


RISKY BUSINESS:

ASSESSING THE SUCCESS OF INVESTMENTS IN SOMALIA




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ASSESSING THE SUCCESS OF INVESTMENTS IN SOMALIA

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August 2019

http://dx.doi.org/10.18289/OEF.2019.040

Cover photos: Clients of One Earth Future's Shuraako program in Somalia and Somaliland. Jean-Pierre Larroque, One Earth Future

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I. EXECUTIVE SUMMARY

This report examines the determinants of private sector growth within the Somali peninsula. In particular, this report provides a rigorous examination of how access to capital significantly improves the long-term prospects for firms operating in fragile and conflict affected countries. While economic development has been widely touted as a solution to ongoing armed conflict, there tends to be less consensus on how to promote economic (particularly, private sector) growth in fragile and conflict affected countries. This is particularly true during periods of active fighting, where businesses are often forced to shutter or move to more stable regions. Similarly, firms in conflict affected countries often face critical barriers to long-term growth including capital flight, access to equity, infrastructure damage, and labor shortages to name a few.

To examine the success of businesses within conflict affected countries, this report examines the monthly earnings of Somali businesses (both within Somaliland and the Federal Republic of Somalia) participating within the *Shuraako* program. Unlike similar analyses, this report draws on unique firm-level data within an exceedingly fragile environment. Furthermore, this report offers a detailed examination of the effects of armed conflict on individual firms, the role of international aid in mitigating these effects, as well as how increased access to capital shapes the earnings of firms.

Key Findings

- Armed conflict plays a critical role in reducing firm earnings. On average, firms lose 2.2 percent of revenue a month due to active fighting. In the most extreme cases, firms may lose up to 41 percent in monthly revenue as a result of ongoing fighting.
- While aid significantly improves the wellbeing of communities in conflict affected countries, international aid may not particularly improve the immediate ability of businesses to increase revenue. This is likely given that many aid projects are non-fungible, where money may not address the unique challenges faced by firms.
- By far, increased access to capital plays the largest role in increasing firm revenues. On average, a one percent increase in loan size offered to firms boosts monthly revenue by 0.89 percent. These effects increase when accounting for sector-level controls.

Policy Recommendation

- Of all the barriers to firm success in conflict affected areas, access to capital is one of the most critical. The international community can greatly expand business growth by providing loans (or scaling up existing operations) to businesses in fragile and conflict affected countries.
- Reducing armed conflict is paramount to promoting a thriving private sector in fragile countries. While fostering economic growth may reduce the long-term risk of new wars, a first step should be to ensure adequate security in unstable regions.

II. INTRODUCTION

Businesses operating in conflict-affected areas face a number of critical hurdles. Outside of the clear risk to personnel and property, firms must navigate a maze of challenges associated with persistent instability and fighting. Mobile wealth (such as finance or manufacturing) often flees during periods of instability, leading to capital flight.[1] Business leaders must also try to hire qualified candidates during periods of sustained *human* capital flight, where talented professionals seek work in more stable countries (often referred to as a "brain drain"). Not to mention the inevitable infrastructure damage that results from major fighting or the inability of governments to keep up with the costs of repairing the consequences of armed conflict.

Yet, increased economic development is consistently offered as a solution to preventing (or ending) armed conflict. Among the United Nations Sustainable Development Goals, 3 of the 17 goals set forth by the international community are tied directly to a vibrant private sector.[2] These include promoting economic growth and employment, sustainable industrialization and innovation, and ending economic inequality. Key to each of these objectives is a strong private sector. Unfortunately, the persistence of armed conflict may undermine these goals. While armed conflict had been declining, 2016 saw the highest number of active armed conflicts since the end of the Cold War.[3] Though that number has declined a bit, much of the current global instability appears to be tied directly to persistent violence. How then will the international community attempt to promote a thriving private sector in the face of growing armed conflict?

One possible path forward is through the use of innovative investment in conflict-affected countries. To that end, this report explores the effects of the One Earth Future (OEF) Foundation's Shuraako program. Since 2012, the Shuraako program has been operating in Somalia and Somaliland, offering financial support to small and medium-sized enterprises (SMEs). The Shuraako program leverages local networks to identify suitable businesses for investment (i.e., loans to expand local businesses). Through this service, the Shuraako program provides a vital service (access to capital) that is largely absent in the greater Somali region.

This report leverages original data produced by this program to examine (1) how armed conflict affects firms operating in this restive region as well as (2) how the program mitigates these effects for participating firms. After over seven years of operating in Somalia, a wealth of data has been generated on participating firms. This report uses these data to examine whether the size of the investment in Somali firms has impacted the profitability of Shuraako businesses. Employing rigorous statistical analyses, we find that the size of the loan greatly affects the long-term profitability of participating firms. Our report also demonstrates that these effects are independent of other key factors such as the market sector, environmental conditions, international aid projects, and other firm-level characteristics. A full description of the data and analysis can be found in the technical appendix of this report.

Based on this report, we offer two key findings:

- Access to capital remains a critical barrier to private sector development in conflict-affected areas. The international community can greatly expand business growth by providing loans (or scaling up existing operations).
- Armed conflict remains a persistent problem for firms in fragile and conflict-affected countries. Even in areas where stability has been largely achieved, fighting may have a greater impact on monthly revenues as compared to less stable regions. It is imperative to reduce long-term fighting to ensure stability.

In the following sections, we discuss the unique challenges faced by Somali firms as well as businesses more broadly that operate in conflict-affected areas. We then examine how mechanisms such as foreign aid may mitigate these effects. Unfortunately, our findings are not optimistic that current aid programs enhance firm revenues. Finally, we detail the effects of targeted investment on firm earnings as well as what critical policy lessons can be drawn from Shuraako's success.

III. SHURAAKO: AN OVERVIEW

Since 2012, the Shuraako ("partnership") program has been operating throughout Somalia and Somaliland, with offices in Hargeisa, Garowe, and Mogadishu. The primary goal of the Shuraako program is to connect Somali firms with critical capital necessary for firms to expand and improve the local economy. As will be discussed in more detail in the following section, firms operating in fragile and conflict-affected areas are often unable to acquire necessary financing domestically or internationally. The Shuraako program is, therefore, designed to fill a critical gap and assist businesses in not only surviving but expanding.

The program primarily operates with field staff who work closely with communities. Unlike other international financial services, this approach provides the Shuraako program with critical partnerships that help to alleviate uncertainty and perceived risk with investing in the Somali peninsula. Data gleaned from local involvement help investment managers identify suitable businesses to work with.

The capital provided to firms often allows businesses to invest in modern technology, expand their labor force, or update old equipment. For example, as part of the Somali AgriFood Fund partnership with Shuraako, capital provided to farmers allowed for the purchase of additional land to expand their capacity as well as update wells with solar panels to efficiently irrigate crops at a substantially lower annual cost.[4] This capital also allows businesses to become more resilient in the face of more adverse climate conditions. Loans allowed farmers to invest in greenhouses and updated irrigation systems to reduce water consumption and protect crops.[5] In many instances, business owners participating in the program have a clear understanding of what resources are necessary to expand their firms. Capital provided to companies merely allows business owners to achieve these objectives.

In addition to offering critical capital to Somali firms, the program provides training, connects firms with international partners, and promotes greater renewable energy and female employment throughout the Somali peninsula.

As will be discussed in the following sections of this report, our analysis suggests that total loan size significantly increases the monthly revenue of participating firms. After accounting for firm-level characteristics, environmental and demographic conditions, and the presence of international aid, we find that the size of loans provided to firms substantially increases month-to-month profits.

