

Do US Interventions Affect FDI Flows?

Cesar A. Perez



4825 Mark Center Drive • Alexandria, Virginia 22311-1850

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE MAY 2003		2. REPORT TYPE		3. DATES COVERED 00-00-2003 to 00-00-2003	
4. TITLE AND SUBTITLE Do US Interventions Affect FDI Flows?				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) CNA Analysis & Solutions,Center for Naval Analyses ,4825 Mark Center Drive,Alexandria,VA,22311				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 42	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Approved for distribution:

May 2003

A handwritten signature in black ink, appearing to read 'E.D. McGrady', with a stylized flourish at the end.

Dr. E.D. McGrady
Director, Evolving Security Operations
Operations Evaluation Group

This document represents the best opinion of CNA at the time of issue.
It does not necessarily represent the opinion of the Department of the Navy.

Approved for Public Release; Distribution Unlimited. Specific authority: N00014-00-D-0700.
For copies of this document call: CNA Document Control and Distribution Section at 703-824-2123.

Contents

Summary	1
Introduction	5
Background.	5
Approach	7
Methodology	7
Data	9
FDI data.	9
Data on interventions	9
Individual results	11
World FDI	11
Yugoslavia and the Balkans	12
The Gulf War and the Middle East	15
Iran and the Middle East	16
Libya and North Africa.	18
Panama and Central America	21
Grenada, Haiti, and the Caribbean	24
Somalia and Sub-Saharan Africa	28
Conclusions and implications	33
List of figures	35
List of tables	37

Summary

US military presence around the world is usually justified as necessary to maintain stability. Stability enhances security and promotes economic activity, thereby contributing to world economic growth.¹ But the connection between stability and economic activity, though appealing, is difficult to quantify. If the expectation that the US will maintain stability has already been internalized by decision makers, then only changes in US policy or in its ability (or perceived ability) to maintain stability can produce a detectable change in decision makers. How can the impact of US presence on stability be ascertained?

Because it is difficult to assess the importance of US presence for continuous control in the international arena, this study concentrates on events that have required direct intervention. We will address the question of the impact of US military actions on business decisions by investigating the possible connection between overt military action and international investment flows. We concentrate on US actions in the last 30 years, and try to associate them with the evolution of investment flows.

We address the following questions:

- Can the action be interpreted as a correction to a deterioration in stability?
- Does the evolution of investment flows support the idea that the action was (was not) a correction to a problem?

1. There is a vast literature that relates security issues, trade, investment, and growth. A good place to start when considering FDI is the World Bank's FDI website, http://rru.worldbank.org/Resources/foreign_direct_investment.asp, especially their annual World Investment Reports. See also The World Economic Forum's Workshop on Security and Political Risk at <http://www.weforum.org/pdf/Atelier/SecurityAndPoliticalRisk.pdf> which covers the importance of security to the investment decisions of multinational corporations.

Our results suggest that US military actions affect FDI only when the action helps resolve an uncertainty/crisis. Further,

- Only the final outcome of the crisis matters, and that may or may not coincide with the military actions. In all but Iran and Libya, our results show that FDI appears to have been influenced by military action. But the effect is a result of the final outcome of the intervention and not of the military action per se.
 - In several of the interventions we examined the end of military actions and final outcome of the crisis did not occur simultaneously. For example, data on the Yugoslavia crisis show that the bombings did not significantly affect FDI, but the Dayton Accords did.
 - In other interventions, such as the Gulf War and Panama, the end of military actions coincided with the final outcome of the crisis. In these cases, the military actions quickly achieved the intended goals and FDI reacted to the achievement of those goals. It is not possible to tell whether the reaction in FDI is due to the military action or to the end of the crisis in these cases.
 - In Haiti, the “military action” was very ambiguous since the landing was unopposed (i.e. no shots were fired). However, it is clear that FDI only improved after the US turned over management of the country to civilians.
- The resolution of the uncertainty may imply an increase in FDI, a decrease in FDI, or no change in FDI.
 - In Grenada, the increase in FDI after the intervention suggests a positive effect on FDI from the military action.² In this case, the action was quick and the goals clearly achieved.
 - In Somalia, we see almost no change in FDI after the military action there. In this case, FDI was almost zero before the intervention and remained at the same level afterwards. Businesses

2. Not enough Grenada pre-intervention data were available to run any regressions, so this result is a qualitative one.

likely did not think that there were favorable investment opportunities in Somalia before or after the crisis.

All of the above actions were in response to specific crises. That is, something had changed that triggered the intervention. The period immediately before the intervention shows FDI reacting to the deteriorating situation. FDI does not appear to react appreciably to military actions that were in response to behaviors that were not explicit crises.

For example, in the cases of Libya and Iran, the military actions were small. They were in response to behaviors which were not crises and the results of those military actions were unclear. TNCs were not in any better position to ascertain the future after the military actions occurred and FDI did not appreciably change in any way that could be associated with the action.

Introduction

Background

US military presence around the world is usually justified as necessary to maintain stability. Stability enhances security and promotes economic activity, thereby contributing to world economic growth.³ But the connection between stability and economic activity, though appealing, is difficult to quantify. If the expectation that the US will maintain stability has already been internalized by decision makers, then only changes in US policy or in its ability (or perceived ability) to maintain stability can produce a detectable change in decision makers. How can the impact of US presence on stability be ascertained?

This paper is part of a CNA-initiated study whose goal is to understand these relationships. A previous CNA study looked at indirect links between investment decisions and military operations.⁴ Here we attempt to make a direct link.

One way to address the issue is by interpreting the international arena as an anarchic dynamic system.⁵ Though the word “anarchy” conjures up images

-
3. There is a vast literature that relates security issues, trade, investment, and growth. A good place to start when considering FDI is the World Bank's FDI website, http://rru.worldbank.org/Resources/foreign_direct_investment.asp, especially their annual World Investment Reports. See also The World Economic Forum's Workshop on Security and Political Risk at <http://www.weforum.org/pdf/Atelier/SecurityAndPoliticalRisk.pdf> which covers the importance of security to the investment decisions of multinational corporations.
 4. Berta M. Heybey and Jessica L. Stewart. *Do Crisis Response Operations Affect Foreign Investment Decisions?*, Sep 2001 (CNA Research Memorandum 3914.A1)
 5. Jack Hirshleifer. "Anarchy and its breakdown," *Journal of Political Economy*, Vol. 103, no.1, 1995. for a discussion of this point of view in the context of international relations.

of Marx Brothers mayhem, anarchy is not the same as chaos. Anarchy in this context refers to a situation in which agents must acquire and defend resources without the help of an overarching authority. Anarchy can be stable or it can degenerate into chaos. The stability of the international anarchic environment is of fundamental importance for the outcomes of international economic activities.

