

Does Foreign Direct Investment Encourage State
Militarization and Reduce Societal Security? An Empirical
Test, 1980-2017

Abstract:

Scholars debate the effects of foreign direct investment (FDI) on poor societies. Apparently, FDI could embolden governments to securitize rather than reform, an argument put forth recently by Kishi, Maggio and Raleigh (2017) who supply evidence within a sample of Sub Saharan African countries showing that FDI increases the number of conflict events. This study takes a critical view of their argument on conceptual and methodological grounds. Using new data for the entire world as well as a sample of developing countries, this study directly tests securitization as militarization measured as military spending and the size of armed forces and finds that several alternative measurements of the stock and flow of FDI reduces militarization, results that are robust to fixed effects estimations, Heckman selection models, and models with and without controls for ongoing armed conflict and interstate tension. Testing an Africa-only sample yields no statistically significant effects either way, but compared to the global sample, an interaction of FDI in Africa does show a positive effect. This result, however, is substantively very slight compared with the net effect of the African region where military spending is unusually greater than in other regions, but size of armed forces are smaller. These results are replicated using a measure of societal security capturing more than just the absence of war as measured by the World Economic Forum's data. If FDI increases security without increasing militarization, then FDI is potentially a sound source of finance for poor countries. Case-study-based research might usefully unpack the political economy of defence spending in Africa and identify precisely how TNCs can be implicated in the story. Our results show, however, that generally, FDI might actually reduce militarization while increasing societal security beyond just the absence of armed violence.

Introduction:

There's been a long and contentious debate about the desirability of foreign direct investment (FDI) from transnational corporations (TNCs) for the economic and socio-political development of host countries (Lall 1974, Seligson and Passé-Smith 1998, Todaro 1977, UNRISD 1995). One discerns two distinct schools of thought on the subject—the liberals/modernization theorists, most often represented by economists, who see foreign capital as beneficial for poor countries, versus the neo-Marxist/dependency theorists, usually dominated by sociologists and political scientist, who see FDI as exploitative of poor countries (Valenzuela and Valenzuela 1978). The modernization school argues that FDI promotes economic growth and development because transnational corporations bring much-needed investment, new ideas and technology, and they open up markets for poor countries (Lipsey 2000). The neo-Marxist/dependency theorists argue that FDI is simply a transfer of monopoly practices that displace domestic investment, exploit cheaper wages and regulatory standards. TNCs apparently “capture” the political and economic institutions through their “structural power” and need for profits (Blomström and Hettne 1984, Cardoso and Faletto 1979, Palma 1995). These older debates are repackaged in the newer globalization debates, where even orthodox economists have begun to argue that transnational capital makes it harder for governments in the poor world to act in the interests of their communities, perhaps not because of too much FDI but because open borders make capital more “footloose,” shifting bargaining power away from states (Rodrik 2011, Stiglitz 2002). Using a recent study published by Kishi, Maggio and Raleigh (2017), who find that FDI increases state securitization, this study re-examines this question by examining the effect of FDI directly on the degree of state militarization defined as military spending and the size of the armed forces. If FDI, which is a badly-needed source of capital encourages wasteful militarization, then its net effect might indeed be harmful, and poor countries would be well advised to shun TNCs.

My results suggest a different story. Using both flows and stocks of FDI relative to GDP, I find that greater “dependence” on FDI reduces militarization, measured both as defence spending and the size of the armed forces as a share of the total labour force. The results are robust to fixed effects estimations, the inclusion of a number of potential confounding factors, alternative estimating techniques and datasets. The results are also robust to a sample of only 133 developing countries. These results do not support the view that FDI encourages states to securitize, leading to greater degrees of conflict. Results for an Africa-only sample shows no statistically significant effects either way, but compared to the global sample, an interaction of FDI in Africa shows a positive effect. This positive effect, however, is substantively very slight compared with the net effect of the African region relative to others. If FDI increases growth and development without increasing militarization, then FDI is potentially a sound source of finance for poor countries. It may very well be that FDI is implicated in higher levels of conflict, but this does not seem to be coming at the expense of state budgets and militarization of societies in general.

Theory

Liberal/modernization theorists view FDI as a particularly good source of development finance because poor countries lack capital, technology, and markets. Since poor countries have low savings, apart from the dim prospect of borrowing on international capital markets, access to capital is likely to be highly constrained, affecting growth. FDI offers an opportunity for poor countries to obtain, not just capital, but the technology, both soft and hard, and markets abroad. Soft technology comes in the form of new ideas, better ways of production, managerial skills and access to more “modern” worldviews of governance, importantly among them a boost to legal institutions and business practices conducive to a modern economy (Becker and Sklar 1999). On the hard side, FDI brings capital, employment, and foreign markets (Lucas 1990).

Thus, the more FDI the better for social outcomes, such as development and peace because the process of economic growth can reduce the risks of costly armed conflict by raising the opportunity costs of people for engaging in violence, increasing state capacity for dealing with social problems, and most importantly, allowing state monopoly of the use of force for deterring armed opposition. Armed conflict and violent challenge of state authorities were generally identified by modernization theorists as resulting from economic and political backwardness, where ascriptive ties of ethnicity and religion, political patronage and misguided ideological affinities were generally blamed on “traditional values” and worldviews, which could be corrected by economic growth and development, a rising middle class, the growth of literacy and education etc (Lipset 1994, Rostow 1960). FDI, thus, came to be viewed as a positive input to peace, both directly and indirectly via its economic and socio-political effects.