Despite this comprehensive approach to supporting Somali firms, investing in this region of East Africa can be a risky affair. There are still significant barriers to firm success for Shuraako participants. A key concern is the persistence of armed conflict throughout the Somali peninsula.

IV. ARMED CONFLICT AS A BARRIER TO FIRM SUCCESS

Generally, there is almost universal consensus that armed conflicts generate significant costs for national economies.[6] Beyond the direct economic costs of war, fighting often produces reverberating deleterious effects for society. Increased violence dramatically increases malnourishment, poverty, and infant mortality and reduces total life expectancy as well as access to water.[7] These results reflect earlier findings by Ghobarah, Huth, and Russett, who found that armed conflict drastically shortens the life spans of vulnerable communities by degrading access to health care and diverting resources that would be spent on social welfare programs.[8] Significant damage to national infrastructure that results from armed conflict substantially reduces the ability of vulnerable populations to receive health care either by preventing citizens from reaching doctors or by preventing aid workers from reaching the affected population.[9]

Though civil wars have reverberating effects on many aspects of life in these countries, this report is primarily concerned with the effects of armed conflict on the private sector. As noted earlier, civil wars often generate lasting economic damage to countries.[10] Not only do economies suffer during periods of active fighting, but there are

prolonged effects associated with major civil wars.[11] Though economies do seem to experience some recovery after years of war, intrastate conflicts critically undermine the capacity of economies to grow in meaningful ways.[12] [a] For instance, Collier identifies five avenues by which civil wars disrupt and/or damage the economies of war-torn countries. First and foremost, parts of the labor force are killed or maimed from fighting. Civilians are often targeted directly, or sections of society are coerced into joining armed resistance, raising the risk of being killed as part of fighting. Second, economic activity is disrupted as a result of armed conflict (such as damaged roads or market closures during major fighting). Third, governments often redirect spending away from investments in human capital and public goods in order to support the war against rebel groups. For instance, funding for public schools may be limited so as to procure weapons or hire more soldiers. Fourth, limited funds within the country will reduce the total amount of income that is saved, preventing future investments. Finally (and relatedly), civil wars tend to lead to large capital flight from the country, halting major expansions.[13]

Beyond the national-level effects of continued fighting, armed conflict often carries direct costs on firms. The majority of studies on firms and armed conflict point to a substantial loss in revenue for businesses operating in periods of high conflict.[14] Collier and Duponchel point to reduced production capacity as a major driver of economic loss.[15] As noted by the authors,

> *Rather than physical destruction, the most important effects of civil war on firms are likely to be through the disruption of production through the flight of employees, unreliability of transport, and fear of looting. Faced with unreliable transport, firms would normally have carried larger inventories, but the fear of looting would warrant the opposite response. Such costs of disruption can be characterized as technical regress in the private sector of the economy, and so raise the unit cost of its output.*

The authors also point to significant reductions in business and consumer demand following armed conflict, as entities often lack cash on hand to make sustained purchases. Of critical importance, Amodio and Di Maio point to market access as a major distortion that results from armed conflict.[16] Put frankly, it is difficult to transport goods to markets during periods of high-intensity armed conflict. There may actually be a substitution effect that occurs during armed conflict, where businesses and consumers begin to rely more on imports, thereby reducing the market share of domestic producers.[17] Collier and Duponchel suggest that the critical barrier to firm success in the aftermath of fighting is the reduction in human capital for many employees.[18] Specifically, workers caught in areas most affected by fighting are unable to engage in conventional labor, thereby reducing the skill set they bring when fighting ends. Looking at large manufacturing plants in Colombia, Camacho and Rodriguez demonstrate that greater battle events within municipalities significantly increase the likelihood of firm exit from those municipalities.[19]

There are some limitations to these past studies (particularly for the Somali context). National-level studies often overlook critical variations in firm exposure to conflict within countries. This is particularly true at the sector level.[20] In addition, of the studies included within this section, only one was conducted in an exceedingly fragile economy (Sierra Leone), and this study was based largely on performance in the postwar environment. This context obscures the immediate consequences of armed conflict. Finally, while the studies all confirm that fighting may damage the economic performance of firms, few provide mechanisms available to the international community to ameliorate the effects of armed conflict. Furthermore, how do the characteristics of firms assist in limiting the effects of armed conflicts? As noted by Victor Odundo Owuor, firms in conflict-affected countries often have significant agency and may adapt to the barriers they face.[21] Drawing on a unique qualitative review of firms in conflict-affected countries (Somaliland, Democratic Republic of Congo, and South Sudan), Owuor points to the wide variation in how firms operate (based on their unique circumstances) to overcome the risks posed by conflicts. Hoffmann and Lange similarly argue that businesses rely on complex social networks to help offset the costs of armed conflict.[22]

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a Gates, Hegre, Nygard, and Strand note that, though there is some pickup in economies after wars end, it is difficult to assess the sectors that account for this development. It is likely that growth is driven, in part, by significant postwar aid. They caution against simply assuming that states will immediately begin recovering following the end of a war.

V. OPERATING IN THE SOMALI REGION

There are many challenges to promoting growth for Somali firms. Somalia has been chronically beset by war since 1981 when the Somali National Movement (SNM) started its insurgency. Following President Barre's ouster from power in 1991, the country has suffered through decades of prolonged armed conflict as rival militant groups jockey for control of the region (particularly Puntland and the southwest-central regions). Though the self-declared independent state of Somaliland has enjoyed relative stability since 1991, fighting between militant groups and between rival regions has impacted all parts of the region. In addition to the brutal conflict, the country has also been hit hard by persistent famines exacerbated by major droughts. Shortly after the collapse of the state, internal trade within the country was severely handicapped by rival groups blocking trade routes.[23] Though this has been alleviated by increasing order in parts of the country, insecurity often hampers the ability of firms to move goods to market. Finally, national infrastructure policies have been hampered by instability. As of 1992, the national road system connecting cities had largely been worn down.[24] Again, international aid projects and regional government efforts have remedied this to a degree, but chronic national instability presents challenges for modernizing the country's infrastructure.

Despite these difficult conditions, firms still persist (and even thrive) throughout the country (though the size and scale vary).[25] As noted by Hoffmann and Lange, SMEs operating in conflict-affected countries often find novel ways of adapting to growing instability, allowing firms to endure despite ongoing armed conflicts.[26] The private sector in Somalia has historically thrived best in areas where local governments have provided security and basic services.[27] These effects have been compounded by decades of national instability, where local and regional governments typically fill the vacuum left by transitional governments. The private sector of Somalia (and Somaliland) has also benefited significantly from remittances and investments provided by a strong diaspora community.[28]

Still, instability within Somalia has generated significant barriers for the private sector. One such barrier is the absence of international investment within the country. Fragile and conflict-affected countries often are less likely to receive international investment given a greater perception of risk in these states.[29] Similarly, domestic capital is typically rare given weak financial institutions. Though countless aid dollars have been distributed throughout the country, aid dollars have not led to a vibrant banking sector (with most aid used to strengthen national institutions, alleviate famine, and develop basic infrastructure).[b] Again, armed conflict heightens these problems by reducing national wealth available for investment or by signaling greater risk for international investors. As this report will show, though, active armed conflict often has immediate costs for firms operating in the country.

