Income and Livelihoods in the War in Afghanistan

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Abstract

In this paper we explore the impact of the insurgency and military deployment on the livelihoods of the local communities in Afghanistan. We use monthly wages and commodity prices at the provincial level over the period 2003-2009 and look for their response to conflict events and ISAF deployment. Two basic results emerge: first, commodity prices are not significantly affected by insurgent violence, which is consistent with coping strategies already in place. Second, military deployment is associated with an increase in the levels of wages and commodity prices.

JEL classification: D74, H56, J30, 013, K42

Keywords: Afghanistan, Consequences of Conflict, Coping Strategies, Military Deployment

1 Introduction

Since 2004, there has been a notable increase in the number of security incidents in Afghanistan from approximately 6,000 troops to 132,000 in 2011. This has been paralleled by a sharp increase in the size of the International Security Assistance Force (ISAF) deployment. This meant more troops in more areas that previously had little or no regular security presence. The consequences were mixed: more fighting in some areas as militants were pushed away from the most densely populated districts, and a relatively safer environment in other areas, which enabled Afghan citizens to return to the homes from which they had been displaced by the insurgents. The coverage of the Afghanistan war in the media and in academic discussions has been primarily driven by the huge number of NATO and civilian casualties, the surge in armed attacks and suicide bombings, and the ensuing deterioration in the level of security in most part of the country. Reports and analyses have mainly focused on the factors affecting the raise in Talibans's activities across the countries and ISAF's approaches to counter-insurgency. However, quantitative analyses have never explicitly dealt with the impact that both the insurgency and the international military deployment could have on the economic conditions of the local communities. This paper investigates whether increasing levels of insurgency-driven insecurity in the country and the surge in ISAF activities have different effects on market prices and wages. We assume that as a result of physical insecurity and the interruption of local markets, Afghans may decide to employ different income-generating strategies to cope with the conflict shock. For this purpose, we have gathered a unique dataset with monthly information on commodity and labour prices, conflict events and ISAF deployments.

[Figure 1 about here]

In particular, we use monthly market prices of wheat, sheep, diesel and the wage of one day of unskilled labor as they can capture the returns from engaging in their respective activities and thus proxy the different choices of livelihoods of people. Almost a half of all Afghan households depends on income from agriculture where wheat is the main crop. More than 23 percent of the population depends on livestock thus the price of one year old female sheep is used as an indicator of the purchasing capacity of those households that are mainly reliant on income from livestock (pastoralism). One third of the population depends on non-farm labour thus the wage of one day of unskilled labor proxies for the purchasing capacity of households relying on casual labor as main income. Finally, diesel is a main commodity and it is held as an asset, together with wheat and meat stocks. The literature on coping strategies in a state of war suggests that assets play an important role in reducing the variability of consumption in environments characterized by income risks (Bundervoet, 2010). Prices directly affect asset values, capital gains, and decisions on holding and selling inventories.[1] Prices are also a critical determinant of the overall level of revenues across the provinces. This means that changes in the level of prices can have adverse consequences for rural poverty. The coping strategy adopted in Afghanistan entails having members of the family involved in different types of trades, as a matter of diversifying income. By using wages and commodity prices, we can differentiate the effects of conflict on existing markets between employment and exchange i.e. the buying and selling of commodities (see e.g. Justino, 2009). Moreover, by distinguishing between violence and ISAF casualties we find a way to circumvent the coping strategies argument. We argue that given that Afghanistan has been in a conflict for almost four decades, there must be coping strategies in place and therefore little or no response to attacks. However, ISAF deployment is a relative new phenomenon in this conflict

[1] Verpoorten's (2009) study on coping strategies in wartime, for example, uses cattle sales to explore whether peasants sold cattle to smooth consumption.

and their strategies change continually; this allows us to disentangle the response of old coping strategies to a new type of event.

While a number of factors influence domestic food prices, in particular the seasonality of production within a production year, adverse weather conditions and the latitude, we expect insecurity to play a big role in determining price levels. This is important given the general assumption that high food prices have a negative impact on the livelihood of people. Significant and frequent changes in the direction and magnitude of food prices make both smallholder farmers and poor consumers increasingly vulnerable to poverty. While price fluctuations can put at risk decisions made by farmers about what and how much to produce, soaring prices reduce the purchasing capacity of the most vulnerable groups, such as low income urban and rural populations. Because food represents a large share of farmer income and the budget of poor consumers, large price increases have large effects on real incomes. In addition, smallholder farmers are less likely to invest in measures to raise productivity when price changes are unpredictable (e.g. FAO, 2011). Thus, even short episodes of high prices for consumers or low prices for farmers may lead to poverty traps. Large fluctuations in food and commodity prices are not only associated with reductions in the value of food consumption, but also with calorie availability and dietary diversity.[2]

Conflict has always been part of the everyday life of Afghans, yet studies on the economic impact of violence in the country are sparse. Giustozzi (2008, 2009) provides excellent background material on the Afghan polity and society in times of war, including issues of warlordism and nation-building. These books also give further references to a large qualitative literature on Afghanistan, only a small proportion of which has been cited in this paper. Two quantitative studies are most closely related to ours. D'Souza & Jolliffe (2012a) explore how differences in the level of conflict across provinces influence food security and show a negative correlation between conflict and food security. More interestingly, they find that food prices increases have a large impact on provinces with lower levels of conflict. Ciarli *et al.* (2010) examine the relationship between conflict and entrepreneurial activity. They show small direct negative effects of conflict on the likelihood of household to engage in small businesses. This insight suggests that entrepreneurs adapt to a permanent state of violence and continue to operate regardless.[3] The above studies use data on households on an yearly basis. We employ higher frequency monthly information on commodity and labor prices and conflict events on the provincial level. There are two main advantages of using monthly data: first, the use of higher frequency indicators allows us to identify the immediate effects of conflict events. Violent occurrences perturb the economic system and affect commodity prices, which adjust in response to these shocks to update information on supply factors and risk premia. Second, by using monthly variations, we can control for seasonality given that temperatures vary dramatically across seasons, with hot summers and severe winter conditions which affect production and transportation (D'Souza & Jolliffe, 2012b). This has never been taken into proper account in the literature on the topic, which uses annual date.

We investigate whether changes in prices respond to security incidents and to what extent

[2]The World Bank estimates that the 2010 price spikes for foodstuffs have pushed an additional 44 million people into extreme poverty. The UN Food and Agriculture Organization (FAO) estimated that the previous high in food prices, in 2007-8, drove the number of undernourished people worldwide from 915 million to more than 1 billion, the highest number in more than 40 years (Barrett & Bellemare, 2011).

[3]A recent work by D'Souza & Jolliffe (2012b) also explores the impact of rising wheat prices on household food security in Afghanistan. They find large falls in the value of per capita food consumption and significant trade offs between quality and quantity as households move away from nutrient-rich foods toward staple foods. While their work brings interesting insights on the impact of food prices on Afghan households, they do not explicitly deal with conflict and do not include any measure of violence or instability.

they are affected by the presence of ISAF forces. We anticipate that while price levels are not generally affected by waves of violence, military deployment is associated with an increase in the levels of prices. We proceed as follows: section 2 offers a short literature review on the competing mechanisms linking insecurity and external military deployment to market prices. Section 3 provides background material on security and development in Afghanistan using our newly assembled dataset. Section 4 presents the methods used in the analysis. Section 5 discusses the empirical evidence and section 6 concludes the paper and provides policy-relevant implications.

