

The Impact of Income Shocks on Sexual Behavior in the Commercial Sex Market: Evidence from Kenya's Post-Election Violence

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After a long and closely fought election campaign, Kenya held general elections on December 27, 2007. Despite concerns about serious flaws in the counting and tallying of votes, Mwai Kibaki of the Party of National Unity was announced the winner of the Presidential vote, by a narrow margin, over the opposition candidate Raila Odinga of the Orange Democratic. The announcement of the election results sparked widespread outrage and violence in many parts of Kenya. Looting, arson, and property destruction were rampant throughout January and February, 2008, and the violence is estimated to have resulted in over 1,000 deaths and the displacement of 300,000 people. After more than a month of negotiation to resolve the crisis, a power sharing agreement was finally signed on February 28, 2008, and a general calm has been restored.

The political crisis and resulting violence led to massive economic disruptions in January and February, as commercial transport was halted through much of the country and market centers were closed. These disruptions had large impacts on the lives of those that depend on the local markets for their livelihoods (such as market vendors or shopkeepers).

The disruptions also had severe, less obvious effects for one understudied population that particularly depends on markets functioning normally: commercial sex workers. Prices went down dramatically as the supply of clients decreased (Odeke, BBC News, January 4, 2008). Women were often unable to leave their homes and so many went weeks or months with no income whatsoever.

This paper has two main goals. First, we document the impact of the crisis on sex worker income and consumption, test whether sex workers were able to self-insure themselves against this unexpected income shock, and examine which types of women (i.e. richer women or women with larger sexual networks) were best able to cope with the shock. Second, we test whether the crisis made women more likely to supply unprotected sex to clients. Without adequate formal consumption smoothing devices, sex workers may resort to unprotected sex to make up for income shortfalls (Robinson and Yeh, 2008), at significant risk to their long-term health. Such a behavioral change imposes a long-term cost on women that is not easily observed. To our knowledge, this is the first paper to examine the impact of a large income shock on sexual behavior. As such, this research represents a contribution to the enormous literature on risk-coping over large, aggregate shocks.

Methodology and Preliminary Results

This paper utilizes a unique dataset collected by the authors in March, 2008 (immediately after the signing of the peace agreement) to estimate the impact of the disruption on the income, labor supply, and sexual behavior of informal sex workers in Busia District, Western Kenya. The dataset is drawn from a set of sex workers previously followed in Robinson and Yeh (2008) and constitutes a random sample of sex workers identified through a snowball methodology in July, 2005. We visited each sex worker in the sample and asked for retrospective data on income (in the sex sector and from other work), consumption, the number of meals consumed, the number of clients seen, and detail on sexual activities performed. We supplement this dataset with previously collected background information on each woman.

We make a first pass at estimating the impact of the crisis by simply comparing several dependent variables immediately pre- and post-crisis. We estimate equations of the following form, by fixed effects:

$$y_{it} = \beta_0 + \sum_{t=0}^5 \beta_t period_t + \mu_i + \epsilon_{it} \quad (1)$$

where y_{it} represents an outcome of interest (i.e. income, the number of clients seen, the number of sexual acts engaged in, etc.), $period_t$ is a dummy variable for the period in question (often a month, but sometimes 2-weeks intervals), μ_i is an individual fixed effect, and ϵ_{it} is the error term. We estimate a rough impact of the violence by examining the pattern of β_t s. If the violence had negative effects on sex workers, we would expect these coefficients to be negative for income measures. The inclusion of the fixed effect purges the coefficients from any bias caused by time-invariant, individual-level errors.

Although there is no counterfactual (that is, all women were affected by the violence), which makes it impossible to assign the β_t s to the violence itself rather than to some other factor, the pattern of results is quite striking and suggests that women were severely affected by the violence. We summarize the income results in Figure 1 and the sexual behavior results in Figure 2.

