




UNITED NATIONS DEVELOPMENT PROGRAMME

FOREIGN DIRECT INVESTMENT AND GROWTH IN FRAGILE AND CONFLICT- AFFECTED COUNTRIES

The Role of Peacekeeping and Natural Resources

By Lars Jensen



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The Role of Peacekeeping & Natural Resources

LARS JENSEN¹

Abstract

This study assesses the relationships between foreign direct investment (FDI), growth, natural resources, and UN peacekeeping operations (PKOs) in fragile and conflict-affected countries (FCAs). An unbalanced panel-dataset on conflict and peacekeeping covering 127 countries from 1989-2018 was created to estimate how FDI and growth are associated with periods of peace, conflict, and post-conflict, including the significance of having a PKO in the last. Main findings are:

- In 2018 all but two of the top 32 FCAs were either low income (LIC) or lower-middle income (LMIC) countries, and two-thirds could be categorized as resource dependent (RD). As a share of total LIC and LMIC, they accounted for 40% of countries, one-third of population, little more than 20% of GDP, and received about 20% of FDI.
- The group of countries that can be categorized as both FCA and RD receive the highest ratios of FDI-to-GDP averaging 5.6% per annum (2006-2018), whereas the group of non-RD FCAs has not attracted even 2%.
- Post-conflict periods without a PKO are not associated with recovery (higher than peacetime) rates of FDI nor economic growth, whereas periods coinciding with a PKO presence have higher FDI-to-GDP of close to 2 percentage points, and with so-called transformative PKOs a higher real GDP growth of more than 4 percentage points. Results also provide some tentative evidence that transformative PKOs and PKOs in resource-dependent economies are more effective in facilitating recovery rates of FDI and growth.

In conclusion, the study finds that fragility is not a major deterrent of resource-seeking FDI, largely explained by its set of unique investment determinants. Furthermore, that peacekeeping and natural resources are important overlooked factors in understanding the large country heterogeneity regarding the economic impact of conflicts and post-conflict economic recovery, and that peacekeeping could be an important measure in closing conflict-attributable GDP losses.

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Acronyms

BRD	Battle-Related Deaths
CPIA	Country Policy and Institutional Assessment
DFI	Development Finance Institution
EoDB	Ease of Doing Business Index
FCA	Fragile and Conflict-Affected
FDI	Foreign Direct Investment
FfP	Fund for Peace
FSI	Fragile States Index
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GPI	Global Peace Index
GPI_S	Security and Safety sub-index of the Global Peace Index
HIC	High Income Country
ICT	Information and Communications Technology
IEP	Institute for Economics and Peace
IMF	The International Monetary Fund
LDC	Least-Developed Countries
LIC	Low-Income Country
LMIC	Lower-Middle Income Country
MIGA	The Multilateral Investment Agency
MONUC	UN Mission in the Democratic Republic of the Congo
ODA	Official Development Assistance
PKO	Peacekeeping Operation
PPI	Positive Peace Index
RD	Resource dependent
SDG	Sustainable Development Goal
SIDS	Small Island Developing State
SSA	Sub-Saharan Africa
UCDP	Uppsala Conflict Data Program
UMIC	Upper-Middle Income Country
UN	United Nations
UNCTAD	UN Conference on Trade and Development
UNMIL	UN Mission in Liberia
UNOMIL	UN Observer Mission in Liberia
WB	The World Bank

Introduction

Post-conflict countries are often left with the destruction of essential infrastructure, disrupted public services, and increased levels of unemployment and poverty, all of which contribute to an elevated level of fragility and higher risk of conflict relapse. Domestic capital markets are weakened and so is the ability of government to raise revenue. Foreign investors and donors can help fill funding gaps thereby restoring infrastructure and services, provide foreign exchange and generate jobs and income — at least in theory. Investors' risk perception of post-conflict countries works against the need to attract funding as one of the best predictors of conflict onset (relapse) is a (not-too-distant) history of conflict. Donors, Development Finance Institutions (DFIs) and the international community work in different ways to help countries recover and avoid a return to conflict for instance by increasing official development assistance (ODA) or by the provision of tailored financial instruments that help rebalance the risk-reward profile facing private investors.² Another important instrument is peacekeeping - that is, the deployment of a peacekeeping operation (PKO). Whereas the literature has mostly found that PKOs are effective in terms of reducing and preventing conflict, it is not well-understood to what extent PKOs contribute to investments and overall economic performance — key ingredients to sustaining peace.

Before the paper examines this question empirically in section 3, section 1 starts by discussing the possible links between peacekeeping, FDI and fragility, including by looking at the example of Liberia. Section 2 then takes a closer look at the size and nature of FDI flows going to FCAs relative to non-FCAs, including the importance of considering natural resource wealth, and includes three country examples; Angola, Mozambique, and Yemen. Finally, section 4 concludes the paper.

For developing countries, FDI is often viewed as a particularly important source of finance as it can help fund infrastructure, create jobs, and raise economic productivity.³ But not all FDI is considered equally conducive to sustainable development and while public data on sectoral FDI is limited, it is commonly understood that a high share of the little FDI going to lower income developing countries is invested in the extractives sector. Although natural resources provide countries with great development opportunities, the so-called "resource curse" literature has pointed out that, if not carefully managed, natural resource wealth can be detrimental to sustainable development through a multitude of social, economic, environmental, and governance channels.⁴

Relative to other types of FDI often termed market-seeking, resource-seeking FDI is less likely to lead to any significant transfer of technology, skills or knowledge, and it is known to create fewer jobs per dollar invested. The extractives industry is capital-intensive and, in developing economies, most of the necessary machinery and equipment is imported. Extraction tends to rely little on host-country production inputs. Extracted materials are exported to the global market at global market prices and settled in US dollars. However, resource-FDI can help generate significant rents accruing to governments, which could be used

² One example is the World Bank's Multilateral Investment Guarantee Agency (MIGA), which directly offers foreign investors insurance products some of which are tailored to FCA countries, e.g., MIGA's product against war, terrorism and civil disturbance. The purpose is to offer a risk insurance product that would otherwise not have been provided by the market and thereby attract private investors to help fund recovery and development.

³ The Sustainable Development Goals (target 10.b) explicitly mentions the need for Least Developed Countries (LDCs), African countries and Small Island Developing States (SIDS) to attract more FDI in accordance with national plans and priorities. Some of the benefits of FDI are that it can help compensate for underdeveloped domestic financial markets; it often comes with a large physical capital component, which can help fill important infrastructure gaps, and it often comes with a transfer of both technology, skills, and knowledge that can raise economic productivity. Labor-intensive FDI is viewed as particularly conducive to developing countries with a large and fast-growing workforce (many in Africa), and especially so when it also generates links to local businesses either as off-takers or suppliers of goods and services.

⁴ For a good overview of the different cause and effect explanations in the resource curse literature see NRG (2015) and Badeep et al. (2017).

to fund health, education, social services, environmental protection, infrastructure, and so on. Because of the nature of the extractives sector, resource-FDI determinants are also highly different from market-FDI determinants which is key to understanding the dynamics of investment flows and growth in resource-dependent developing economies, including FCAs.

Whereas key market-seeking FDI determinants are the size, growth, and stability of the economy; the quality, quantity and price of domestic production inputs; access to ICT and other market infrastructure; and the functioning of market institutions, these factors matter less for resource-FDI. Main determinants of resource-seeking FDI are likely to be global commodity prices; the size and accessibility of resource deposits, and; in FCAs to what extent production facilities and infrastructure necessary for exports (pipes, roads, rails, and ports) are, or can be expected to be, shielded from any ongoing or future conflict. As an example, offshore facilities are likely to offer more protection against such risks.

Another key determinant is the financial attractiveness of the agreement the investor can negotiate with the government, especially in terms of taxes, royalties, and capital transfers, and importantly the likelihood that the government will stay committed. In other words, political risk. It has also been argued that for resource-seeking FDI in least developed countries (LDCs) there are good reasons to believe that investors often prefer to deal with autocratic regimes as they can grant more favorable terms and offer more governance and economic stability (Li, 2017). This might also explain why one study finds that higher levels of democracy do not help attract more FDI in countries that are resource dependent (Aseidu & Lien, 2011).⁵

1. UN Peacekeeping & FDI

It is unclear if and how foreign investors factor in a PKO presence as part of their investment decision. On one hand, having a PKO might be perceived as a signal of elevated risk. In fact, one of the criteria used by the World Bank to label a country as fragile is the presence of a PKO. More specifically, the presence of a PKO (during the last three years) puts a country on the World Bank's so-called 'Harmonized List of Fragile Situations,' regardless of the country's CPIA score — a score otherwise used to classify countries as fragile or not.⁶

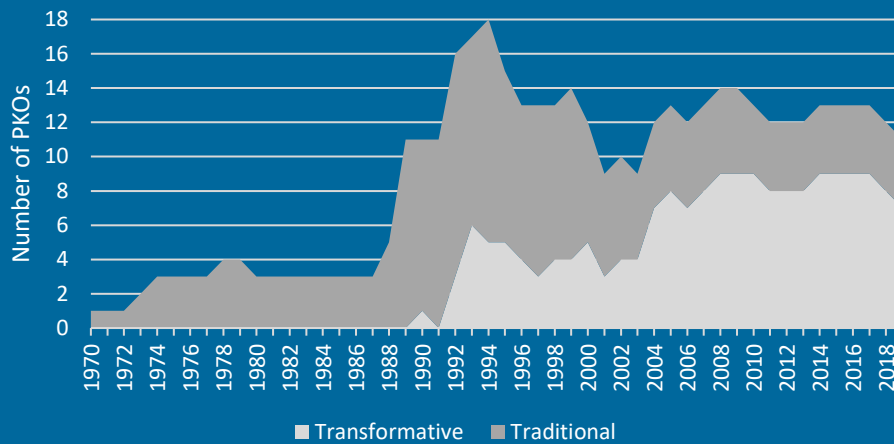
On the other hand, it is possible that investors view a PKO as a positive market signal that risk is better contained, as UN PKOs have been found effective in reducing conflict and prolonging peace. Earlier literature suggested that PKOs have been most effective in the short-term, whereas their ability to positively affect longer-term economic development and growth (key determinants of self-sustaining peace) have historically been limited (Sambanis, 2007). However, more recent evidence suggests that PKOs have improved over time and are today better at addressing countries' longer-term peace constraints by ensuring a better coordination between peacekeeping, humanitarian and development assistance (WB & UN, 2018). A recent study also argues that the positive impacts of PKOs have been understated in past empirical studies because those studies did not adopt a more holistic view of how PKOs have helped reduce both the intensity and duration of conflict as well as the probability of conflict relapse and contagion to neighboring countries (Hegre et al., 2019).