Most productive economic activities imply a separation in time between investment and the associated return. Agents considering investment must imagine the different possible outcomes of their projects and the likelihood of each possible outcome. A stable environment reduces the uncertainty over the possible outcomes. This reduced uncertainty implies lower required rates of return on potential projects and thereby increases the number of projects with acceptable returns.

By definition, an anarchic international arena means that there is no higher authority to ensure stability. That is, stability exists only as the outcome of the actions taken by the international agents. A range of stability can be maintained through “continuous control.” By continuous control we mean the effects that the US may have on decision makers by simply being peacefully engaged. US presence around the world, as a physical representation of US policies, provides a level of continuous control because agents internalize the possible consequences of destabilizing actions and tend to avoid those actions.

Although continuous control through presence appears to be associated with a given level of stability, from time to time the dynamic system may require more direct control actions to keep it within acceptable boundaries. A number of situations may cause this to happen:

- An agent’s perception of the consequences of its actions may change. Saddam Hussein may have been led to believe that the US had lost its tolerance for military casualties and therefore in the end it would accept an Iraqi takeover of Kuwait.
- Circumstances may arise in which individuals must make a concerted effort to avoid instability but they lack coordination. An example of this may have been the disintegration of Yugoslavia. It was apparent that the European countries were finding it hard to coordinate a response until the US took the lead.

When agents do not regulate their actions as necessary to maintain the current level of stability, a more vigorous act is required to put the system back within acceptable boundaries.

From an investor's point of view, continuous control implies a given constant level (or range) of predictability. Investors' decisions take that predictability for granted; it affects each choice equally, so it is not a factor to use in discriminating between choices. On the other hand, a direct action taken to exercise control does require that investors reassess their choices. In fact, because direct action usually requires a trigger, investors may start adjusting some time before the intervention takes place. This is more evident when the situation leading up to the intervention develops slowly. Stability (or expected stability) steadily deteriorates and investors react to the deterioration. When a certain point is reached, direct action is taken. The outcome of the action is evaluated by the investors, and adjustments are made.

Approach

Because it is difficult to assess the importance of US presence for continuous control in the international arena, this study concentrates on events that have required direct intervention. We will address the question of the impact of US military actions on business decisions by investigating the possible connection between overt military action and international investment flows. We concentrate on US actions in the last 30 years, and try to associate them with the evolution of investment flows.

We address the following questions:

- Can the action be interpreted as a correction to a deterioration in stability?
- Does the evolution of investment flows support the idea that the action was (was not) a correction to a problem?

Methodology

We will combine regression analysis with historical information to determine whether there is support for the contention that investment flows are affected by an intervention only if the intervention is accompanied by a change in stability. We would like to associate positive regression results

with a plausible story. Without a story, the existence or non-existence of a statistical relation is simply suggestive.

For the regressions, we use Foreign Direct Investment (FDI) inflows into the country or region of interest as the dependent variable. We control for world trends by using a variable for FDI inflows into all of the developing world. We then use dummy variables for the years of interest. Years of interest include years of deterioration as well as interventions or corrections. We also include dummies to control for other specific events not related to the intervention.

Data

FDI data

The data on FDI are from the United Nations Conference on Trade and Development (UNCTAD) Transnational Corporations' (TNCs') FDI database.⁶ The database defines FDI as an investment that gives a foreign investor at least 10% ownership. FDI can take three forms: acquisition of existing assets, joint-venture with a local business enterprise, or the building of production facilities.

The data are annual values that cover almost all of the world's countries from 1970 to 2001. Quality and availability of countries' data vary: the data for developing countries are less reliable than data from the industrialized countries. UNCTAD combines data from the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD), and supplements those data with its own in-house database on TNCs.

For purposes of this study, the data were deflated to the base year 1996 using a GDP price deflator from the Bureau of Economic Analysis.

Data on interventions

Intervention data are freely available from various news and historical sources.⁷

For this study we used the eight major US interventions listed in table 1. We chose them because they clearly were undertaken to correct a situation or to change behavior.

6. Data can be obtained at UNCTAD's website, www.unctad.org.

7. Good summaries can be found at the Armed Conflict Events Data website, <http://www.onwar.com/aced/>.

Table 1. Summary of interventions

Action	Multilateral?	Aim	Achieved Aim? ^a
Actions in Yugoslavia (1992-2000)	Yes, NATO, UN	Change Behavior	Yes
Grenada Invasion (1983)	No	Change Government	Yes
Panama invasion (1989-90)	No	Change Government	Yes
Haiti intervention (1994)	Yes, UN	Change Government	Yes
Actions against Libya (1981, 1986)	No	Change Behavior	??
Actions against Iran (1980, 1988)	No	Change Behavior	??
War/Actions against Iraq (1991-present)	Yes, UN	Liberate Country, Change Behavior	Yes, ??
Somalia intervention (1992-1995)	Yes, UN	Restore Order	No

a. There is no final word on whether the aim was achieved or not. The decision here is based on a combination of clear outcomes, like government change or country liberation, plus whether the US continued to intervene after the fact, and whether US statements about the particular country changed in any way after the event.

All interventions are simply interpreted as an action taken by the US. These actions have differed in many ways. For example, they can vary in purpose and scope:

- To fix something (this is usually a crisis event) or to punish, and thus discourage, undesirable behavior.
- Unilateral vs. multilateral.

Although the US has carried out many more actions--for example, in the Middle East region--very few of them have required actual shooting. Also, many of them have been short (one or two days of ship movements), of ambiguous aim (being there “just in case”), and apparently directed at non-state actors (especially after terrorist attacks).

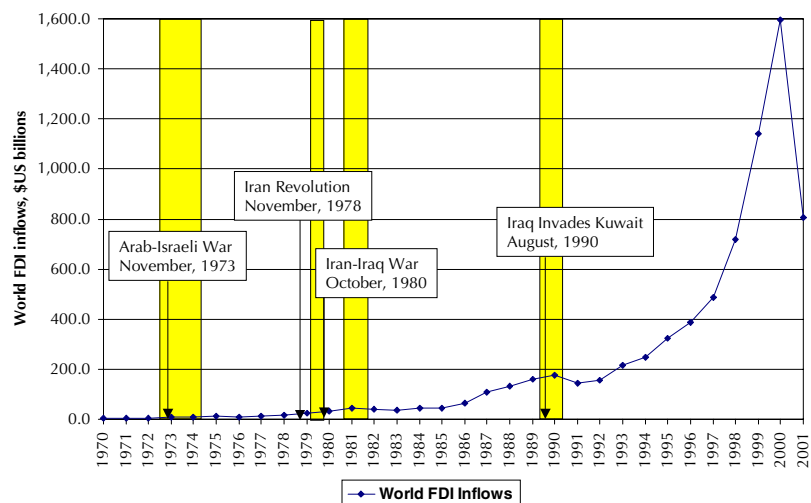
Individual results

Since the US is a major force in the world both politically and economically, we will first look at the evolution of world FDI and the possible effects of US interventions at that level. We will then look at each of our eight chosen interventions and discuss the effects they appeared to have on FDI inflows into the region and the country.