2 Literature review

War devastates life, health, and living standards; it also disrupts physical infrastructure and human capital, and may alter social and political institutions (Blattman & Miguel, 2010). One of the most recent contributions on the topic, Gates *et al.* (2012), find that war has also negative effects on progresses in meeting the UN Millennium Development Goals, such as the reduction of poverty, hunger, infant mortality and on access to water and primary education. Turmoil also leads to decreased and uncertain supplies of necessities and affects consumption patterns (Hess, 2003). Although difficult to quantify, this source of uncertainty, combined with shorter time horizons, adds significantly to the cost of conflict. This is crucial, since poverty can lead to violence and conflict (e.g. Collier & Hoeffler, 2004). Furthermore, over time the price volatility of primary commodities are critical determinants of the risk of a return to conflict (e.g. Caruso, 2010). The centrality of the costs of conflict to development is also duly covered by Brück & De Groot (2012) and by the World Bank (2011), among others.

Despite a growing number of quantitative studies on war-torn countries, it is not clear how exactly violent conflict affects production and well-being and how individuals cope with conflict. This is due to the inherently difficulty in analyzing through a coherent framework the effects of armed conflicts on households and the ways in which households in turn respond to conflicts. A more specific literature on coping strategies in war contexts is starting to take shape. Brück & Schindler (2009) investigate how conflicts damage households' core functions and their choice of coping strategies. Justino (2009, 2012) explores the economic channels through which war may affect the responses of individuals and their adaptation mechanisms. She distinguishes between direct and indirect effects, and shows that the indirect effects are channeled through (i) markets, (ii) political institutions, and (iii) social networks.

In the present study we consider the first channel i.e. markets and we ask what is the effect of violence on commodity prices. Given the inherent sensitivity of market prices to uncertainty, they become a potential source of information about the extent of effect of conflict on the economy. Empirical evidence on price effects of armed conflict is scarce though some evidence has reported an increase in prices of staple food (Verpoorten, 2005). Moreover, the destruction of infrastructure should increase transaction costs for households involved in market exchanges who may decide to return to subsistence activities (Bozzoli & Brück, 2009; Justino, 2009). Prices can also be kept artificially high during conflicts if farmers choose to hide crops so they do not get raided (Azam *et al.*, 1994). However, increases may be more than offset by decreases in prices of commodities produced and assets held by the household e.g. livestock, as well as the decrease in access to exchange markets. Overall, negative effects may prevail due to observed decreases in the price of other commodities and assets like cattle and other livestock (e.g. Bundervoet, 2006). The channels and intensity of the impact and people vulnerability to conflict vary in terms of their asset endowments, the characteristics of the production and their location (Brück & Schindler, 2009). Also, there might be substantial

differences across sectors, as industries dependent on either capital or transactions are most vulnerable to conflict (Vothknecht & Sumarto, 2011).

Studies on how labor markets are shaped by violent conflicts are also sparse. Serneels & Verpoorten (2012) find that areas that experienced genocide in Rwanda have higher returns to labour compared to other areas. While, as the authors suggest, we may expect the mass killings to increase returns to labour, if surplus labour was substantial, these returns may remain low in absolute terms. Case studies also suggest that conflict entails losses of human capital, resulting from household investment trade-offs between education and economic survival (Justino *et al.*, 2011). Moreover robust effects of mass violent conflict are found on fertility (Schindler & Brück, 2011) while violence may also cause pessimism about people's future prospects (Brück *et al.*, 2011). These effects may in turn cause a chain reaction and influence the labor market. Whether the net effect on wages is positive or negative is not obvious and should be treated as an empirical question. In the following study, we tackle this question.

Overall, in the specific case of Afghanistan, we might expect conflict to have a small effect on wages and commodity prices because of coping strategies developed over the last 30 years. Arguably, individuals are accustomed to a conflict environment and have developed consumption smoothing strategies. There is evidence that coping schemes have been developed before the start of our sample period (see e.g. Goodhand, 2005). Therefore, both the sign and the significance of conflict on prices and wages are unclear and debatable.

Another largely overlooked aspect is the considerable amount of resources invested by the international community to stabilize the country. Questions are often raised about the counter-productive effects of the presence of international actors. The 2005 Human Security Report attributes the decline in the number and intensity of wars to the increase in the deployment of peace and security operations. However, there are no agreed criteria for the success of an external intervention, because of the lack of agreement on goals and what would have happened without a deployment. Moreover, the economic impact of military intervention in theater has been largely neglected due to a lack of reliable economic data on the host country, which are difficult to collect in times of war, especially in the remote rural areas. Carnahan *et al.* (2007) collected field data from the Chief Financial Officers or Chief Procurement Officers in eight active missions.[4] Data suggest an immediate upsurge in economic activity associated with the restoration of basic security. But more interestingly, they find that the spending from international staff allowances (e.g. purchase of local goods and services), local procurement and on national staff wages provided a significant stimulus to the local economy. Using survey and administrative data from post-war Liberia, Mvukiyehe & Samii (2010) suggest that deployments seem to stimulate local markets and boost employment possibilities and incomes. Finally, Caruso *et al.* (2012) explore the relation between the presence of UN peacekeepers and cereal production in Sudan: assuming that UN troops are expected to improve security, they find that a reduction of conflict-related loss of crops is more pronounced in areas secured by the UN. We are not aware of any systematic studies of the development benefits of military intervention beyond those discussed here.[5]

Afghanistan is a very interesting case in this respect, as the country hosts the biggest and longest military operation undertaken by NATO since its creation. The function of the ISAF forces is to suppress violent challenge to the Afghan government by assisting it in the

[4]UNMIK (Kosovo); UNMISET (Timor-Leste); UNAMSIL (Sierra Leone); MONUC (Democratic Republic of Congo); MINUSTAH (Haiti); ONUCI (Côte d'Ivoire); UNMIL (Liberia); and ONUB (Burundi).

[5]A comprehensive survey of peacekeeping economic impacts at both local and regional levels, including trends of how military interventions may develop until 2020, is offered by Tejpar (2009).

establishment of a secure and stable environment and reducing the capability and will of the insurgency. The mandate also explicitly refers to improvements in the socio-economic development.[6] Yet, ISAF has also a direct impact on the host county economy through a number of channels. NATO/ISAF is the single largest spender in Afghanistan and offers a number of job opportunities to locals. According to NATO sources,[7] the United Kingdom alone has been employing over 2 300 Afghans, which represents USD 2.94 million to the Afghan economy per annum. Moreover, from 2005 to 2009, the US Government employed over 20,000 Afghans and procured more than USD 4 billion worth of local goods and services. In particular, NATO says "Increasing local procurement in Afghanistan is considered the most important step in promoting the development of the Afghan private sector and supporting the economic development of the country. The analysis undertaken by NATO demonstrates that purchasing local goods and services has the potential to create an economic stimulus for Afghanistan."[8] The local procurement affects the housing, retail and service markets and the labour force. We should expect an immediate upsurge in economic activity as a consequence of the international mission subsistence allowance (MSA) spent on the local economy, local mission procurements and wages paid to locally hired staff. Therefore, the economic impact of ISAF on the host economy can be both indirect, through improved security and direct, from the demand for local goods and services to job training. If, on one hand, ISAF deployments, especially those not associated to fighting activities can improve the level of security and reduce the perception of risk, thus lowering market prices, the relatively large amount of economic resources poured into a developing country naturally overheats the local markets, thus increasing prices. The security umbrella provided by ISAF also encourages non-state actors, such as NGOs, and government development agencies, to direct aid and assistance to host countries. In fact, it is also frequently the case that military operations start at the same time as increased developmental assistance.[9] Again the net effect is not clear-cut and needs to be determined from the data.

