0.0201	0.0012

Ranked by pwar:

Dyad	Year	CAPOPENL	pMID	pdeadly	pwar
Kuwait & U.A.E.	**1973-1986**	**7-8**	**<0.033**	**<0.0242**	**<0.0332**
U.A.E. & Oman	1990-1992	8	<0.028	<0.023	<0.0063
Bahrain & U.A.E.	1972-1974	7-8	<0.007	<0.0070	<0.0049
S. Arabia & U.A.E.	1990-1992	8	<0.019	<0.0134	<0.0017
Bahrain & Oman	1985	8	0.003	0.0030	0.0014

From these lists we selected Kuwait and U.A.E. because it was the only dyad in all three short-lists and was a clear outlier on pdeadly and pwar. Since there were no other outliers on all three lists, we selected our final case from the pMID list. In the interests of achieving a breadth of actors and regions, we opted to not look at U.S.A. & U.A.E. or U.S.A. & Panama. We thus selected Honduras and Nicaragua for our last case, which also happened to have the next highest pdeadly and pwar of the pMID short-list.

APPENDIX B: EXPANDED SUMMARY OF CASES

UNITED KINGDOM-ARGENTINA, 1982

Case Overview

In 1982 the long-standing dispute between Argentina and Great Britain over the ownership of a set of small islands in the South Atlantic known as the Malvinas/Falklands, respectively, escalated into a war that cost both sides hundreds of lives. The Falkland Islands were of low strategic and economic value[1] to Britain and their costs of effective defense burdensome[2], but British citizens living on the Falklands made it politically suicidal for any British leader to try to negotiate away sovereignty over the Falklands.[3] Meanwhile, conditions in Argentina made conflict over Falklands increasingly likely: the *junta* ruling Argentina was unstable, the economy was depressed, nationalist sentiment surrounding las Malvinas was aroused, the *junta* underestimated the likelihood that Britain would respond militarily to an invasion[4], and long and medium term changes in military acquisition and deployment was shifting the regional balance of power against Britain and in favor of Argentina[5], making the outcome of a potential war uncertain.[6]

The Argentinean government had invasion plans drawn up by 1982 to cap a year-long intended process of escalation[7], although an unexpected escalatory incident in March initiated the invasion a few months ahead of schedule on April 2nd. Despite a series of increasingly hostile signals[8], both British and American intelligence services failed to anticipate an invasion.[9] Following the surprise invasion, Britain immediately launched a task force to retake the Falkland Islands. In the month that followed there were extensive incidents of economic escalation and attempts at negotiation facilitated by the United States, but neither side proved willing to compromise on sovereignty of the islands. Fighting resumed in late April, and Argentina surrendered the islands on 14 June.

If we assume that there existed a pre-war bargain that both parties would have preferred to war, there were at least two periods where both parties failed to reach this efficient bargain: first, prior to the conflict Argentina failed to persuade the British parliament (and the Islanders) to seriously negotiate over the islands, while Britain, likewise, failed to make it clear to the *junta* that they would forcefully contest an invasion of the islands. Secondly, following the invasion, Britain was unable to compel the *junta* to surrender the islands short of an invasion.

Evidence for Market-Mediated Signaling

Currency and Stock Markets

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[1] Lawrence Freedman, *The Official History of the Falklands Campaign*, vol. 1 (London: Routledge, 2005)., 40.
[2] Ibid., 144.
[3] Ibid., 27.
[4] Richard Ned Lebow, "Miscalculation in the South Atlantic: The Origins of the Falklands War," in *Psychology and Deterrence*, ed. Robert Jervis, Richard Ned Lebow, and Janice Gross Stein (Baltimore: Johns Hopkins University Press, 1985), 110..
[5] John Arquilla and Maria Moyano Rasmussen, "Origins of the South Atlantic War," *Journal of Latin American Studies* 33(2001)., 754.
[6] Ibid., 758.
[7] Freedman, *The Official History of the Falklands Campaign*, 154..
[8] Lebow, "Miscalculation in the South Atlantic: The Origins of the Falklands War," 93..
[9] Freedman, *The Official History of the Falklands Campaign*, 197..

There was no evidence of any movement on either currency or on stock markets due to the ongoing negotiations prior to the invasion. As soon as it became known that Argentina had invaded the Falklands, extensive forms of automatic economic costs came into play. Both currencies reacted substantially to ongoing developments[10], suggesting that currency markets should have allowed Britain and Argentina to signal their resolve in the post-invasion period. Movements in the British stock market were similarly reported by "all news sources…in the same way: the approach of war was associated with falling shares; when the prospects for peace seemed brightest, stocks rebounded."[11] The Buenos Aires Stock Exchange does not yield a clear interpretation; this may be due to the quickly changing exchange rates and the many restrictions being placed on the economy at the time.

Other Areas of Capital: Investment, Assets, and Sanctions

Evidence for costly signaling via mechanisms other than currency and stock markets prior to the invasion is mixed; some signaling did occur but did so in circumstances that may have rendered it ineffective. The economy of the Falkland Islands suffered from both lost investments due to the political risks of conflict with Argentina, and from occasional (and potentially severe future) intentional disruptions in the provision of their services from Argentina, thus signaling the resolve of the Islanders to resist negotiations on their sovereignty.[12] Argentina bore minor costs due to lost investment in oil-exploration and fishing enterprises, such that British negotiators had hoped to regularize negotiations by focusing on these potential gains.[13] However, in general the Argentinean economy was in shambles and since no major oil deposits were discovered near las Malvinas the perceived economic costs of the ongoing dispute were relatively small. Great Britain also bore costs through the subsidies required to maintain and defend the Falklands, made especially burdensome by threats of Argentinean sanctions. Segments of the British government, however, were doing everything possible to become free of these responsibilities and thereby eliminate these costs, thus signaling the desire of parts of the British government to negotiate on the islands. Although, this daily pecuniary conservatism did not translate into a lack of resolve for war when a British colony was invaded, the *junta* may have interpreted that it did.[14]

Following the Argentinean invasion, Britain imposed severe economic sanctions on Argentina, freezing $1.5 billion worth of assets from a country already in severe economic straits.[15] Likewise, Argentina froze British assets, banned imports, and suspended payments to British banks.[16] Bearing of these costs enabled both countries to communicate their resolve.

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[10] During the first days after the Argentinean invasion, the pound dropped by 1 to 2%, a slightly anomalous and noteworthy amount. As a measure of the perceived effect on the currency of the Falklands crisis, over the ensuing few months more than 40 articles were published per month relating the pound and the Falklands. The effect on the Peso was much more serious. Though the exchange rate was controlled, data on the black market exchange rate reveals that the invasion marks the beginning of a major inflation, with the black market rate 50% more than the already inflated official rate. See for example: Samuel Brittan, "Falklands: The Price to Be Paid," *Financial Times*, April 8 1982.

[11] Jonathan Kirshner, *Appeasing Bankers: Financial Caution on the Road to War* (Princeton, NJ: Princeton University Press, 2007)., 195.

[12] Freedman, *The Official History of the Falklands Campaign*, 124..

[13] Ibid..

[14] Ibid., 145..

[15] Peter Montagnon, "Argentina Faces Financial Isolation," *Financial Times*, April 7 1982..