Economic nationalists and neo-Marxist/dependency theorists reject the modernization claims and argue that poor countries remained poor and unstable precisely because of their “dependency” on rich multinational corporations and the exploitative policies of the “headquarter” countries in the West. They argued that FDI was one part of a system of unequal exchange where the rich controlled markets and capital flows that benefitted them at the expense of the poor. For example, FDI engaged in exploiting natural resources and cheap labour, giving very little back to the host societies (Bornschier and Chase-Dunn 1985, Cardoso and Faletto 1979). Odiously, FDI was in an alliance with the local capitalist class, which was regressive rather than progressive. FDI and local capitalists hindered the reforms necessary for progress, such as those advocated by labour movements. Indeed, this perspective blamed FDI for strengthening the regressive elements in society, creating the conditions for to further exploiting a country’s potential by controlling political and economic institutions (Boswell and Dixon 1990, London and Williams 1990, Muller and Seligson 1987). Thus, transnational

corporations were both a direct cause of political violence by denying demands for rights, for example by organized labour, by exploiting labour directly, particularly in cahoots with local landed (military) classes, and indirectly by raising both income and land inequality, which were recipes for social breakdown.

Today, a great deal of empirical evidence seems to suggest that the pessimistic view of FDI has been unwarranted. The outward-oriented economic policies of South East Asia, for example, generated greater prosperity and peace compared with the import-substitution-industrialization (ISI) strategies followed in most of Latin America and Sub Saharan Africa (Krasner 1985). Armed conflicts and state failure seemed more to be related to economic stagnation, high indebtedness, high unemployment and low state capacity due to the lack of development (Collier et al. 2003). Empirical scholars of both development and conflict found little evidence for a link between FDI and inequality and between income inequality and conflict (Bussmann, de Soysa and Oneal 2005, Collier and Hoeffler 1998, Fearon and Laitin 2003, Weede 1998). Indeed, a host of empirical, mostly statistical studies, show that dependency expectations regarding the ill-effects of FDI on economic and political development, particularly regarding repressive political conditions under openness to FDI, are unfounded (Apodaca 2001, de Soysa and Oneal 1999, Richards 2001). Even when considering the globalization debate, albeit where FDI is only one component of the discussion, the empirical evidence suggests that greater globalization is a force for societal peace measured as political repression; i.e. violence committed by a state against its people, the incidence of civil war, and societal militarization (Blanton and Apodaca 2007, Bussmann, Schneider and Wiesehomeier 2005, de Soysa, Jackson and Ormhaug 2009, de Soysa and Vadlamannati 2013, Dreher, Gassebner and Siemers 2012, Flaten and de Soysa 2012, Weede 2004). However, it should be noted that whether or not states fall into conflict might indeed be determined strongly by how states are able to deter dissent and rebellion. If indeed processes of globalization

empower states, then states may achieve a “totalitarian peace.” Ultimately, any benign effect of FDI on social progress should be evaluated on the basis of how states avoid serious dissent and conflict.

Some offer formal models for why trade (and FDI) affects military spending and thereby secures interstate peace, usually analysed in terms of dyadic conflict (Polachek and Seiglie 2007, Seiglie 2016), there is much less discussion on how FDI might reduce *domestic* peace. The “liberal peace” argument focuses on the losses from trade and FDI in the case of violent conflict, which should dissuade actors from engaging in costly foreign policy adventures. While this logic is certainly operating in the civil war domain, the logic of political survival could drive rulers to take short term economic losses for longer-term political gain. A recent article on FDI and armed conflict in Africa provides an interesting proposition about how state dependence on FDI may increase the risk of armed violence (Kishi, Maggio and Raleigh 2017). The theoretical starting point harkens back to what one might call a dependency perspective because they suggest that states dependent on outside sources of unconditional financing are likely to be weak and motivated to please foreign sources of finance. As a result, FDI incentivizes these states to embark on securitization rather than domestic reform. Using a mix of statistical methods and measurement of intensities and types of conflict, they show robust evidence at the country level of aggregation that FDI stock increases the risk of armed violence by increasing state “securitization.” While acknowledging the possibility that FDI might promote violence in two ways; (A) as a “honey pot” for rebels, and (B), by incentivizing state militarization, they conclude that their statistical tests proved the latter possibility. They conclude that:

The proposed link between FDI and securitization violence is that regimes may use access to external financial resources to further their power and longevity through intervention in conflict and repression, where violence against both challengers and citizens remains an effective way for regimes to secure control (Kishi, Maggio and Raleigh 2017: 19).

While I am not in a position to directly address all the details of their conceptual formulations and statistical design, I object to some conceptual issues related to their theoretical angle on FDI and securitization as well as some critical issue of study design and operationalization of variables. Conceptually, why the link from FDI to conflict reflects securitization is unclear. If the location of an FDI project causes communal violence over the benefits or costs of such a project, for example a real or perceived grievance, then a state's response to such a conflict can be viewed as a public good. FDI is often in a contractual agreement with a state, for example, for providing security to its employees and property. A state that is obliged to protect property rights will also gain the confidence of other foreign economic actors as well as domestic actors, strengthening the legal system in the process. A state that neglects its duty to protect property, such as is the case in many inner-city environments in the US, then gangs and mafias pick up the slack, perhaps increasing gang violence over spoils and territory (Skarpadas 2003, Venkatesh 2008). In other words, if FDI acts as a "honey pot," such as in the case of looting rebels, then neither states nor companies can be blamed for increasing conflict events, particularly if a state is trying to uphold the rule of law. States, whether because of foreign companies or domestic ones, uphold the law and protect property rights through the use of force (securitization). Thus, why indeed violence erupts when FDI is present remains ambiguous—does it embolden states to use violence or does it drive up the demand for security. Surely, few would suggest that we discard democracy simply because democratization increases electoral violence?