World FDI

Do US military actions have affect on worldwide FDI inflows? The tentative answer is, “yes, but only if the crisis itself is important to the MNCs.” Figure 1 depicts worldwide FDI inflows from 1970 to 2001. It also shows periods of US recessions, which more or less coincided with world recessions.⁸

Figure 1. World FDI Inflows and US Recessions



8. On the recessions see *World Economic Outlook*, April 2002, Chapter 3. International Monetary Fund, <http://www.imf.org/external/pubs/ft/weo/2002/01/pdf/chapter3.pdf>. Recessions are shown from peak to trough.

These recessions are associated both with disruptions in world oil production and with slowdowns in world FDI inflows. Hamilton⁹ has shown that the world recessions were triggered by the disruptions in oil. High oil prices and the implied negative effects for economic growth reduce the expected returns from overseas investments and motivate a reduction in FDI flows. Because oil is such a key input to world production, MNCs consider any major developments associated with world oil as important in their decisionmaking. In only one of the four major oil events did the US intervene militarily in a way that resolved the crisis. Once the Persian Gulf war was over and the uncertainty about oil production reduced, FDI returned to its pre-crisis trend.

One plausible story on the effects of US military interventions on world FDI flows is not enough to make a general conclusion. Whether a crisis is of concern to MNCs is difficult to determine at such an aggregate level. In the next sections, by focusing on countries and regions we can, to a higher degree of confidence, assume that an intervention is of some relevance to FDI flows into those regions/countries. Then, the possible connection between US interventions and FDI flows may be clearer.

Yugoslavia and the Balkans

FDI inflow into Yugoslavia was low, but stable during the 1980s. In this period, the old Yugoslavia still existed, though it began heading for implosion. In 1991, Slovenia and Croatia declared independence. Hostilities commenced immediately between Croatia and federal Yugoslavia over pieces of Bosnia. Interestingly, FDI took a jump in the Balkans in 1991 and increased over the next two years. Apparently investors saw the separation of Slovenia and Croatia, the two most industrialized regions in the former Yugoslavia, as a positive development for the two new countries. They were like a company that sheds its less profitable division. The West (the UN and NATO) blamed federal Yugoslavia for the war and placed a trade embargo on it, deployed peacekeeping forces in Bosnia, and conducted bombing raids against Serbian forces. These actions caused a steady decrease in FDI into Yugoslavia (Serbia and Montenegro), while

9. James D. Hamilton. *What is an Oil Shock?* University of California San Diego Working Paper, <http://weber.ucsd.edu/~jhamilto>.

maintaining the new higher levels into other Balkan countries. The combination caused an overall slowdown of FDI into the region.

The signing of the Dayton Peace Accords in November 1995 ended the war with Croatia and motivated an accelerated expansion of FDI into Croatia and Slovenia. FDI became more volatile after 1997 as a combination of Yugoslavia's war in Kosovo (which is within Yugoslavia) and everyday economic problems in both Croatia and Slovenia.

Figure 2 shows FDI flows into the Balkans (FDIB) region. In general, the region's FDI tended to track FDI into the developing world (FDIDW). Data for the region are only available from 1980. In 1994 and 1995, FDIB followed its own path, and in 1996 it returned to tracking FDIDW. The interpretation is that FDI was negatively affected when MNCs perceived a “problem” in the region. The problem was a combination of intensified fighting together with US and NATO bombings. These events increased the uncertainty in the outlook for investment motivating an apparent “hold” on FDI activities. FDI returned when a “correction” to the problem, the Dayton Accords, was applied.

Figure 2. FDI Inflows into Yugoslavia vs. Developing World

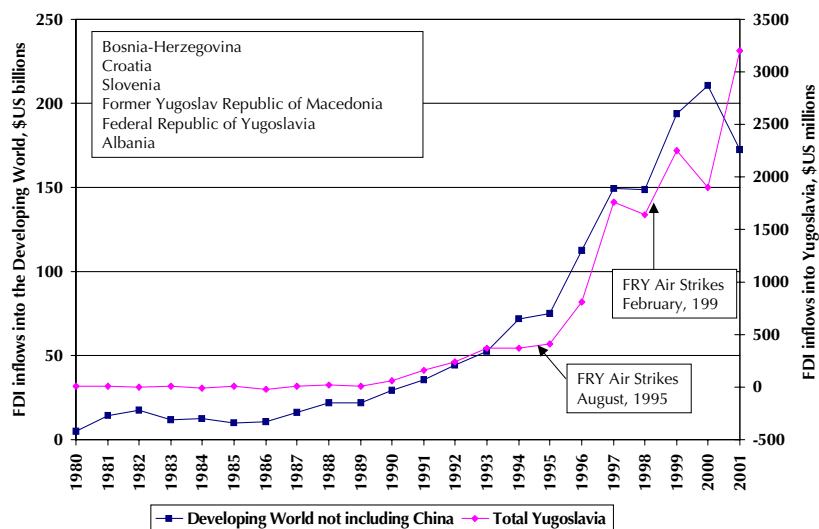


Table 2 reports the results of the regressions.

Table 2. Yugoslavia regressions, with FDI inflows into Yugoslavia as dependent variable

Independent variable	Coefficient ^a	t-stat	Coefficient	t-stat
Intercept	-222.74***	-4.15	-211.81***	-4.34
Developing world FDI	0.013***	5.87	0.013***	7.75
Squared trend				
D1994-1995			-347.48***	-4.05
D1994-1999	-356.45***	-2.99		
D1996-1999	202.74	0.83		
R-squared	0.97		0.88	
Sample size	20		22	

a. *** means significant at the 1% level.

The variable Dummy1994-1999 represents the "problem," while the variable Dummy1996-1999 represents the "correction." The first regression shows that the problem has a negative effect on FDI and the correction has a positive effect, though only the problem is significant. In the second regression, we have a dummy for the net effect of the problem and the correction: the two years before the accords were signed. This variable is negative and highly significant indicating that the period was associated with a fall in FDI.

The results tell us that, from the MNCs' point of view, 1994-1995 was a period of increased uncertainty. Only after the accords were signed did this uncertainty subside. The accords were the result of efforts on many fronts and were supported by many nations. Although the US did play the leading role, military actions were a group effort and investors appear to have waited for the results rather than acting on the military actions. The MNCs were considering the whole picture and not solely concentrating on military actions.

The Gulf War and the Middle East

Compared to Yugoslavia, figure 3 shows that there is less correlation between FDIDW and Middle East FDI (FDIME). For FDIME we have not included Saudi Arabia, as its FDI is very much oil oriented and shows very large changes. We also have not included the countries of interest Iran and Iraq.