[16] Lisa L. Martin, "Institutions and Cooperation: Sanctions During the Falkland Islands Conflict," *International Security* 16, no. 4 (1992): 150..

Results

We conclude from the costs described above that this case appears to provide extensive evidence of market-mediated signaling.[17] Why then did the signaling fail to prevent escalation to war?

Differing Escalation Scripts and the Benefits of a Surprise Attack: Though there was extensive signaling after the Argentinean invasion, what little signaling took place beforehand was weak or ambivalent. The weakness of this pre-invasion signaling can be attributed to the fact that the *junta's* escalation schedule was accelerated by external events, that they opted for a surprise invasion due to the need to strike before British naval reinforcements could arrive, and to their belief that the invasion would be accepted as a *fait accompli*. Had the conflict escalated gradually—as both British and American intelligence services anticipated—Britain may have had sufficient opportunity to signal resolve and the outcome might have been significantly different; because the escalation followed a script other than the one anticipated by the British, they were insufficiently sensitive to Argentina's signals and failed to communicate their own.

War Can Be Cheaper than Economic Escalation: The most common framing of the rationalist puzzle of war asks why the belligerents failed to reach a pareto-improving bargain prior to the outbreak of mutually costly war. However, if war is not particularly costly then the phenomenon of war is less puzzling. In this case, though the war was costly in human and economic terms, it was also limited. Both the U.K. and Argentina could be confident that this war would not expand into attacks on their home countries or loss of territory beyond the islands in dispute. In fact, key actors in Argentina withheld the best military units from conflict so as to avoid their loss, such as Argentina's mountain division and navy. For similar reasons, most of the air force was inefficiently but safely based on the mainland.[18] Relatedly, it should be noted that both Britain and Argentina did *not* employ all possible means of economic coercion because some were simply too damaging to all parties: British financial sanctions were moderated from pressure by London bankers concerned about their reputations, and, for fear of destabilizing the global financial system, Argentina was not declared in default of its loans.[19] Thus, potentially much more costly market-mediated signals could have been sent if the expected costs from war were larger. In this case, though, the costs of war were relatively small compared to the expected tenure costs both leaderships anticipated from backing down.

Domestic Audience Costs Rise with Escalation: Prior to war, a bargain might have been struck that would be preferable to the costs of war. Once Argentina had invaded, though, the domestic audience costs were far too great for either the *junta* or Thatcher to back down from this limited conflict.[20] Thus in this case the very process of escalation, although it may allow signaling of resolve, also raises the costs of reaching a bargain relative to the costs of war. If both actors have mutual

[17] Though not discussed above, this case also illustrates well the role of financial interests in resisting movement towards war. This argument is well developed by Kirshner, *Appeasing Bankers: Financial Caution on the Road to War*., 154-202.
[18] Arquilla and Rasmussen, "Origins of the South Atlantic War.", 760.
[19] Martin, "Institutions and Cooperation: Sanctions During the Falkland Islands Conflict.", 150.
[20] Margaret Thatcher could not be seen to condone the use of force against the Empire: "any outcome that looked like a British surrender would almost certainly have led to demands that Thatcher resign." Likewise, the Argentinean generals feared that "neither the honor of the military nor their tenure as Argentina's leaders was likely to survive any settlement they had any chance of reaching..." Lebow, "Miscalculation in the South Atlantic: The Origins of the Falklands War.", 121.

expectations about the likely sequence and tempo of escalation, bargains may be more likely to take place; in this case, the process of escalation occurred far more rapidly than both parties—and especially the British--expected.

Issue Indivisibility: Finally, this conflict exemplifies the role of issue indivisibility in promoting conflict[21], particularly since the conflict was long-standing and had become thoroughly entrenched.[22] In the years prior to the invasion, negotiators from Britain repeatedly tried to strike a deal between the Islanders and the Argentineans, but to no avail. British administrations considered conceding (or coercing) on other issues such as claims to Antarctica or payments (or withdrawn subsidies) to Islanders, or in any manner of complicated bargains, but at the core of all negotiations was the refusal of both Islanders and Argentineans to concede on the core principal of sovereignty of the islands. It is an open question whether this obstacle could have been overcome even if resolve had been credibly communicated earlier.

[21] James Fearon, "Rationalist Explanations for War," *International Organization* 49, no. 3 (1995)..
[22] Ron E. Hassner, "The Path to Intractability: Time and the Entrenchment of Territorial Disputes," *International Security* 31, no. 3 (2007)..

UNITED STATES-PANAMA, 1989

Case Overview

The US invasion of Panama in December 1989 represents a deadly altercation between two countries with open economies, intertwined due to the American management of, and investment in and around, the Panama Canal. The United States wanted to depose the leader of Panama, General Noriega, based on a claimed lack of support in fighting the drug trade. Noriega, on the other hand, was unwilling to step down without, at a minimum, guaranteed protection against U.S. drug-related indictments[23]. In retrospect, a deal that resulted in Noriega's exile from Panama in exchange for dropping of the U.S. indictments seems to have been a possible compromise. Therefore, this case appears to offer sufficient opportunities to observe market-mediated signaling of resolve, as well as any reasons why it failed to lead to a non-violent compromise.

Evidence for Market-Mediated Signaling

There are at least seventeen dates on which specific escalatory events occurred[24] and on which we might expect to see signals[25]:

7/23/87	U.S. suspends military and economic aid to Panama.[26]
2/4/88	Noriega indicted by two U.S. federal grand juries.[27]
3/11/88	U.S. imposes sanctions on Panama.[28]
4/3/88	U.S. ambassador's car harassed by Panamanian police.[29]
4/6/88	U.S. deploys additional troops to Panama.[30]

[23] Goshko, John M. (1988) "Spain Would Take Noriega; Country Seeks Deal Barring Extradition." *Washington Post*, March 13, 1988.
Goshko, John M. (1988) "Reagan Increases Economic Sanctions against Noriega." *The Washington Post*, March 12, 1988.
White, Michael (1988) "Bush Feeling the Pinch from Noriega Deal." *Guardian*, May 23, 1988.

[24] This is not an exhaustive list of conflictual behavior during this conflict. This list is intended to capture a set of distinct events that had a high chance of being perceived by markets as informative of the probability of war.

[25] For reference, see the following news articles:
Cannon, Lou (1988) "U.S. Takes New Steps on Panama; Government Assets Here Are Frozen; Payments Halted." *The Washington Post*, April 9, 1988. Pear, Robert (1988) "Rift on Noriega Deepens as Bush and Treasury Chief Oppose Deal." *New York Times*, May 23, 1988.
This timeline also benefited from the one assembled by Jane Franklin, available at:
http://andromeda.rutgers.edu/~hbf/panama.htm

[26] Lewis, Neil A. (1987) "U.S. Suspends Aid to Panama to Press Regime for Change." *The New York Times*, July 24, 1987.

[27] Pichirallo, Joe (1988) "Panama's Noriega Indicted in U.S.; Drug, Racketeering Charges Due Out Today." *Washington Post*, February 5, 1988.

[28] Goshko, John M. (1988) "Reagan Increases Economic Sanctions against Noriega." *The Washington Post*, March 12, 1988.