One might also object to Kishi, Maggio and Raleigh's (2017) use of FDI stock to capture securitization effects. FDI stock, which is the historical value of FDI, says something about the hold of TNCs on an economy (as a share of GDP, or on a per capita basis) in terms of the value of FDI activity summed over time, subject to some rate of depreciation. Stock says little about the rate at which new infusions of FDI occur. A government that got 10 small

factories 100 years ago would be weighed equally with a country that has just received 1 big factory a year ago, adjusting of course for depreciation at some constant rate. In fact, using new infusions of finance captured by flow as a share of government revenue would have been the more appropriate operationalization since flow captures the current value of the finance to the regime.

Moreover, why FDI, which is generally a small share of total GDP should matter relative to all potential finance in the hands of local elites is a mystery. Indeed, the mean value of the stock of FDI in Sub Saharan Africa (the total historically accumulated value of FDI) is only 22% of GDP (notice that GDP is an annual flow). The mean value of the annual flow of FDI is merely 3% of GDP. Indeed, FDI flows make up only 14% of gross domestic capital formation globally, and this ratio is roughly 12% in the African sample, suggesting that 88% of the investment capital on average is in domestic hands. Thus, a ruler that raises taxes by 1% on domestic investors stands to gain 7 times more in absolute income from domestic investors than from foreign investors. Whether FDI will stay around to be taxed at 700% more than domestic investors is a highly questionable proposition. Moreover, there is good reason to believe that governments that want to attract FDI would place a high premium on stability in order to assure foreigners of the safety of their investments, perhaps proactively seeking to minimize social conflict and other societal tensions, *ex ante*, but presumably by taxing domestic investors and consumption.

This study revisits this important issue by testing the effect of FDI on militarization directly, conceptualized as both flow and stock relative to GDP on a global sample and a sample of Sub Saharan African countries assessed in relative terms to the rest of the world. If greater state violence requires greater finances, then this should be captured more directly in how states budget for military-related activity. Rather than test FDI's effect on the prevalence of armed conflict, I assess the mechanism of securitization, or militarization, directly with and without

controlling for the incidence of ongoing conflicts. The absence of violence, such as in North Korea, however, does not capture real “security” for people. Thus, I also test whether or not FDI promotes security by using a measure of security sourced from the World Economic Forum’s Global Competitiveness Index that creates an index of societal security determined broadly as freedom from violence, terrorism, crime and errant police services. If FDI increases militarization without bringing security to people, then it would be a great loss to host societies if finance for development ends up wasted on security expenditures and wasteful violence.

Methods & Data

I use a time-series cross-sectional dataset (TSCS) that contains roughly 157 countries over the period 1980-2017. Only countries with a population larger than 500,000 inhabitants are included because of the coding criteria used by the VDEM data on democracy. The dataset is unbalanced because not all countries have data on all variables for the entire time period. TSCS data have complicated correlation patterns both within and across units. I initially run the Wooldridge test to check for autocorrelation, and the data show serial correlation of the error term. Thus, I estimate the models using the Newey-West standard errors which are robust to both heteroscedasticity and serial correlation (Newey and West 1987). I use both time and country fixed effects to ensure that the results are not biased due to omitted variables (Wilson and Butler 2007). Additionally, in robustness tests I use the Driscoll-Kraay standard error method in fixed effects models. The Driscoll-Kraay method is robust to both temporal and spatial dependence (Hoechle 2007). Spatial dependence is likely to be an issue since FDI might cluster in space as might patterns in defence spending and militarization. Since the relationship between FDI and militarization is likely not to be random, or in other words, FDI is likely to select itself into more peaceful countries, I also test the basic models in Heckman selection models where a first step probit regression estimates the selection model and enters the residual

from this model in the second (outcome) stage so that the effect of FDI on militarization is estimated after accounting for any systematic pattern in the FDI data (Winship and Mare 1992).

My main dependent variables are military spending as a share of GDP and the size of the armed forces as a share of the total labour force. Both variables are obtained from the World Bank's *World Development Indicators* (WDI) online database.¹ Arguably, increased defence burdens and increasing size of the armed forces are direct indicators of militarization, although militarization might also occur through paramilitary means, including police and other state agents. Given the difficulty of assessing the size and scope of such secretive organizations, we are generally left with assessing militarization by the most direct, calculable means, such as official military budgets. The World Bank obtains this data from specialized organizations, such as the Stockholm Institute for Peace Research (SIPRI) that has been monitoring military spending around the World since the 1948. Both these variables are logged to reduce skewness. The correlation between military expenditure to GDP and the size of the armed forces as a share of the labour force is $r = 0.59$, which suggests that they capture distinct dimensions of militarization despite being moderately positively correlated.

The main independent variables measuring FDI in terms of inflows are obtained from the World Bank's WDI database while the FDI stock data are obtained from the United Nations Conference on Trade and Development (UNCTAD).² Both inflows and stock are measures as a share of GDP to gauge the value of FDI to an economy. Both these measures are logged to reduce skewness. I also test the effect of FDI inflows per capita (logged). The correlations between the two FDI inflow measures are $r = 0.73$, while the correlation between inflows per GDP and stock per GDP is $r = 0.65$ respectively.

¹ The WDI online database can be accessed here: <https://databank.worldbank.org/data/reports.aspx?source=world-development-indicators&preview=on#> (last accessed 0n 19th March, 2019).