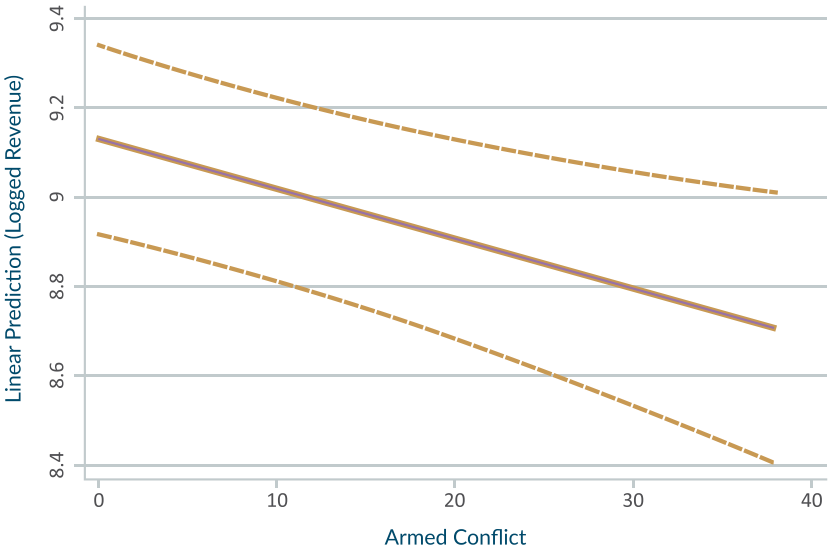
The Effects of Armed Conflict in the Somali Context

The results of our analysis confirm that Somali firms suffer significant costs during periods of greater armed conflict (see technical appendix). In an average month, firms participating in the Shuraako program suffer a 2.2 percent loss in monthly revenue due to active fighting. These only represent the costs in an "average" month. At the peak of fighting in areas where Shuraako firms operate, we find a 41.8 percent drop in monthly revenue for participating businesses. These results may have a devastating effect on the long-term ability of firms to weather periods of growing instability. As noted in the technical appendix, these results remain consistent while controlling for firm characteristics, regions where businesses operate, and economic and environmental conditions.

While we might expect the effects of armed conflict to dissipate in more stable regions (i.e., Somaliland), we actually find the opposite. Specifically, armed conflict events actually have a *greater* impact on businesses operating in Somaliland. While total conflict events are much rarer in the Somaliland region, when they do occur, their effects are more pernicious for monthly firm revenues. On average, a single conflict event reduces monthly revenue by 4.1 percent. This is an astonishing effect, as it is almost four times as great as that caused by conflict events in other parts of the country. When accounting for the maximum number of armed conflict events in a given month for this region,

b Assessment based on original data collected from the United Nations and USAID. See technical appendix.

FIGURE 1. PREDICTED BUSINESS REVENUE AND ARMED CONFLICT EVENTS



we find a roughly 32.8 percent drop in monthly revenue for participating firms in the Shuraako program. This outsized effect may be tied, in part, to the rarity of violence in this more stable region. Firms located in other parts of the Somali peninsula tend to experience more conflict events, and, therefore, an increase in fighting may not have as dramatic effect on their month-to-month revenue. This is not to say that fighting does not diminish their earnings. Rather, in parts of the country where fighting is rarer (and, conversely, stability is greater), the emergence of fighting tends to have a more significant impact on monthly earnings.

While clearly businesses (and the private sector more broadly) thrive in parts of the Somali peninsula where governments have invested in security and basic services, armed conflict continues to present a pernicious threat to the long-term profitability of firms in this area.

There is also evidence that certain sectors are more vulnerable to armed conflict than other sectors. Our analysis suggests that conflict plays a unique role in undermining the monthly revenue of both fishing and service sector industries in the Shuraako program. In part, this makes sense. Service sector firms (restaurants in particular) often rely on sustained daily business within a particular community. During periods of fighting, it is often difficult for business owners to relocate their brick and mortar establishments to towns where there is no active conflict. There may be similar effects present for fishing firms. As these firms are unable to operate year-round, months during the fishing season that they are unable to operate due to conflict may be particularly costly. In addition, fishing firms may be limited in the markets they can reach. Immediate access to markets is often incredibly important for small fishing firms, as fish are a highly perishable food source. This may be one reason why these firms tend to invest in refrigeration units.

International Aid as a Balm?

We were curious whether current international aid programs could help mitigate some of the adverse effects of armed conflict in a region. As noted by Findley, aid is generally offered to "mitigate the risk and impact of war while servicing their [the donors'] own foreign policy interests, [and] wealthier states and international organizations frequently make use of foreign aid—public assistance with a grant or concessional component administered to promote development."[30] Unfortunately, the results of these policies are often mixed. To be sure, some excellent work has emerged demonstrating that international aid reduces armed conflict and improves security for the private sector.[31] With that said, the research is still mixed as to how aid reduces the deleterious effects of armed conflict.[32]

Given the generally positive effects of international aid, our initial expectation was that increased aid spending in areas where Shuraako participants operate would generate a net benefit in their monthly revenue. However, our results did not demonstrate a consistent effect of aid expenditures. The findings from our analysis suggested that, on average, firms operating near larger aid projects (as measured by total estimated monthly expenditures for projects) were no better off than firms operating in areas with small or no ongoing aid projects. Though there was some evidence that the type of aid (particularly capacity-building aid) may have a different effect from development projects, we could not

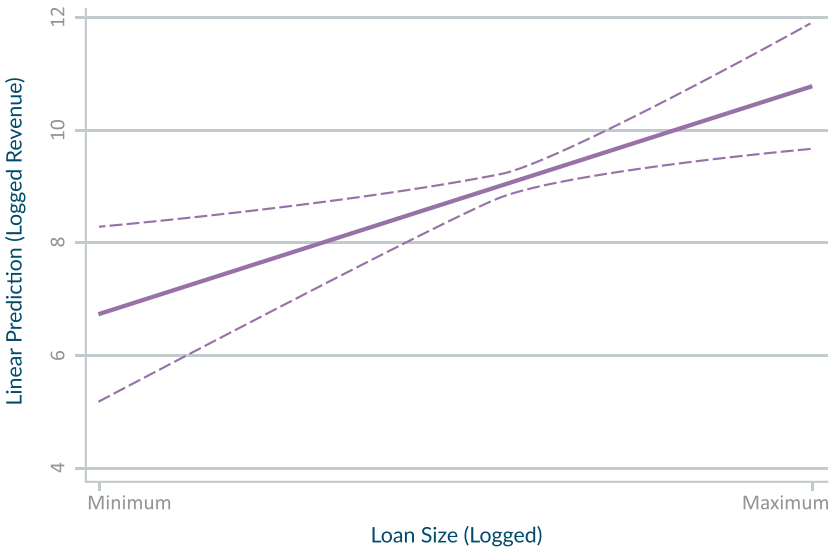
assess how and why such expenditures benefited firms. These results may also be the product of *where* aid is spent, as aid is often given to poorer parts of the country. While there is some evidence to suggest that an underlying "selection effect" may be influencing our results, these effects were rather weak. Rather, aid projects, in general, did not seem to improve the monthly earnings of businesses in our program.

Though disappointing, these results are not necessarily shocking. While we might expect that the private sector should benefit from improved infrastructure or from communities that experience "resilience training" (see technical appendix) to help expand their capacity, the monthly revenues of firms are likely tied to factors more closely associated with how businesses operate (such as labor costs) or immediate market conditions (e.g., foreign competition or renewed violence). Aid projects offer essential long-term benefits to communities that may simply not be accounted for in this analysis. The efficacy of aid may also be shaped by the complicated nature in which it is rolled out. As noted by Findley, international aid "is the result of a long, complex process that unfolds at the intersection of donors' national interests, recipients' national interests, bureaucratic processes surrounding the allocation of aid, and the complex delegation chain of partners responsible for implementing aid."[33] Again, while aid offers numerous benefits to recipient communities, we found no clear evidence that participating firms benefited monetarily from operating near aid projects.