[29] Jenkins, Loren (1988) "Car Carrying U.S. Envoy Chased in Panama; Automobile Pursued by Police; Embassy Calls Incident 'Serious'." *Washington Post*, April 4, 1988.

[30] Costello, D (1988) "Panama Fears War as Us Forces Arrive." *Courier-Mail*, April 7, 1988.

4/8/88	U.S. increases sanctions.[31]
5/25/88	U.S. announces that talks on Noriega's departure have collapsed.[32]
5/7/89	Panamanian presidential elections. Noriega obstructs elected opponent. U.S. protests.[33]
5/11/89	U.S. withdraws ambassador; dispatches more soldiers.[34]
8/8-10/89	U.S. detains Panamanian soldiers; Panamanians reciprocate; U.S. storms a guarded area.[35]
9/1/89	U.S. cuts diplomatic ties with Panama.[36]
9/12/89	US imposes additional sanctions.[37]
10/19/89	US declares Noriega and associates agents of Cuba.[38]
11/30/89	U.S. announces that it will bar vessels registered under Panamanian flag from its ports, taking effect February 1.[39]
12/15/89	Panama declares it is in a state of war with U.S.[40]
12/16/89	A U.S. soldier shot; other alleged incidents.[41]
12/20/89	Invasion occurs.[42]

Stock Markets

[31] Cannon, Lou (1988) "U.S. Takes New Steps on Panama; Government Assets Here Are Frozen; Payments Halted." *Washington Post,* April 9, 1988.
[32] Pear, Robert (1988) "U.S. Abandons Effort to Persuade Noriega to Yield Power in Panama." *New York Times,* May 26, 1988.
[33] Bennett, Philip (1989) "Panama Casts Votes for Leader; 2 Sides See Victory; Fraud Alleged." *Boston Globe*, May 8, 1989. Gruson, Lindsey (1989) "Noriega Stealing Election, Carter Says." *New York Times*, May 9, 1989.
[34] Devroy, Anne, and Molly Moore (1989) "Bush Orders More Troops to Panama; Efforts to Isolate Noriega with Diplomacy Continue." *Washington Post,* May 12, 1989.
[35] Pear, Robert (1989) "Military Arrests Exacerbate U.S.-Panamanian Relations." *New York Times*, August 10, 1989. Dorsey, James M. (1989) "U.S. Uses Mind Games to Pressure Noriega." *Washington Times,* August 11, 1989.
[36] Goshko, John M. (1989) "U.S. Denies Recognition to Panama; Sanctions against 'Puppet' Regime to Be Tightened." *Washington Post,* September 2, 1989.
[37] Fletcher, Martin (1989) "Sanctions Tightened; US Sanctions on Panama." *Times (London)*, September 13, 1989.
[38] *Washington Post,* October 20, 1989. "U.S. To Ban Private Deals with Noriega; Family, Associates Included in Sanction."
[39] Albright, Mark (1989) "Ships under Panama Flag Banned from U.S." *St. Petersburg Times (Florida)*, December 1, 1989.
[40] Branigin, William (1989) "Noriega Appointed 'Maximum Leader; Panama Says 'State of War' Exists with U.S.' *Washington Post*, December 16, 1989.
[41] Mashek, John, and Stephen Kurkjian (1989) "Panama Forces Kill US Soldier." *Boston Globe*, December 18, 1989.
[42] Devroy, Anne, and Patrick E. Tyler. "Bush Launches Strike to Seize Noriega; Fighting Widespread in Panama City." *Washington Post,* December 20, 1989.

Panama did not have a stock market in 1989, significantly constraining any opportunity to signal via drops in stock value. In the U.S. market, examination of major indices[43] show no obvious effects, either in volume of trading or loss of stock value, during any period prior to December 15th, 1989 (See Figure 1 for an overview of the period May 1989-December 1989). On the 15th, the Panamanian legislature declared that Panama was in a state of war with the U.S. U.S. financial markets responded, as the Financial Times described, with "panic and disorder" while "the Dow Jones Industrial Average [fell] 30 points (approximately 1%) in just over 15 minutes," though it partially recovered prior to close for a net loss of 14.08 (0.5%)[44]. The New York Times also attributed the day's market movements in part to the Panamanian announcement, but placed less emphasis on this cause[45].

[43] *Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed June 2009.
[44] Kaletsky, Anatole (1989) "Panama's War Declaration Upsets Markets." *Financial Times*, December 16, 1989.
[45] Cole, Robert J. (1989) "Dow Drops 14.08 on 'Witching' Day." *New York Times*, December 16, 1989.