² FDI stock data are obtained here: <https://unctad.org/en/Pages/statistics.aspx> (last accessed 19th March, 2019).

Naturally, I need to control for several important confounding factors. I keep the models relatively simple to avoid overfitting, which also allows for easier interpretation of results (Achen 2005). First, I control for the level of per capita income, or the level of development because it explains FDI flows (per capita) as well as the degree of state capacity and strength. The intercorrelation matrix in the appendix shows a correlation of $r=0.79$ between FDI inflows per capita and income per capita. Income per capita is taken from the WDI database and indicates GDP per capita in constant 2010 US\$. This variable is logged to reduce skewness. FDI is thought also to flow to larger markets, and large populations likely require greater military spending, but economies of scale might also lead to lower military spending but larger military forces. I remain agnostic as to the effect of population size on the two dependent variables. I use total population size from the WDI data, logged to reduce skewness. Finally, I control for electoral democracy, or polyarchy, which is an indicator taken from the Varieties of Democracy Project (Coppedge et al. 2011). Essentially, polyarchy measures the degree to which people are free to choose their elected officials for the highest offices of government in free and fair elections, without violence or other impediments to voting and the exercise of political rights. Very importantly, studies of militarization must control for international wars and tensions (Dunne and Perlo-Freeman 2003). Rather than use actual international war data, which are very rare among the developing countries, I use the International Country Risk Guide (ICRG) data on international tensions (external conflict), which includes actual war and diplomatic tension stemming from external relations.³ Since the coverage for this variable is lower by roughly 30 countries, I use this variable only in supplementary tests. The results reported below do not change in the least when using this variable in the models (these tests are available in the appendix tables 1-4). My results on external peace support expectations

³ The ICRG researcher dataset is generated by the PRS group, which provides political services to companies. These data and variables are explained on their website <https://www.prsgroup.com/explore-our-products/international-country-risk-guide/> (last accessed 01.04.2019).

from formal models about trade, FDI and international disputes (Polachek, Seiglie and Xiang 2007).

Finally, FDI may systematically avoid ongoing civil violence. Thus, I also enter two measures of armed violence in the models. I use civil war data taken from the Uppsala Conflict Data Project, which measures a civil war as an armed incompatibility between a government and an organized rebel group where at least 25 battle deaths have occurred in a single year (Gleditsch et al. 2002). Using this indicator, I also develop a count of the number of years of peace since the last civil war, or the year 1946 in the case of countries that have never had a civil war. If FDI systematically avoids countries in civil war, then entering civil war and the history of peace should impact the effect of FDI on militarization. First, however, I estimate the basic model without any of the conflict variables. Appendix exhibit A displays the intercorrelations among each of the variables in the models. Appendix exhibit B displays the summary statistics.

Results

Table 1 reports the results of the basic models with the two measures of FDI inflows (per GDP and per capita) as well as the stock to GDP estimated on the two dependent variables measuring militarization. In column 1, FDI inflows per GDP has a negative and significant effect on military expenditure per GDP. Substantively, a standard deviation increase in FDI inflows to GDP would reduce the military budget by roughly 5% of a standard deviation of the military budget, on average holding all the other variables at their mean values. To put this in perspective, the average military spending to GDP in the entire sample for the entire time period, which is 2.43% of GDP would decrease to 2.3% of GDP on average, a rather small reduction substantively. Comparatively, a standard deviation increase in electoral democracy reduces the military budget by 10% of a standard deviation of the military budget.

Looking across to column 2, FDI inflows per capita also has a negative effect, which is statistically significant at the 10% level. Interestingly, the substantive impact is similar in strength to FDI inflows per GDP. The effect of increasing income on lowering military expenditure is potentially simply a denominator effect since GDP is the denominator of the dependent variable. In column 3, the effect of FDI stock per GDP is also negative and highly significant. In other words, the greater the hold of TNCs of a host economy, the lower the military budget. Substantively, a standard deviation increase in FDI stock to GDP reduces the military budget by roughly 9% of a standard deviation of military expenditure to GDP, an effect similar to that of increasing democracy by a similar quantity.

These results are replicated across column 4-6 when the share of armed forces in the total labour force is tested. Increasing FDI, whether measured as flow or stock, reduces the size of the armed forces. Substantively, a standard deviation increase in FDI stock to GDP reduces the armed forces share of the labour force by roughly 6% of a standard deviation. Comparatively, a similar increase in electoral democracy would reduce the share of the armed forces by a similar magnitude, but the overall effect of these variables are comparatively small. Interestingly, increasing incomes increase the size of the armed forces, presumably because increasing wealth makes a labour-intensive military more affordable. These results are replicated with little change when estimated with a control for international conflict (see Appendix Table 1). The results on income per capita on military spending and the increase in military labor are consistent with formal theoretical reasoning contained in Seiglie (2016).

In Table 2, I include two critical variables in the model that account for ongoing armed conflict and a measure for the history of peace. As seen across the columns, the results remain little changed (the FDI inflow per capita measure is dropped for brevity). Unsurprisingly, ongoing wars increase the military budget whereas time since the last war decreases it. These results, particularly on FDI could be biased due to selection effects. FDI may select only

peaceful countries. The results are largely replicated when running two-stage Heckman selection models, although test statistics, such as the Wald test for independent equations failed to reveal that the two equations (outcome vs selection) were indeed independent (results not shown but available upon request). Given the fixed effects set up of the statistical tests, there is good reason to believe that the basic results do not suffer omitted variables bias and are not biased by selection effects, although the substantive direct effects remain modest.