⁵ The authors find that when the share of oil and minerals in total exports exceed a certain threshold, improving on measures of democracy does not help attract more FDI.

⁶ CPIA is the World Bank's Country Policy and Institutional Assessment. The reader can find the World Bank's Harmonized List of Fragile Situations using the following link: <https://www.worldbank.org/en/topic/fragilityconflictviolence/brief/harmonized-list-of-fragile-situations>

Box 1: UN Peacekeeping 1970-2019

Since 1970, 55 UN PKOs have responded to internal (not international) conflicts across 36 countries, cf. the Figure below.⁷ In the literature it is common to distinguish between type of PKO based on mandates and activities and, not surprisingly, PKOs with stronger mandates, personnel, and budgets — called transformative as opposed to traditional — have been found to be more effective in reducing conflict and securing peace (Hegre et al., 2019).



Source: Based on Hegre et al., (2019) with own update from 2013-2019.

The number of active PKOs peaked in 1994 with 18 missions and is today down to 11. The split between traditional and transformative PKOs has been almost equal over the entire period (28 traditional and 27 transformative), but there were no transformative PKOs before the end of the Cold War. Today, seven of the 11 ongoing PKOs are transformative. Close to half of all PKOs have been deployed in Sub-Saharan Africa (SSA) and, only considering transformative PKOs, almost two-thirds. A full list of PKOs can be found in Table 7 in Annex A.

The World Investment Report (WIR) from 2010 dealt explicitly with FDI in FCA countries and included an interesting example of a mining company in the Democratic Republic of the Congo. The case suggested that the physical proximity of the mining-site to the military (PKO) outfits was a key determinant in the investment decision:

AngloGold Ashanti was the first major foreign investor to return to the troubled northeastern region of the war-ravaged Democratic Republic of Congo [...].

Following the December 2002 peace agreement, Ashanti Goldfields— then in the process of merging with AngloGold — consulted its local joint venture partner, the interim government of the Democratic Republic of Congo, and the United Nations peacekeeping mission to explore whether a presence could be reestablished in the area and mining exploration conducted.

In light of the recent conflict, [...], security remained an issue. The company, however, assessed the situation as sufficiently stable to reengage. In addition, a United Nations peacekeeping camp was to be established in the vicinity of the concession. As a result, AngloGold Ashanti set up an exploration camp in 2004, and unarmed security guards were recruited. Exploration drilling started in January 2005.

[WIR (2010), Box 2.1, page 40]

The arguments presented thus far suggest that it is somewhat unclear whether investors would react positively or negatively to the presence of a PKO in a fragile context. The question can be assessed

⁷ The PKO-dataset used in this analysis is an updated version of the dataset from Hegre et al. (2019) where authors collected data for all UN PKOs deployed to internal conflicts from 1970-2013. For this analysis the dataset was updated to 2019.

empirically, which the paper attempts to do in Section 3 by focusing on PKOs' association with both growth and FDI in post-conflict periods. But first it might be useful to take a closer look at a country example to better understand the complexities around conflict and fragility, FDI, growth, and natural resources.

1.1. The Case of Liberia - Peacekeeping & Fragility

Liberia has had two PKOs since 1993 and the latest, UNMIL, left the country in March 2018. Judging from four key measures (cf. Box 2 for details) broadly thought of as a country's level of "conflict- or fragility-risk" (authors own interpretation), it is not obvious that Liberia today is a much less fragile country than it was say 10+ years ago, cf. Figure 1. The "underlying" drivers of conflict represented by the Positive Peace Index (PPI) did improve slowly from 2005-2015 but deteriorated again from 2015-2017, and in 2017 (latest PPI datapoint at the time of writing) the country was at the worst interval of the PPI scale, 'Low.' The more "immediate" drivers of conflict represented by the Global Peace Index's Safety and Security sub-index (GPI_S) have only improved marginally over the period and the Fragile States Index (FSI) has remained at the "Alert" level (value 3 in Figure 1) since the start of the index in 2006. Viewed in this light, UNMIL's exit might look premature. GDP per capita has continued its fall since the Ebola crisis in 2014 and now has been worsened by the COVID-19 crisis.

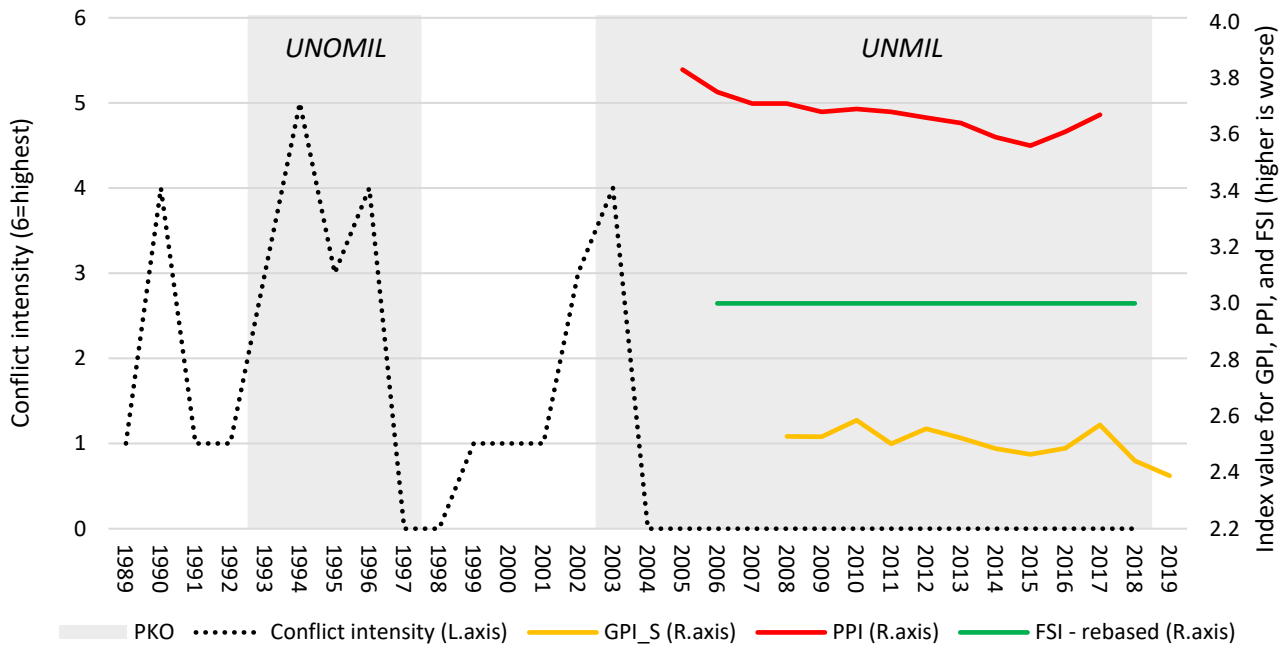
Box 2: Key measures of fragility, peace & conflict in Figure 1

The most direct conflict measure included in Figure 1 is conflict intensity (black dotted line) which is based on the number of yearly battle-related deaths (BRDs) as reported by the Uppsala Conflict Data Program (UCDP) and scaled in the figure to lie between 0-5 (cf. Figure 1 note). Included is also a version of the Fragile States Index (FSI) from the Fund for Peace (FfP) which, according to FfP, should be interpreted as a measure of a country's resilience towards conflict (green line). According to the Institute for Economics and Peace (IEP) their Positive Peace Index (PPI) can be interpreted as the "underlying/structural" drivers of conflict (red line). Finally, the figure also includes IEP's Global Peace Index "Societal Safety and Security" sub-index (GPI_S), which can be interpreted as the more "immediate" drivers of conflict (orange line).⁸

The FSI, GPI and PPI indices were not available under the first PKO in Liberia called the United Nations Observer Mission in Liberia (UNOMIL, 1993-1997) or at the beginning of second United Nations Mission in Liberia (UNMIL, 2003-2018). But it could be noted that conflict intensity (number of battle-related deaths) was high throughout UNOMIL (which was only an observer mission, i.e., a traditional PKO, cf. Annex A) and fell to zero only in 1997, the same year the mission left. Liberia was then still a highly fragile country and relapsed into conflict already in 1999 with rising intensity until 2003 when UNMIL — an enforcement mission (transformative PKO) — was finally deployed and a peace accord signed the same year, thereby signaling an end to a civil war that had lasted since 1989. Conflict intensity fell to zero in 2004 where it has remained ever since and UNMIL withdrew from Liberia in March 2018.

⁸ The GPI has three sub-indices; Conflict, Safety & Security, and Military. Conflict is a measure of ongoing conflict and thus strongly related to the included conflict intensity (BRD) series in Figure 2. Military measures things like military spending, weapons trade, access to small arms, and how much the country contributes to UN PKO funding, etc. GPI_S relates more closely to institutions and drivers of conflict, and this sub-index is shown in Figure 2. More specifically GPI_S is a composite measure made up of the indicators: Perceptions of criminality; Refugees and IDPs; Political instability; Political terror; Impact of terrorism; Homicide rate; Violent crime; Violent demonstrations; Incarceration rate; and Security officers and police rate.