3 Security and development in Afghanistan

In the period covered by our study the Afghan economy has experienced strong economic growth, with real gross domestic product (GDP) growth rate averaging 11 percent per year. Yet, after decades of war and political instability, and a long-lasting western military intervention (i.e. ISAF), Afghanistan remains one of the world's poorest countries, with a GDP per capita hovering around USD 600 in 2007. Its population, estimated at almost 30 million, remains largely rural and mostly uneducated. Development indicators published by the World Bank and the UN rank Afghanistan at the bottom of virtually every category, including nutrition; infant, child, and maternal mortality; life expectancy; and literacy. The country is also at the lowest levels of global human security, according to the Human Development Index. To provide more background material, we now turn to the discussion of our measures of security and livelihood in the country. We collected information on commodity prices, wages, security incidents and ISAF deployment over the period 2003-2009. Prices have been

[6] See $http://www.isaf.nato.int/mission.html$.Accessed 25 April 2013.

[7] see $http://www.aco.nato.int/page26911751.aspx$. Accessed 25 April 2013.

[8] see $http://www.nato.int/cps/en/natolive/official_texts_62851.htm$. Accessed 25 April 2013.

[9] There are also areas where international actors such as the UN and the WFP distribute food aid, which may cause a depression in prices. Yet, field observations show that food aid is not commonly sold in the market place, thus should not significantly affect our marker prices. It can be deduced that food distributed to the most vulnerable is used or stored for future consumption and not sold to traders (Favre, 2005).

recorded in 7 provinces: Badakhshan, Faryab, Ghowr, Herat, Kabol, Kandahar, Nangarhar. These provinces are heterogeneous in characteristics between them (in terms of population, geographic location, language), but together they are likely to be representative of the whole of Afghanistan. Kabol, Kandahar and Herat an the three most populous provinces in the country, Nangarhar is the fifth, Badakhshan the sixth and Faryab the eight out of 34 by population. They are also representative of the four main languages spoken in the country i.e. Pashto, Dari Persian, Turkmen and Uzbek. Figure 1 presents the distribution of the provinces of our sample on a map of Afghanistan. Together, they represent more than one third of the total population, have a combined area of 221,800 Km^2 out of 647,500 Km^2 and are geographically distributed across the whole country.

[Figure 1 about here]

3.1 Security

We measure violence and security in several ways. Firstly, we look at the effect of all types of security incidents, ranging from suicide bombings to coordinated assaults on military compounds, to see the cumulative effect of conflict. Secondly, we measure the disruption of peace with a dummy for the monthly occurrence of violence in a given province to eliminate the effects of outliers. Thirdly, we analyze the violence connected to the presence of international military actors, captured by the number of ISAF casualties. Moreover, we separate between hostile and non-hostile casualties, and use the reported location to measure casualties by province. While both hostile (e.g. RPG attack, suicide car bomb) and non-hostile casualties (e.g. illness, vehicle accident) indicate the presence of ISAF forces, non-hostile casualties should be less influenced by the occurrence of fighting. ISAF patrols may increase the perception of security and drive insurgents out of some regions. At the same time, areas where ISAF forces fight and are killed are bound to be relatively more insecure. This distinction does not completely purge the presence of ISAF forces from the location of insurgent units. Schutte (2012) explores in details the nature of ISAF activities against insurgents, including the difference between indiscriminate and selective violence by ISAF forces.

Our data on the Afghan conflict comes from the Worldwide Incidents Tracking System (WITS), US National Counterterrorism Center. This dataset is event-based, and includes information on the event type, date, location, whether the perpetrator is an Islamic Extremist/Sunni or unknown, and the number of deaths, wounded and kidnapped in each event.[10] Daily data on coalition deaths comes from iCasualties.org (accessed 15 April 2013), which are based on press releases from the US Department of Defense and CENTCOM. We then aggregated the data by month. The database lists every casualty by name, cause of death, and location and follows a rigorous recording methodology (see Schutte, 2012, for the most thorough discussion to date of conflict event data in Afghanistan).[11]

As Figure 2 shows, insecurity in Afghanistan has dramatically increased since 2004, two years after the fall of the Taliban. This is primarily a result of the insurgency's growing strength. Much of the violence occurred in Southern Afghanistan (e.g. Kandahar, Helmand), but insecurity has also spread eastwards (e.g. Kunduz), to cover the majority of Afghan provinces. According to the data, the Afghan National Army, the Afghan National Police and ISAF forces are the most frequent targets, but there have also been a substantial number of civilian casualties. In 2008 and 2010, many Afghan provinces registered a record number of attacks (see Figure 2). Most of the violent events are usually attributed to the Taliban-led

[10]The dataset includes 6080 episodes in the period considered

[11]Complete documentation of iCasualties.org's methodology is available at http://icasualties.org/

insurgency. Yet, it is very difficult to distinguish among terrorist movements, insurgencies and organized crime (linked to the drug trade or otherwise), since their tactics and funding sources are increasingly similar.[12]

[Figure 2 about here]

3.2 Commodities

We gathered monthly US$ selling prices of 1 kg of wheat; a one year old female sheep; 1 liter of diesel; and wage for 1 day of unskilled labour. Prices are from the Vulnerability Analysis and Mapping (VAM) Market Data, World Food Programme and characterize different market places. Figure 3 displays wage and commodity prices. The shaded gray areas depict the variations in prices across Afghan provinces.

[Figure 3 about here]

Overall, the legal agricultural sector, which is a major source of income for the majority of the population, is slowly recovering from decades of conflict. Household surveys demonstrate the centrality of crops and livestock prices in the economy of the country. Major crops include wheat, rice, maize (corn), barley, vegetables, fruits, and nuts. Approximately 70 percent of cultivated crop area is devoted to wheat and about 15 percent is devoted to rice, barley, and maize (Chabot & Dorosh, 2007). Almost half of Afghan households depend on income from agriculture, 33 percent on non-farm labour, 23 percent on livestock and 4 percent on opium production[13]. Given the problem of reverse causality between opium prices and the level of violence that would not permit us to make credible inference - i.e. regional instability and insurgency may be fueled by the Afghan opiate industry (see e.g. Bove & Elia, 2013, for an empirical analysis) - we only focus on legal occupational opportunities. The mechanisms connecting the opium market and the political violence in the country are explored in details by Rubin (2000), Giustozzi (2007) and Goodhand (2008).