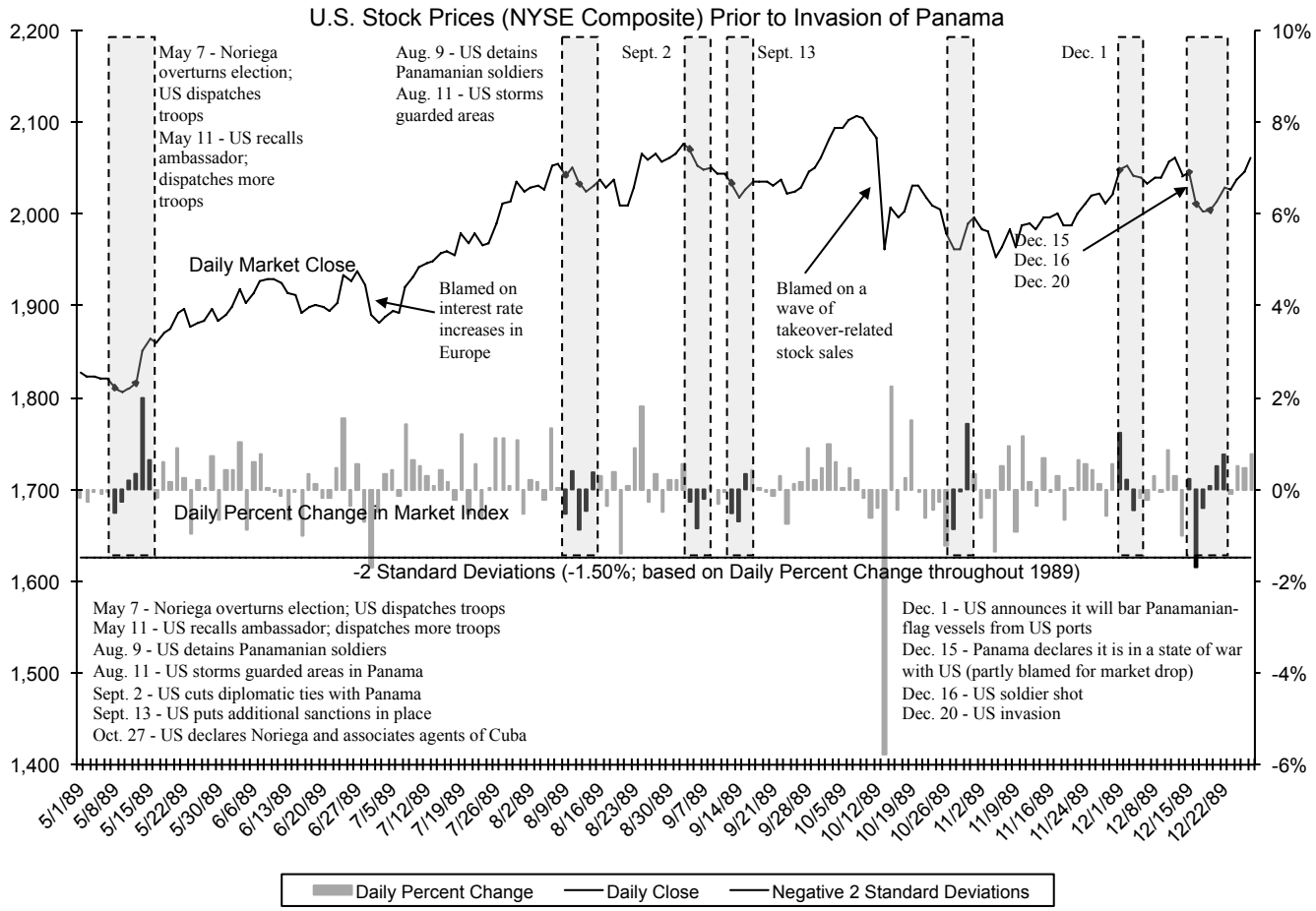

Figure 1: For illustration, we present the movements of the NYSE composite index from May through December, 1989 (the last eight months of our period of interest). Shown are the daily market close and, below, the daily percent change the market close represents. The solid line below the daily percent change data represents negative two standard deviations of magnitude in daily percent change, based on data for the full year of 1989. Only one market drop during a period of interest exceeds -2 standard deviations – the drop seen in the immediate run-up to the invasion itself. Market analysts at the time did cite news of the apparent state of war as one reason for this drop. (*Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed June 2009.)

As the U.S. market as a whole may in many cases be too large to be strongly affected by specific escalation events with Panama, we also looked at sensitive sectors. Two sectors that received coverage during the market reaction on December 16th were energy and gold.[46] However, except for Dec. 15th–20th, it does not appear that major costly drops occurred on or after our dates of significance in either of these sectors, although at various points *rises* in gold prices were attributed to investor concern over general Panamanian instability. [47]

In sum, it appears we have found *some* evidence of costly signaling through U.S. stock market behavior. However, since the primary potential signal observed came in response to a Panamanian declaration of war, this particular signal likely occurred too late for the participants to avert the war.

Currency

Panama's currency had been pegged to the U.S. dollar since 1904, and thus cannot reveal information. There is no indication that the U.S. dollar responded to any of the significant dates associated with this crisis in a costly manner consonant with the costly signaling mechanism. In fact, as occurred with gold prices, in some cases Panamanian instability was cited as one of multiple causes for a strong or rising dollar, based on the general observation that international instability tends to cause flight to the safe haven of the dollar.

Other Areas of Capital

Panama experienced a variety of automatic open-market costs from escalation with the U.S. Foreign businesses and investment were damaged, the offshore banking sector's revenue decreased by $21 billion between June 1987 and January of 1989, foreign banks cut loans for construction, and financing became impossible to secure for a planned new canal.[48]

The U.S. government also directly and strategically imposed costs by freezing Panamanian-owned funds in U.S. banks,[49] elimination of trade preferences and credits,[50] prohibition on payments from U.S. companies operating in Panama to the Panamanian government, blocks on the supply of U.S. currency to Panama,[51] withholding of canal revenues due the Panamanian government,[52] and a (mutually costly)[53] U.S. proposal to bar its ports to ships flying the Panamanian flag[54]. These measures were ruinous to the Panamanian economy, producing bank closures, widespread

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[46] *New York Times*, December 16, 1989. "Futures/Options; Panama Move Sends Prices of Gold and Energy Soaring."
[47] This is a typical general reaction to instability in the global economic system.
[48] Barber, Lionel (1988) "Political Change in Panama Costs US Dear." *Financial Times*, April 29, 1988. *Latin American Markets*, June 2, 1989. "Panama: Bleak Economic Horizon."
[49] Barber, Lionel (1988) "Political Change in Panama Costs US Dear." *Financial Times*, April 29, 1988.
[50] Goshko, John M. (1988) "Reagan Increases Economic Sanctions Against Noriega." *Washington Post*, March 12, 1988.
[51] Kirshner, Jonathan. 1995. *Currency and Coercion: The Political Economy of International Monetary Power*. Princeton: Princeton University Press.
[52] Gardner, David (1988) "Us Switches Tactics in Bid to Oust Noriega." *Financial Times*, April 22, 1988.
[53] *Business Law Brief*, December 1, 1989. "Cost of Banning the Panama Flag."
Latin American Markets, December 15, 1989. "U.S. Moves on Panama Ban."
[54] *Journal of Commerce*, December 1, 1989. "Bush Bans Panama Ships from U.S. Ports."
Albright, Mark (1989) "Ships under Panama Flag Banned from U.S." *St. Petersburg Times (Florida)*, December 1, 1989.

unemployment, default on international loans, and other serious problems.[55] A U.S. Treasury designation also prohibited U.S. citizens from doing business with Noriega himself, imposing personal costs.[56] Noriega's bearing of these costs can reasonably be coded as a credible show of resolve; indeed, some commentators at the time referred to Noriega as "emboldened," "tenacious," and "stubbornness," suggesting that observers were updating their beliefs about Noriega's resolve.[57]

The costs of these measures were proportionally much smaller for the U.S., but present. The escalation process risked destroying the large U.S. business community in Panama. The U.S. government responded to domestic complaints by creating exceptions for U.S. companies, reducing the potency of U.S. signals of resolve – a point not lost on observers. As Congressman Sam Gejdenson noted in hearings on the Panama situation, "There were two contradictory and therefore unattainable goals for the economic sanctions. We wanted to get Noriega out, but we did not want to hurt U.S. businesses, the people of Panama, or the Panamanian economy… since the Administration *was not fully committed to either goal*, we failed to accomplish either" [emphasis ours].[58] This suggests that U.S. signaling may not have been clear or sufficiently credible to communicate the U.S.'s resolve.

Discussion

We find evidence of costly signaling on both sides. Given this, what does the absence of compromise imply about the validity or scope of GLB's market-mediated signaling model? Ultimately, both the US and Panama *were* resolved enough to go to war. Of the several signaling opportunities the U.S. had, only the stock market reactions on and after Dec. 15th were clearly strong and definite enough to allow for a clear signal of resolve, and these likely came too late. Earlier possible signals were relatively weak and may also have been undermined by U.S. own responses. In sum, the U.S. failed to signal in such a way as to effectively communicate its resolve prior to the war.

In the years prior to the invasion, the U.S. attempted to find a deal with Noriega to remove him from power. Early deals, which Noriega rejected, did not include an agreement to drop the U.S. indictments that left Noriega in danger of extradition and imprisonment.[59] Noriega's demonstrated resolve in the face of devastating economic sanctions probably did contribute to a final offer from

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[55] U.S. Congress. House of Representatives. Subcommittee on Western Hemisphere Affairs of the Committee on Foreign Affairs. 1988. *The Political Situation in Panama and Options for U.S. Policy*. Washington: U.S. Government Printing Office. Hufbauer, Gary Clyde, Jeffrey J. Schott, and Kimberly Ann Elliot. 1990. *Economic Sanctions Reconsidered: History and Current Policy*. Washington: Institute for International Economics (261-265). Kirshner, Jonathan. 1995. *Currency and Coercion: The Political Economy of International Monetary Power*. Princeton: Princeton University Press (160). Scranton, Margaret E. 1991. *The Noriega Years: U.S.-Panamanian Relations, 1981-1990*. Boulder, CO: Lynne Rienner Publishers (136-138).