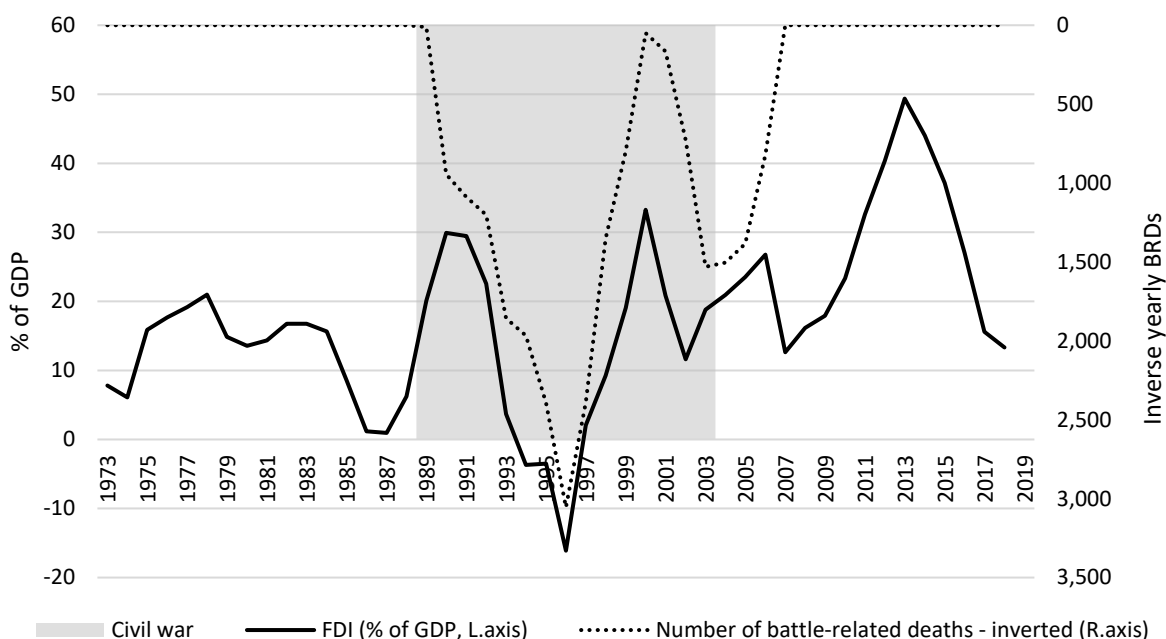
Figure 1: Liberia - PKOs, conflict intensity, and peace & fragility indices



Source: Own calculations based on IEP, Fund for Peace and UCDP. The Global Peace Index (GPI) and Positive Peace Index (PPI) are both from the Institute of Economics and Peace (IEP). The Fragile States Index (FSI) is from the Fund for Peace. Conflict intensity is measured based on the number of battle-related deaths (BRDs) as reported by the Uppsala Conflict Data Program (UCDP). Note: PPI and GPI ranks countries on a scale from 1-5 (higher = worse). The FSI ranks countries on a scale from 1-120 within 11 categories. The FSI index value 3 in the figure corresponds to the category 'Alert' on the FSI ranking which are countries with a score between 90-100. Conflict intensity is based on number of yearly BRDs on a scale from 0-5: 0 if BRD < 25; 1 if 25 ≤ BRD < 1,000; 2 if 1,000 ≤ BRD < 2,000; 3 if 2,000 ≤ BRD < 3,000; 4 if 3,000 ≤ BRD < 4,000; and 5 if 4,000 ≤ BRD < 5,000.

To show how FDI and conflict intensity have moved together in Liberia, Figure 2 plots the inverse conflict intensity measured as the number of yearly battle-related deaths (BRDs) against FDI as a percentage of GDP with both series transformed to their four-year moving averages to smooth out fluctuations. The two series follow each other rather closely with FDI turning negative at the peak of conflict intensity in the mid-1990s. However, and not uncommon for RD countries, Liberia was still able to attract sizeable amounts of FDI relative to its economic size during its civil war, with inflows averaging 11.5% of GDP annually from 1989-2002. From 2007-2013 FDI inflows grew significantly and partly attributable to the 2006-government's strategy to attract foreign investments including equal treatment of foreign investors and freer transfer of capital (UNCTAD, 2011). But it is also a period under which global commodity prices (including gold and iron ore, with which Liberia is endowed) experienced a boom. UNCTAD estimated that about 90% of all FDI greenfield investments in Liberia in the period 2003-2010 went into extractives. From the end of the civil war until 2013 FDI inflows to Liberia were in relative terms astonishingly high, averaging an annual 33% of GDP. Since the Ebola outbreak in 2014 and the coinciding fall in global commodity prices, FDI inflows have reduced dramatically despite there being no relapse into conflict.

Figure 2: Liberia - FDI (% of GDP) & inverse conflict-intensity (4-year moving average), 1985-2018



Source: Own calculations based on UCDP data for conflict (BRDs) and UNCTAD data for FDI.

In summary, while the presence of UNMIL in Liberia has likely contributed to end the fighting and sustain the peace, and therefore likely also helped Liberia attract more FDI, it is not obvious that Liberia’s underlying structural level of fragility (or resilience to conflict) improved significantly under UNMIL. Thus, a PKO withdrawal would not necessarily signal to a potential investor that peace has now reached any “self-sustaining level,” and if UNMIL was perceived as a main measure keeping “a lid” on conflict risk then investors might have reacted negatively to UNMIL’s exit. It is unclear to what extent such level of analysis goes into decisions on PKO withdrawals. Based on the PKO dataset used in this report, almost one-third of PKO-exits happen under some level of ongoing conflict and for PKOs exiting in a peace year, conflict follows within five years in 10% of the cases. Whereas Figure 2 suggested that FDI in Liberia has responded negatively to the intensity of conflict it also showed that despite conflict and fragility Liberia (by virtue of its natural resources) was nevertheless able to attract or sustain high levels of FDI-to-GDP.

2. FDI in Fragile & Conflict-Affected Countries

Few studies have dealt explicitly with FDI in FCAs, but this was the topic of the World Investment Report (WIR) in 2010. The report found that two sectors were outliers as they were able to attract high levels of FDI despite high levels of fragility or outright conflict: the extractives sector and the telecommunications sector. Findings are well-aligned with an UNCTAD report published the following year on lessons learned on FDI in LDCs covering the period 2003-2010 (UNCTAD, 2011). The report found that 54.9% of total cumulative greenfield investments by volume was in the primary sector, hereof 51.4 percentage points in one of the two industries, namely 'minerals' or 'coal, oil and gas.'

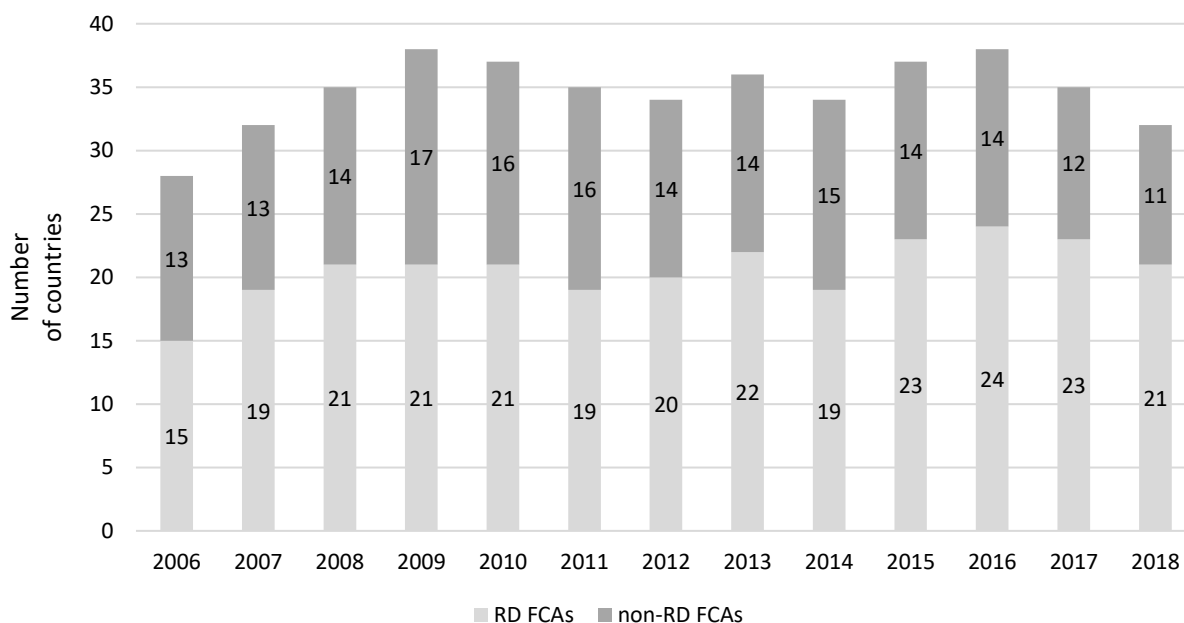
As suggested earlier, and as pointed out in WIR (2010), in the event of conflict FDI in the extractives sector (relative to other types of FDI) could be less affected by: domestic demand shocks as production is exported; weakened access to domestic production inputs as investments are highly capital-intensive and import-heavy; and destruction of assets as assets are underground or far away from the location of conflict, e.g., off-shore. It is less obvious why the ICT sector stood out in WIR, but the authors argue that

due to low cellular penetration in most FCAs and an increasing demand for information during conflict/fragility, returns to telecommunications investments could be high.

2.1. Natural Resources & Fragility

More than half of all highly Fragile and Conflict-Affected countries (FCAs) in every year from 2006-2018 can be categorized as resource-dependent (RD) and two-thirds of FCAs in the year 2018, cf. Figure 3. It can also be noted that with the chosen definitions (cf. Box 3 for details) all 32 identified FCAs in 2018 except for Libya and Iraq are either LIC or LMIC.

Figure 3: Number of high FCA countries, 2006-2018



Source: Own calculations based on the Fund for Peace and World Bank data. Note: see Box 3 for details.

As a share of total LIC and LMIC countries, FCAs account for 40% of countries, one-third of the population, and 21.6% of GDP. Total FDI inflows to LICs and LMICs were \$146 billion in 2018, whereof 20.5% went to FCAs — roughly equal to their GDP share, cf. Table 1.

Table 1: FDI inflows to LICs & LMICs disaggregated on FCA and RD status, 2018

Country category	FDI (\$ billion)	Share of FDI	Share of GDP	Share of population
Non-FCAs	115.9	79.5%	78.4%	67.1%
RD-FCAs	16.1	11.0%	9.6%	16.9%
Non-RD FCAs	13.8	9.5%	12.0%	16.0%
Total	145.8	100%	100%	100%

Source: Own calculations based on data from UNCTAD, Fund for Peace and the World Bank. Note: See Box 4 for definitions. The table excludes Syria, for which there is no FDI data since 2011 and DPR Korea, for which there is no resource data.