In Table 3, I estimate interactive effects of FDI flows and stocks in Sub Saharan Africa. Interestingly, the average military spending per GDP is slightly higher for the non-Sub Saharan African sample (2.55%) compared with the Sub Saharan Africa sample of 40 countries (2.34%). As seen across the columns, the conditional effect of FDI stocks and flows is positive, albeit the flow effect is not statistically significant when testing military spending. In other words, the Sub Saharan African FDI correlates positively with military spending and the size of the armed forces relative to the rest of the world. However, notice that Sub Saharan Africa when FDI is 0 shows a higher substantive effect on defence spending. The coefficient is roughly 250% of a standard deviation of the military spending share of GDP. These results tentatively support the proposition about FDI and securitization in Africa, but substantively the positive effect of the interaction term is a great deal smaller than the effect of simply being from Africa. A standard deviation increase in FDI stock to GDP increases defence spending in Africa by roughly 6% of a standard deviation of defence spending over the entire time period. Nevertheless, the results suggest that Sub Saharan Africa is different to the global sample, at least in terms of the change in sign. These results are replicated when running the models with international conflict included (see Appendix Table 2).

Finally, I estimated the basic models accounting for Driscoll-Kraay standard errors that are robust to both temporal and spatial dependence for a sample of developing countries only (I drop the so called WENAO countries, or Western Europe, North America and Oceania; see

appendix exhibit C for list). As seen in Table 4, both FDI flow and stock remain robust to standard errors adjusted for spatial dependence, but only when testing military spending. The results are not significant for size of the armed forces. FDI, however, reduces military spending. These results are unaffected when international conflict is also in the models (see Appendix Table 3).

Next, I ran a barrage of robustness tests on the basic results. First, I ran the conditional model with African FDI examined separately from the rest of the World without any controls except per capita income. The African result became statistically not significant, but the negative effect of FDI for the rest of the world remained robust. Indeed, running the basic results for an Africa only sample of countries (40 countries) showed no significant effect of FDI on military spending, nor on the size of the armed forces. Additionally, I entered a term for natural resource wealth by using rents per GDP sourced from the WDI data. While natural resources generally increase military spending, the result on FDI remained unchanged. Entering terms for oil rather than total resources also did not alter the basic findings. The basic results remain unchanged when I enter terms for population density (WDI) and egalitarian government measured as access to education of the poor relative to the rich, an indicator sourced from the VDEM data (VDEM 2017). Running Variance Inflation Factor scores showed no multicollinearity in the basic models. Dropping 266 observations that may have biased the results (cooks statistics greater than the cutoff of $4/n$) did not alter the basic findings on FDI stock and lower military spending.

Finally, the “securitization” argument assumes that FDI increases violence within a society that has higher dependence on this form of capital. However, securitization might also dissuade violence from occurring, making any correlation between FDI and violent outcomes problematic since countries such as North Korea might keep the peace with minimal FDI. If this were true, then FDI should be associated with societal insecurity associated with crime,

violence and other forms of violent and non-violent insecurities. To measure such an outcome, I utilize 10 years of data on societal insecurity collected by the World Economic Forum's (WEF) Global Competitiveness Index (GCI), which measures "security" as the unweighted index made up of four indicators; namely, the absence of organized crime, the homicide rate, the incidence of terrorism, and the reliability of the police services. All three of the measures of FDI used above show positive effects on the measure of security taken from the WEF's GCI. I could only estimate random effects with standard errors robust to spatial and temporal dependence because of the short time period. These results are displayed in Table 5. A standard deviation increase in the inward stock of FDI per GDP increases societal security by roughly 23% of a standard deviation of security. These effects are likely to be direct and indirect through FDI's effect on other outcomes, such as income. Moreover, the substantive effect of inward flows relative to GDP are even greater than those of stock. Interactive effects of FDI among the African countries show that These results too do not suggest that FDI increases societal insecurity because of government securitization, if securitization means an increase of conflicts. The results taken together are consistent with "liberal peace" arguments about trade dependence, lower military spending and thereby the reduced risk of international armed conflict (Polachek, Seiglie and Xiang 2007, Seiglie 2016).

Conclusions

This study addresses concerns about the effects of foreign direct investment on armed conflict. Some argue that the connection between FDI and conflict, particularly in Africa, occurs because cash-strapped governments can use FDI to securitize rather than reform (Kishi, Maggio and Raleigh 2017). Using a global sample, this study tests these propositions directly by estimating the effects of FDI (inflows and stocks) on measures of state militarization; namely, military spending and the size of the armed forces. The results show consistently and

extremely robustly that FDI lowers defence spending, although the direct substantive impacts are fairly slight. These results are more in line with the view that regimes struggling to survive, or facing challenges of a military nature, have a lot more to depend on than FDI, which barely makes up 5% of GDP when considering flows of FDI. Conceptually, regimes would have their domestic support base to count on when under threat, a support base that potentially makes up the bulk of investment. While the statistical tests estimated here use fixed effects analyses and have been careful to address issues of selection, the question of whether FDI causes lower defence spending remains because reverse causality could still be an issue. Perhaps lower defence spending increases FDI? Thus, future studies might use instrumental variable techniques to tease out the direction of causality. For the moment, these results suggest that FDI does not cause higher militarization. If at all, there is a small positive effect only among a sample of Sub Saharan African countries when assessed against the rest of the world, and these effects are substantive slighter than simply the effect of being Sub Saharan African. Future studies might well examine other indicators of securitization to gauge if FDI does indeed have pernicious effects on conflict through other factors, such as influencing corruption and military government. Preliminary analyses of the effect of FDI on societal security, however, suggest that these effects are positive. The results presented here do not support dependency and anti-globalization arguments suggesting that TNCs promote a race to the bottom by influencing state militarization and societal disarray.