Shuraako: Filling the Gap?

What does appear to monetarily benefit participating firms is access to capital. Specifically, our findings demonstrate that the total loan size received by firms significantly affects month-to-month profits. This effect is both consistent and enduring, with increased loan sizes providing sustained returns for participating firms. While we are unable to compare companies that did and did not receive loans, our findings do demonstrate that the size of loans given to different firms is our best indicator of whether firms will experience monthly revenue increases. These effects remain consistent while controlling for firm-level characteristics (e.g., size, sector, past losses) as well as external factors that may undermine firm success (e.g., armed conflict, environmental shocks, access to aid). Figure 2 provides the linear prediction of logged loan size effect on the logged monthly revenue of firms.

FIGURE 2. LINEAR PREDICTION OF EFFECT OF LOAN SIZE ON MONTHLY FIRM REVENUE

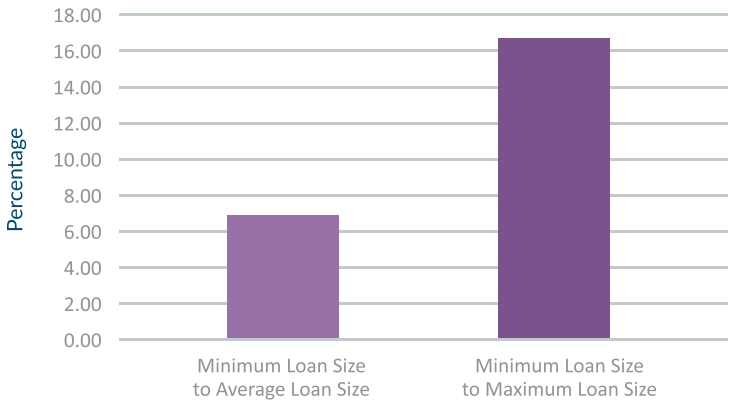


Note: Estimates are derived from an instrumental variable regression. Figure includes 95 percent confidence intervals.

These effects are substantive as well. On average, for every 1 percent increase in loan size, there is a corresponding 0.84 percent increase in monthly revenue. The effects of loan size on monthly revenue increase when we include sector-level controls, leading to a 1.01 percent increase in monthly revenue for every 1 percent increase in loan size. The substantive effect of loan size exceeds all other measures included in the analysis barring the total number of employees working at the firms. In simulating the predicted monthly revenue of firms, we estimate the predicted increase in revenue by varying loan size (holding all other variables constant). Increasing the loan size from the minimum value to the average value boosts firm earnings by 6.9 percent. Increasing loan size to the maximum value boosts monthly revenue by over 16 percent.

One key question about these results may be tied to the causal connection (and direction) between loan size and firm earnings. In other words, do greater loans lead to greater earnings or do more effective companies qualify for greater loans? In the technical appendix, we address this by using instrumental variable analysis to isolate the causal direction of loan size, thereby ensuring that our results are not merely reflective of high-performing companies in the program. We are, therefore, confident in the efficacy of loans provided to Shuraako firms to increase monthly profits.

FIGURE 3. PREDICTED INCREASES IN LOGGED MONTHLY REVENUE FROM INCREASES IN LOGGED LOAN SIZE



Again, while we are unable to compare the monthly earnings of firms that participated in the Shuraako program to firms that did not participate in the program, we can use variation in the size of loans provided to Shuraako program participants to assess the effect of greater loan size on participant success. So, why do loans have such a significant effect on participant earnings? One of the key barriers to firm success in conflict-affected countries is access to capital. Many businesses have a clear idea of what may improve their operations but lack financing to make those substantive changes. Access to capital is a critical component in allowing firms in conflict-affected areas to adapt their operations to ensure long-term growth.

This is particularly salient when accounting for the effects of armed conflict on firm revenue. While conflict events reduce the earnings of firms, access to capital may allow many companies to better prepare for an eventual rise in conflict events. As firms grow, they can invest in security, purchase trucks to move their goods to more stable markets, and eventually offer tax revenue to local governments to ameliorate potential drivers of armed conflict. For example, a key investment made by many fishing firms in the program was the purchase of refrigeration units to store their catches. As noted earlier, fish are a highly perishable food source. Having a refrigeration unit affords fishermen the time to find markets that may face fewer armed conflict events as compared to more dangerous markets. Without access to capital (or with access to limited financial assistance), firms are less likely to adapt to conflict events. This often leads to a shuttering of operations until stability is reached within the region. Such short-term closures may lead to a perilous drop in revenues, crippling businesses.

Finally, loans to businesses are far more targeted than aid dollars to communities. As noted earlier, foreign aid projects may substantially improve the quality of life for communities that host those programs, but they do not provide liquid capital that can be reallocated to fit the unique needs of each business. While new businesses may emerge as a result of ongoing aid projects, existing firms may still face barriers in expanding their operations or updating their equipment. Targeted loans, while smaller in scale, address this problem by providing firms more agency in how they use foreign money.

V. CONCLUSION

The findings from this report point to two clear conclusions. First, armed conflict continues to pose a significant challenge for firms operating in Somalia and Somaliland. Even accepting the propositions that firms adapt to increased armed conflict and that local communities ameliorate the effects of fighting, increased violence plays a consistent and significant role in reducing firm revenues. The findings of this report even go as far as to demonstrate that armed conflict in more stable regions has a greater impact on monthly revenue as compared to less stable regions. As the

international community continues to work toward achieving the Sustainable Development Goals, reducing armed conflict should be a chief priority in this effort.

Second, access to capital plays a critical role in improving the monthly earnings of firms within the Somali peninsula. Firms that operate in fragile and conflict-affected states typically lack access to both domestic and international capital. This significant restriction prevents firms from making necessary improvements to mitigate the effects of armed conflict and expand their operations. As access to capital increases, this report shows a substantial increase in the monthly revenue for firms. Targeted loans to firms may be a more effective way to strengthen the private sector of fragile and conflict-affected countries as compared large aid projects that generate sociotropic benefits, as loans allow firms to address unique challenges.

In addition to providing security, the international community may consider a mixed package of reforms to assist conflict-affected countries. Outside of offering necessary aid programs that improve the well-being of all citizens (such as infrastructure development, health, and education programs), the international community should consider new ways to provide vital capital to active firms within conflict-affected countries. Traditional aid packages, while beneficial, may be missing a key component for strengthening the private sector and reducing the long-term drivers of armed conflict.

VI. TECHNICAL APPENDIX

Shuraako Data

The data gathered over the course of the Shuraako program's implementation provide a unique opportunity to (1) examine some of the effects of the program and (2) address some of the shortcomings in previous analyses of firms in conflict-affected countries. To generate the data set, the Political Conflict Track within One Earth Future Research worked with members in the Shuraako program to identify sources of information for this analysis. Shuraako staff also assisted with reviewing early stages of this project, provided critical background information, and addressed discrepancies within preliminary data.