Figure 3. FDI Inflows into the Middle East vs. the Developing World

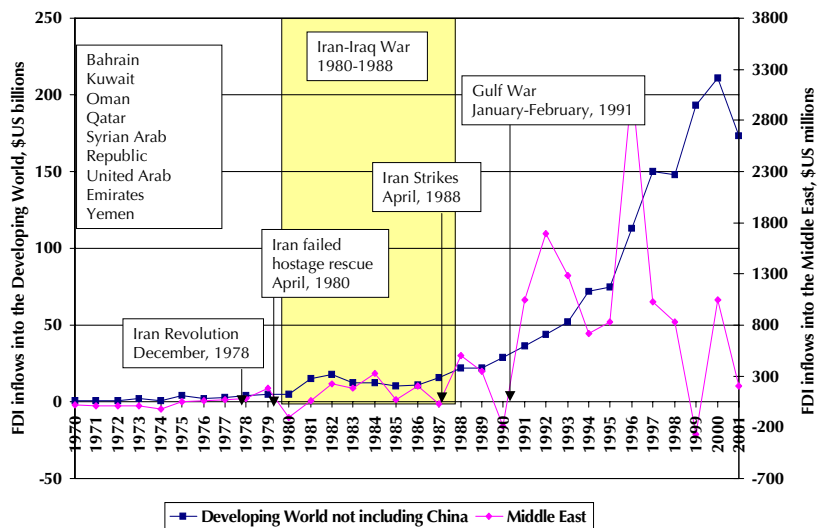


Table 3 reports the regression results.

Table 3. Middle East regression, with FDI inflows into the Middle East as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	58.55***	2.83
Developing world FDI	-0.0049*	-1.89
DIIWAR	197.55***	2.85
D1990-2001	-298.58***	-4.18
D1991-2001	1853.59***	6.02
R-squared	0.53	
Sample size	32	

a. * means significant at the 10% level.

*** means significant at the 1% level. Significance at the (say) 10% level means that statistically the chance that the independent variable is not important for explaining the dependent variable is 10%.

The results suggest a problem created by Iraq's invasion of Kuwait in 1990 and a correction applied in 1991. The problem, represented by the variable D1990-2001, had a negative effect on FDI inflows into the other countries, and the correction, D1991-2001, had a positive effect. Again, perhaps the problem increased uncertainty for MNCs and the correction reduced uncertainty. We have also included a dummy for the Iran-Iraq war, DIIWAR, which is positive and highly significant. The interpretation is a possible shift in FDI flows into the rest of the region during the war.

It is interesting to note that the reaction of FDI flows into the region is different for each event. During the Iran-Iraq war there appears to have been a shift of FDI to the rest of the region, whereas during the Gulf War there was a reduction. An interpretation is that MNCs perceived major dangers all across the region from a US intervention. They may have feared that foreign companies would suffer a backlash across the entire region. In contrast, a war between two regional states would not implicate the MNCs.

FDIDW is negative and barely significant at the 10% level. The region does not appear to have benefitted from the upward trend of FDI into the developing world.

Iran and the Middle East

Figure 4, which compares FDI inflows into Iran (FDII) with FDIDW, suggests that there was little relationship between them. Two US military acts focused on Iran: the 1980 failed hostage-rescue attempt, and the 1988 strikes on offshore oil platforms in the Persian Gulf. Both actions were small and had very limited aims. Most importantly, 1980 coincided with the first full year after the Iranian revolution and also with the start of the Iran-Iraq war. The year 1988 coincided with the end of the Iran-Iraq war.

Figure 4. FDI Inflows into Iran vs. the Developing World.

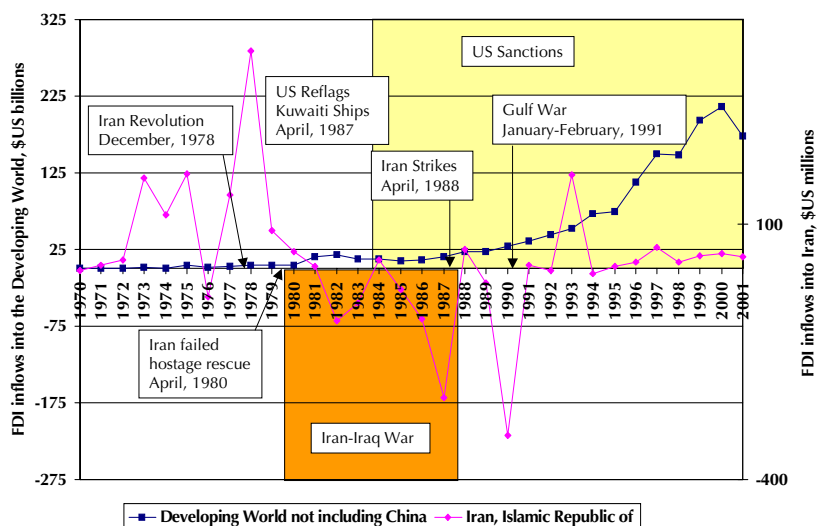


Table 4 gives the regression results. FDIDW is not significant. All other variables are significant at the 1% level.

Table 4. Iran regression, with FDI inflows into Iran as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	120.08***	2.89
Developing world FDI	-0.00007	-0.28
DIIWAR	-177***	-3.52
D1990-2001	-254.05***	-8.92
D1991-2001	184.25***	2.86
D1980	103.42***	3.67
D1988	107.07***	3.79
R-squared	0.51	
Sample size	32	

a. *** means significant at the 1% level.

D1990-2001 and D1991-2001 again represent the Iraqi invasion of Kuwait problem and its correction. Their significance can be explained, as before, by the higher uncertainty created by the invasion of Kuwait, and the reduction in uncertainty due to Iraq's forced withdrawal. The dummies for 1980 and 1988 are significant. D1980 appears to correlate with less disinvestment. We do not have a good explanation why.¹⁰ However, the positive correlation between FDI and D1988 can be explained by the end of the Iran-Iraq war.

The military action in the Gulf War had a more direct effect. The action itself was overwhelming and secured very quickly the goal of pushing Iraq out of Kuwait. TNCs were immediately confident the goals had been achieved. FDI flows into the region quickly returned.

In January 1984, the US declared Iran a sponsor of international terrorism. This automatically imposed trade and investment sanctions for US companies. As time passed, other sanctions were added. They culminated with the 1996 Iran-Libya Sanctions Act, which imposed penalties on companies from any nation that were doing more than \$40 million in business with Iran. A dummy for sanctions did not prove significant. This may be because by 1984 the Iran-Iraq war had already reduced the flows of FDI and the sanctions have simply helped maintain them at low levels since then.

Libya and North Africa

Figure 5 shows that FDI into North Africa (FDINA) has a general trend that seems to follow FDIDW. The two US military actions do not appear to be correlated with specific shifts in FDINA.