Appendix

Exhibit A. Intercorrelations among the variables

	1	2	3	4	5	6	7	8	9
1. Military exp./GDP	1								
2. Armed forces/labor	0.6274	1							
3. FDI stock/GDP	-0.142	-0.0066	1						
4. FDI flow per cap.	-0.0234	0.2292	0.6092	1					
5. FDI flow/GDP	-0.1329	0.004	0.6788	0.6689	1				
6. per capita income	0.1196	0.3757	0.2525	0.778	0.1289	1			
7. population size	0.0466	-0.1583	-0.3234	-0.2661	-0.3086	-0.1578	1		
8. Electoral democracy	-0.3225	-0.1051	0.1559	0.4376	0.0854	0.5245	-0.0906	1	
9. Civil war ongoing	0.2676	0.1276	-0.2089	-0.2417	-0.1643	-0.2216	0.3537	-0.2305	1
10. peace years	-0.1534	0.033	0.335	0.4849	0.2614	0.459	-0.3708	0.3379	-0.5674
11. External peace	-0.2377	-0.1192	0.0931	0.1976	0.0877	0.2529	-0.1607	0.3402	-0.3776

Exhibit B. Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
1. Military exp./GDP	4,457	1.095666	0.4947266	0	3.566046
2. Armed forces/labor	3,459	-0.051234	0.9621307	-5.990263	2.610277
3. FDI stock/GDP	4,429	2.884471	1.083497	0	6.968076
4. FDI flow per cap.	4,261	3.921676	2.163131	-4.78775	12.50372
5. FDI flow/GDP	4,374	1.123442	0.8532921	-4.902115	5.534606
6. per capita income	4,456	8.308114	1.540043	4.880119	11.62597
7. population size	4,457	16.27526	1.501325	12.69125	21.04997
8. Electoral democracy	4,457	0.5297707	0.2734922	0.014855	0.9399808
9. Civil war ongoing	4,457	0.1826341	0.3864096	0	1
10. peace years	4,457	23.3545	18.57701	0	57
11. External peace	2,851	10.07609	1.535854	3	12

Exhibit C. List of WENAO countries

Australia

Austria

Belgium

Canada

Switzerland

Germany

Denmark

Spain

Finland

France

United Kingdom

Greece

Italy

Japan

Luxembourg

Netherlands

Norway

New Zealand

Portugal

Sweden

United States

Appendix Table 1.

	(1)	(2)	(3)	(4)	(5)	(6)
	lnmilexpgdp	lnmilexpgdp	lnmilexpgdp	lnarmforcelf	lnarmforcelf	lnarmforcelf
FDI inflow / GDP (ln)	-0.02** (0.01)			-0.03** (0.01)		
FDI inflow per capita (ln)		-0.01** (0.00)			-0.03*** (0.01)	
FDI inward stock/GDP (ln)			-0.03*** (0.01)			-0.05*** (0.02)
Income per capita (ln)	0.02 (0.04)	0.03 (0.04)	0.02 (0.04)	0.20** (0.09)	0.25*** (0.08)	0.26*** (0.08)
Population size (ln)	0.02 (0.06)	0.01 (0.06)	-0.02 (0.05)	-0.20* (0.10)	-0.15 (0.10)	-0.24** (0.09)
Electoral democracy	-0.04 (0.07)	-0.03 (0.07)	-0.01 (0.07)	-0.20 (0.12)	-0.20* (0.12)	-0.12 (0.12)
External peace	-0.01* (0.00)	-0.01 (0.01)	-0.01* (0.00)	-0.01 (0.01)	-0.02* (0.01)	-0.01 (0.01)
Constant	1.55 (1.09)	1.61 (1.09)	2.22** (1.04)	2.53 (1.99)	1.50 (1.94)	2.84 (1.87)
Countries	127	127	127	128	128	128
Observations	2,870	2,819	2,965	2,983	2,940	3,088

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 2.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	lnmilexpgdp	lnmilexpgdp	lnmilexpgdp	lnarmforcelf	lnarmforcelf	lnarmforcelf
FDI inflow / GDP (ln)	-0.01*			-0.02*		
	(0.01)			(0.01)		
FDI inflow per capita (ln)		-0.01*			-0.03***	
		(0.00)			(0.01)	
FDI inward stock/GDP (ln)			-0.03***			-0.05***
			(0.01)			(0.02)
Income per capita (ln)	0.00	0.01	-0.00	0.19**	0.23***	0.24***
	(0.04)	(0.04)	(0.04)	(0.09)	(0.08)	(0.08)
Population size (ln)	-0.03	-0.03	-0.06	-0.24**	-0.20**	-0.28***
	(0.06)	(0.06)	(0.06)	(0.10)	(0.10)	(0.09)
Electoral democracy	-0.04	-0.03	-0.02	-0.20*	-0.20*	-0.13
	(0.07)	(0.07)	(0.07)	(0.12)	(0.12)	(0.11)
External peace	-0.01	-0.00	-0.00	-0.01	-0.02	-0.01
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
Civil War	0.07***	0.07***	0.07***	0.05	0.07**	0.04
	(0.02)	(0.02)	(0.02)	(0.04)	(0.03)	(0.04)
Years of civil peace	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	2.35**	2.41**	2.97***	3.27	2.30	3.58*
	(1.12)	(1.12)	(1.07)	(2.05)	(1.99)	(1.93)
Countries	127	127	127	128	128	128
Observations	2,870	2,819	2,965	2,983	2,940	3,088

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 3.