The vast majority of data on firm attributes are derived from Credit Committee Forms (or CCFs) and quarterly reports produced by the Shuraako program. The CCFs offer vital information on the location, age, and sector of firms as well as the total loan size that businesses received in addition to the owner's contribution. Quarterly reports were used to identify monthly revenue, expenses, and profits. Reports also offer quarterly employment numbers as well as descriptions of the current business environment that were used to identify necessary control variables for analyses. With regard to monthly data, discrepancies in the reporting of monthly level profits were addressed through referrals to Shuraako employees or through revised calculations done by researchers based on the reported monthly revenues and expenses. This coding procedure provides a panel data set of firms at the monthly level, including quarterly employment of permanent, temporary, and female employees. The data for this analysis begin in 2014 and end in April 2018.

TABLE 1. DESCRIPTIVE STATISTICS

	Mean	SD	Min	Max
Profit	5,023.02	9,013.48	-68,314.97	64,320.11
Revenue	17,268.95	27,631.37	0	219,733.90
Owner Contribution	17,814.13	23,371.13	0	174,000
Loan Size	40,722.44	39,785.64	6,000	233,000
Pre-Loan Age	9.97	7.09	1	27
Total Employees	35.14	33.59	1	164
Temporary Employees	12.96	20.69	0	113
Female Employees	6.45	10.01	0	85

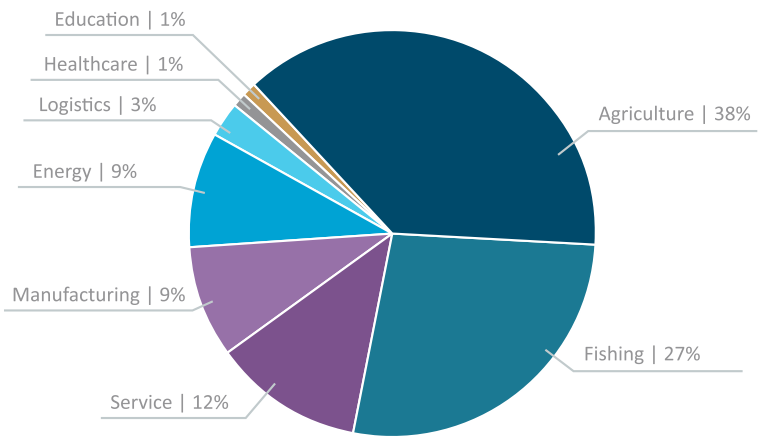
The Shuraako data for this analysis are derived from 75 firms that consistently included information in quarterly reports. Figure 4 shows a breakdown of the different sectors included in this analysis. As underscored by the chart, the majority of firms are either in fishing or agriculture. Outside of these traditional forms of employment, the Shuraako data set includes logistics (such as transportation), energy, and service sector firms.[c]

Outside Data

To assess the impact of the two primary external factors of interest (conflict and aid), data are drawn from a number of sources. Aid data are drawn from both USAID and the United Nations Mission in Somalia. Data are only used if (1) a location of aid projects within Somalia (and Somaliland) was identifiable, (2) the monetary value of aid projects was discernable within the data, and (3) a start and end date for projects was clear within the aid data. These strict criteria inevitably excluded a number of aid projects from this analysis. Once the list of aid projects was developed, researchers

c Our sample population also includes education and health-care sectors, but these represent just a tiny fraction of the total. Given the small size of these sectors, it may be inappropriate to draw inferences from their effect on the total sample population.

FIGURE 4. DISTRIBUTION OF FIRMS BY SECTOR



Based on data from 69 firms

composed a database of all ongoing aid projects in the cities where Shuraako firms are located (or closest to). The logic behind this coding decision was based on an assumption of market access, where the closest towns would provide the nearest markets for Shuraako firms to participate in.[d] Similarly, conflict data were also coded for towns where Shuraako firms operated or were closest to. These data are drawn from the Armed Conflict Location Event Dataset (ACLED).[34] Conflict events include all forms of active fighting such as fighting between rebels and the government, rival clans and the government, armed disputes between Puntland and Somaliland, and gun battles between security forces and unknown assailants.

This project also includes a number of control variables. Using data from the Peace Research Institute of Oslo (PRIO) Grid Level Data, we include controls for average infant mortality rate (IMR), average grid cell population, the start of the rain season, as well as the end of the growing season.[35] PRIO data are somewhat limited in that the database does not have data past 2012. Given this fact, this report is forced to rely on 2012 IMR and population figures.[e] Equally, given the importance of fishing to the Somali economy, we include a control variable for the end of the fishing season in Somalia. These data are based on assessments from Shuraako quarterly reports. The following analysis also includes controls for whether businesses are operating in Somaliland, Puntland, and the other regions (South West) in Somalia.

Analysis I: The Role of Conflict and Aid in Shuraako Revenue

To assess the effects of conflict and aid on businesses in the Shuraako program, this report first looks at business revenue as compared to profits. Profits represent a tricky indicator with regard to sales, as they incorporate both revenues and expenses. As businesses reinvest in repairing equipment or expanding employment to meet demand, there are significant reductions in profits. This may be the case even though revenues are high as entrepreneurs are making long-term calculations. Therefore, though revenues may be relatively high given increased sales, profits may be misleadingly small. Revenues, on the other hand, reflect the ability of businesses to make consistent sales during the months under observation.[f] Table 3 includes the initial results from our analysis. As demonstrated across all models, armed conflict appears to have a negative and consistent effect on the revenues of SMEs within our sample population. Specifically, as the number of armed conflict events increase, we observe a 1.1 percent decline in business revenues.[g] As the average monthly number of conflict events is roughly two (rounding up), the mean number of armed conflict events reduces the profits of firms by 2.2 percent. At the upper end of the data set, the maximum number of conflict events is 38. If businesses experience the maximum number of conflict events within a month, there is a predicted loss of 41.8 percent in monthly revenue. This is a significant drop.

d The researchers on this project are well aware that many Shuraako firms operate throughout Somalia and/or have an international market. It still stands to reason, though, that firms should benefit from close proximity to major aid projects.

e Data from 2012 night lights were also included but were a poor predictor of revenue and profits. These data are included in subsequent analyses to address the exclusion restriction in Heckman models.

f Revenues are logged to address skewness in the data.

g As a logged dependent variable, we simply take the exponentiated coefficient of armed conflict to identify the percentage change from a one-unit increase.