[56] *Washington Post*, October 20, 1989. "U.S. To Ban Private Deals with Noriega; Family, Associates Included in Sanction."

[57] U.S. Congress. House of Representatives. Subcommittee on Western Hemisphere Affairs and International Economic Policy and Trade of the Committee of Foreign Affairs. 1990. *United States Policy Toward Panama in the Aftermath of the May 1, 1989 Elections*. Washington: U.S. Government Printing Office.

[58] U.S. Congress. House of Representatives. Subcommittee on Western Hemisphere Affairs and International Economic Policy and Trade of the Committee of Foreign Affairs. 1990. *United States Policy Toward Panama in the Aftermath of the May 1, 1989 Elections*. Washington: U.S. Government Printing Office (63-64).

[59] Goshko, John M. (1988) "Spain Would Take Noriega; Country Seeks Deal Barring Extradition." *Washington Post,* March 13, 1988. Scranton, Margaret E. 1991. *The Noriega Years: U.S.-Panamanian Relations, 1981-1990*. Boulder, CO: Lynne Rienner Publishers.

President Reagan that included a promise from the administration to support a motion to drop the indictments. Unfortunately, by the time the offer was made, in the late spring of 1988, it was likely no longer credible to Noriega. After the indictments decision, a strong sanctions push, and multiple minor clashes, U.S. public opinion had turned strongly against Noriega, and it was unclear that Congress, the presiding judge for the indictments, or Vice President and likely next President Bush would be willing to honor the deal.[60]

Thus, in this case costly signaling did indeed provide information that led parties to converge on a compromise solution. However, our findings here echo some of the findings from the case of the Falkland Islands war. Specifically, *Domestic Audience Costs Rise with Escalation*; the very escalatory process that allowed signaling also induced potential domestic audience costs which closed off this bargaining space. In addition, the fact that the U.S. was willing to go to war even though it had been reluctant or unwilling to bear some of the economic costs of the escalatory process also suggest that *War Can Be Cheaper than Economic Escalation.* Finally, there may have been some level of *Issue Indivisibility*, given that Noriega's stepping down was a key point of contention; Noriega could not half-step down and half-retain power, making this issue difficult to divide.

[60] Pear, Robert (1988) Rift on Noriega Deepens as Bush and Treasury Chief Oppose Deal." *New York Times*, May 23, 1988. " Scranton, 1991 (150).

SINGAPORE-MALAYSIA, 1992

Case Overview

In 1992, a series of small incidents occurred over Pedra Branca, a disputed island controlled by Singapore but claimed by Malaysia. On April 22nd, a Malaysian fisheries patrol vessel near Pedra Branca was chased away by Singaporean naval patrols.[61] On May 20th, a youth wing of Parti Islam (a Malaysian Islamic political group) announced its intention to plant a Malaysian flag on Pedra Branca.[62] Singapore issued statements saying that trespassers on Pedra Branca would be arrested and Malaysian authorities expressed a preference for settlement through peaceful negotiations and condemned the flag-placing threat.[63] On May 28th, however, Malaysian marine police detained seven Singaporean fishermen and their boats, again near Pedra Branca.[64] Following these incidents, the two states de-escalated, reiterated their commitment to peaceful negotiations, and completed a previously agreed-upon exchange of materials documenting each country's claim on the island. Did market-mediated signaling play a role in this resolution?

Evidence for Market-Mediated Signaling

Both Singapore and Malaysia had stock markets and floating currencies in 1992. There are three dates of interest as possible escalatory events in this case:

April 22	Singaporean forces chase Malaysian fishing boat off Pedra Branca
May 20 – May 22	Flag-planting threat and Singaporean reaction
May 28 – June 1	Malaysian arrest of Singaporean fishermen; only widely reported by June 1

Currency and Stock Market

In addition to not finding any concerns in the press about market or currency movements related to these events, a review of stock market indicators and currency records does not reveal any anomalous movements that clearly stood out from general trends and market noise. Although there were notable daily downward movements in the stock markets and currency between May 28 and June 1, these were not anomalously large relative to movements over the rest of the year.[65] For demonstration purposes, we present a chart of the indicator (the Malaysian KLSE) that provided the strongest evidence of a market response to events.

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[61] *Straits Times*, May 14, 1992. "Pedra Branca Boat Incident: "Report Sent to KL"."
[62] *Straits Times*, May 21, 1992. "PAS Plans Stunt to Push Claim to Pedra Branca."
[63] *Straits Times*, May 22, 1992. "S'pore Will Arrest Anyone Landing Illegally on Pedra Branca." Hassan, Kalimullah (1992) "Mahathir Warns PAS against Planting Flag on Pedra Branca." *Straits Times*, June 9, 1992. Hassan, Kalimullah (1992) "KL Raps PAS for Plan to Plant Flag on Pedra Branca." *Straits Times*, June 5, 1992.
[64] *Straits Times*, June 1, 1992. "Malaysian Marine Police Check S'pore Boats Off Pedra Branca."
[65] That is, with the exception of the Malaysian KLSE composite index, these downward movements were not within the top 10 downward daily movements of the year; in the case of the Malaysian KLSE, the largest downward movement seen on a date of interest was only the 4th largest of the year. *Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed June 2009.