We assume that individuals can choose from a number of legal activities (e.g. wheat and cereal production, sheep-farming, off-farm casual labour). Most frequently farmers decide what to plant and how to allocate labour and land on their own.[14] Wheat is not only the main legal crop in rural Afghanistan, it is also the key staple food, accounting for over half the caloric intake of population (Persaud, 2010). Such a high prevalence of consumption makes wheat, by considerable margin, the most significant agricultural market to evaluate in relation to food security. We also use wages to capture the equilibrium between the supply of labor by the household and the demand for labor from off-farm sources. Wages peaked in the months following the surge of violence, in 2004, and has been growing ever since the return of the insurgents in the country (Figure 3). However, if surplus labour is steady, these returns may remain stable. We treat labor wage as a flexible and accessible smoothing tool, as it gives short term remuneration and it does not require investment costs. This activity requires safety, it gives a comparable high return but its variation is higher than other activities.

[12] As a label, "AGE" or Anti-Government Elements, brings under one umbrella a complex mixture of groups and shifting alliances. The three major groups include the Quetta Shura Taliban, Hezb-e Islami Gulbuddin (HIG), and the Haqqani Network (HQN). These groups cooperate and coordinate at times and their areas of operations tend to be geographically determined (USDD, 2010). The United States Department of Defense says that "'the common goals of these groups are to expel foreign forces from Afghanistan and to undermine the central government "'(USDD, 2010, p22).

[13] According to the United Nations Office for Drug and Crime, in 2009 poppy cultivation created 5.6 jobs per hectare (UNODC, 2009a). Yet, only one in seven Afghans is reportedly involved in some aspect of the trade, with 6.5 percent of the population involved in growing poppy (UNODC, 2009b).

[14] For example, in the 2003-2004 season, 87 percent of poppy growers and 81 percent of non-poppy growers decided independently the allocation of land between opium and wheat (UNODC, 2004).

Overall, there is strong seasonal behavior in prices in agricultural markets in Afghanistan. The breakdown by month reveals general hikes in wheat prices around harvesting times in spring and autumn (see Figure 3). The major wheat harvest in May-June puts most of the food on the market. This is followed by minor crops, all harvested in August - September. During the winter months there is little additional food coming onto the market from domestic production and stocks need to be sufficient to last until spring. Adverse weather conditions can create pressure on prices, like the periods of inadequate rains and snowfall during 2008. Geographical variations in terms of land ownership and sharecropping, which is more common in the North Eastern and Eastern regions (UNODC, 2004), as well as variations in latitude and elevations, explain some of the deviation in prices around the mean. Certainly, wheat prices in Afghanistan are also correlated to international market prices, thus explaining a common trend across provinces. In the period 2003-2009, the dramatic increase in global food prices has been accompanied by peaking diesel prices. We consider diesel an intermediate good in production, therefore its price variation can give us information about local market disruptions. Diesel and wheat prices are highly seasonal and dominated by the world prices, so all the provinces we analyze show similar patterns. Sheep and labor prices follow more idiosyncratic variations across provinces, with pronounced differences in the level of revenues. In the following econometric analysis, we expect that a confluence of international as well as domestic factors have an impact on prices. In particular seasonality and other common factors like international prices, past trends and geographic variations across provinces. Yet, we believe that insecurity, and the ensuing uncertainty, as well the international military presence may have important effects on prices. For households that spend the majority of their budgets on food, high volatility in both revenues and commodity prices led to a severe erosion of purchasing power, disproportionally affecting poor households. Therefore, if violent occurrences drive consumption prices up, poor household will be most sensitive to these shocks.

In Tables 1 and 2 we present the summary statistics, the definitions of our variables and the source.

[Tables 1 and 2 about here]

As we pointed out above, the impact of armed conflict on markets is still subject to debate and it is not clear whether changes in the level of violence should be associated with changes in commodity prices. Moreover, coping strategies may be already in place, and there may be little or no effect of violence on prices and wages, given that Afghanistan has been in a state of conflict since the late 1970s. However, violence is associated with a higher state of uncertainty e.g. about one's own life, and we observe in figure 2 a steadily increasing trend. Therefore, we expect some effect of violence on prices even if small. As we said, prices capture the returns from engaging in their respective activities and thus proxy the different choices of livelihoods of people. Furthermore, we consider unskilled labor wage as a flexible and accessible smoothing tool in response to sudden violent shocks. This activity gives a high return comparably to other and its variation is higher than that of other activities. Therefore, we expect wages to be sensitive to violent episodes.

Violence can have important effects on prices of investment-intensive goods such as herding and wheat cultivation. These activities require year-round care and can be disrupted by conflict and uncertainty. This disruption might lead to a fall in the returns and so decrease the likelihood of incurring the initial investment. Afghanistan is net importer of wheat and primary goods price variation would reflect relative scarcity. Any risk faced at the local level could be compensated by imports. Livestock prices may also react to insecurity. In particular, high uncertainty may lead to people selling their livestock, thereby conflict would have a negative effect on prices (Verpoorten, 2009). However, sheep herding might yield

luxury goods, wool and meat, and this would still make it a valuable investment. Arguably, prices of luxury goods such as wool should have higher prices during conflict duration due to uncertainty and transport shocks to herds.

Finally, the variation of the price of diesel, an input for production, serves us to evaluate how intermediate goods and markets are affected by the conflict. The price of diesel tracks closely the world prices for this commodity, therefore a big part of the variation is exogenous. However, if part of the local variation can be explained by violence it would give us a clue on how the local markets are disrupted by the conflict. Furthermore, we expect smaller effect of violence on wheat and diesel than on wages and sheeps because prices are driven by the international markets (see Figure 3) and local demand can be met by imports. [15]

We interpret the violence variables in terms of perceptions they create. Jones (2011) outlines that one of the main reasons for insurgents to consider reintegration are the perceptions on who is winning the war. Perceptions can drive the prices of commodities due to the haggling processes inherent to Afghan society. We consider the effects of levels of attacks and a dummy of their occurrence. The latter helps us identify the uncertainty effect due to a simple change from peace to violence and the former the effect of each additional attack. We also explore the effect of military deployment on market prices. We use hostile and non hostile casualties. Increases in hostile casualties would carry the perception of increasing violence and that ISAF is loosing the war, which entails uncertainty about the rule of law. Non-hostile causalities indicates the deployment of NATO troops without necessarily indicating the occurrence of fighting. Finally, the variable ISAF sums these both types of variation and gives us a general effect of deployment. As we said above, local procurement of goods and services is expected to increase both commodity prices and wages.

4 Econometric Model

In our empirical model we look at how different conflict occurrences affect the wages and prices of everyday consumption goods. In the baseline specification we consider the reduced form relationship for each price independently:

$$P_{i,p,t} = \alpha P_{i,p,t-1} + \beta V_{c,p,t-1} + \mu_p + \delta_m + \epsilon_{i,p,t} \tag{1}$$

where the logged price $P_{i,p,t}$ of good i in province p in period t is explained by past violence ($V_{c,p,t-1}$), past month price ($P_{i,p,t-1}$), month fixed effects (δ_m) and province-specific fixed effects (μ_p). δ_m and μ_p capture seasonality and geographical features (like latitude and elevation), ethical composition, etc.[16] which play an important role in determining prices' fluctuations. The coefficient α measures the percentage price changes from a 1 percent wage increase holding violence constant in a province. The coefficients β measures the percentage price changes for each additional occurrence of violence. Identification of the effect of conflict comes from the assumption that commodity prices are exogenous and do not predict violence or ISAF deployments.[17]

We chose to take the lag of the independent variables to take the issue of information spreading into account. Politics and economic decisions in Afghanistan are conducted "locally" at the district and village level (Goodhand, 2005). [18] Given that we have data on provinces we

[15] For e.g. in 2008 during the food crisis prices of wheat in Afghanistan rose because the main importer, Pakistan, banned exports of this primary commodity. See for more information Persaud (2010)

[16] Figures 2 and 3 display clearly variations within provinces.