TABLE 2. ARMED CONFLICT AND BUSINESS REVENUE

Logged Business Revenue OLS Regression Model	Model 1 Full Sample		Model 2 Full Sample		Model 3 Somaliland Only		Model 4 Somaliland Excluded	
	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error
Armed Conflict	–0.011***	(0.0038)	–0.011**	(0.0052)	–0.042**	(0.020)	–0.0090**	(0.0035)
Capacity Aid (Logged)	0.036***	(0.0091)	0.036**	(0.018)	0.020	(0.015)	0.036***	(0.0067)
Capacity Projects	0.069	(0.051)	0.069	(0.064)	0.092*	(0.049)	0.11	(0.090)
Total Aid (Logged)	–0.017	(0.012)	–0.017	(0.013)	–0.025**	(0.010)	–0.055***	(0.020)
Total Aid Projects	–0.066*	(0.038)	–0.066*	(0.036)	0.0061	(0.017)	–0.090*	(0.049)
Lagged Revenue	0.088**	(0.037)	0.088***	(0.030)	0.059**	(0.027)	0.066	(0.058)
Owner's Contribution	0.071	(0.089)	0.071	(0.084)	0.065	(0.063)	–1.32***	(0.29)
Loan Size (Logged)	0.45**	(0.21)	0.45**	(0.21)	0.34	(0.22)	2.00***	(0.18)
Business Age	–0.016	(0.013)	–0.016	(0.013)	0.015	(0.022)	–0.041***	(0.014)
Logged Employees	0.38*	(0.21)	0.38**	(0.16)	0.83***	(0.056)	–0.14	(0.11)
End of Fishing Season	–0.047	(0.075)	–0.047	(0.049)	0.0055	(0.063)	–0.032	(0.099)
End of Growing Season	0.12	(0.090)	0.12*	(0.064)	0.063**	(0.029)	–0.079	(0.22)
Start of Rain Season	0.065	(0.071)	0.065	(0.047)	–0.018	(0.032)	0.063	(0.071)
2012 Population (Logged)	0.094	(0.066)	0.094	(0.088)	–0.047	(0.20)	0.14***	(0.032)
2012 Mean IMR	–0.00069	(0.0016)	–0.00069	(0.0020)	–0.00046	(0.0041)	0.00066	(0.0024)
Somaliland	–0.043	(0.49)	–0.043	(0.60)				
Puntland	–0.53	(0.33)	–0.53	(0.37)			–1.09***	(0.22)
Constant	2.13	(2.34)	2.13	(2.93)	2.97	(6.27)	0.13	(3.02)
Observations	1,118		1,118		593		525	
R^2	0.49		0.49		0.67		0.57	
Standard Errors	Clustered on City		Clustered on Business		Clustered on City		Clustered on City	

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

As the results may be driven by businesses outside of Somaliland, we restrict the sample population to businesses within Somaliland and outside of Somaliland. Our findings indicate that the marginal effects of armed conflict are actually much greater inside Somaliland as compared to outside of the state. This occurs despite the fact that conflict is less common within this part of the greater Somali peninsula. While one conflict event (in the aggregate sample population) reduces firm revenue by 1.1 percent, within the Somaliland population armed conflict reduces monthly revenue by 4.1 percent. As the maximum number of conflict events within Somaliland is roughly eight in a given month, if a Somaliland business experiences the total number of conflict events, then there is roughly a 32.8 percent decline in profits. It may, therefore, be the case that businesses outside of Somaliland have developed strategies for avoiding the effects of armed conflict (given that it is a more common challenge). Conversely, given the rarity of armed conflict events within Somaliland, the businesses in this part of the country appear more vulnerable to the negative effects of armed conflict. As a further analysis, we estimated the effects of conflict events on the different sectors included in the sample population. We generate a number of conditional variables where we interact firm sectors with armed conflict events. Our findings demonstrate that conflict events appear to hit fishing firms the hardest, with those firms having

TABLE 3. INTERACTION MODELS ESTIMATING THE EFFECT OF CONFLICT ON FIRM SECTOR

OLS Regression Logged Firm Revenue	Model 1	
	Coefficient	Robust Standard Error
Armed Conflict	0.020	(0.014)
Capacity Aid (Logged)	0.037**	(0.018)
Capacity Projects	0.064	(0.068)
Total Aid (Logged)	–0.017	(0.013)
Total Aid Projects	–0.069*	(0.036)
Lagged Revenue	0.085***	(0.030)
Owner's Contribution	0.078	(0.073)
Loan Size (Logged)	0.38*	(0.20)
Business Age	–0.014	(0.015)
Total Employees (Logged)	0.36**	(0.17)
End of Fishing Season	–0.049	(0.049)
End of Growing Season	0.12*	(0.064)
Start of Rain Season	0.069	(0.047)
2012 Population (Logged)	0.072	(0.11)
2012 Mean IMR	–0.0028	(0.0024)
Fishing*Conflict	–0.037**	(0.015)
Agriculture*Conflict	–0.023	(0.017)
Logistics*Conflict	–0.025	(0.024)
Manufacturing*Conflict	–0.0040	(0.023)
Energy*Conflict	–0.071	(0.059)
Service*Conflict	–0.033**	(0.016)
Fishing	0.16	(0.30)
Farming	–0.36	(0.31)
Renewable Energy/Utilities	0.36	(0.23)
Service	0.058	(0.33)
Manufacturing	0.49	(0.31)
Transportation/Logistics	1.08***	(0.32)
Education	0.83*	(0.45)
Somaliland	–0.50	(0.70)
Puntland	–0.53	(0.40)
Constant	5.83	(3.78)
Observations	1,118	
R^2	0.51	

Clustered on Businesses | *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

the largest drop in predicted revenue as compared to other sectors. Service sector firms also appear to suffer significantly. Surprisingly, manufacturing firms appear the most resilient to the effects of armed conflict. These findings seem to suggest that the biggest effect of armed conflict relates to market access, wherein firms suffer losses when they cannot get goods to the market. Manufacturing firms may shift their target markets to foreign countries, ameliorating the effects of armed conflict events.[h]

Figure 1 within the main text (see above) provides an illustration of the linear predictions from armed conflict events on the logged monthly revenue of firms. The X-axis in this graph charts the number of monthly conflict events from minimum to maximum values. As demonstrated by the graph, each subsequent conflict event significantly reduces the monthly revenue of firms (though the accuracy of our predictions declines as we reach the upper limit of this measure of armed conflict events).

The results for aid data are more mixed. Aid, in and of itself, appears to have an inconsistent effect on the revenues for SMEs within the sample population. When looking at the total aggregate sample population, aid does not appear to have a significant effect on business revenue. It should be noted, though, that not all aid projects are the same. Given OEF's goal to enhance the capacity of states (such as by strengthening governance) so as to reduce armed conflict, models also include the results for aid data that deal specifically with capacity-building. These data exclude development and welfare aid projects (such as digging wells or sheltering refugees) and instead focus on funding for police training, conflict resolution efforts, community resilience programs, and governance-building programs. The results from this analysis show a strong relationship between these capacity-building programs and the monthly revenue of firms. A 1 percent increase in capacity-building aid translates to a 0.036 percent increase in monthly revenues for firms in the communities where these projects are located. Figure 5 charts the linear increase in the monthly revenue of firms as capacity-building projects increase. The x-axis charts changes in capacity-building funds from the minimum value in the data set to the maximum value.

h This assertion is based primarily on coefficients from models.

Interestingly, our results appear to be driven largely by areas outside of Somaliland. Capacity-building projects outside of Somaliland receive over twice as much funding as similar projects within Somaliland, and there are on average four times as many capacity-building projects outside of Somaliland as there are within this autonomous region of Somalia. Intuitively this makes sense, as Somaliland is the most stable territory within the broader Somali region. These findings also suggest that donors are not sending projects to the proverbial low-hanging fruit in Somalia. Rather, capacity-building dollars are flowing to areas where there may be the most need.

It may be that the results from this analysis are driven by selection effects. This is particularly true for the null (and even negative) effects associated with aid dollars more generally. In other words, aid projects may be distributed to the poorest parts of the country where firm revenue would be the weakest. To account for this, this report includes an additional Heckman selection model to account for the non-random distribution of total aid dollars.[i] Table 4 includes the results from the Heckman analysis. After correcting for the distribution of aid dollars, the results indicate that aid dollars (in general) do appear to have a positive effect on firm revenue. The results also confirm the effects of capacity-building aid as well as the effects of armed conflict. It should be noted that the estimated selection effects are somewhat weak, offering greater support for the use of a traditional linear regression. Equally, the statistical connection between aid dollar distribution and monthly firm revenue is weaker than that of capacity-building aid.