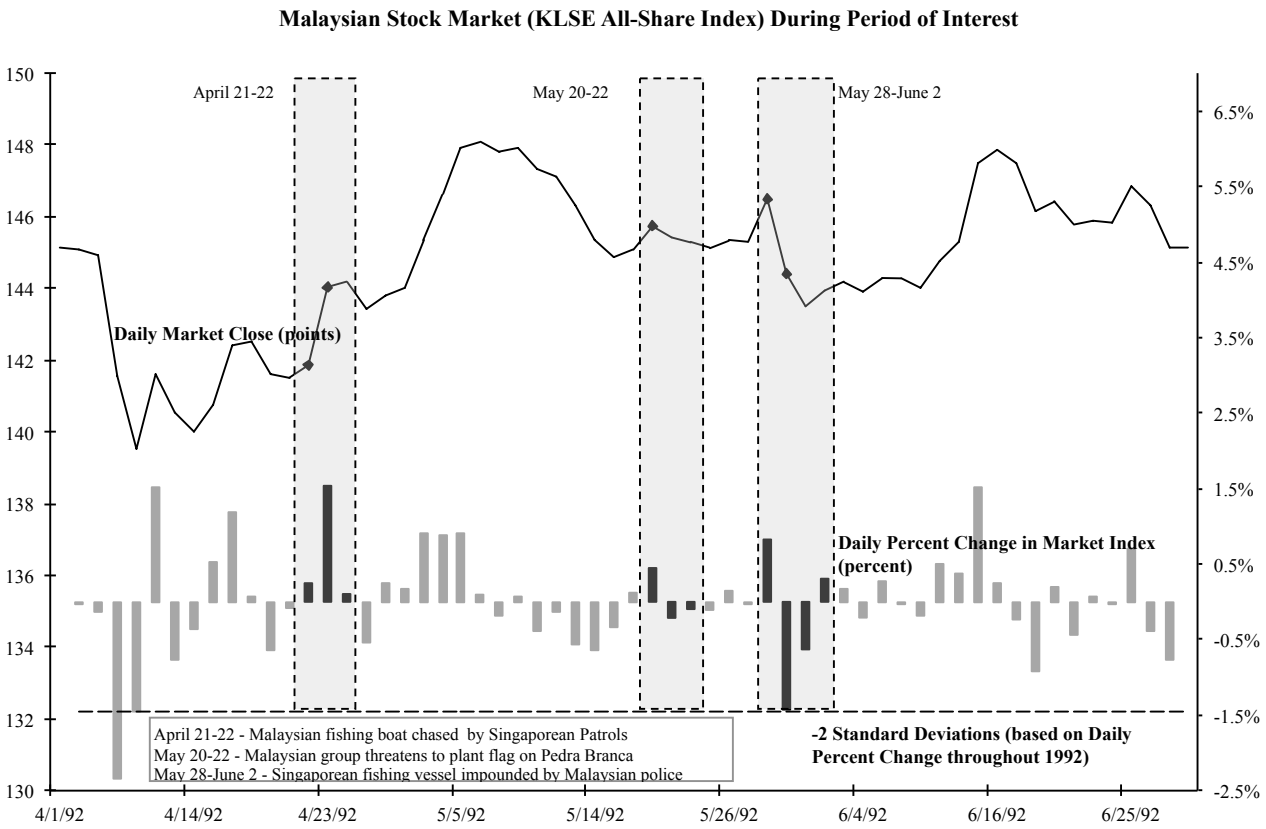

Figure 2: For illustration, we present the movements of the Malaysian KLSE All-Share stock index from April through June of 1992 (the period of interest for this case). Shown are the daily market close and, below, the daily percent change the market close represents. The solid line below the daily percent change data represents negative two standard deviations of magnitude in daily percent change, based on data for the full year of 1992. As discussed in the case, the drop seen between May 28 and June 2 is potentially of interest. (*Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed June 2009.)

Other Areas of Capital

Malaysia was forced to face other costs caused by the two countries' aggressive actions. In particular, the tourist trade for the Johor region was hurt by the drop in the number of Singaporean visitors.[66] Malaysia responded by making visible attempts to step back from these economic consequences; Malaysian leaders complained about the disruptions to tourism and reiterated their desire to actively resolve the problem through peaceful negotiation.[67] This de-escalation was explicitly described by some radical groups as a sign of Malaysia's lack of resolve over Pedra Branca,[68] suggesting that the governments of Singapore and Malaysia were probably also aware of this possible implication of Malaysia's de-escalation.

We are unable to identify comparable immediate costs to the Singaporean economy. However, Singaporean officials did express concern about the *potential* impact of further conflict on the regional economy and investments. Singapore, with its highly developed economy, sizeable capital investment in Malaysia, extensive revenue from Malaysian shipping through Singaporean ports, and dependence on Malaysia for water, would have been particularly vulnerable to the economic effects of a serious disruption. Following the escalatory incidents, Singaporean officials, like their Malaysian counterparts, expressed their desire for a peaceful resolution through negotiation or arbitration.[69]

Both governments behaved in the manner we would expect if each lacked (and thus signaled a lack of) willingness to use military means: each nominally continued to press its claim, but both avoided risky escalatory behavior. Malaysian leaders, with the exception of a few opposition party members, showed an unwillingness to bear the costs of the escalatory seizure of Singapore's fishermen, preferring to seek reconciliation in the interests of ameliorating economic consequences; Singapore could therefore infer that the status quo was secure. Meanwhile, Singaporean leaders' expressed concern over a possible disruption in regional investment signaled Singaporean lack of resolve for a militarized dispute, and willingness to negotiate with Malaysia.

Discussion and Alternate Explanations

Thus, there was some evidence for *ex ante* market-mediated signaling in as much as both parties simultaneously *failed* to signal resolve, which may have contributed to mutual de-escalation. However, this evidence is not sufficient to persuasively demonstrate a decisive role for *ex ante* signaling in preventing escalation in this case. Reluctance to incur the substantial longer-term anticipated costs from disrupted economic cooperation as well as regard for the value of existing economic ties, which we saw expressed at both the state government level and the private business[70] level, provides a plausible explanation for the eagerness of state leaders to deescalate. While not

[66] Osman, Ahmad (1992) "The View from the Other Side of the Causeway." *Straits Times*, July 11, 1992.
[67] Osman, Ahmad (1992) "Muhyiddin Urged to Visit S'pore to Mend Relations." *Straits Times*, June 24, 1992. Osman, Ahmad (1992) "Let KL Settle Issue with S'pore, Johoreans Told." *Straits Times*, July 19, 1992. Osman, Ahmad (1992) "'46 Assemblyman Seeks Clarification on Pedra Branca." *Straits Times*, June 23, 1992.
[68] Osman, Ahmad (1992) "'46 Assemblyman Seeks Clarification on Pedra Branca." *Straits Times*, June 23, 1992.
[69] Joo, Ng Wei (1992) "Look at Territorial Claims in Wider Context: Envoy." *Straits Times*, June 3, 1992.
[70] *The Straits Times*, May 27, 1992. "Don't Use Pedra Branca Issue to Sour S'pore-Kl Ties, Urges Majlis Pusat." Joo, Ng Wei (1992) "Look at Territorial Claims in Wider Context: Envoy." *Straits Times*, June 3, 1992. Osman, Ahmad (1992) "The View from the Other Side of the Causeway." *Straits Times*, July 11, 1992.

without stresses, the economic relationship between Singapore and Malaysia was valuable to each. This alternate explanation is at least equally as plausible as the less direct signaling mechanism.

In addition, this case is consonant with the alternate explanation that capital openness acts as a proxy for a previous acceptance of the status-quo. Malaysia and Singapore were already deeply interdependent and Singapore in particular was highly vulnerable to Malaysia's control of its water supply. Such a magnitude of vulnerability interdependence implies a mutual acceptance of prior, perhaps implicit, terms of cooperation and non-aggression. Indeed, both Singapore and Malaysia belong to the Association of South East Asian Nations (ASEAN), an organization dedicated to fostering regional economic growth and security stability through cooperation and mutual respect for sovereignty. By this hypothesis, Malaysian and Singaporean capital openness may simply proxy for their entrenched acceptance of a status-quo neither wants to violate.

BAHRAIN-QATAR, 1986

In April of 1986, Qatar seized workers engaged in building a coast guard station for Bahrain on an oil-rich reef controlled by Bahrain but claimed by Qatar[71]. The immediate conflict had the potential to escalate: "Sheikh Hamad, the Bahraini Crown Prince… had to be physically restrained by members of the island's war cabinet from ordering his own helicopter force to launch a reprisal attack"[72]. The two countries, however, suspended hostilities and began the negotiation that eventually led to a compromise. As well as having the highest IMF measures of capital openness, Bahrain and Qatar were both involved in several recently formed economic consortiums of Middle Eastern nations, such as the Gulf Cooperation Council, the Gulf Investment Corp, and the pooled investment group Investcorp. Was market-mediated signaling instrumental to this de-escalation?

