

# Civil conflicts hurt firms – by displacing workers

Christopher Ksoll, Rocco Macchiavello, and Ameet Morjaria

*As unrest continues in the Arab countries, many are asking about the economic costs. While the macro effect of civil conflicts is widely studied, little is known of the micro effects. This column presents evidence from the short-term violence following the 2007 election in Kenya. It finds that firms providing cut flowers to Western markets saw a significant rise in costs, largely due to the displacement of workers.*

Foreign firms who want to take advantage of Africa's comparative advantage in agriculture and low wages not only face bureaucracy, but also civil wars and conflicts. Naturally the latter are disastrous for profitability and investments—yet very little is actually known about the microeconomics of how conflict affects firms.

The macroeconomic literature studies the relationship between conflict and growth (see e.g. Collier and Hoeffler 1998) as well as conflict and trade (see e.g. Besley and Persson 2008 and Martin et al. 2008). The microeconomic literature, meanwhile, has overwhelmingly focused on how health and education outcomes of children are affected by conflicts (see Blattman and Miguel 2010 for a survey). But the dearth of data on firms in conflict locations makes it difficult to analyse how firms are affected—and through what channels. The evidence at the firm level is either focused on developed countries, such as Abadie and Gardeazabal (2003) who study the conflict in the Basque region, or finds results that are limited to a subset of firms, such as Guidolin and La Ferrara (2007) who find that stock-market values of diamond-mining companies decrease following the unanticipated end of civil war. In recent research (Ksoll et al. 2010), we examine how a short, intense period of violence following the disputed general election affected export-oriented firms in Kenya's flower industry—one of the country's largest foreign-exchange earners.

## The Kenyan post-election violence and flower-exporting firms

In late 2007, Kenya held its fourth multi-party general elections. Three days after the polls were cast the incumbent president Mwai Kibaki was declared the winner over Raila Odinga, the opposition candidate who had been leading in published polls. Within minutes of Kibaki's swearing in, a political and humanitarian crisis erupted. Targeted ethnic violence lasted well in to February 2008. In its wake, an estimated 1,200 people were killed and more than 300,000 others were displaced. Financial losses to the economy reached approximately £145 million, around 1% of GDP (The Economist 2008).

There are two empirical challenges confronting empirical studies on the effect of violence in this situation.

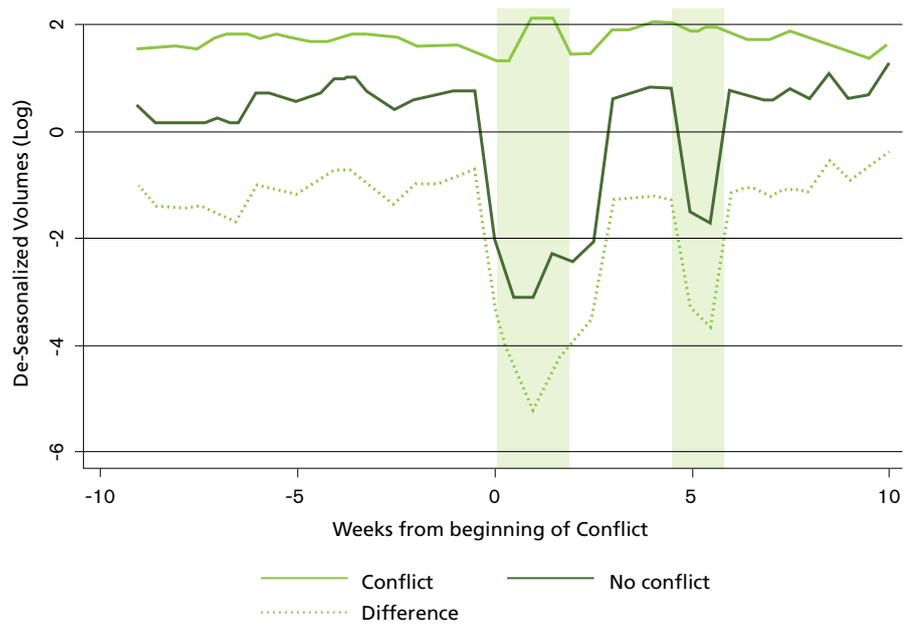
The first is to provide what is called the counterfactual. In our case, this is an estimate of what would have happened to the firms affected by violence if the violence had not taken place. The geography of the Kenyan violence unwittingly offered the perfect counterfactual. Flower firms are located in regions where violence occurred and also in regions where violence did not occur.

The second empirical challenge is to gather detailed information on the operations of firms exposed to violent conflict before and after the violence. Again, the features of the Kenyan flower industry provide a way to overcome this hurdle. Flowers in Kenya are produced by about 120 established firms exclusively for foreign markets. As a result, administrative records for all firms in the industry include extensive daily data on production and sales. In addition, shortly after the violence, we were able to conduct surveys in the field with flower firms about the channels through which the violence affected the firms' operations. As a result, our case study allows us to examine the microeconomic effects of the outbreaks of violence with a certain degree of detail.