FIGURE 5. PREDICTED BUSINESS REVENUE AND CAPACITY AID

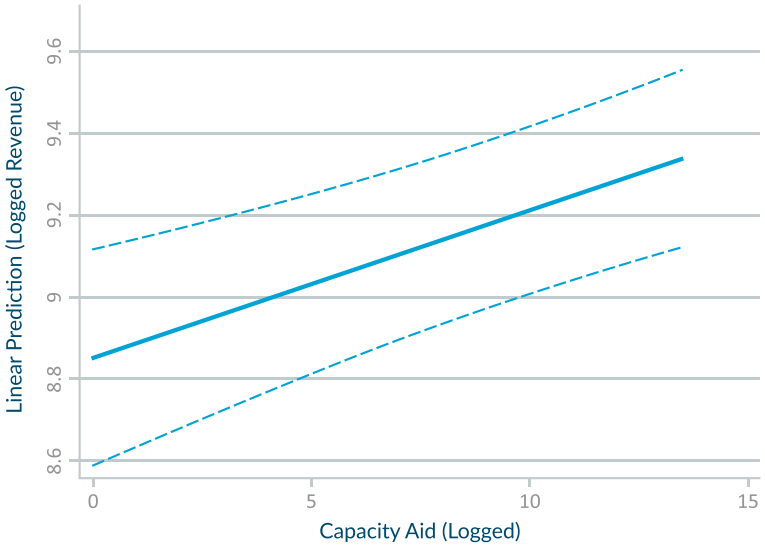
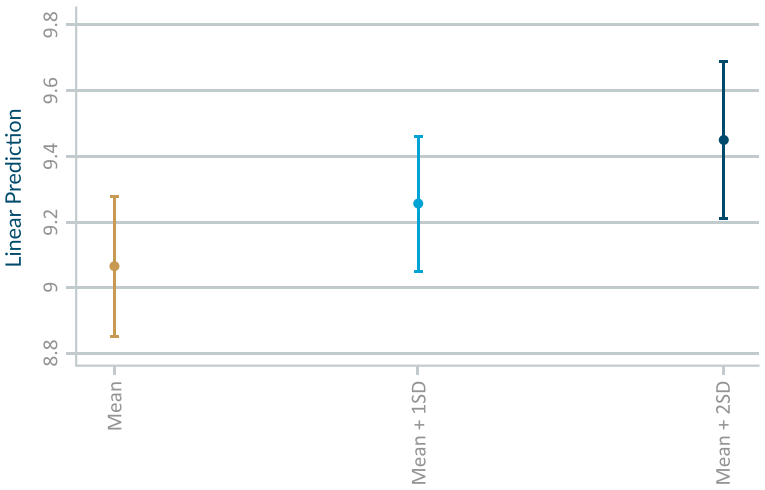


FIGURE 6. PREDICTED BUSINESS REVENUE WITH INCREASING CAPACITY AID



i Such models often require a variable that addresses the "exclusion restriction." In other words, a variable that predicts the distribution of aid dollars but does not predict firm revenue. Further statistical tests indicate that 2012 night lights have a negative effect on the distribution of aid but no effect on firm revenue. This is because aid is distributed to places with low development, but firms often sell goods even in places with low electric output or in markets where there is greater development. See Model II in Table 4 for further confirmation.

TABLE 4. SELECTION MODELS ACCOUNTING FOR THE DISTRIBUTION OF AID IN SOMALIA

Logged Business Revenue (OLS and Heckman Models)	Model 1 (OLS) Logged Aid		Model 2 (OLS) Bus. Revenue		Model 3 (Heckman) Logged Aid		Model 3 (Heckman) Bus. Revenue	
	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error
Armed Conflict			–0.012***	(0.0037)			–0.031***	(0.0071)
Capacity Aid (Logged)			0.035***	(0.0094)			0.065***	(0.020)
Capacity Projects			0.075	(0.048)			–0.11	(0.096)
Total Aid (Logged)			–0.017	(0.012)			0.29**	(0.15)
Total Aid Projects			–0.067*	(0.038)			–0.063**	(0.028)
Lagged Revenue			0.088**	(0.036)			0.040	(0.058)
Owner's Contribution			0.065	(0.094)			–0.058**	(0.027)
Loan Size (Logged)			0.41**	(0.19)			0.68***	(0.13)
Business Age			–0.019	(0.013)			–0.042***	(0.015)
Total Employees (Logged)			0.38*	(0.21)			0.47***	(0.12)
End of Fishing Season	0.018	(0.096)	–0.048	(0.075)	0.10	(0.20)	–0.10	(0.069)
End of Growing Season	–0.31**	(0.15)	0.12	(0.090)	–0.55	(0.49)	0.064	(0.094)
Start of Rain Season	0.38*	(0.21)	0.066	(0.071)	0.61*	(0.34)	0.13	(0.11)
2012 Population (Logged)	0.22	(0.29)	0.15	(0.11)	0.042	(0.12)	–0.016	(0.090)
2012 Mean IMR	0.0047	(0.0045)	0.00024	(0.0020)	–0.0013	(0.0030)	–0.0049***	(0.0013)
Somaliland	1.27	(1.34)	0.11	(0.47)	–0.86	(0.70)	–1.69***	(0.38)
Puntland	1.33*	(0.80)	–0.44	(0.36)	0.58	(0.47)	–0.85***	(0.20)
2012 Night Lights	–326**	(144)	–66.3	(104)	–186	(124)		
Lagged lnAid	0.74***	(0.11)			0.30***	(0.015)		
Constant	14.0***	(4.39)	5.10	(4.91)	12.1**	(4.88)	4.91***	(1.70)
Observations	1,565		1,118		1,302			
R^2	0.83		0.50					
Log-Likelihood					–1,234.97			
Uncensored Observation					947			

Clustered on City | *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Assessing the Impact of Loan Size on Firm Revenue

To fully assess the impact of loan size on firm revenue, researchers at OEF had to grapple with the clear endogeneity between firm success and the total amount of money that business leaders qualify for as part of the capital infusion. Businesses operating in the Shuraako program are likely to receive a larger loan if they demonstrate the propensity to

succeed in the marketplace. This makes it difficult to assess whether larger loans are enhancing businesses or if those firms would have succeeded regardless of receiving financial assistance.

To address this identification challenge, we leverage an unexpected finding within the previous models. While loan sizes are strongly correlated with monthly revenue, the total contributions that business owners put up as part of the loan have no consistent effect on firm earnings.[j] This finding is surprising given that the size of the loan is heavily dependent on how much capital (or collateral) owners can contribute. Members of the Shuraako team confirmed that owner contributions play a critical role in how they assess the likelihood that businesses can pay back loans (leading to larger loans). This allows researchers at OEF to employ the variable *Owner's Contribution* as an instrument in an instrumental variable regression. This approach ensures that analyses can isolate the causal direction of loan size on revenue.