10. It may simply be a result of running out of things to disinvest, but we have no data on this.

Figure 5. FDI Inflows into North Africa vs. the Developing World

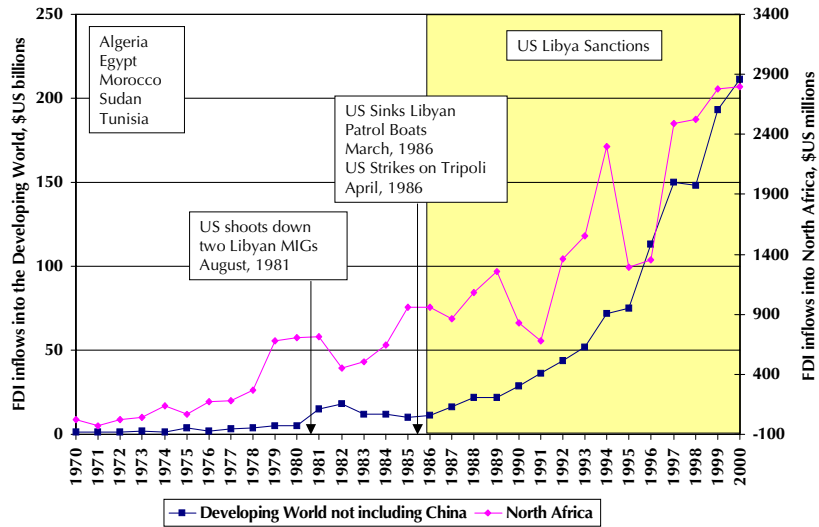


Table 5 provides regression results. All variables, including a US sanctions dummy (DUS Sanctions), are significant. The suggestion is that FDI tended to flow into the rest of North Africa as events unfolded in Libya and in Iran and Iraq.

Table 5. North Africa regression, with FDI inflows into North Africa as the dependent variable

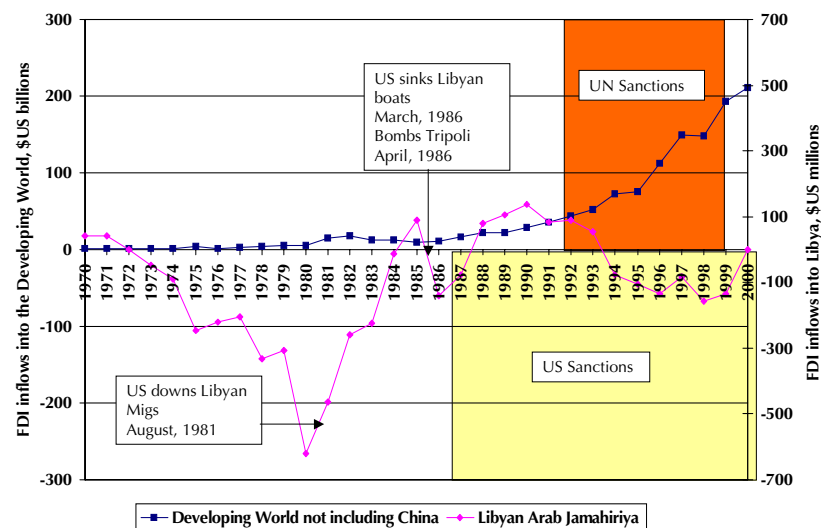
Independent variable	Coefficient ^a	t-Stats
Intercept	181.87***	2.88
Developing world FDI	0.011***	11.83
DUS Sanctions	412.82***	2.99
DIIWAR	228.36**	1.97
R-squared	0.88	
Sample size	31	

a. *** means significant at the 1% level; ** means significant at the 5% level

Figure 6 depicts the evolution of FDI inflows into Libya. After the military coup in 1969, the Libyan government initiated a switch to a socialist economy. During the 1970s, Libya was militarily involved in Chad, the Sudan,

and Uganda. This combination motivated heavy disinvestment in the country. The military involvements ended in the early 1980s. FDI inflows became positive in 1985, after 13 straight years of disinvestment. In 1986, the US bombed Tripoli and established sanctions on Libya, which became stronger in 1996 with the Iran-Libya Sanctions Act. Between 1992 and 1999 the United Nations also had sanctions on Libya.

Figure 6. FDI Inflows into Libya vs. the Developing World.



The diagram shows that FDI into Libya (FDIL) followed its own path. Also, US actions do not appear to correlate with expected FDI changes. The 1981 action happened in a year in which the FDI variable was increasing. The data show negative FDI inflows, meaning that MNCs were selling off assets. The "increase" after 1981 may mean that MNCs were running out of assets to sell.

The 1986 action is associated with a fall in FDI. The year also coincides with the beginning of US sanctions. The whole period of US sanctions is difficult to correlate with FDI, as it is initially associated with a sharp fall and then with steady positive inflows. Only after the imposition of UN sanctions do the inflows turn down and negative again.

An initial regression showed serious autocorrelation of the error term of the regression. This can be interpreted as the result of some unknown variable or shock affecting FDI flows over more than one period. This “memory” characteristic of FDI inflows affects the significance of the explanatory variables. We correct for it by adding one lag to the error term. The results are provided in Table 6. The error autocorrelation term is the only variable that is significant.

Table 6. Libya regression, with FDI inflows into Libya as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	-93.5	-1.68
Developing world FDI	-0.0007	-0.69
D1981	-97.3	-0.74
D1986	-133.8	-1.64
DUS86-01	143.9	1.24
DUN92-99	-28.8	-0.31
Error(t-1)	-1.0***	-12.60
R-squared	0.61	
Sample size	31	

a. *** means significant at the 1% level.

The results can be interpreted as showing how FDI into Libya was isolated from that of the rest of the world. Its evolution, the result of a different set of variables. Since 1970 Libya has had a low or negative level of FDI flows. At most, US actions may have played a role in keeping it low.

Panama and Central America

The crisis in Panama, though long simmering, intensified in 1987 out of a power struggle between Manuel Noriega and his Chief of Staff. Business leaders aligned themselves with Noriega’s opposition. Riots and a state of emergency followed. In 1988 the US indicted Noriega on drug and arms trafficking. Sanctions were put in place against Panama to include withholding of canal fees. Though not the elected president of the country, Noriega was in fact in control. After one president sought refuge in the

american base, a new president was elected in May 1989. Noriega, not happy with the outcome, cancelled the election. In September 1989 a puppet president was installed.

Violent harassment of the opposition and of US personnel in the country culminated with the death of an unarmed US marine officer in December 1989. On December 20th, the US invaded. The operation was a short, rapid engagement. Overwhelming force was applied, and there was a definite and easily verifiable objective--bringing Noriega to justice and restoring the elected president.

First, we consider the effect that the invasion of Panama may have had on FDI inflows into the rest of Central America. Figure 7 suggests that FDI flows into Central America followed the FDIDW trend. We can see that there appears to be an uptick leading up to the US invasion, perhaps a result of MNCs shifting to other countries in the region during the period.

Figure 7. FDI Inflows into Central America vs. the Developing World.