[17] As we said, this condition does not hold for opium, so we excluded it from our analysis.

[18] Jones (2011) outlines the main sources of information for individuals: friends, neighbors and village chiefs.

leave a one month period for conflict information to spread. Earlier lags do not seem to hold predictive power and do not change results. The long time frame of our panel (72 months) allows the bias due to lagged dependent variables to tend to 0 (Nickell, 1981; Kelly, 2006). Only the prices of wheat and diesel exhibit an unit root, which is another rationale for the use of lagged dependent variables in the estimating equation. We also perform a robustness check with first differences and note in the tables when the results concur with the levels estimation. The first difference estimation results are available in the appendix.

We ran also the specification in Equation 1 on a sub-sample which excludes the province of Kandahar. This province saw one of the highest levels of fighting and thus it might drive some of the effects we find. For reasons of brevity we do not include tables with those results but comment where we have found evidence for the above concern. The results of the sub-sample are also available in the appendix.

5 Empirical results

Table 3 provides estimates for the effects of conflict events on labour. The top of the columns shows the measure of violence used as an independent variable, while the dependent variable is unskilled labour wage. From all columns we can see that the wage is positively affected by past values. In column 1 we examine the effect on all types of attacks on wages and we notice a barely significant positive effect. An additional attack at time *t-1* has a small effect on wages at time *t*. In column 2 we examine the effect of attacks as a dummy variable that takes on the value 1 if there were attacks in a given month and 0 otherwise. This variable is not affected by presence of outliers and serves as a more parsimonious measure of attacks. From the summary statistics we can see that there are no attacks roughly half of the time. This variable seems to have a higher effect than the levels of attacks, leading us to believe that it is the disruption of peace that influences the bargaining process for wages rather than the uncertainty associated with the number of attacks. A potential channel would be that the risks associated with traveling and flexibility are increasing the bargaining power of employees, so they succeed in securing a higher wage on average. Or, there are less laborers willing to take up the risks associated with flexible traveling, and more laborers turn to other opportunities, causing an increase in market wages. In the third, fourth and fifth columns we investigate the effect of ISAF hostile and non hostile casualties and we find a small positive effect of each additional non hostile casualty, while hostile casualties have no effect. This partially lends support to the possibility of increasing wages in reaction to local procurement of services. The presence of NATO troops increases the level of wages, while fighting activities associated to the ISAF presence (i.e. hostile casualties) do not show an influence on their own. The effect of nonhostile casualties is robust to the exclusion of Kandahar and to first differences estimation (see the appendix).

[Table 3 about here]

Table 4 shows that attacks and disruptions of peace are not associated with forces that determine the price of sheep. This may suggest that since herding is a relatively mobile activity, any fighting on the local level can be avoided. Arguably, areas with less rule of law do not necessarily disrupt the movement of a flock. However, ISAF deployments affect the selling prices of sheep, given the significance of the coefficient for hostile casualties and the combined positive effect of hostile and non-hostile casualties. We mentioned earlier the information sources of Afghanis. Given that the variable attacks pools all types of incidents

and the close links of villagers to insurgents[19], probably they are not able to forecast the ISAF strategies[20] and this is why it is not possible to avoid fighting theaters. This effect is robust in first differences. However, when we estimate this specification without the province of Kandahar, the most violent province, we find no effect. This pattern makes sheep herding the one commodity that is most resistant to conflict, providing a stable source of income.

[Table 4 about here]

In Table 5 we see that wheat prices are mainly influenced by deployment. Wheat is equally influenced by hostile and non hostile casualties. The positive association between wheat prices and NATO presence may be driven by the purchasing of local agricultural products and fuel. The effects of hostile casualties on wheat disappears in the absence of Kandahar in the sample. As we said, Kandahar is the province with the highest level of violence. Yet, the positive impact of non-hostile casualties on wheat prices is robust to this exclusion: this means that results can be explained by the mere presence of ISAF forces, rather than the occurrence of fighting activities. We also find that the effect of all ISAF casualties to be most robust across specifications. As we said above, it is also often the case that non-state actors, such as NGOs, and government development agencies, deploy when security is provided by military actors. Therefore, international assistance on the ground overheats the wheat market and causes important increases in wheat prices.

Table 6 shows a general lack of a robust effects of violence on diesel prices. Moreover, the exclusion of Kandahar makes diesel prices unresponsive to both violence and deployment. This suggests that Afghanistan is a price taker on the international market and local events do not influence the price of this fuel.

[Table 5 and 6 about here]

Furthermore, Table 7 presents the interrelationships between the different livelihoods. We observe that the price of diesel is complementary to the price of wheat.[21] The two price move together and positively influence one another. Diesel is not used in the production of wheat, so the positive sign might reflect a transport cost associated with the final selling price of wheat. We note no substitution patterns between sheep herding and wheat. Notably, there is no significant result for the specification in which labour wage is the dependent variable. Given the lack of substitution patterns, this would suggest that other activities are preferred to labour and it would be consistent with labour wage being only a consumption smoothing tool. The lack of significant patterns would be consistent with coping strategies already in place and that household members engage and specialize in different activities. The results remain similar if we estimate a model without lags.

[Table 7 about here]

Overall, we notice that conflict has a positive effect on prices. The effect is higher for prices that are relatively more variant. The lack of substitution patterns is consistent with coping strategies already in place and implicit risk aversion. Given that Afghanistan has been in a state of conflict for the past 30 years, this channel can explain the lack of (or small) effect of all attacks on prices. However, the ISAF are a new source of uncertainty. They do not share their strategies with the local population and there are no adaptation mechanisms at play. Overall we find that prices are more sensitive to deployment than to attacks. In particular we see a positive effect of ISAF deployment on prices. Price increases are affecting the vulnerable population and, thus, ISAF deployment benefits the suppliers who can ask for

[19] Another aspect of the coping strategies is to have one member of the household with insurgents and one member collaborating with ISAF (Goodhand, 2005)

[20] Partially due to strategic incentives on the part of ISAF

[21] The simple correlation between them is 0.81

a higher price and harms the portion of population on the demand side.

6 Conclusions

War is a destructive event. Political instability and insurgency have strong adverse effects on economic development and a detrimental impact on the well-being of individuals. The destruction and loss of life are not the only cost of conflict. The lack of physical safety, the disruption of important infrastructures and the interruption of local markets make coping strategies in wartime an important issue. Yet, it is not clear whether and how violence and the presence of external military actors in a country affect the opportunities and livelihoods of people. Our study explores the impact of insurgency-related violence and ISAF deployment on the opportunities for income of the local communities in Afghanistan. As the country has been suffering from chronic violence and lawlessness for decades, we consider survivalist activities across a range of occupational choices, such as farming, pastoralism, off-farm activities and casual labour.