Box 3: Definitions of fragile and resource-dependent

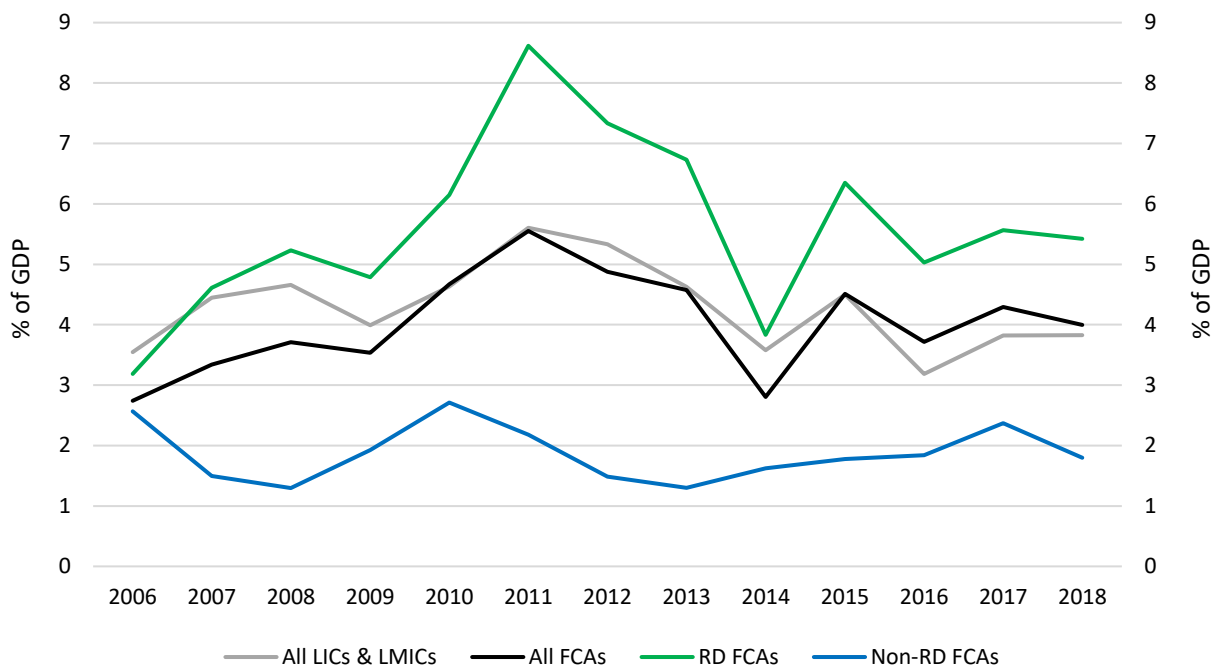
For the purpose of this analysis, a country is categorized as an (high) FCA if its annual score on the Fragile States Index (FSI) published by the Fund for Peace since 2006 is a minimum of 90 corresponding to FSI's 'Alert' category (a score between 90-100). This gives a total number of 32 FCAs in 2018. Countries scoring lower than 60 on the FSI are considered sustainable and/or stable. When a country scores above 60 it goes into 'warning' and the last stage 11 is 'very high alert' for countries scoring between 110-120. FSI is a composite index of 12 main fragility indicators across four dimensions; Cohesion, Economic, Political, and Social. The source states that even though countries are ranked against each other every year, it is better to use the index as a longitudinal measure assessing the vulnerability of state collapse.

Usually one of two measures are used to classify a county as resource dependent. One is the share of fuel, mineral, and ores in total exports. The other measure, chosen for this analysis, is the sum of all natural-resource rents from coal, forests, minerals, gas, and oil stated as a percentage of GDP and published by the World Bank. The World Bank calculates resource rents as the difference between the price of a commodity and the average cost of producing it. This is done by estimating the world price of units of specific commodities and subtracting estimates of average unit costs of extraction (or harvesting) costs and a normal return on capital. These unit rents are then multiplied by the physical quantities that countries extract to determine the rents for each commodity as a share of GDP. For the purpose of this analysis, resource-dependence is defined based on the size of resource rents relative to GDP where a country is classified as RD if over the period 2006-2018 its annual average total resource rents have been a minimum of 10% of GDP.

Figure 4 plots FDI in percent of GDP for LICs and LMICs from 2006-2018 and also broken down based on RD and FCA status using the definitions described in Box 3. Overall, the FCA group (black line) attracted about the same ratio of FDI-to-GDP as the total LIC & LMIC group (gray line); the yearly averages across the period are 4% versus 4.3%. However, the FCA group hides a substantial divergence. The RD FCA group of countries (green line) has attracted the highest ratio of FDI-to-GDP over the period averaging 5.6% per annum and the group has continued to outperform the total LIC & LMIC group despite falling levels of FDI since the peak and following downward trend in commodity prices from 2011.⁹ At the very bottom of the scale is the non-RD FCA group of countries (blue line) which has managed to attract only an annual average ratio of 1.9%. It should be mentioned (as is not shown in the graph) that if only considering the RD non-FCA group, it has attracted an annual average of 5.4% of GDP over the period — i.e., not much different from the RD FCA group. Furthermore, the non-FCA non-RD group has attracted an annual average of 4.2% — i.e., significantly higher than the non-RD FCA group.

⁹ The steep drop in FDI to GDP in 2014 for FCAs coincides with the drop in the price of mainly crude oil, but also metals and other commodities at that time. From mid-2014 until end-2014 the price of crude oil almost halved.

Figure 4: FDI inflows in LICs & LMICs (% of GDP), 2006-2018



Source: Own calculations based on data from Fund for Peace, World Bank and UNCTAD. Note: The datapoints are simple averages. Resource-dependent countries are defined as having an average annual (2006-2018) level of resource rents at a minimum of 10% of GDP — i.e., this ‘category variable’ is constant across years for all countries in the graph. Fragile and Conflict-Affected (FCA) countries are defined as countries having a minimum score of 90 (“Alert”) on the Fragile States Index in the respective year — i.e., this ‘category variable’ can change from year to year. There is no FDI data for Syria since 2011 and there is no rents data for DPR Korea.

In summary, across all LICs and LMICs, the group of fragile and conflict-affected countries that are also resource-dependent has attracted the highest ratios of FDI-to-GDP, averaging 5.6% per annum while the group of countries that are non-resource-dependent but fragile and conflict-affected is left the furthest behind, attracting an average of only 1.9% per annum.¹⁰

The next subsection takes a closer look at three country examples of FDI in FCAs to illustrate some of the many nuances in the interactions between fragility, conflict, FDI, and natural resources.

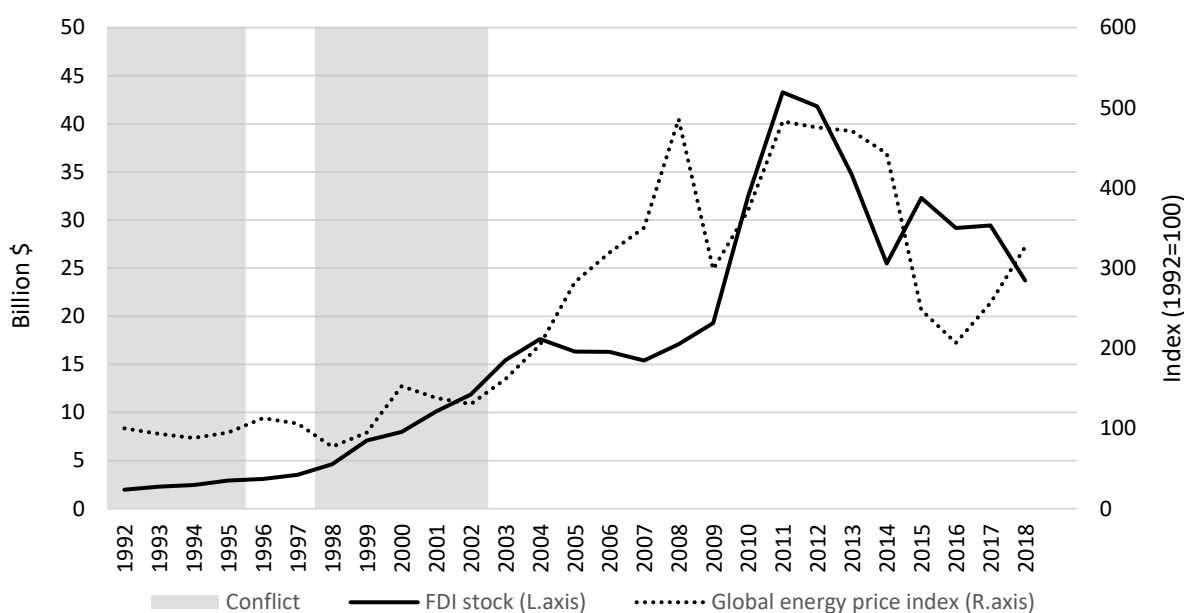
2.2. Country Examples: Conflict, FDI & Natural Resources

When global commodity prices go up, resource-endowed countries and companies in the extractives sector earn more, and there is an incentive to increase production. The increase in production will often have to be preceded by new investments to expand capacity. Therefore, it can be expected that FDI inflows and the country and resource relevant global commodity price index are highly correlated.

Figure 5 depicts the development in FDI stock (black line) and the global fuel energy price index (black dotted line) for Angola, a highly oil export-dependent country.

¹⁰ Country groupings cover: RD & FCA; non-RD & FCA; RD & non-FCA; non-FCA & non-RD. It could be noted that the conclusion from Figure 4 is opposite to the findings in WIR (2010) where the authors argue that FCA economies not endowed with natural resources tend to rely more heavily on FDI than others. One possible explanation is that WIR uses different definitions of FCA and RD. The size of the primary sector is used as a proxy for a countries’ RD status, and a different (more limited) measure of FCA which has lower country coverage. In WIR (2010) a country with a primary sector of at least 20% of GDP is considered resource dependent (or resource-rich). As for FCA classification WIR used the average CPIA score and every country scoring below 3.2 was classified as an FCA.

Figure 5: Angola — FDI stock (billion \$) and energy price index (1992=100), 1992-2018



Source: Uppsala Conflict Data Program (UCDP), UNCTADStats and IMF Commodity Price Statistics. Note: The IMF price index includes Crude oil (petroleum), Natural Gas, Coal Price and Propane Indices. The negative FDI inflows in 2005, 2006 and 2007 were due to the government’s purchase of foreign-owned oil projects.

During the last 5 years (1998-2002) of the Angolan civil war, FDI stock grew by more than 155%, or \$5.2 billion. FDI inflows temporarily turned negative in 2005-2007 as the state-owned oil company, Sanongold, made several large acquisitions of ongoing exploration and refinery projects owned by foreign investors during a period of rapidly rising oil prices (UNCTAD, 2007). Thus, Angola was able to attract high and increasing volumes of FDI during part of their civil war, and mostly into the extractives sector (oil). How so? Investment- versus fighting-location is one key explanation. In Angola these locations were mostly different, with most investments going into offshore oil projects. As argued earlier, another explanation is that resource-seeking FDI depends less on the state and prospects of the host economy.