Evidence for Market-Mediated Signaling

We found little evidence for any market-mediated signaling. Since both states' currencies are pegged to the U.S. dollar, there were no day-to-day signs of pressure on the currency. The black-market data, though limited because of its (monthly) resolution, also does not seem to reveal any clear movements during this period[73]. There were no domestic stock exchanges in operation at this time. One article did suggest that the crisis was preventing the development of plans for a causeway between Bahrain and Qatar[74], but we found no evidence that media or government officials drew inferences from this or other facts about the resolve of the disputants.

Discussion and Alternate Explanations

Bahrain and Qatar's mutual involvement in organizations like the Gulf Cooperation Council (GCC) and Investcorp allowed both countries to reap substantial economic and strategic gains through cooperation. Members of the GCC perceived the Bahrain-Qatar conflict as threatening both economic and security gains, suggesting that the opportunity costs from escalation may have made the actors more willing to strike a bargain[75]. Similarly, joint membership in these organizations, which existed to capitalize on the economic and strategic benefits of cooperation among a set of neighbors with similar national goals, suggests a general acceptance of and interest in formalizing and preserving the status quo.

Third-party players in this conflict helped mediate the crisis: Saudi Arabia, a regional power and leading member in the regional economic group, was engaged in shuttle diplomacy between the two within two days of the initial seizure[76]. Analysts attribute Saudi Arabia's interest in and efforts on

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[71] Guardian (London), April 29, 1986. "Peace Moves in New Gulf Rift/Dispute between Qatar and Bahrain over Offshore Coral Reef."
[72] MidEast Markets, September 1, 1986. "Bahraini Succession Could Be Affected By Qatar Dispute."
[73] *Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed May 2007.
[74] MidEast Markets, September 15, 1986. "Fresh Date for Bahrain-Saudi Causeway Opening."
[75] MidEast Markets, November 24, 1986. "Diplomacy Opportunity for Fahd at Causeway Opening;" MidEast Markets, November 10, 1986, "Summit Hides Cracks in the GCC;" Khalaf, Abd al-Hadi. 1987. "The Elusive Quest for Gulf Security," *MERIP Middle East Report* (September-October 1987) (32).
[76] Guardian (London), April 29, 1986. "Peace Moves in New Gulf Rift/Dispute between Qatar and Bahrain over Offshore Coral Reef;" Financial Times, April 28, 1986. "Saudis in Peace Bid."

behalf of such a resolution to its concern over the problems in regional cooperation, mentioned above, that these tensions caused[77].

[77] MidEast Markets, September 1, 1986. "Bahraini Succession Could Be Affected By Qatar Dispute;" MidEast Markets, November 24, 1986. "Diplomacy Opportunity for Fahd at Causeway Opening;" MidEast Markets, November 10, 1986, "Summit Hides Cracks in the GCC;" MidEast Markets, December 8, 1986. "Saudi Compromise on Bahrain-Qatar Dispute."

UAE-KUWAIT, 1972 – 1977

Case Overview

These dyad years merit attention because they have both the highest probability of war and highest probability of a deadly MID in the entirety of the data set used by Gartzke between countries that both had maximal capital openness.[78,79] In spite of this fact, no MIDs occur between the two nations during this period. These dyad years thus present a potential opportunity to observe market-mediated signaling or other mechanisms successfully mitigating a MID.

We used the Conflict and Peace Data Bank[80], as well as a more general survey of news-media, to locate any potential conflicts relevant to the 1972-1977 period. We located only one: in April 1971 Kuwait accused the UAE (Trucial Coast) of turning their backs on a federation of Gulf states proposed by Kuwait and Saudi Arabia[81]. While this event does not fall within the 1972-1977 period, it is potentially relevant and we included this date in our search for signaling evidence.

Evidence for Market Mediated Signaling

Both Kuwait and the UAE have fixed currencies. Data available on black market trading of the Dinar, the Kuwaiti currency, shows no weakening relative to prior months in April of 1971; black market data for the UAE is unavailable[82]. Similarly, the stock exchanges for Kuwait and the UAE did not exist during the period of interest. We conducted a news search on Lexis-Nexis for articles on Kuwait and the UAE in 1971, 1973, and 1974, the years with the highest probability of a MID and the year of the conflict event. This search revealed no evidence of costly state actions, nor of any economic disturbances that might be attributable to tension between UAE and Kuwait. Thus, we found no evidence of costly market-mediated actions, let alone signaling, during these years.

Discussion and Alternate Explanations

The most likely alternative explanation for the lack of conflict is that leaders of the UAE and Kuwait had much to gain in the long run from acceptance of the status quo and strategic cooperation over oil exports. During the 1973-1974 period, the Gulf states engaged in an oil embargo to encourage Western discipline of Israel after the Yom Kippur War. This was seen at the time as a main instrument in forcing the U.S. and other states to make concessions to the Arab demands[83]. Conflict would have undermined this collective influence. The desire to maintain these gains from

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[78] The high probability of war calculated by Gartzke's model in this case appears due to a combination of factors influencing the probability of war, the majority of which (in particular excepting capital openness) conspire to increase the calculated probability of war in these years relative to the mean values for these variables. Of particular influence are their high real GDP per capita, relatively short distance between the countries, and a relative equality of military capabilities. If regional dummies were included in the regression they would only increase the pMID for UAE and Kuwait further.

[79] Why are these years higher than those before or after? The UAE did not exist, as such, prior to 1971. Regarding the period following 1977, trade increased and the GDP per capita of the lowest of the pair decreased during the 70s, decreasing the probability of an MID according to Gartzke's model.

[80] Azar, Edward. 1993. Conflict and Peace Data Bank (COPDAB), 1948-1978, 3rd release. Inter-university Consortium for Political and Social Research. Accessed May 6, 2007.

[81] New York Times, April 18, 1971. "Persian Gulf Unity Efforts Impaired."

[82] *Global Financial Data*. Available from: https://www.globalfinancialdata.com/. Accessed May 2007.

[83] Eder, Richard (1973) "Iraq, Guerrillas Reject the Truce." *New York Times*, October 23, 1973.

cooperation seems to have led some states to try to consolidate regional cooperation through the establishment of regional economic interdependence – in other words, the instrumental use of these mechanisms to consolidate a status quo and support peace.

This process began in 1971 with a failed push by Kuwait and Saudi Arabia to create a nine-member regional bloc[84] and concluded in the 1981 creation of the Gulf Cooperation Council (GCC), a regional group expressly intended to serve security and stability purposes[85]. During the GCC formation process, Kuwait in particular pushed for a model of cooperation that stressed economic and cultural cooperation as well as military collaboration[86], and spearheaded the Inter-Arab Investment Guarantee Corporation, a multi-state investment insurance consortium[87]. Thus, it seems that Kuwait, at least, sought to use economic openness as a means to secure regional stability. If so, it was a desire for regional stability which caused both peace and open capital markets, thus supporting the idea that capital openness can be a proxy for states that have embraced regional cooperation.