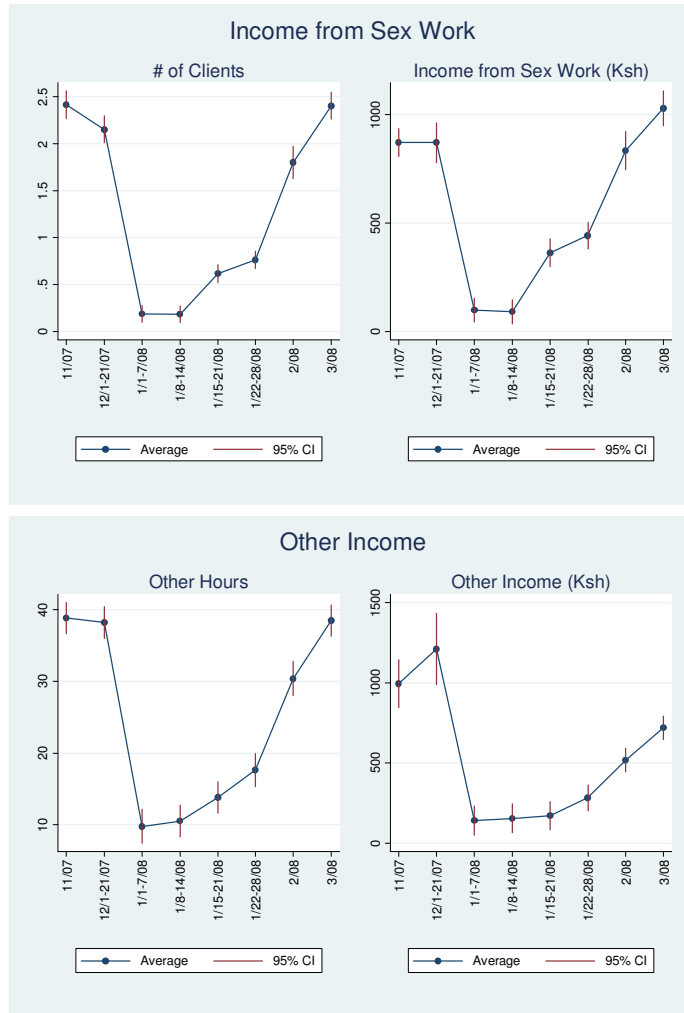


Figure 1: Weekly Income from Sex Work and Other Sources

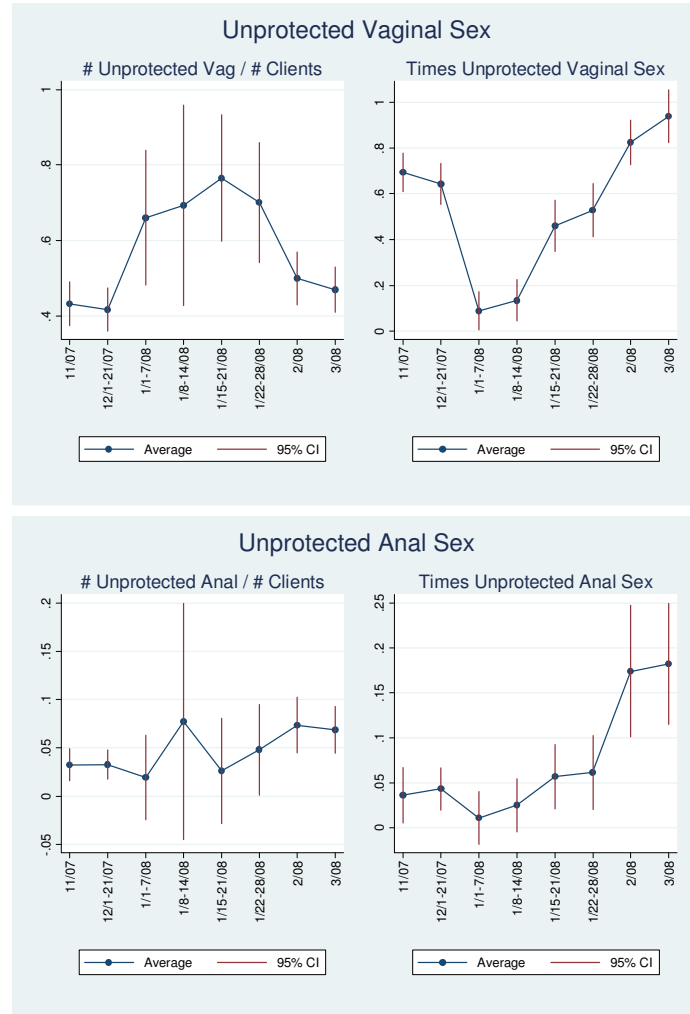


Figure 2: Sexual Behavior

These regression-adjusted estimates first suggest that the chaos had a sizeable effect on income, from sex work and other sources. Weekly income was 0 for the majority of women immediately after the crisis, and did not return to pre-violence levels until February. These shocks were not insured (not shown): women reduced their food and overall expenditures, and were more likely to skip meals. The pattern of results suggests that smoothing was far from perfect.

Most importantly, women responded to the crisis in large part by significantly increasing the amount of unprotected sex they had (Figure 2). In that Figure, we show the total number of times having unprotected anal and unprotected vaginal sex over the week, as well as the probability of having either type of unprotected sex with a given client. The pattern is telling: women dramatically increased the probability of having unprotected sex with a client – in fact, women had a higher number of total times unprotected sex in late January and early February, despite the fact that they were seeing a smaller number of clients.

Overall, these results suggest that the crisis had major impacts on behavior and, consequently, on long-term health and on the spread of HIV/AIDS. They strongly suggest that women lack effective risk-coping mechanisms, and that the provision of such mechanisms could dramatically increase health and welfare, for sex workers and their partners.

Before the conference, we plan to better explore these relationships. In particular, we plan to examine how the impact of the violence varied by sex worker characteristics, and examine other risk coping mechanisms women employed (such as selling livestock or other assets).

References

Odeke, Abraham (2008). "Kenya Chaos Hits Ugandan Economy." *BBC News*, January 4.

Robinson, Jonathan and Ethan Yeh (2008). "Transactional Sex as a Response to Risk in Western Kenya." mimeo, UC Santa Cruz.