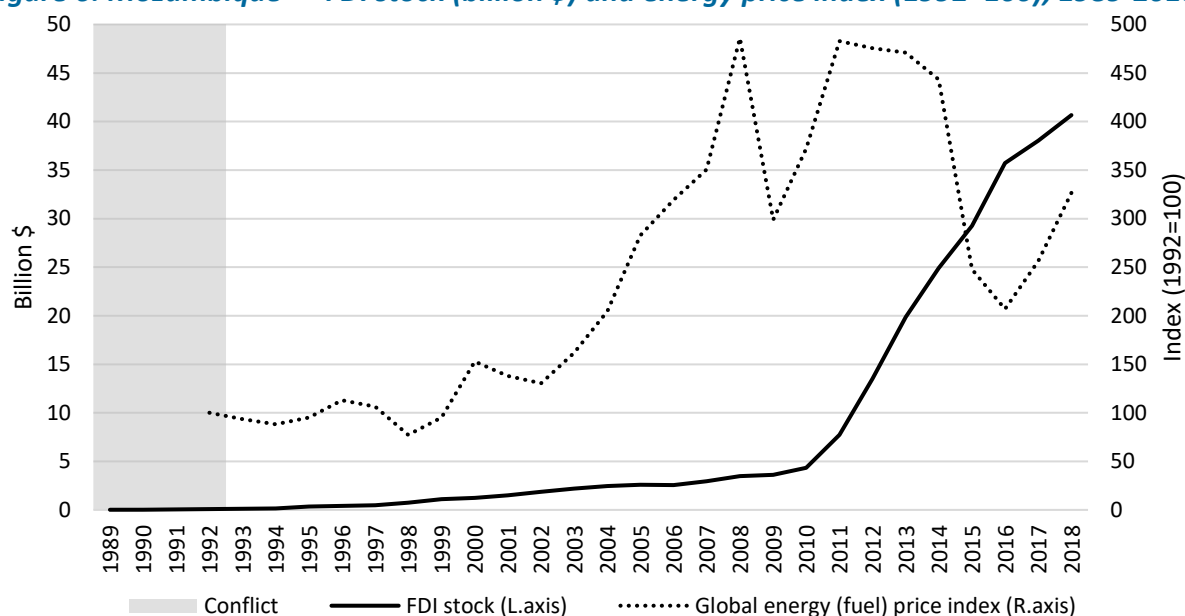
Angola is one of the most resource (oil) dependent countries in the world. From 2006-2010 fossil-fuel exports accounted for 95% of all exports and Angola depended on fossil fuels for no less than 78% of total fiscal revenue (IMF, 2012). Angola still has offshore oil reserves, but FDI stock has been on a steady decline alongside a falling oil price since 2011. As reported by the magazine *The Economist*, offshore deep-water oil projects have higher investment and operational costs, and when oil prices approach \$50/barrel many of these projects become unprofitable.¹¹ Angola has had negative real GDP growth the last four years.

Different from Angola, Mozambique was not able to attract any significant amounts of FDI during its civil war that ended in 1992, cf. Figure 6. After the war, FDI inflows started growing slowly until 2010, at which point they started surging. From 2010-2018 FDI stock grew by almost 840% (\$36 billion) and has averaged 28% of GDP annually. Part of Mozambique’s success in attracting FDI can be attributed to the implementation of several reforms since the mid-1990s. But it is likely to have much more to do with the opening of new coal mining concessions since 2010, described by the OECD in 2013 as a coal boom, and particularly the discovery of some of the world’s largest (offshore) gas deposits between 2009-2011 (Roe, 2018).¹²

¹¹ <https://www.economist.com/middle-east-and-africa/2019/10/03/angolan-oil-production-is-in-decline>

¹² See OECD, 2013

Figure 6: Mozambique — FDI stock (billion \$) and energy price index (1992=100), 1989-2018



Source: Uppsala Conflict Data Program (UCDP), UNCTADStats and IMF Commodity Price Statistics

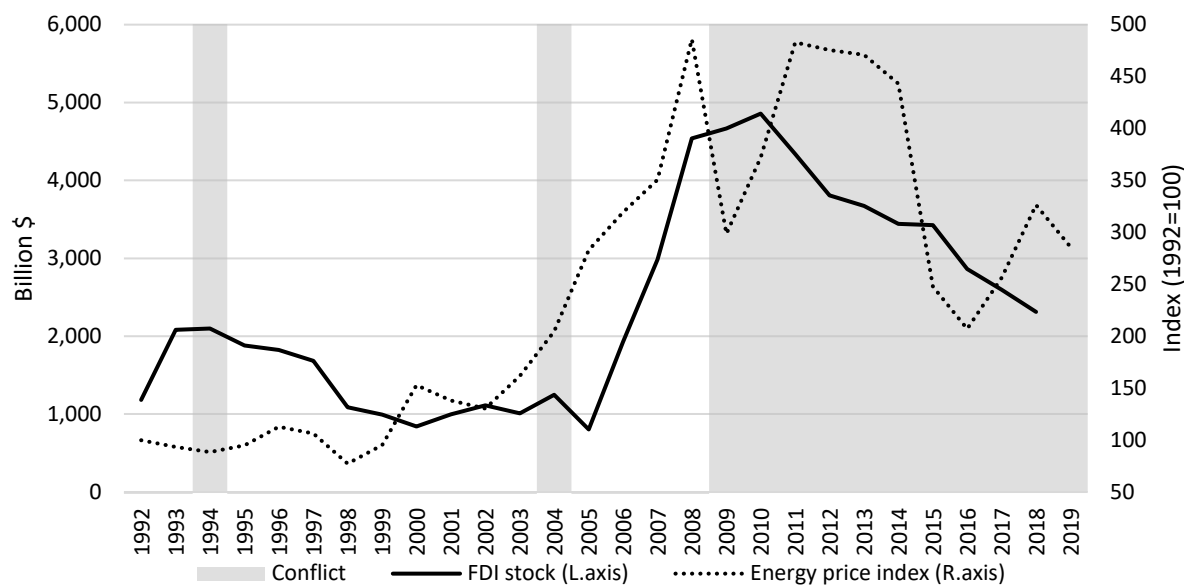
Mozambique’s FDI boom is thus a fossil-fuel boom and shows no signs of stopping.¹³ Even the steep drop in energy prices starting in 2014 and the debt scandal uncovered in 2016 seem to have had little impact on FDI. The boom also shows up in other key data. Resource rents from coal have gone from close to zero in 2010 to 4.6% of GDP in 2018 and over the same period the share of fuel exports in merchandise export has gone from 20% to 47%. The IMF estimates that fiscal revenue from gas rents will start accruing to the government in 2023 and could by 2030 account for more than 50% of total fiscal revenue (IMF, 2019). A growing insurgency in the Northern Cabo Delgado region, where the gas deposits have been discovered, have recently raised questions of whether Mozambique's gas dream is likely to be derailed. But as noted by the financial news outlet *Bloomberg* this is unlikely, as foreign investors have already made large investments, drill sites are 40 kilometers from shore and thus easy to protect, and onshore projects are well secured within a vast compound protected by Mozambique's military and hired mercenaries and with its own airport and direct access to the sea to bring in supplies.¹⁴

Yemen is currently at war, which has resulted in one of the worst humanitarian catastrophes since the end of the Cold War. As for Angola, Yemen is similarly one of the world’s most oil-dependent nations. From 2004-2014 yearly fuel rents averaged almost a third of GDP and fuels accounted for close to 90% of exports. Pre-conflict, the hydrocarbon industry in Yemen generated 50-60% of fiscal revenues and nearly 50% of foreign reserves (WB, 2017). The war in Yemen broke out in 2009 but escalated significantly from early 2015, preceded by a sharp drop in global energy prices. Consequently, FDI has been fleeing Yemen since 2010, cf. Figure 7. The impact of the war in Yemen has also been devastating for the economy, with real GDP per capita now at about half of what it was in the year 2010.

¹³ It can be noted that historically Mozambique has and continues to generate most of its natural resource rents from forests (timber exports) but the share of fossil fuels (oil, gas and especially coal) rents has been rising since 2003. Today total fossil fuel rents make up 7.8% of GDP while forest rents make up 11.6%. With the large discovery of gas deposits, both rents and fuel exports are likely to increase at large scale the coming decades.

¹⁴ See article by Bloomberg on August 19, 2020 titled 'How an insurgency threatens Mozambique's gas bonanza'.

Figure 7: Yemen — FDI stock (billion \$) and energy price index (1992=100), 1992-2019



Source: Uppsala Conflict Data Program (UCDP), UNCTADStats and IMF Commodity Price Statistics. Note: The large increase in inflows in 2006-2008 were driven by two large M&As in telecommunications in 2006 and 2007 and one large greenfield investment in oil and gas in 2008 (UNCTAD, 2011)

Measured based on conflict intensity relative to population and area affected by the war, the current war in Yemen is worse than was the last phase of the civil war in Angola. This is most likely one of the key reasons behind the very different conflict-FDI-growth experiences between the two countries. But at least two other factors are likely to have played a significant role.

First, and contrary to Angola, in-land oil fields and strategic seaports in Yemen have been severely affected by the conflict and the government lost control over much of this key infrastructure. Only in 2018 did the government regain some control and were able to export 40% of their 2014 oil production level.¹⁵ Second, global energy prices were rising during the Angolan conflict but have fallen sharply under the conflict in Yemen. Because of these differences, Yemen’s oil production and thus export revenue, foreign exchange, and government revenue collapsed after 2015. In 2017 Yemen recorded the lowest revenue-to-GDP in the world of only 3.8%, down from 36.7% in 2008 (the year before the war started).¹⁶ In comparison, the average revenue-to-GDP ratio for Angola during the last phase of its civil war (1998-2002) was 35.6% and much higher than today’s 20% (following the fall in global oil prices).¹⁷

¹⁵ <https://www.reuters.com/article/us-yemen-oil/yemen-urges-oil-companies-to-restart-production-oil-ministry-document-idUSKCN1UO1FC>

¹⁶ IMF Fiscal Monitor database

¹⁷ Ibid

3. Empirical Analysis: Growth, FDI & Peacekeeping

Table 2 includes summary statistics on key variables in the dataset covering 127 countries from 1989-2018. FDI-to-GDP has on average been the same for LICs and LMICs, higher for UMICs, and highest if considering only the group of RD countries. The LIC group of 31 countries in the sample have experienced the highest average of 18 battle-related deaths per 100,000 capita per annum (8.7 if excluding the Rwandan genocide). The LIC group also has the highest percentage of total years with a PKO presence with 17% of all country years in the LIC group having been with a PKO, compared to 8% across the entire sample of countries.¹⁸ The LIC group also has a higher share of transformative versus traditional PKOs; out of the total 17% country years with a PKO, 11.4 percentage points have been with a transformative PKO. An average annual PKO budget across the entire sample has been 6.8% of the PKO-receiving country's GDP, and much higher for transformative PKOs at 13.4%. The highest average annual budget-to-GDP is found in the group of 45 resource-dependent (RD) countries at 13.7% of GDP and as high as 20.8% if only considering transformative PKOs.