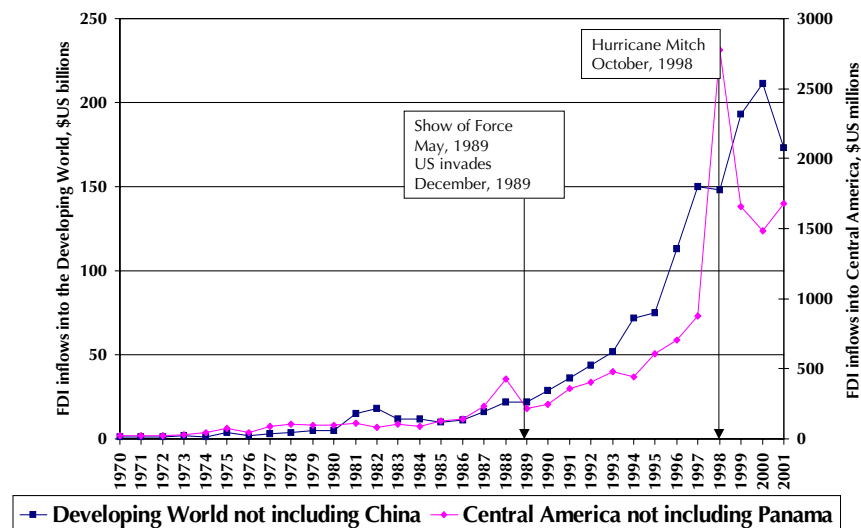


Table 7 reports regression results.

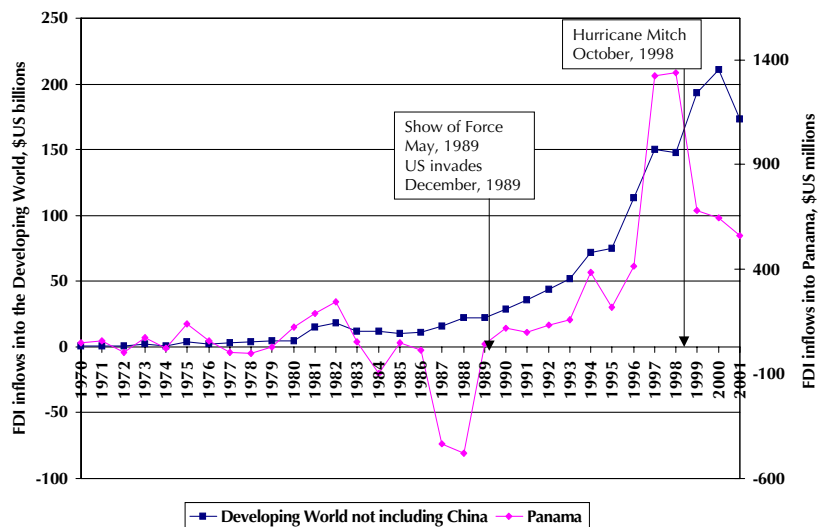
Table 7. Central America regression, with FDI inflows into Central America as the dependent variable

Independent Variable	Coefficient ^a	t-Stats
Intercept	30.2***	3.42
Developing world FDI	-0.0075***	10.25
D8701	154***	2.77
D8901	-158***	-2.5
D98	1626.8***	20.41
R-squared	0.84	
Sample size	32	

a. *** means significant at the 1% level.

Figure 8 depicts FDI flows into Panama (FDIP). It shows a definite deterioration in the years leading up to the invasion, with quick recovery afterward.

Figure 8. FDI Inflows into Panama vs. the Developing World



The interpretation is that as the regime of Manuel Noriega became associated more and more with instability, investment flowed into the rest of the region. Once the US intervened, investment shifted back to Panama. The D98 variable represents the effects of Hurricane Mitch. The devastation motivated large inflows of FDI for reconstruction.

Table 8 reports the regression results.

Table 8. Panama regression, with FDI inflows into Panama as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	33.6	1.85
Developing world FDI	0.0041***	4.44
D8701	-566.8***	-17.52
D8901	528.6***	-2.5
D98	728.1***	6.61

a. *** means significant at the 1% level.

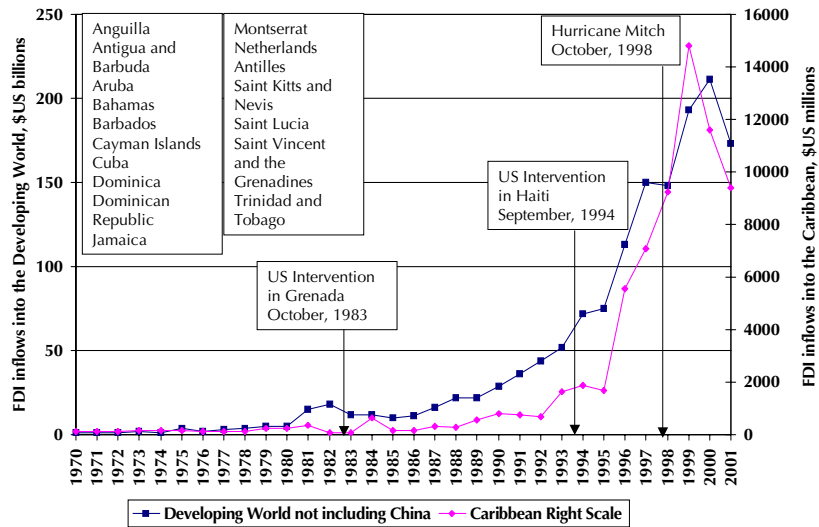
Grenada, Haiti, and the Caribbean

In the Caribbean region, the US intervened in Grenada (1983), and Haiti (1994).

The Grenada intervention was triggered by a Marxist coup. The violence of the militants, which executed the deposed leaders immediately after the coup, raised fears for the security of US citizens, mainly medical students, in the country. This fear, combined with the dislike of having a radical marxist group in the region, and the presence of cuban military personnel on the island motivated direct military action.

In figure 9, FDI flows into the region show a long-term trend similar to that of FDIDW. It is difficult to see whether the actions in Grenada or Haiti had any effect.

Figure 9. FDI inflows into the Caribbean vs. the Developing World.



In the regression results in Table 9 (where we have corrected for autocorrelation), D9401 represents Haiti and D84 represents Grenada (lagged one period). The results show that neither of the US interventions is significant in explaining the evolution of FDI into the Caribbean region.