For this reason, we gathered a unique dataset monthly commodity prices: wheat, sheep, diesel, and wages, to capture the return from different activities in a state of war. We provide econometric evidence from actual data collected by the World Food Program, which is the only time series market data available for Afghanistan. We find evidence that coping strategies are already in place, consistent with the long conflict history of Afghanistan. We disentangle the effect of deployment from the effect of coping strategies. In particular, we find that commodity prices are not significantly associated with levels of attacks. However, given that ISAF are a new actor in the Afghan civil war, we find that military deployment is associated with an increase in the level of wages and prices of wheat and sheep. The final price of wheat seems to discount the transport costs associated with diesel. We also find that sheep herding provides the most stable source of income.

Our study informs current policy discussions within Afghanistan and, more generally, within the international development community. We provide novel insight into the domestic and conflict-related determinants of sudden changes in food prices and the possible effects on an economically vulnerable population. This is particularly crucial in conflict areas, which may be most susceptible to food price shocks, but which usually have little quantitative data on violent events. Identifying the impact of war on food and commodity prices is an important step in understanding how conflict affects household well-being.

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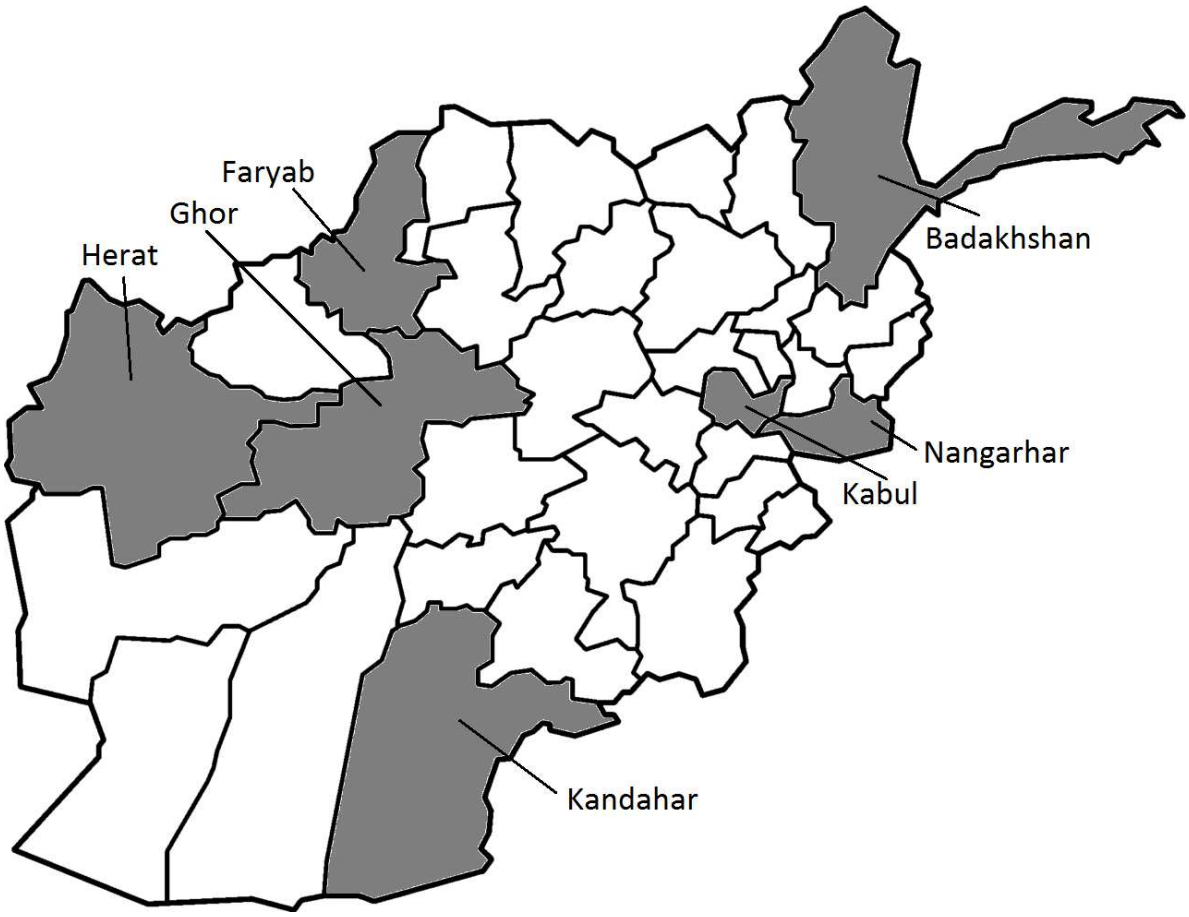

Figure 1: Map of Afghanistan and the provinces in our sample

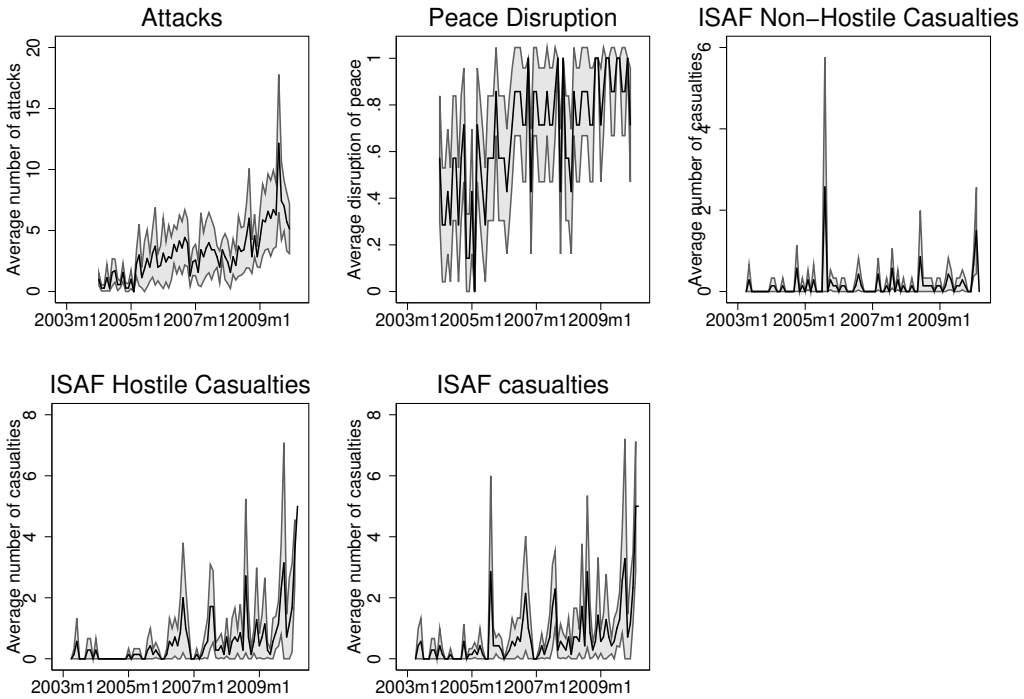

Figure 2: Security incidents and ISAF casualties with the monthly standard deviation (in grey) around the cross-sectional mean (black). The vertical axis measures number of attacks or casualties. Authors' calculation based on records from iCasulaties.org and the Worldwide Incidents Tracking System (WITS), US National Counterterrorism Center