Table 2: Summary statistics (N=127 countries, T= 1989-2018)

	All (127)		LIC (31)		LMIC (44)		UMIC (52)		Resource dependent (45)		Non resource dependent (82)	
	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd	Mean	Sd
FDI (% of GDP)	3.6	6.9	3.3	7.8	3.3	5.1	4.1	7.8	4.3	10.5	3.2	3.7
Battle-related deaths (per 100,000 capita)	5.4	139.2	18.1	284.0	1.3	11.6	1.5	10.7	5.5	27.4	5.3	170.7
<i>excl. the Rwanda</i>	3.1	21.8	8.7	40.0	-	-	-	-	-	-	1.8	18.1
Peacekeeping (% of total years with PKO)	8.0		17.0		5.6		4.3		10.6		6.6	
<i>Traditional (% points)</i>	3.9		5.6		2.1		4.2		4.0		3.8	
<i>Transformative (% points)</i>	4.1		11.4		3.5		0.1		6.6		2.8	
PKO yearly budget (% of GDP)	6.8	14.2	12.8	18.9	1.2	1.4	2.0	3.8	13.7	20.6	2.5	3.8
<i>Traditional</i>	1.4	2.9	0.6	1.1	1.1	1.5	1.9	3.8	0.8	1.1	1.7	3.4
<i>Transformative</i>	13.4	18.8	17.0	20.4	2.2	1.3	6.7	NA	20.8	22.8	4.7	4.2
Resource rents (% of GDP)	9.2	11.8	12.3	9.3	8.3	11.2	8.3	13.2	21.2	13.2	3.1	3.3
Fuel (% of exports)	16.8	26.8	9.6	23.0	15.7	23.6	20.2	29.6	38.0	37.9	8.3	13.4
Minerals (% of exports)	9.8	16.1	13.5	20.7	10.0	17.7	8.1	11.7	15.0	23.0	7.7	11.5

Source: Own calculations based on data from the World Bank (rents, fuel and mineral exports), UNCTAD (FDI), UCDP (battle-related deaths), Hegre et al. (2019) and own update (peacekeeping).

Mueller (2017) estimates how real GDP growth reacts to conflict and recovery relative to growth during peacetimes. The findings suggest that minor conflicts do not have any significant impact on growth, whereas major conflicts significantly reduce growth and more so in the first year of conflict.¹⁹ Interestingly, the study also finds that relative to peacetime growth countries do not grow faster in post-conflict periods as could perhaps be expected. This latter result underpins one of the papers' main findings that major conflict inflicts a permanent economic loss on countries. Possible explanations of a permanent loss could be the above discussed path-dependency which translates into heightened investor risk perceptions and/or

¹⁸ As an example, the total dataset of 127 countries across 29 years has (29*127 =) 3,683 country years and 295 of those years (8%) have had a UN PKO deployed.

¹⁹ The author does not use the term major, but civil war defined as Battle-Related Deaths (BRDs) exceeding 0.008 per 1,000 capita in one year. Minor conflicts are called armed conflict and are defined as 24<BRDs<1,000.

a loss of human capital and thus lower productivity.²⁰ An earlier study found evidence that countries on average do experience some recovery growth post-conflict, but that country heterogeneity is large with some countries essentially never recovering and some more than recovering, and the drivers behind such observed differences are not well understood (Gates et al., 2012).²¹

By combining conflict-data from UCDP with an updated version of the PKO-dataset from Hegre et al. (2019) it is possible to assess empirically whether differences in post-conflict economic performance could possibly be explained by peacekeeping. This is done by splitting post-conflict periods into periods with and without a peacekeeping presence (PKO) and run a set of similar growth regression as in Mueller (2017) and similar regressions for FDI.²²

Regression (1) in Table 3 shows that the first year of major conflict is associated with a real GDP growth rate that is 6.9 percentage points lower than peacetime growth and 3.3 percentage points lower for subsequent years of major conflict. It also shows that countries do not grow faster in post-conflict (recovery) periods as the coefficient on the recovery variable is positive but not statistically significant. Results in regression (1) are thus, not surprisingly, like the findings in Mueller (2017). In regression (2) the recovery variable is now split in two based on whether recovery coincides with the presence of a PKO or not, and finally regression (3) looks at the type of PKO, i.e., traditional versus transformative (cf. Annex A for details). Regression (2) shows that whereas post-conflict countries without a PKO do not experience higher-than-peacetime real GDP growth, post-conflict countries with a PKO do, and significantly so with growth about 3 percentage points higher than during peacetimes. Regression (3) further suggests that this positive relationship likely holds true only for transformative PKOs, for which GDP growth is higher by more than 4 percentage points.

A PKO presence in post-conflict periods could thus be a key factor in understanding the large conflict-recovery heterogeneity across FCA-countries identified in Gates et al. (2012). An example using the estimated coefficients from Table 3 regression (3) is depicted in Figure 8. Assume that a country's peacetime growth rate is 5% per annum and that the country then falls into a five-year major conflict (year 5 to 10 in the figure). At the end of the conflict (year 10) GDP will be 18% lower than what it would have been had the conflict not started (i.e., had GDP continued to grow at 5% per annum). After the conflict, how long would it then take for the county to return to its pre-war (peacetime) GDP trajectory? Without a PKO, the country would never return, but with a (transformative) PKO the country will have fully closed its conflict-attributable GDP loss after five years; i.e., it will have returned to its prewar GDP trajectory at year 15.

²⁰ See Mueller et al. (2017) for more on these long-run productivity impacts.

²¹ See, e.g., Figure 3 in Gates et al. (2012) for the simulated GDP trajectories.

²² Recovery is here defined as a period with no conflict that follows a period with conflict and up to 10 years after conflict has ended.

Table 3: Real GDP growth during recovery with and without type of PKO

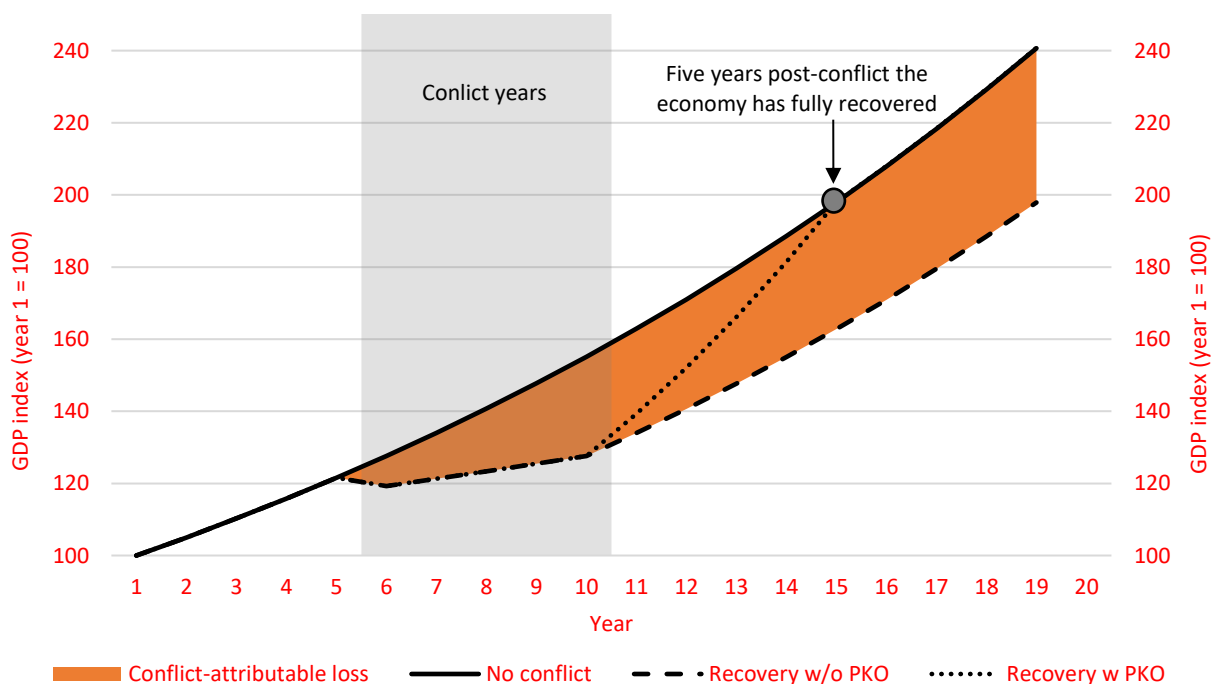
	Dependent variable:		
	Real GDP growth rate		
	Recovery (1)	Recovery w/wo PKO (2)	Recovery w/wo type of PKO (3)
Minor conflict	-0.896* (0.523)	-0.832 (0.523)	-0.879* (0.524)
First year of major conflict	-6.919*** (0.904)	-6.837*** (0.904)	-6.854*** (0.904)
Following years of major conflict	-3.293*** (0.762)	-3.252*** (0.762)	-3.286*** (0.762)
Recovery	0.524 (0.424)		
Recovery wo. PKO		0.354 (0.429)	0.327 (0.429)
Recovery w. PKO		3.046*** (1.057)	
Recovery w. transformative PKO			4.252*** (1.327)
Recovery w. traditional PKO			1.383 (1.529)
Observations	3,346	3,346	3,346
R ²	0.168	0.169	0.170
Adjusted R ²	0.128	0.129	0.130
Residual Std. Error	6.980 (df = 3192)	6.974 (df = 3191)	6.972 (df = 3190)
F Statistic	4.200*** (df = 153; 3192)	4.225*** (df = 154; 3191)	4.214*** (df = 155; 3190)

Note:

*p<0.1; **p<0.05; ***p<0.01

Fixed Effects estimator with year dummies. Recovery is defined as up to 10 years after end of conflict. Minor conflict is defined as 24 < BRDs < 1,000 and major as BRDs > 999

Figure 8: Economic recovery with and without a (transformative) PKO



The results suggest there could be substantial economic benefits to having a PKO post-conflict. But what about the costs? Table 2 showed that transformative PKOs are especially expensive and it might therefore not come as a big surprise that they are positively correlated with real economic growth in periods of recovery. The average transformative PKO costs \$665 million a year — equivalent to an average of 13% of the GDP of the country to which it is deployed. But one should be careful making a link between a PKO's budget size and its direct economic impact, as only a fraction of the budget is spent in the country where the mission is deployed.