VARIABLES	(1) lnmilexpgdp	(2) lnarmforcelf	(3) lnmilexpgdp	(4) lnarmforcelf
Sub Saharan Africa dummy	-0.27*** (0.10)	-0.72*** (0.21)	-0.23** (0.10)	-0.58** (0.24)
FDI stock GDP (ln)	-0.04*** (0.01)	-0.07*** (0.02)		
SS Africa x FDI stock/ GDP	0.04** (0.02)	0.05 (0.03)		
SS Africa x FDI flow/GDP			0.04** (0.02)	0.10*** (0.03)
FDI flow/GDP(ln)			-0.02*** (0.01)	-0.05*** (0.02)
Income per capita (ln)	-0.00 (0.04)	0.24*** (0.08)	0.01 (0.04)	0.19** (0.09)
Population size (ln)	-0.11* (0.06)	-0.32*** (0.09)	-0.05 (0.06)	-0.30*** (0.10)
Electoral democracy	-0.02 (0.07)	-0.13 (0.11)	-0.04 (0.07)	-0.22* (0.12)
External peace	-0.00 (0.00)	-0.01 (0.01)	-0.01 (0.00)	-0.01 (0.01)
Civil war	0.07*** (0.02)	0.04 (0.04)	0.07*** (0.02)	0.02 (0.03)
Years of peace	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00** (0.00)
Constant	3.94*** (1.06)	4.85*** (1.77)	2.96*** (1.11)	4.72** (1.91)
Countries	127	128	127	128
Observations	2,965	3,088	2,870	2,983

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Appendix Table 4.

VARIABLES	(1) lnmilexpgdp	(2) lnarmforcelf	(3) lnmilexpgdp	(4) lnarmforcelf
lnfdikgdp	-0.04*** (0.01)	-0.04*** (0.01)		
lngdppc	-0.05 (0.03)	0.15 (0.09)	-0.03 (0.04)	0.13 (0.11)
lnpop	-0.15*** (0.05)	-0.44*** (0.12)	-0.07 (0.05)	-0.37** (0.14)
v2x_polyarchy	-0.09 (0.06)	-0.06 (0.09)	-0.09 (0.06)	-0.14 (0.09)
extpeace	-0.02*** (0.01)	-0.01 (0.01)	-0.01*** (0.00)	-0.00 (0.01)
civilwar	0.07*** (0.01)	0.04 (0.04)	0.06*** (0.01)	0.05 (0.04)
peaceyrs	-0.00*** (0.00)	-0.00* (0.00)	-0.00*** (0.00)	-0.00** (0.00)
year	-0.00* (0.00)	-0.01 (0.01)	-0.01*** (0.00)	-0.02* (0.01)
lnfdigd			-0.03*** (0.01)	-0.00 (0.01)
Constant	10.11*** (3.18)	32.57** (13.95)	15.05*** (3.41)	39.37*** (14.40)
Observations	2,428	2,558	2,364	2,481
Number of groups	106	107	106	107

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

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Table 1. OLS regressions of FDI on military spending and the size of armed forces

	(1)	(2)	(3)	(4)	(5)	(6)
	1980-2017	1980-2017	1980-2017	1990-2017	1990-2017	1990-2017
	Mil.exp/gdp	mil.exp/gdp	mil.exp/gdp	Mil.forces/labour	Mil.forces/labour	Mil.forces/labour
FDI inflows/GDP (ln)	-0.02** (0.01)			-0.03** (0.01)		
FDI inflows per capita(ln)		-0.01* (0.00)			-0.03*** (0.01)	
FDI stock/GDP (ln)			-0.03*** (0.01)			-0.03** (0.02)
Income per capita (ln)	-0.07** (0.03)	-0.05* (0.03)	-0.06* (0.03)	0.07 (0.05)	0.11** (0.05)	0.13** (0.05)
Population size (ln)	0.01 (0.05)	0.00 (0.05)	-0.01 (0.05)	-0.37*** (0.08)	-0.35*** (0.08)	-0.41*** (0.08)
Electoral democracy (vdem)	-0.20*** (0.05)	-0.19*** (0.05)	-0.21*** (0.05)	-0.30*** (0.10)	-0.30*** (0.11)	-0.22** (0.10)
Constant	1.58* (0.86)	1.62* (0.87)	1.92** (0.85)	6.76*** (1.53)	6.17*** (1.53)	7.20*** (1.49)
Countries	154	154	154	157	157	157
Observations	4,457	4,352	4,621	3,734	3,670	3,860

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Two-way fixed effects estimated

All x variables lagged by 1 year

Newey-West standard errors

Table 2. OLS regressions of FDI on militarization controlling for civil war and the history of peace