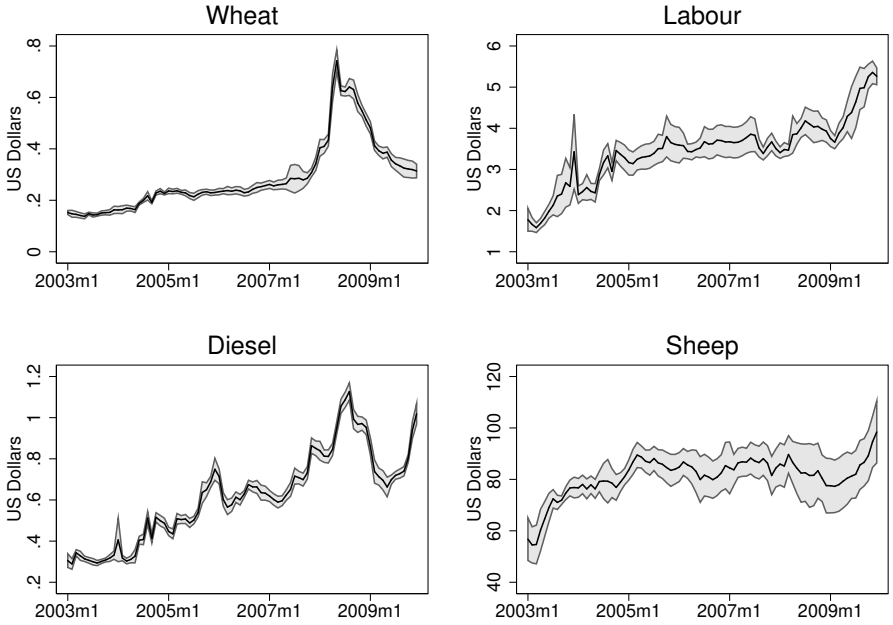

Figure 3: Wage and Commodity Prices with the monthly standard deviation (in grey) around the cross-sectional mean (black). The vertical axis measures price in US dollars. Source: Vulnerability Analysis and Mapping (VAM) Market Data from Afghanistan main cities, World Food Program

Table 1: Descriptive statistics

	Mean	Standard Deviation	Between Variation	Within Variation	Observations	Panels	Months
Labour Wage	3.515	0.982	0.547	0.844	517	7	73.857
Wheat Price	0.301	0.147	0.044	0.144	517	7	73.857
Sheep Price	81.615	15.688	7.870	13.792	517	7	73.857
Diesel Price	0.638	0.225	0.133	0.208	517	7	73.857
Attacks	3.165	4.291	3.115	3.175	504	7	72
Peace Disruption	0.677	0.468	0.263	0.400	504	7	72
Nonhostile	0.203	0.917	0.220	0.893	650	7	92.857
Hostile	0.786	2.253	1.200	1.918	650	7	92.857
ISAF	0.989	2.539	1.343	2.172	650	7	92.857

Table 2: Variables used in the econometric estimation

Name	Definition	Source
Labour Wage	US$ prices of one day of unskilled labour	World Food Program
Wheat Price	US$ prices of 1 kg of wheat	World Food Program
Sheep Price	US$ prices of a one year old female sheep	World Food Program
Diesel Price	US$ prices of one liter of diesel	World Food Program
Attacks	N. deaths, wounded and kidnapped	Worldwide Incidents Tracking System
Peace Disruption	Dummy taking a value 1 when Attacks is positive	Worldwide Incidents Tracking System
Nonhostile	Non-Hostile ISAF casualties	iCasualties.org/
Hostile	Hostile ISAF casualties	iCasualties.org/
ISAF	Hostile and Non-Hostile ISAF casualties	iCasualties.org/

Table 3: The Impact of Violence on Labour Wage

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00290*	0.01659**	0.00498***	0.00471	0.00472*
	(0.001)	(0.005)	(0.001)	(0.002)	(0.002)
Labour Wage (lagged)	0.85951***	0.87573***	0.87761***	0.87217***	0.87120***
	(0.037)	(0.039)	(0.045)	(0.046)	(0.046)
Constant	0.14784***	0.12262**	0.09440**	0.10034**	0.10103**
	(0.036)	(0.039)	(0.035)	(0.036)	(0.036)
Observations	450	450	510	510	510
R-squared	0.810	0.809	0.826	0.826	0.827
Number of provinces	7	7	7	7	7
First Differences	-	-	x	-	-
No Kandahar	-	x	x	-	-

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed unskilled labour wage. Estimation includes month and province fixed effects. The last 2 lines describe the robustness checks. An "x" stands for same sign of effect and significance, an "-" stands for no effect.

Table 4: The Impact of Violence on Sheep Price

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00094	0.00446	-0.00090	0.00340***	0.00229**
	(0.001)	(0.016)	(0.001)	(0.001)	(0.001)
Sheep Price (lagged)	0.93135***	0.93422***	0.91758***	0.91349***	0.91437***
	(0.009)	(0.009)	(0.017)	(0.018)	(0.018)
Constant	0.30713***	0.29364***	0.36815***	0.38497***	0.38120***
	(0.042)	(0.044)	(0.075)	(0.077)	(0.076)
Observations	450	450	510	510	510
R-squared	0.828	0.828	0.871	0.872	0.871
Number of provinces	7	7	7	7	7
First Differences	-	-	-	x	-
No Kandahar	-	-	-	-	-

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed sheep price. Estimation includes month and province fixed effects. The coefficient on lagged sheep price is significantly different from 1. The last 2 lines describe the robustness checks. An "x" stands for same sign of effect and significance, an "-" stands for no effect.

Table 5: The Impact of Violence on Wheat Price

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00225*	-0.01254	0.00391**	0.00212**	0.00252***
	(0.001)	(0.016)	(0.001)	(0.001)	(0.001)
Wheat Price (lagged)	0.95482***	0.95249***	0.96282***	0.96178***	0.96140***
	(0.008)	(0.007)	(0.004)	(0.004)	(0.004)
Constant	-0.01276	-0.01216	-0.01700	-0.01855	-0.01942
	(0.017)	(0.017)	(0.014)	(0.014)	(0.014)
Observations	450	450	510	510	510
R-squared	0.934	0.934	0.946	0.946	0.946
Number of provinces	7	7	7	7	7
First Differences	-	-	-	-	x
No Kandahar	x	-	x	-	x

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed wheat price. Estimation includes month and province fixed effects. The coefficient on lagged wheat price is significantly different from 1. The last 2 lines describe the robustness checks. An "x" stands for same sign of effect and significance, an "-" stands for no effect.

Table 6: The Impact of Violence on Diesel Price

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00129	-0.00213	0.00722**	0.00230	0.00349
	(0.001)	(0.014)	(0.002)	(0.003)	(0.002)
Diesel Price (lagged)	0.91048***	0.91707***	0.94431***	0.94288***	0.94134***
	(0.006)	(0.007)	(0.012)	(0.014)	(0.013)
Constant	-0.08632***	-0.07968***	-0.05487**	-0.05539**	-0.05679**
	(0.008)	(0.007)	(0.021)	(0.020)	(0.021)
Observations	450	450	510	510	510
R-squared	0.908	0.907	0.927	0.926	0.927
Number of provinces	7	7	7	7	7
First Differences	-	-	-	-	-
No Kandahar	-	-	x	-	-

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed diesel price. Estimation includes month and province fixed effects. The coefficient on lagged diesel price is significantly different from 1. The last 2 lines describe the robustness checks. An "x" stands for same sign of effect and significance, an "-" stands for no effect.