Measured relative to the size of the Liberian economy, UNMIL (2003-2018) has been one of the largest UN PKOs with a total cost of \$7.5 billion (more than two times Liberia's current GDP). But a report finds that only \$552 million (7.4% of total UNMIL spending) was spent in Liberia, and with an assumed multiplier of 1.5 the author estimates that UNMIL's total cumulative direct contribution to Liberia's economy has been \$828 million (Thompson, 2018). In comparison Liberia received more than \$10.2 billion in ODA and \$6.2 billion in FDI during UNMIL.²³ If UNMIL (and its ability to maintain peace) was a precondition for attracting such increasing amounts of aid and investment flows then its indirect contribution to economic recovery could be very large. On UNMIL's impact on economic growth the report concluded that:

"... although the literature and our actual experience has shown that annual UNMIL-related local spending had a significant impact on stimulating growth of the country's stagnant GDP during the early postwar years, its potential impact on GDP growth as UNMIL draws down has now become much less significant in both absolute and relative terms. Perhaps the greatest impact of the UNMIL deployment as the mission shuts down by June 2018 will be its contribution to GDP growth by maintaining the peacetime economy over the past 16 years after the initial kick-start from mission-related local expenditures."

[Page 58 in Thompson, 2018].

But as alluded to earlier, a big "wild card" in the complex interactions between fragility, conflict and growth is natural resources, and they have played a large role in Liberia's post-conflict economic performance. The end of the war, which also marked the beginning of UNMIL, happened to coincide with the beginning of a commodity price boom whereas the drawdown and finally exit of UNMIL came in the aftermath of not only a commodity price bust, but also the Ebola crisis. Both factors have contributed to falling FDI inflows and lower growth and now exacerbated by the COVID-19 crisis.

Next the analysis turns to FDI. Higher FDI is one important channel through which a PKO could potentially reduce the perceived investment risk and contribute to recovery growth as indicated by the results from Table 3. By replacing the dependent variable in Table 3 with FDI as a percentage of GDP it can similarly be assessed to what extent FDI flows differ between periods of peace, conflict, and post-conflict with and without a PKO. Results are shown in Table 4 and suggest that recovery periods that coincide with the presence of a PKO do have significantly higher-than-peacetime levels of FDI-to-GDP of a magnitude close to 2 percentage points. This result is robust to changing the FDI variable to an alternative source of data often used (mostly drawing from the IMF's balance of payment statistics), although the significance level falls from 0.01 to 0.05 (cf. Table 8 regression (2) in Annex B).²⁴ Regression (3) in Table 4 suggests that the relationship is stronger for traditional versus transformative PKOs, but this result is sensitive to the

²³ \$11 billion in FDI if one uses data from WDI (which is based on IMF's BoP statistics) instead of UNCTAD.

²⁴ There are two main sources of aggregate FDI data — UNCTAD and the IMF. The latter is from the IMF's balance of payments statistics, and the two series deviate quite a lot in some years. For the regressions in Table 4, FDI data is taken from UNCTAD, which provides the largest number of observations. For the regressions in Table 6, FDI data is taken from the World Bank's WDI-database, which is based on FDI data primarily from the IMF, but in some cases supplemented by UNCTAD data and national sources.

chosen FDI data source as Annex B Table 8 regression (3) indicates that only the transformative type is significant (at the 0.05 level). In summary, the empirical analysis finds no evidence that PKOs deter FDI, but rather the opposite as having a PKO in post-conflict recovery periods is associated with a close to 2 percentage points higher than peacetime FDI-to-GDP.

It could be noted from Table 4 that even though the conflict variables have the expected negative sign they are only estimated statistically significant (and only at the 0.1 level) in regression (1). This is not uncommon. One empirical study not only finds that there is no empirical evidence of a negative relationship between conflict and FDI, but that the link is actually positive and significant — a finding the authors call puzzling (Aseidu & Lien, 2011).²⁵ It is beyond this analysis to dive deeper into this puzzle. But one possible explanation could be the definition of the dependent variable being FDI-to-GDP. If FDI inflows do react negatively to conflict (which Figure 2 suggested was the case in Liberia) but are less sensitive to conflict than GDP, that could explain why one could get insignificant, or even positive, estimates.

Table 4: FDI in % of GDP during recovery with and without type of PKO

	<i>Dependent variable:</i>		
	FDI in % of GDP (using UN data)		
	Recovery (1)	Recovery w/wo PKO (2)	Recovery w/wo type of PKO (3)
Minor conflict	-0.401 (0.352)	-0.326 (0.352)	-0.319 (0.352)
First year of major conflict	-1.060* (0.617)	-0.947 (0.617)	-0.96 (0.617)
Following years of major conflict	-0.900* (0.518)	-0.824 (0.517)	-0.820 (0.517)
Recovery	-0.304 (0.285)		
Recovery wo. PKO		-0.438 (0.287)	-0.434 (0.287)
Recovery w. PKO		1.906*** (0.711)	
Recovery w. transformative PKO			1.656* (0.881)
Recovery w. traditional PKO			2.264** (1.031)
Observations	3,408	3,408	3,408
R ²	0.320	0.323	0.323
Adjusted R ²	0.288	0.290	0.290
Residual Std. Error	4.701 (df = 3252)	4.693 (df = 3251)	4.694 (df = 3250)
F Statistic	9.885*** (df = 155; 3252)	9.926*** (df = 156; 3251)	9.862*** (df = 157; 3250)

Note:

*p<0.1; **p<0.05; ***p<0.01
Fixed Effects estimator with year dummies. Recovery is defined as up to 10 years after end of conflict. Minor conflict is defined as 24 < BRDs < 1,000 and major as BRDs > 999

²⁵ See regressions 3, 4, 7 and 8 in Table 7.

Until now the analysis has looked at the "type of PKO in recovery." Alternatively, one could look at the "type of country in recovery" — i.e., resource-dependent (RD) versus non-resource-dependent (non-RD) — as it was argued earlier that resource-seeking FDI have very different determinants than market-seeking FDI, and hypothesized that it might be easier for PKOs to improve determinants for the former compared to the latter. Results are shown in Table 5.

Table 5: Real GDP growth during recovery with and without PKO & in resource-type of country

	Dependent variable:	
	Real GDP growth	
	Recovery in type of country (1)	Recovery in type of country w/wo PKO (2)
Minor conflict	-0.951* (0.526)	-0.930* (0.527)
First year of major conflict	-6.980*** (0.906)	-6.900*** (0.906)
Following years of major conflict	-3.356*** (0.765)	-3.326*** (0.764)
Recovery in resource-rich country	0.050 (0.630)	
Recovery in non-resource-rich country	0.747 (0.478)	
Recovery in resource-rich country w. PKO		5.276*** (1.993)
Recovery in resource-rich country wo. PKO		-0.286 (0.644)
Recovery in non-resource-rich country w. PKO		2.253* (1.219)
Recovery in non-resource-rich country wo. PKO		0.623 (0.484)
Observations	3,346	3,346
R ²	0.077	0.079
Adjusted R ²	0.032	0.034
F Statistic	8.037*** (df = 33; 3191)	7.864*** (df = 35; 3189)

Note:

*p<0.1; **p<0.05; ***p<0.01
Fixed Effects estimator with year dummies. Recovery is defined as up to 10 years after end of conflict. Minor conflict is defined as 24 < BRDs < 1,000 and major as BRDs > 999

Regression (1) in Table 5 shows that for both RD and non-RD countries, post-conflict periods are not associated with higher-than-peacetime growth as the estimates are no different from zero. In regression (2) recovery is split in two based on type of country and whether recovery coincides with the presence of a PKO or not. Estimates suggest that without a PKO there is no recovery growth in neither RD nor non-RD countries. However, with a PKO, recovery growth is much stronger in RD countries at about 5 percentage points higher than peacetime growth, whereas it is "only" about 2 percentage points higher in non-RDs (and estimated statistically significant only at the 0.1 level).

The same regressions are shown in Table 6 using FDI as a percentage of GDP as the dependent variable. Like the results for GDP growth, regression (1) suggests that neither RD nor non-RD countries experience higher-than-peacetime FDI during post-conflict periods. However, this result changes when looking at post-conflict with and without a PKO in regression (2). Whereas non-RD countries experience no recovery pickup in FDI independent of having a PKO or not, in RD countries having a PKO during recovery is associated with higher-than-peacetime FDI-to-GDP of 6 percentage points. In fact, without a PKO, RD

countries have lower-than-peacetime FDI-to-GDP of more than 1 percentage points. The conclusions from Table 6 are of the same magnitudes when using the alternative FDI series.²⁶

Table 6: FDI in % of GDP during recovery with and without PKO & in resource-type of country

	<i>Dependent variable:</i>	
	FDI in % of GDP (UN data)	
	Recovery in type of country (1)	Recovery in type of country w/wo PKO (2)
Minor conflict	-0.448 (0.354)	-0.429 (0.353)
First year of major conflict	-1.113* (0.619)	-0.951 (0.617)
Following years of major conflict	-0.955* (0.520)	-0.846 (0.517)
Recovery in resource-rich country	-0.673 (0.424)	
Recovery in non-resource-rich country	-0.133 (0.320)	
Recovery in resource-rich country w. PKO		6.495*** (1.237)
Recovery in resource-rich country wo. PKO		-1.218*** (0.431)
Recovery in non-resource-rich country w. PKO		-0.118 (0.837)
Recovery in non-resource-rich country wo. PKO		-0.114 (0.322)
Observations	3,408	3,408
R ²	0.058	0.069
Adjusted R ²	0.013	0.024
F Statistic	6.090*** (df = 33; 3251)	6.891*** (df = 35; 3249)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01 Fixed Effects estimator with year dummies. Recovery is defined as up to 10 years after end of conflict. Minor conflict is defined as 24 < BRDs < 1,000 and major as BRDs > 999	

In summary, the results suggest that PKOs and natural resources could be key factors in better understanding the large heterogeneity in post-conflict economic performance as countries are found to experience recovery rates of FDI and economic growth only when post-conflict periods coincide with the presence of a PKO. Furthermore, the results provide tentative evidence that transformative PKOs and PKOs in resource-dependent economies could be more effective.

Several issues should be pointed out. First, an insignificant coefficient on a PKO variable in any of the above regressions does not necessarily imply that PKOs have no impact on growth or FDI. This is because both conflict and recovery in the regressions are defined relative to countries' performance on the dependent variable during peacetimes (the regressions' "baseline period").

Second, it would be hard to assess how much the differences in estimation results across the regressions are driven by "type of PKO" (Tables 3 and 4) versus "type of country" (Tables 5 and 6). Further breaking down regressions into "type of PKO IN type of country" would result in very few observations for some of

²⁶ Cf. footnote 24.

the recovery variables and is thus not a good approach. But it could be noted from Table 2 that RD countries compared to non-RD countries also have a higher share of transformative PKOs.