	(1)	(2)	(3)	(4)
	1980-2017	1980-2017	1990-2017	1990-2017
	Mil.exp./GDP	Mil.exp./GDP	Forces/labour	Forces/labour
FDI inflow/GDP (ln)	-0.01*		-0.02**	
	(0.01)		(0.01)	
FDI stock/GDP (ln)		-0.03***		-0.03**
		(0.01)		(0.02)
Income per capita (ln)	-0.06**	-0.05*	0.08*	0.13***
	(0.03)	(0.03)	(0.05)	(0.05)
Population size (ln)	-0.06	-0.08*	-0.40***	-0.44***
	(0.05)	(0.05)	(0.08)	(0.08)
Electoral democracy (ln)	-0.19***	-0.21***	-0.32***	-0.24**
	(0.05)	(0.05)	(0.10)	(0.10)
Civil war ongoing	0.12***	0.13***	0.02	0.02
	(0.02)	(0.02)	(0.03)	(0.03)
Years of peace since last war	-0.00***	-0.00***	-0.01***	-0.01***
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	2.46***	2.86***	7.20***	7.67***
	(0.85)	(0.82)	(1.50)	(1.47)
Countries	154	154	157	157
Observations	4,457	4,621	3,734	3,860

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Two-way fixed effects estimated

All x variables lagged by 1 year

Newey-West standard errors

Table 3. The relative effects of FDI on militarization in the Sub Saharan African region

	(1)	(2)	(3)	(4)
	mil exp/gdp	forces/labour	mil exp/gdp	forces/labour
Sub Saharan Africa (dummy)	0.63*** (0.11)	-1.20*** (0.37)	0.68*** (0.11)	-1.12*** (0.35)
FDI stock/GDP(ln)	-0.04*** (0.01)	-0.04** (0.02)		
Sub Saharan Africa x FDI stock/GDP	0.03** (0.02)	0.03 (0.03)		
Sub Saharan Africa x FDI inflow/GDP			0.02* (0.01)	0.05** (0.02)
FDI inflow/GDP			-0.02*** (0.01)	-0.04*** (0.01)
Income per capita (ln)	-0.05* (0.03)	0.13*** (0.05)	-0.06* (0.03)	0.09* (0.05)
Population size (ln)	-0.12*** (0.05)	-0.48*** (0.08)	-0.08 (0.05)	-0.43*** (0.08)
Electoral democracy (vdem)	-0.22*** (0.05)	-0.25** (0.10)	-0.20*** (0.05)	-0.33*** (0.10)
Civil war ongoing	0.13*** (0.02)	0.02 (0.03)	0.13*** (0.02)	0.02 (0.03)
Years of peace since last war	-0.00*** (0.00)	-0.01*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)
Constant	3.53*** (0.85)	8.33*** (1.43)	2.80*** (0.85)	7.75*** (1.44)
Countries	154	157	154	157
Observations	4,621	3,860	4,457	3,734

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Two-way fixed effects estimated

Table 4. Fixed effects estimations of FDI on militarization in developing countries accounting for temporal and spatial dependence

	(1) mil exp/gdp	(2) forces/labour	(3) mil exp/gdp	(4) forces/labour
FDI stock/GDP(ln)	-0.03*** (0.01)	-0.02 (0.02)		
FDI inflow/GDP(ln)			-0.02*** (0.01)	-0.00 (0.01)
Income per capita (ln)	-0.07*** (0.02)	0.08 (0.05)	-0.07** (0.03)	0.05 (0.05)
Population size (ln)	-0.20*** (0.04)	-0.57*** (0.08)	-0.15*** (0.04)	-0.47*** (0.09)
Electoral democracy	-0.33*** (0.04)	-0.19** (0.09)	-0.28*** (0.04)	-0.26*** (0.09)
Civil war ongoing	0.14*** (0.02)	0.02 (0.03)	0.13*** (0.02)	0.03 (0.03)
Years of peace since last war	-0.00*** (0.00)	-0.01*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)
Year	-0.00 (0.00)	-0.01 (0.01)	-0.00*** (0.00)	-0.01* (0.01)
Constant	6.73*** (0.96)	23.11** (10.28)	10.64*** (1.72)	27.89*** (10.29)
Observations	3,973	3,341	3,845	3,245
Number of countries	133	136	133	136

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Driscoll-Kraay standard errors

Table 5. Effects of FDI on societal security globally & among Sub Saharan African countries

	(1)	(2)	(3)	(4)	(5)
	security	security	security	security	security
FDI inward stock/GDP (ln)	0.07*** (0.01)			0.13*** (0.01)	
FDI inward flow per capita (ln)		0.07*** (0.01)			
FDI inward flow/GDP (ln)			0.10*** (0.02)		0.12*** (0.02)
Income per capita (ln)	0.38*** (0.01)	0.31*** (0.01)	0.38*** (0.01)	0.48*** (0.01)	0.49*** (0.01)
Population size (ln)	-0.09*** (0.01)	-0.09*** (0.01)	-0.09*** (0.01)	-0.07*** (0.01)	-0.08*** (0.01)
Electoral democracy	-0.56*** (0.03)	-0.56*** (0.03)	-0.56*** (0.03)	-0.65*** (0.03)	-0.63*** (0.03)
External peace	0.09*** (0.01)	0.09*** (0.01)	0.09*** (0.01)	0.08*** (0.01)	0.08*** (0.01)
year (linear)	-0.04*** (0.01)	-0.03** (0.01)	-0.03** (0.01)	-0.04*** (0.01)	-0.03** (0.01)
SSA x FDI inward stock/GDP				-0.18 (0.12)	
SSA				1.21*** (0.42)	0.72*** (0.12)
SSA X FDI inward flow/ GDP					-0.07 (0.06)
Constant	77.63*** (26.44)	70.92** (28.13)	65.92** (27.78)	81.18*** (26.93)	66.41** (28.87)
Observations	1,016	971	989	1,016	989
R-squared	0.424	0.415	0.421	0.470	0.465
Number of groups	120	120	120	120	120

*** p<0.01, ** p<0.05, * p<0.1