Table 9. Caribbean regression, with FDI inflows into the Caribbean as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	-97.15	-0.62
Developing world FDI	0.07***	6.66
D9201	-1813.16**	-2.23
D9401	-263.18	-0.32
D84	-803.04	-0.99
D0001	-2651.68*	-1.67
Error(t-1)	-5.47***	-4.03
R-squared	0.98	
Sample size	31	

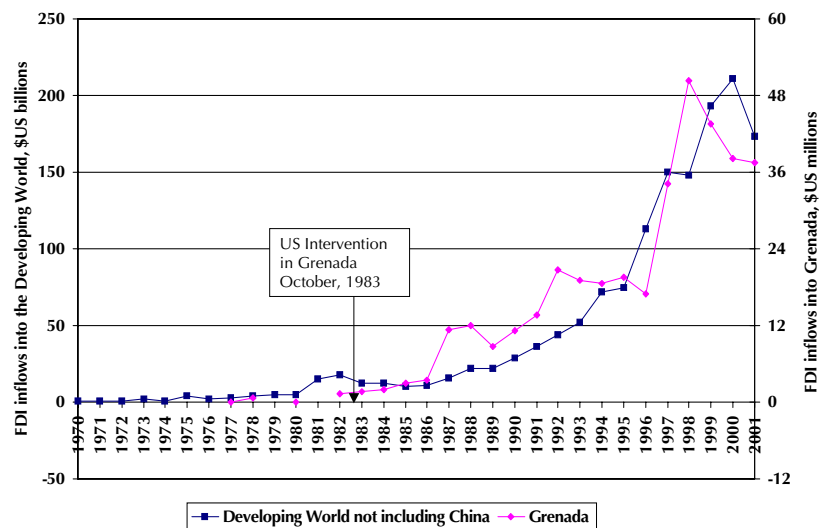
a. * means significant at the 10% level.

** means significant at the 5% level.

*** means significant at the 1% level.

In Grenada we don't have enough observations to run a regression, but the data that are available hint at improvements after the intervention. Figure 10 shows available data on Grenada's FDI inflows. Note that data are sporadic before the intervention, and become steadily available after the intervention. This in itself gives the impression that things in general improved and that FDI was positively influenced by the intervention.

Figure 10. FDI Inflows into Grenada vs. the Developing World.

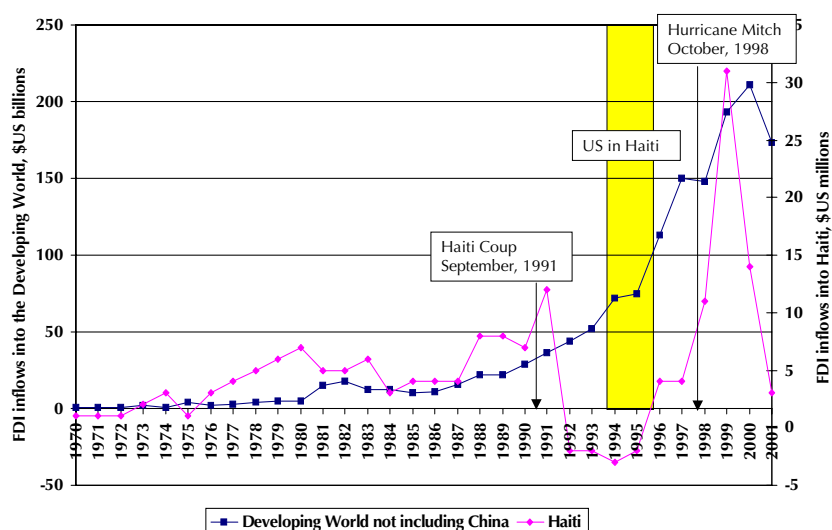


In Haiti, a military coup in 1991 deposed the recently elected president. Violence and repression followed. Sanctions by the international community to pressure the coup leaders to step down exacerbated the refugee problem. Pressure from many countries and an impending US invasion convinced the coup leadership to return control of the country to the elected president.

The US intervention in Haiti differed from those in Panama or Grenada. First, the US did not have to enter the country by force. The agreement between the coup leadership and the elected president included a transition period handled by a US-led UN force. Second, it spent the time (about two years) administering the government while setting up government institutions to work independently. Figure 11 does show a clear deterioration in

the years before the intervention and until the civilian organizations finally assumed responsibility for in-country operations.

Figure 11. FDI Inflows into Haiti vs. the Developing World.



In Table 10 we see the results of the regression:

Table 10. Haiti regression, with FDI inflows into Haiti as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	2.6***	3.85
Developing world FDI	0.00018***	3.95
D9201	-14.9***	-5.94
D9501	-13.6***	-2.94
FDIDW*D9501	0.0001**	1.88
D1997	-11.84***	-4.59
R-squared	0.89	
Sample size	32	

a. *** means significant at the 1% level.

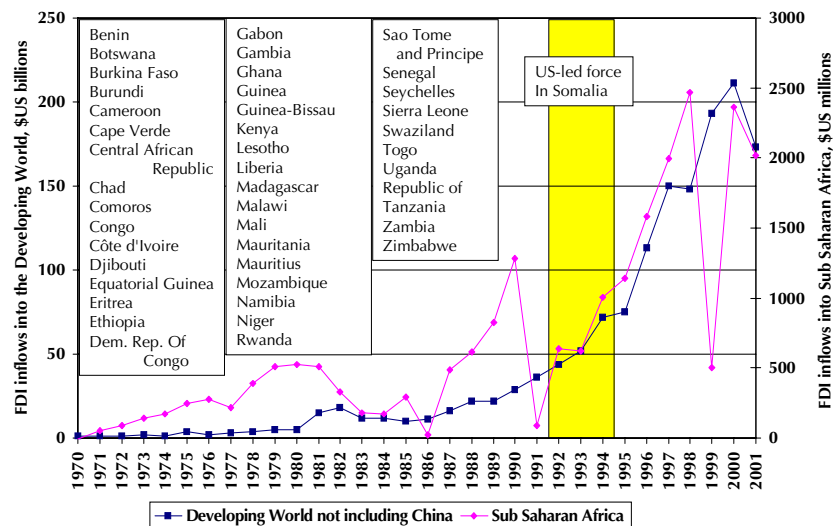
FDI into the developing world is positive and significant. The period starting in 1992, which reflects the crisis and its aftermath, is negative and significant. The period starting in 1995, reflecting the US intervention and its aftermath, is significant but negative. The negative sign may imply that MNCs were better able to assess the condition of the country after the US intervened and that their assessment was negative.

The variable $FDIDW \cdot D9501$ allows us to test whether the coefficient of $FDIDW$ changed after 1994. The estimate is positive and significant at the 10% level. This indicates that after the US intervention, FDI into Haiti followed the evolution of FDI inflows into the developing world much more closely.

Somalia and Sub-Saharan Africa

Figure 12 compares FDI inflows into Sub-Saharan Africa with $FDIDW$.¹¹ The figure does suggest some relationship between Sub-Saharan Africa FDI ($FDISA$) and $FDIDW$. It also suggests some improvements in FDI flows during the Somalia intervention.

Figure 12. FDI Inflows into Sub Saharan Africa vs. the Developing World.



11. In figure 11 and in the regression, we have left out three countries: Nigeria, because of its oil-driven economy; South Africa, because it is perceived differently from the rest of the region; and Angola, due to its very erratic FDI flows, which are caused by internal turmoil.