Finally, the empirical results should be interpreted with caution and much more work is needed to understand the complex causal relationships between natural resources, conflict and fragility, FDI, growth, and PKOs. Interesting topics for future research could be to focus on how the timing of conflicts and PKOs coincide with commodity price cycles as well as changes to government and thus often policies of high relevance to foreign investors such as capital controls. There is also the possibility that PKO deployments are biased towards certain types of countries/economies.

4. Concluding Remarks

The majority of the 32 highly Fragile and Conflict-Affected countries (FCAs) in 2018 can be categorized as resource-dependent (RD) and all but two were either low-income (LIC) or lower middle-income (LMIC) countries. The same year, FCAs accounted for 40% of all LICs and LMICs, about one-third of population, 20% of GDP and similarly attracted about 20% of FDI inflows. But these aggregates hide a large divergence. The group of FCA countries that can also be categorized as RD has attracted the highest ratios of FDI-to-GDP, averaging 5.6% per annum over the period 2006-2018, whereas the worst performing subgroup of countries is the group of FCAs that are not categorized as RD with an average ratio of FDI-to-GDP of just 1.9%.

Such differences reflect the highly different set of determinants for resource- versus market-seeking FDI. Independent of fragility and conflict-risk, attracting market-seeking FDI is more complicated as it depends on numerous domestic development markers such as the quality and effectiveness of institutions, functioning of key markets, human and physical capital, market size and growth, etc. Resource-seeking FDI depends crucially on global commodity prices, the size and accessibility of resource deposits, the terms of the agreement with the government, and in FCAs the likelihood that production assets and the physical infrastructure necessary for exports (pipes, roads, rails and ports) will be uninterrupted by any ongoing or future outbreak of conflict. In case of conflict, main assets (the mineral deposits) are less prone to destruction (as they are underground) and in cases where the geographical locations of extraction and fighting are not the same (e.g. more likely with offshore facilities) productive assets and operations are at less risk of destruction and disruption. This latter point is supported by the fact that it is not difficult to identify countries in which resource-FDI inflows have been large during periods of conflict.

Despite many complex development problems pertaining to natural resources, these are not predetermined, and societal benefits can far outweigh costs under the right set of policy choices. For countries coming out of conflict, FDI in any form has the potential to help them rebuild their economies — an essential component of sustaining peace. But high fragility (probability of conflict-relapse) can deter private investments. This paper has argued that peacekeeping could be an important measure in facilitating post-conflict economic recovery, e.g., through higher rates of FDI. The results of the empirical analysis support this hypothesis as post-conflict periods that coincide with the presence of a PKO are positively and significantly correlated with recovery rates of both FDI and economic growth. Furthermore, results provide some cautious evidence that these recovery relationships are stronger for transformative PKOs and when PKOs are deployed in resource-dependent economies. More specifically, results suggest that post-conflict countries attract higher-than-peacetime ratios of FDI-to-GDP of a magnitude close to 2

percentage points but only with a PKO present. GDP is similarly found to exceed peacetime growth rates when a PKO is present post-conflict, and for transformative PKOs by as much as 4 percentage points.

How should we interpret these results? Overall, they suggest that PKOs and natural-resource dependence are two important and overlooked factors when it comes to understanding country heterogeneity with respect to the economic impact of conflicts and post-conflict economic recovery. The possibility that the economic impact of PKOs are stronger in resource-dependent economies could be interpreted as follows. As resource extraction is often considered a "fallback" sector, and resource-FDI investment determinants are less complex, it might be easier to grow the extractives sector post-conflict when a PKO is viewed as a credible guarantor of peace and security.

Finally, it is worth emphasizing that the results presented in this paper are far from conclusive and cannot necessarily be interpreted as causal. Possible co-determinants such as commodity price cycles, changes in key policies (e.g. capital controls), and timing of discoveries are important factors to carefully consider for future analyses. So is the disentanglement of type of PKO from type of country. There is also a possibility that Security Council decisions to deploy PKOs are biased towards certain types of countries. Nor does the paper deal with the important question of how growth and FDI are possibly affected by PKO withdrawal and exit. These are interesting topics for future research, which could help PKOs better understand how they affect economic performance and can help countries recover faster and more sustainably.

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Annex

A. UN Peacekeeping Operations

Hegre et al. (2019) defines the different PKOs as below.

Traditional

Observer missions — restricted to observing actions such as a truce, troop withdrawal, or a buffer zone. Always deployed with the consent of the parties to the conflict. Examples are United Nations Mission of Observers in Tajikistan (UNMOT) and United Nations Mission of Observers in Prevlaka (UNMOP) in Croatia.

Traditional missions — also deployed with the consent of the parties, but with somewhat extended mandates such as policing a buffer zone and assisting in negotiating a peace agreement. Examples are United Nations Preventive Deployment Force (UNPRESEF) in Macedonia and United Nations Interim Force in Lebanon (UNIFIL).

Transformational

Multidimensional missions — referred to as “second-generation operations,” the mandates, also consent-based, are extended with activities intended to go to the roots of the conflict, such as economic reconstruction, institutional transformation (reform of police, army, judicial system, elections). Examples are United Nations Observer Mission in El Salvador (UNOSAL) and United Nations Mission in Timor-Leste (UNMIT).

Enforcement missions — “third-generation operations” that do not require the consent of both parties and therefore must draw on the authority of UN Charter articles 25, 42, and 43 to apply force to protect the activities of the operation. Examples are United Nations Protection Force (UNPROFOR) in the former Yugoslavia and United Nations Mission in Sudan (UNMIS). Table 7 provides an overview of the UN PKOs included in the dataset.

Table 7: PKOs included in the dataset

Traditional PKOs				Transformational PKOs			
Observer missions				Multidimensional missions			
Name	Country	Start	End	Name	Country	Start	End
UNDOF	Syria	Jun-74	Present	UNTAG	Namibia	Apr-89	Mar-90
UNAVEM I	Angola	Jan-89	Jun-91	ONUSAL	El Salvador	Jul-91	Apr-95
ONUCA	Costa Rica	Nov-89	Jan-92	UNTAC	Cambodia	Mar-92	Sep-93
	El Salvador			ONUMOS	Mozambique	Dec-92	Dec-94
	Guatemala			UNMIBH	Bosnia and Herzegovina	Dec-95	Dec-02
	Honduras			MINURCA	CAR	Apr-98	Feb-00
MINURSO	Morocco	Apr-91	Present	UNMISSET	Timor-Leste	May-02	May-05
UNAMIC	Cambodia	Oct-91	Mar-92	UNMIT	Timor-Leste	Aug-06	May-12
UNOMUR	Rwanda, Uganda	Jun-93	Sep-94	Enforcement missions			
UNOMIG	Georgia	Aug-93	Jun-09	UNPROFOR	Croatia	Feb-92	Mar-95
UNOMIL	Liberia	Sep-93	Sep-97		Bosnia Herzegovina		
UNASOG	Chad	May-94	Jun-94		Macedonia		
UNMOT	Tajikistan	Dec-94	May-00	UNOSOM II	Somalia	Mar-93	Mar-95
UNMOP	Croatia, Yugoslavia	Jan-96	Dec-02	UNMIH	Haiti	Sep-93	Jun-96
MIPONUH	Haiti	Dec-97	Mar-00	UNTAES	Croatia	Jan-96	Jan-98
UNPSG	Croatia	Jan-98	Oct-98	UNMIK	Kosovo	Jun-99	Present
Traditional missions				UNTAET	Timor-Leste	Oct-99	May-02
UNFICYP	Cyprus	Mar-64	Present	UNAMSIL	Sierra Leone	Oct-99	Dec-05

Table 7 (continued)

Traditional missions				Enforcement missions			
UNIFIL	Lebanon	Mar-78	Present	MONUC	Congo DRC	Nov-99	May-10
UNGOMAP10	Afghanistan and Pakistan	May-88	Mar-90	UNMIL	Liberia	Sep-03	Mar-18
UNAVEM II	Angola	Jun-91	Feb-95	UNOCI	Cote d'ivory	Apr-04	May-17
UNOSOM I	Somalia	Apr-92	Mar-93	MINUSTAH	Haiti	Jun-04	Oct-17
UNAMIR	Rwanda	Oct-93	Mar-96	ONUB	Burundi	Jun-04	Dec-06
UNAVEM III	Angola	Feb-95	Jun-97	UNMIS	Sudan	Mar-05	Dec-11
UNPREDEP	Macedonia	Mar-95	Feb-99	UNAMID	Sudan	Jul-07	Present
UNCRO	Croatia	May-95	Jan-96	MINURCAT	CAR, Chad	Sep-07	Dec-10
UNSMIH	Haiti	Jul-96	Jul-97	MINUSMA	Mali	Apr-13	Present
MINUGUA	Guatemala	Jan-97	May-97	MONUSCO	Congo DRC	Jul-10	present
MONUA	Angola	Jun-97	Feb-99	UNMISS	South Sudan	Jul-11	Present
UNTMIH	Haiti	Aug-97	Dec-97	MINUJUSTH	Haiti	Oct-17	Present
UNOMSIL	Sierra Leone	Jul-98	Oct-99	MINUSCA	CAR	Apr-14	Present

Source: based on Hegre et al. (2019), own update from 2013 -2019

B. Regression Output

Table 8 shows the same regressions as in Table 4 in the main text, but with FDI data from the World Bank's WDI-database (which primarily uses FDI data from the IMF's balance of payments statistics).

Table 8: Table 4 regression, but using IMF data on FDI (as reported in the WDI database)

	Dependent variable:		
	FDI in % of GDP (using IMF data)		
	Recovery (1)	Recovery w/wo PKO (2)	Recovery w/wo type of PKO (3)
Minor conflict	-0.182 (0.443)	-0.139 (0.443)	-0.169 (0.443)
First year of major conflict	-0.944 (0.799)	-0.884 (0.799)	-0.887 (0.799)
Following years of major conflict	-0.486 (0.674)	-0.463 (0.673)	-0.484 (0.673)
Recovery	-0.346 (0.358)		
Recovery wo. PKO		-0.489 (0.362)	-0.510 (0.362)
Recovery w. PKO		1.893** (0.912)	
Recovery w. transformative PKO			2.817** (1.109)
Recovery w. traditional PKO			0.372 (1.382)
Constant	-1.084 (1.660)	-1.107 (1.658)	-1.075 (1.658)
Observations	3,291	3,291	3,291
R ²	0.315	0.317	0.317
Adjusted R ²	0.282	0.283	0.284
Residual Std. Error	5.851 (df = 3137)	5.845 (df = 3136)	5.844 (df = 3135)
F Statistic	9.442*** (df = 153; 3137)	9.445*** (df = 154; 3136)	9.401*** (df = 155; 3135)



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