Figures 1 and 2 show that—during the two-week episode of intense violence—the export volumes and revenues of firms located in affected regions dropped by 38% relative to comparable firms in non-affected regions. This effect can be separated into two distinct components. A 31% drop in export volumes, associated with displaced workers, and a 9% drop in the likelihood of exporting in a given day, mostly associated with transport problems.

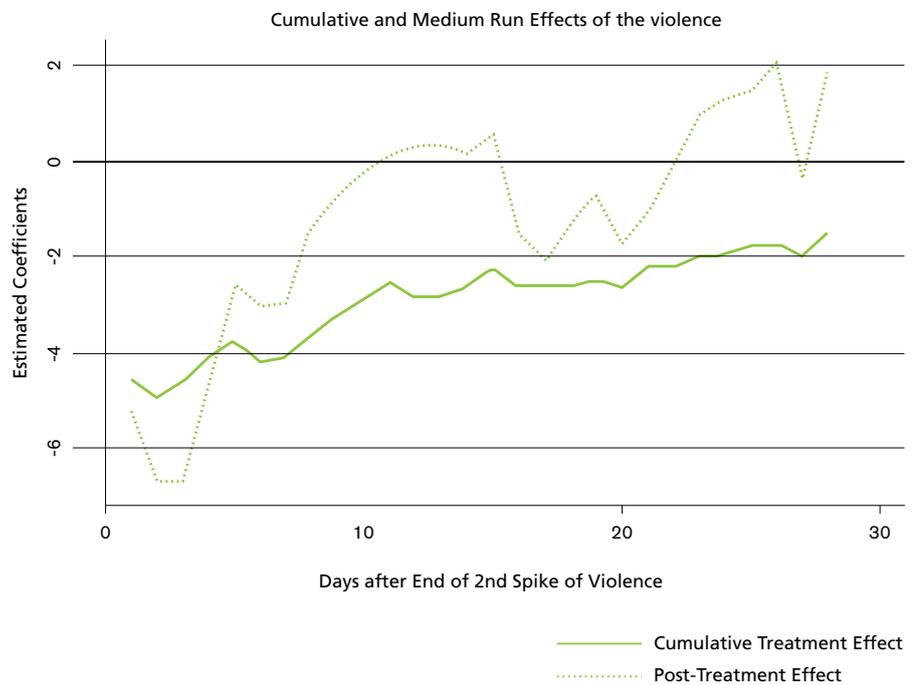
These average figures, however, conceal substantial differences in both the firms' exposure and response to the violence. In particular, large firms, firms with stable contractual relationships in export markets, and firms affiliated with the industry association were better able to handle the difficult situation. They were able to take a wide variety of measures—some cheap but others costly. For instance, hiring extra security for transportation and setting up camps and temporary housing for workers, to encourage them to come to work rather than stay on guard at home. On average, operating costs for these businesses grew by 16% (Ksoll, Macchiavello and Morjaria 2010).

**Figure 1. Effect of violence on export volumes**



**Notes:** The figure shows the median biweekly residual of a regression that controls for firm specific seasonality and growth patterns in conflict and in non-conflict locations for the 10 weeks before and 10 weeks after the first outbreak of violence.

**Figure 2. Effect of violence on export volumes**



**Notes:** The figure shows the estimated coefficients of the differential cumulative and medium-run effects of the violence following the second outbreak using the baseline specification as outlined in Ksoll et al. (2010).

## The effect of worker displacement

The flower industry is labour-intensive and employs mostly low-educated women in rural areas. Flowers are fragile and highly perishable; as a result, post-harvest care is a key determinant of quality. Workers, therefore, receive significant training in harvesting, handling, grading and packing, and they acquire skills that are difficult to replace in the short run.

At the peak of the violence, worker absence averaged 50% of the labour force, across firms. Our research shows that worker displacement was the main channel through which the violence affected production, rather than transportation problems. Firms responded to the violence by compensating the workers that came to work for the (opportunity) costs of coming to the farm during the violence period. Further firms increased working hours to keep up production despite severe worker absentees. As a result, despite the temporary reduction in the labour force, our estimates suggest that the weekly wage increased by 70% for the average firm which operated at a loss during the period of the violence.

At the average firm, about 50% of the labour force did not come to work for at least one week during the period of the violence. Those absent had higher costs of going to work during the violence; and our estimates suggest that these costs were more than three times higher than normal weekly earnings for the marginal worker. The estimates, therefore, suggest large welfare costs of the violence on workers. These effects mirror the effects on other parts of the population and the economy. Dupas and Robinson (2010) find large effects of the violence on income, consumption, and expenditures on a sample of sex-workers and shopkeepers in Western Kenya.

Yet, the situation of the flower firms also provides a silver lining at the horizon. The export-oriented flower firms, with relatively high margins had the incentive to coordinate, organising security for transportation to the export airports and organising camps for displaced workers. Firms who were affected by the violence sought to find ways to fulfil their contractual obligations with foreign buyers. The firms' commitments in foreign markets, moreover, kept on generating foreign currency, which was of vital importance for the country at a time in which the two other main sources—tourism and tea exports—were very badly hurt. Our findings, therefore, suggest that policies directed at upgrading agricultural products towards commercial exports might have beneficial side effects in mitigating the risk and consequences of violence in the poor and relatively un-diversified African economies.

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