A regression gives the results in table 11.

Table 11. Sub-Saharan Africa regression, with FDI inflows into Sub-Saharan Africa as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	196.19***	4.54
Developing world FDI	0.0074**	2.2
D87	172.67***	3.41
D8889	363.67***	3.69
D90	867.28***	9.97
D9101	-369.74***	-3.46
D9201	695.01***	4.01
R-squared	0.75	
Sample size	32	

a. ** means significant at the 5% level.

*** means significant at the 1% level.

Events in Somalia help explain FDI inflows into Sub-Saharan Africa. The coefficient for developing-world FDI is positive and significant at the 5% level. All other coefficients are significant at the 1% level. D87 represents a year in which the Somali government accepted the International Monetary Fund's recommendations and incorporated them into the 5-year plan. D8889 represents two years of civil war. D90 represents the year 1990 when the head of state resigned. D9101 represents the period starting in 1991 when no definite leader was available. D9201 represents the period of famine relief and includes the US-UN involvement.

The events related to Somalia's internal turmoil are associated with increases in FDI inflows to Sub-Saharan Africa. There is no logical implication here since Somalia had been in turmoil for a number of years. It is possible that the interest shown by the US and others may have given the impression that more effort would be spent on helping Africa as a whole. This may have motivated an improved outlook for the MNCs.

Figure 13 and table 12 show the graph and regression results for Somalia.

Figure 13. FDI Inflows into Somalia vs. the Developing World.

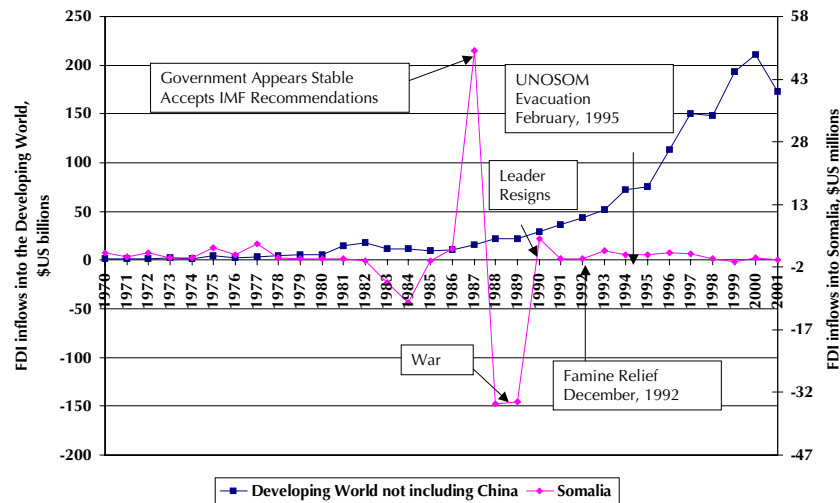


Table 12. Somalia regression, with FDI inflows into Somalia as the dependent variable

Independent variable	Coefficient ^a	t-Stats
Intercept	-0.21	-0.2
Developing world FDI	-0.000015***	-3.39
D87	50.31***	34.59
D8889	-34***	-30
D90	5.33***	4.95
D9101	0.66	0.57
D9301	2.11***	10.36
Error(t-1)	-0.56***	-2.32
R-squared	0.97	
Sample size	32	

a. *** means significant at the 1% level.

In the regression, we have corrected for serial correlation. The dummy for the period 1991 to 2001 is not significant. The dummy associated with the intervention, D9301, was significant at the 1% level. What can we say about this? The values of FDI for the 9301 period are all small and negative.

This implies that there was small disinvestment in process. This may simply mean that there was very little left to disinvest.

The Somalia experience is therefore difficult to interpret. The country's FDI always been small. The fact that the intervention had a negative outcome did not change the outlook for the country. MNCs had no reason to change their negative view of the country's future.

Conclusions and implications

We used the FDI decisions of MNCs to explore the impact of US military interventions. Though the evidence is not definitive, it does suggest some interpretations.

Because an MNC's bottom line is profit, it must evaluate any investment opportunity based on what the prospects are for future economic return. It must consider everything that influences these prospects. In the case of a military intervention, the tactical outcome of a bombing run or a missile attack is not important, but the final outcome of the intervention is. Because the overall picture is what matters to those who have an economic interest in the outcome, the value of the military action must be assessed in that context.

To put some value on the military dimension, all the pieces of the plan must be addressed and their interactions understood. That is, the value of the military depends on how well it has performed its part of the overall plan. The military alone is not wholly responsible for the intervention's outcome. Different interventions have different mixtures of military and non-military actions.

By understanding the role of the military in different types of interventions, we can gain insight into the general role that US forward presence plays in the world at large. Just as in a specific intervention the US military may help with specific security issues, US presence around the world may contribute to overall stability. Further analysis is needed to develop additional quantitative evidence regarding this question.

List of figures

Figure 1.	World FDI Inflows and US Recessions	11
Figure 2.	FDI Inflows into Yugoslavia vs. Developing World	13
Figure 3.	FDI Inflows into the Middle East vs. the Developing World	15
Figure 4.	FDI Inflows into Iran vs. the Developing World.. . .	17
Figure 5.	FDI Inflows into North Africa vs. the Developing World	19
Figure 6.	FDI Inflows into Libya vs. the Developing World.	20
Figure 7.	FDI Inflows into Central America vs. the Developing World.	22
Figure 8.	FDI Inflows into Panama vs. the Developing World.	23
Figure 9.	FDI inflows into the Caribbean vs. the Developing World.	25
Figure 10.	FDI Inflows into Grenada vs. the Developing World.	26
Figure 11.	FDI Inflows into Haiti vs. the Developing World.	27
Figure 12.	FDI Inflows into Sub Saharan Africa vs. the Developing World.	28

Figure 13. FDI Inflows into Somalia vs. the
Developing World. 30

List of tables

Table 1.	Summary of interventions	10
Table 2.	Yugoslavia regressions, with FDI inflows into Yugoslavia as dependent variable	14
Table 3.	Middle East regression, with FDI inflows into the Middle East as the dependent variable . . .	15
Table 4.	Iran regression, with FDI inflows into Iran as the dependent variable	17
Table 5.	North Africa regression, with FDI inflows into North Africa as the dependent variable.	19
Table 6.	Libya regression, with FDI inflows into Libya as the dependent variable.	21
Table 7.	Central America regression, with FDI inflows into Central America as the dependent variable . .	23
Table 8.	Panama regression, with FDI inflows into Panama as the dependent variable	24
Table 9.	Caribbean regression, with FDI inflows into the Caribbean as the dependent variable	25
Table 10.	Haiti regression, with FDI inflows into Haiti as the dependent variable.	27
Table 11.	Sub-Saharan Africa regression, with FDI inflows into Sub-Saharan Africa as the dependent variable	29
Table 12.	Somalia regression, with FDI inflows into Somalia as the dependent variable	30