[84] *New York Times*, April 18, 1971. "Persian Gulf Unity Efforts Impaired."
[85] Khalaf, Abd al-Hadi. 1987. "The Elusive Quest for Gulf Security," *MERIP Middle East Report* (September-October 1987) (20).
[86] Khalaf, Abd al-Hadi. 1987. "The Elusive Quest for Gulf Security," *MERIP Middle East Report* (September-October 1987) (21).
[87] Inter-Arab Investment Guarantee Corporation website. Accessed July 7, 2007. http://www.iaigc.org/INDEX_E.HTML

HONDURAS-NICARAGUA, 1966-1976

Case Overview

Honduras and Nicaragua had a high probability of a MID and high capital openness during the ten-year span between 1966 and 1976, especially before 1970[88,89]. During this time, one incident stands out as a potential provocation for militarized conflict between Honduras and Nicaragua. In November of 1968, Honduran soldiers crossed the border into Nicaragua and killed two Nicaraguans[90]. Nicaragua accused Honduran soldiers of invading Nicaraguan territory and declared a state of military alert on its border[91]. Nicaraguan students staged a protest against the Honduran embassy in Nicaragua. However, this incident soon deescalated: the Honduran government explained that the incident had been a result of off-duty drinking and apologized; Nicaragua in turn apologized for the actions of its student protesters[92].

Both Honduras and Nicaragua belonged to the Central American Common Market (CACM), an intended tariff-free trade zone composed of Nicaragua, El Salvador, Guatemala, Honduras, and Costa Rica established in 1960[93]. While hailed in early years as the most successful venture of its kind in Latin America, the CACM experienced many disruptions during the ten years examined here. It was the subject of constant boycotts and rebellious tariff actions by its members throughout the period examined. Nicaragua and Honduras were as active as their fellow members in this regard, and Honduras effectively withdrew following the start of its conflict with El Salvador in 1969.

Following our period of interest and beginning with the rise to power of the Sandinistas in 1979, tensions with Honduras did flare into a series of militarized disputes due to a geopolitical reorientation away from American allied countries[94]. Suggestively, the capital markets of these two countries became much more closed at exactly the period when they began to have militarized disputes. Thus, not only did these countries clearly have the potential for conflict, but measures of capital market openness corresponded neatly with what Gartzke's statistical model predicts.[95,96] Did open markets contribute to this stretch of peace? And did their reduced openness in the 1980s contribute to the increase in militarized conflict?

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[88] The factors leading to such a high probability of a MID were: their contiguity and proximity, relative equality in military capabilities, low levels of democracy, and low GDP per capita.
[89] In 1969, Honduras became involved in a conflict with El Salvador that would continue throughout the remaining portion of the period of interest, an external factor which could have reduced any impulse for Honduras to have conflicts on other fronts.
[90] Latin America, November 29, 1968. "News In Brief;" Latin America, December 6, 1968. "News In Brief."
[91] Azar, Edward. 1993. Conflict and Peace Data Bank (COPDAB), 1948-1978, 3rd release. Inter-university Consortium for Political and Social Research. Accessed May 6, 2007.
[92] Latin America, March 28, 1969. "Central America: Nicaragua Retracts."
[93] Latin America, September 8, 1967. "Central America: Common Market Approaching Crossroads."
[94] *BBC Summary of World Broadcasts*, March 19, 1982. "Honduras-Nicaragua Relations." *BBC Summary of World Broadcasts,* March 7, 1984. "Nicaraguan Protests to Honduras over Border Violations." *The Economist*, October 29, 1983. "The Tensest Border." Moses, Arthur (1982) "Called Pretext for Aggression: Boats Raided Nicaragua Says." *Globe and Mail (Canada),* March 19, 1982.
[95] The probability of a MID (according to Gartzke's model 5 without temporal variables) during these years is two to three times greater than during the period of high capital openness.
[96] Trade levels also followed a similar dynamic as capital openness: being high during the periods of peace and low during the periods of conflict. We have chosen to ignore the possible effects of trade since Gartzke's model does not find a significant effect.

Evidence for Market-Mediated Signaling

We do not see evidence for costly signaling at any point from 1966-1976. The primary incident in which costly signaling might have been expected was the border-crossing incident in 1968. Both Honduras and Nicaragua had currencies linked to the U.S. dollar and neither had a stock market during the period, removing the possibility of capital market signaling. We were unable to find any evidence of direct costs born by investors, creditors, or the states' themselves in response to the incident. While both countries backed down, it seems unlikely that any market-related signaling took place.

Discussion and Alternate Explanations

However, there is evidence to suggest that the states wanted to avoid potential costs associated with conflict, and that state leaders pursued open capital markets as a concomitant or complement to goals of regional political and economic stability (in other words, that either capital market openness served as a proxy for status-quo acceptance, or it was used instrumentally to encourage or solidify the status quo, or both). During incidents in which Nicaragua disrupted the CACM, the business community pressured Nicaraguan President Somoza to back off of behavior disruptive to the CACM in part because of fears regarding the effect of instability on foreign capital investment and credits[97]. In this case domestic business interests that would benefit from cooperation helped motivate Somoza to support an interdependence agenda that he otherwise might not have. We did not find evidence of this mechanism in Honduras.

Somoza was also quoted as being in favor of the CACM for the political stability it brought *in spite* of fiscal difficulties it created for Nicaragua[98]. This would suggest acceptance of the status quo and, further, that economic integration for Nicaragua was driven by desires for stability and the belief that economic interdependence would encourage stability. This hypothesis also fits with the rise in conflict and decline in capital openness following the installation of the Sandinista government and the related geopolitical reorientation away from the CACM status-quo[99] – once the status quo was no longer desired, and states were moving away from interdependence, interdependence dropped and conflict rose.

LANGUAGE BARRIERS

Due to our case selection strategy, some of our cases had much less English-language reporting than others. Could our inferences be mistaken due to the language of the local media? (We read English and French.)

We believe these language barriers did not significantly impact our inferences for several reasons. First, in most of our cases (four of six) the disputes either involved English-speaking nations as parties; had English-language local news sources; showed relatively extensive English-language reporting; or all of the above. This is somewhat less true of the two Middle East cases, which both had less extensive (though not non-existent) secondary English source material available on them.

[97] Latin America, March 28, 1969. "Central America: Nicaragua Retracts."
[98] Latin America, January 9, 1970. "Central America: A Tinge of Optimism."
[99] Latin American Regional Reports, August 22, 1980. "Nicaragua in the Caribbean Context."

However, for two reasons, we still believe any significant costly signaling is likely to have been picked up by the sources available to us. First, the nature of the costly signaling mechanism itself relies on the existence of market-mediated costs visible to outsiders; if costly signals were subtle enough that they were not picked up on by external English media, it is less likely that they were strong enough to influence the escalatory process. Second, the nature of economic relations in these countries suggests that costly signaling should have been visible to outsiders. In both of these cases part of the reason that we feel confident that costly signaling was unlikely to have occurred is that the routes by which it could have occurred are limited. Given pegged currencies and the lack of active stock markets in these cases at the time, monetary and stock market responses are ruled out. The only remaining area for signaling is impacts on local business.

The most important economic activities in these countries are fossil fuel production, largely for the consumption of external actors. If the escalatory process had created costly impacts on these industries, it would likely have been of interest to external reporters. Hence, though impossible to rule out with certainty, we consider the likelihood that significant costly signaling occurred and was observed at the time but not picked up by this project to be low.