TABLE 5. INSTRUMENTAL VARIABLE REGRESSION

Logged Monthly Revenue (IV Regression)	Model 1		Model 2	
	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error
Loan Size (Logged)	0.84***	(0.20)	1.01***	(0.34)
Lagged Revenue	0.11***	(0.017)	0.10***	(0.017)
Business Age	–0.012	(0.015)	–0.0051	(0.016)
Total Employees (Logged)	0.43***	(0.039)	0.42***	(0.040)
Total Aid (Logged)	–0.0078	(0.0055)	–0.0082	(0.0055)
2012 Population (Logged)	0.031	(0.097)	0.090	(0.12)
2012 Mean IMR	–0.0030	(0.0027)	–0.0064*	(0.0034)
End of Fishing Season	–0.042	(0.041)	–0.040	(0.041)
End of Growing Season	0.075	(0.089)	0.075	(0.089)
Total Monthly Rainfall	–0.0041	(0.018)	–0.0036	(0.018)
Armed Conflict$_{t-1}$	–0.013**	(0.0059)	–0.012**	(0.0059)
Somaliland	–0.63	(0.73)	–1.44*	(0.87)
Puntland	–0.38	(0.40)	–0.57	(0.43)
Fishing			0.41	(0.70)
Farming			–0.33	(0.55)
Renewable Energy/Utilities			–0.30	(0.57)
Service			0.13	(0.59)
Manufacturing			–0.023	(0.64)
Transportation/Logistics			0.71	(0.73)
Constant	1.98	(3.87)	4.19	(4.41)
Observations	1,117		1,117	
Number of Businesses	63		63	

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

Table 5 includes the corrected estimates accounting for the potentially endogenous relationship between loan size and firm revenue. As underscored by the results, the total loan size (logged) received by firms significantly enhances their revenues. According to Model 1, a 1 percent increase in loan size translates to a 0.84 percent increase in logged

j Almost all models have no statistical effect. Where statistical relationships do emerge, they are based on strictly limited sample populations (unrelated to other models).

monthly revenue for firms. These effects become more pronounced when we include sector-level controls. After including these firm-level controls, a 1 percent increase in the loans received by firms increased monthly revenue by 1.01 percent (a substantial increase). Using the STATA statistical package, we simulate the predicted logged earnings for Shuraako firms while varying the logged loan sizes.[k] Specifically, we estimate changes in predicted monthly logged earnings by increasing the logged loan size from the minimum loan size to the average loan size (holding all other variables at their means). This increase in loan size boosted monthly earnings by 6.9 percent. Similarly, we run the same estimation but increase loan size to the maximum value. This boosted monthly firm revenue by 16 percent.

k These variations in loan size are based on the range of the variable as well as its mean.

VII. ENDNOTES

1 Eric Keels, "Oil Wealth, Post-Conflict Elections, and Postwar Peace Failure," Journal of Conflict Resolution 61, no. 5 (2017): 1021–1045.

2 United Nations, Transforming Our World: The 2030 Agenda for Sustainable Development, September 25, 2015, https://sustainabledevelopment.un.org/post2015/transformingourworld.

3 Kendra Dupuy and Siri Aas Rustad, Trends in Armed Conflict, 1946–2017 (Oslo: PRIO, 2018).

4 Kelsey Frandsen and Jean-Pierre Larroque, Somali AgriFood Fund Case Studies (Broomfield, CO: One Earth Future Foundation, 2016).

5 Ibid.

6 Scott Gates, Håvard Hegre, Håvard Mokleiv Nygård, and Håvard Strand, "Development Consequences of Armed Conflict," World Development 40, no. 9 (2012): 1713–1722.

7 Ibid.

8 Hazem Adam Ghobarah, Paul Huth, and Bruce Russett, "Civil Wars Kill and Maim People—Long After the Shooting Stops," American Political Science Review 97, no. 2 (2003): 189–202; H. A. Ghobarah, P. Huth, and B. Russett, "The Post-War Public Health Effects of Civil Conflict," Social Science and Medicine 59, no. 4 (2004): 869–884.

9 Ghobarah, Huth, and Russett, "Post-War Public Health Effects of Civil Conflict."

10 Paul Collier, "On the Economic Consequences of Civil War," Oxford Economic Papers 51 (1999): 168–183; Siyan Chen, Norman V. Loayz, and Marta Reynal-Querol, "The Aftermath of Civil War," World Bank Economic Review 22, no. 1 (2008): 63–85.

11 Paul Collier, "Post-conflict Recovery: How Should Strategies Be Distinctive?," Journal of African Economies 18, no. 1 (2009): 99–131; Chen, Loayz, and Reynal-Querol, "Aftermath of Civil War"; Gates, Scott. Havard Hegre, Havard Mokleiv Nygard, Havard Strand, "Development Consequences of Armed Conflict." World Development 40, no. 9 (2012): 1713-1722.

12 Gates et al. (2012)

13 Collier, "On the Economic Consequences of Civil War," 169.

14 Paul Collier and Marguerite Duponchel, "The Economic Legacy of Civil War: Firm-Level Evidence from Sierra Leone," Journal of Conflict Resolution 57, no. 1 (2012): 65–88; Adriana Camacho and Catherine Rodriguez, "Firm Exit and Armed Conflict in Colombia," Journal of Conflict Resolution 57, no. 1 (2012): 89–116; Francesco Amodio and Michele Di Maio, "Making Do with What You Have: Conflict, Input Misallocation and Firm Performance," Economic Journal 128 (2017): 2559–2612.

15 Collier and Duponchel, "Economic Legacy of Civil War," 68.

16 Amodio and Di Maio, "Making Do with What You Have."

17 Ibid.

18 Collier and Duponchel, "Economic Legacy of Civil War."

19 Camacho and Rodriguez, "Firm Exit and Armed Conflict in Colombia."

20 Gates et al. "Development Consequences of Armed Conflict,"

21 Victor Odundo Owuor, Firm Behavior in Fragile States: The Cases of Somaliland, South Sudan, and Eastern Democratic Republic of Congo (Broomfield, CO: One Earth Future Research, 2017).

22 Anette Hoffmann and Paul Lange, Growing or Coping: Evidence from Small and Medium Sized Enterprises in Fragile Settings (The Hague: Netherlands Institute of International Relations Clingendael, 2016).

23 Jamil Mubarak, "The 'Hidden-Hand' Behind the Resilience of the Stateless Economy of Somalia," World Development 25, no. 12 (1997): 2027–2041.

24 Ibid.

25 Ibid.; Ken Menkhaus, "State Failure, State-Building, and Prospects for a 'Functional Failed State' in Somalia," Annals of the American Academy of Political and Social Science 656 (2014): 154–173.

26 Hoffmann and Lange, Growing or Coping.

27 Mubarak, "The 'Hidden-Hand' Behind the Resilience"; Menkhaus, "State Failure, State-Building, and Prospects"; Owuor, Firm Behavior in Fragile States.

28 Jay Benson and Victor Odundo Owuor, Investing from Abroad: Pathways to Utilizing Diaspora Investment in Fragile and Conflicted State Economies (Broomfield, CO: One Earth Future Foundation, 2019).

29 Ibid.

30 Michael G. Findley, "Does Foreign Aid Build Peace?," Annual Review of Political Science 21 (2018): 359–384, quote on p. 360; J. Michael Quinn, T. David Mason, and Mehmet Gurses, "Sustaining the Peace: Determinants of Civil War Recurrence," International Interactions 33, no. 2 (2007): 167–193.

31 Joseph K. Young and Michael G. Findley, "Can Peace Be Purchased? A Sector Level Analysis of Aid's Influence on Transnational Terrorism," Public Choice 149 (2011), doi:10.1007/s11127-011-9875-y.

32 Findley, "Does Foreign Aid Build Peace?"

33 Ibid., 363.

34 Clionadh Raleigh, Andrew Linke, Håvard Hegre, and Joakim Karlsen, "Introducing ACLED-Armed Conflict Location and Event Data," Journal of Peace Research 47, no. 5 (2010): 651–660.

35 Andreas Forø Tollefsen, Håvard Strand, and Halvard Buhaug, "PRIO-GRID: A Unified Spatial Data Structure," Journal of Peace Research 49, no. 2 (2012): 363–374.

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