Table 7: The Substitution Complementarity Table

	(1) Labour Wage	(2) Sheep Price	(3) Wheat Price	(4) Diesel Price
Labour Wage (lagged)	0.76640***	0.04628*	-0.04857	0.16044
	(0.099)	(0.021)	(0.031)	(0.096)
Sheep Price (lagged)	0.09994	0.90295***	0.05192**	0.03200
	(0.073)	(0.022)	(0.016)	(0.034)
Wheat Price (lagged)	0.00692	-0.02352	0.90582***	0.08270**
	(0.018)	(0.014)	(0.012)	(0.027)
Diesel Price (lagged)	0.06823	-0.00404	0.09848***	0.76781***
	(0.045)	(0.014)	(0.022)	(0.077)
Constant	-0.16606	0.34246**	-0.21405**	-0.36545***
	(0.223)	(0.097)	(0.061)	(0.094)
Observations	510	510	510	510
R-squared	0.835	0.874	0.947	0.935
Number of provinces	7	7	7	7

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the dependent variable. Variables are a log transformation of the respective prices. Estimation includes month and province fixed effects.

A Results without Kandahar

The four tables in this section present the results when we estimate our empirical model on a sample excluding the province of Kandahar.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00387	0.01804**	0.00499***	0.00480	0.00502
	(0.002)	(0.005)	(0.001)	(0.005)	(0.003)
Labour Wage (lagged)	0.84684***	0.85828***	0.85054***	0.84930***	0.84878***
	(0.041)	(0.041)	(0.052)	(0.054)	(0.053)
Constant	0.16219***	0.14212**	0.11984**	0.12159**	0.12208**
	(0.040)	(0.042)	(0.045)	(0.047)	(0.046)
Observations	379	379	427	427	427
R-squared	0.787	0.787	0.782	0.782	0.782
Number of provinces	6	6	6	6	6

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed labour wage. Estimation includes month and province fixed effects. The coefficient on lagged labour wage is significantly different from 1.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00123	0.00439	-0.00103	0.00314	0.00111
	(0.001)	(0.017)	(0.001)	(0.002)	(0.002)
Sheep Price (lagged)	0.93580***	0.93749***	0.91602***	0.91516***	0.91557***
	(0.008)	(0.010)	(0.021)	(0.022)	(0.021)
Constant	0.28274***	0.27449***	0.37048**	0.37422**	0.37239**
	(0.033)	(0.046)	(0.092)	(0.093)	(0.092)
Observations	379	379	427	427	427
R-squared	0.827	0.826	0.855	0.856	0.855
Number of provinces	6	6	6	6	6

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed sheep price. Estimation includes month and province fixed effects. The coefficient on lagged sheep price is significantly different from 1.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00385**	-0.01521	0.00361**	0.00142	0.00256**
	(0.001)	(0.017)	(0.001)	(0.001)	(0.001)
Wheat Price (lagged)	0.95192***	0.94984***	0.96115***	0.96085***	0.96069***
	(0.007)	(0.007)	(0.004)	(0.004)	(0.004)
Constant	-0.01847	-0.01724	-0.02278	-0.02305	-0.02334
	(0.017)	(0.018)	(0.016)	(0.016)	(0.016)
Observations	379	379	427	427	427
R-squared	0.931	0.930	0.943	0.943	0.943
Number of provinces	6	6	6	6	6

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed wheat price. Estimation includes month and province fixed effects. The coefficient on lagged wheat price is significantly different from 1.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	0.00224	0.00029	0.00586***	-0.00310	0.00138
	(0.001)	(0.014)	(0.001)	(0.006)	(0.004)
Diesel Price (lagged)	0.90723***	0.91340***	0.93962***	0.94056***	0.93924***
	(0.006)	(0.007)	(0.015)	(0.016)	(0.015)
Constant	-0.08393***	-0.07874***	-0.04908	-0.04850	-0.04909
	(0.010)	(0.007)	(0.025)	(0.024)	(0.025)
Observations	379	379	427	427	427
R-squared	0.903	0.903	0.920	0.920	0.920
Number of provinces	6	6	6	6	6

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed diesel price. Estimation includes month and province fixed effects. The coefficient on lagged diesel price is significantly different from 1.

B First Difference Results

The four tables in this section present the results when we estimate our empirical model with first difference transformation.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00046	0.00423	0.00326**	0.00132	0.00192
	(0.001)	(0.006)	(0.001)	(0.001)	(0.001)
Labour Wage (lagged)	-0.09348*	-0.09423*	-0.24148*	-0.24200*	-0.24117*
	(0.040)	(0.039)	(0.110)	(0.110)	(0.110)
Constant	-0.02552*	-0.02544*	-0.05533**	-0.05492**	-0.05502**
	(0.011)	(0.011)	(0.020)	(0.020)	(0.020)
Observations	443	443	503	503	503
R-squared	0.101	0.101	0.126	0.125	0.126

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable in first differences used in the estimation. The dependent variable is log transformed labour wage in first differences. Estimation includes month and province fixed effects.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00042	-0.00116	-0.00079	0.00213**	0.00120
	(0.001)	(0.005)	(0.001)	(0.001)	(0.001)
Sheep Price (lagged)	17947**	0.17908*	0.21740***	0.22108***	0.21945***
	(0.072)	(0.074)	(0.053)	(0.053)	(0.054)
Constant	0.00607	0.00617	0.00499	0.00513	0.00495
	(0.007)	(0.007)	(0.005)	(0.005)	(0.005)
Observations	443	443	503	503	503
R-squared	0.049	0.048	0.055	0.058	0.057

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed sheep price. Estimation includes month fixed effects. All price variables are transformed in first differences.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00060	-0.00192	0.00133	0.00261*	0.00219**
	(0.001)	(0.009)	(0.001)	(0.001)	(0.001)
Wheat Price (lagged)	0.14797**	0.14793**	0.10444	0.10559	0.10624
	(0.049)	(0.049)	(0.056)	(0.056)	(0.056)
Constant	0.03518**	0.03532**	0.02970**	0.03008**	0.02985**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Observations	443	443	503	503	503
R-squared	0.085	0.084	0.055	0.057	0.057

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed wheat price. Estimation includes month and province fixed effects. All price variables are transformed in first differences.

	(1) Attacks	(2) Peace Disruption	(3) Nonhostile	(4) Hostile	(5) ISAF
Violence (lagged)	-0.00070	-0.00141	0.00326*	0.00268	0.00284*
	(0.001)	(0.012)	(0.002)	(0.002)	(0.001)
Diesel Price (lagged)	-0.11151	-0.11019*	-0.20131**	-0.20415**	-0.20269**
	(0.058)	(0.055)	(0.058)	(0.057)	(0.057)
Constant	-0.05395***	-0.05380***	-0.02873	-0.02815	-0.02838
	(0.010)	(0.010)	(0.026)	(0.026)	(0.026)
Observations	443	443	503	503	503
R-squared	0.240	0.240	0.188	0.189	0.190

Robust standard errors clustered at the province level in parentheses. *** p<0.01, ** p<0.05, * p<0.1 The top of the column shows the violence variable used in the estimation. The dependent variable is log transformed diesel price. Estimation includes month and province fixed effects. All price variables are transformed in first differences.