

Quantifying the Impacts of Capturing Territory from the Government in the Republic of Yemen

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WORLD BANK GROUP

Poverty and Equity Global Practice

May 2018

Abstract

This article estimates how households were affected by the mostly non-violent capture of Yemen's capital in 2014 using a survey conducted as the capital was captured. Although socioeconomically advantaged households were initially better able to cope with the shock than other households, the capture resulted in a robust decline in expenditure for the entire population within three months. Struggling households turned to a number of coping strategies to meet their basic needs- they increasingly made purchases on

credit, increased their reliance on self-employment to deal with a decline in the economic climate, and reduced both the quantity and quality of foods consumed. Furthermore, women were affected by the capture more so than men. These results demonstrate that the capture of territory without wide-spread violence can result in a nearly immediate decline in standards of living and further illustrate the manners in which households were able to cope with the shock.

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Originally published in the [Policy Research Working Paper Series](#) on *May 2018*. This version is updated on *December 2021*.

To obtain the originally published version, please email prwp@worldbank.org.

Keywords: Conflict, Poverty, Gender, Yemen

JEL classification: D12, E24, J16, O12, O53

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1. Introduction

Fragile and conflict settings are becoming increasingly important to poverty reduction, where the share of the world's poor living in fragile settings is expected to increase from 17 percent in 2017 to approximately 60 percent by 2030.¹ Although there are numerous articles investigating the consequences of violent conflict on economic outcomes, there is less evidence regarding the non-violent capture of territory.² Furthermore, there is less evidence regarding how household behavior changes as these tumultuous events unfold- both the types of coping strategies used and their timing. A better understanding of both the degree to which standards of living might be affected by such uncertainty, and the manners in which households might cope with these events, can help identify interventions that might support households in these increasingly important settings.

This article addresses these issues by investigating the consequences of the unexpected and mostly non-violent capture of Yemen's capital, Sana'a, by Houthi rebels in September of 2014. This setting is unique, where the capture was very quick and accomplished with little violence.³ The rebels placed the president under house arrest and immediately took control of key government agencies- including those responsible for defense and finance. However, because there was little violence, and because the rebels were not initially concerned with many of the less prominent government agencies, the Central Statistical Organization was able to complete an ongoing multi-themed household survey as planned for the remaining three months of the year. This setting allows one to analyze the degree to which households were affected by the capture, the ways in which households coped with the shock, and the different impacts the capture might have had on different household members.

The capture of the city potentially affected households in a number of ways. First, the capture and resulting uncertainty potentially had an adverse impact on the economic climate and peoples' ability to earn a living. Second, although there was not widespread violence, the change in the rule of law did result in a perceived decline in safety that might have made it more difficult for individuals to leave their households. For example, there were reports of targeted violence by Houthi forces⁴, and there was an increase in terrorist events.⁵ And third, the capture of the city could have led to a disruption of supply chains and increases in the prices of goods and services.

Although the household survey continued following the capture of the capital, the identification strategy requires the sampling of households to not significantly change following the capture. The sampling design was such that respondents were randomized over space and time,

¹See (accessed March 2018): <http://www.worldbank.org/en/topic/fragilityconflictviolence/overview>.

²For a survey of the economic effects of conflict, see Blattman and Miguel (2010). Alternatively, a separate literature has investigated the effects of political instability, where the instability could be caused by reasons aside from conflict (e.g., Alesina et al. 1996; etc.).

³The city was captured after a 4-day siege that was mostly centered around a military base in the northern part of the city, and abruptly ended when the internationally-recognized government ceded control of the city. See (accessed July 2017): <http://www.bbc.com/news/world-29380668>.

⁴See (accessed July 2017): <https://www.hrw.org/news/2017/01/12/yemen-no-accountability-war-crimes>.

⁵See (accessed July 2017): <https://www.theguardian.com/world/2014/oct/09/yemen-suicide-attack-kills-20>.

and there should be no differences in the households surveyed in the months before and the months after the capture of the capital if the survey was conducted as planned (World Bank 2017). However, enumerators might have both consciously and unconsciously avoided more dangerous areas, which might have affected the representativeness of the sample.

Despite this potential challenge, there is little evidence that sampling was significantly affected. The sampling was reported to have been carried out as planned- all enumeration areas and initial households to interview were selected approximately a year before the city was captured, none of the enumeration areas were replaced, and there were no reports of difficulties in completing the survey in the final quarter. Also, there is little difference in relatively fixed household characteristics between households surveyed prior to the capture to those surveyed after, corroborating the reports of the sampling not being significantly affected.

Given this setting, this article focuses on the evolution of household expenditure following the capture, as well as the ability of households to cope with the shock. Following the capture of Sana'a, one cannot reject the hypothesis that average expenditure did not initially change in the first month. However, by the third month following the capture, expenditure had significantly dropped in the capital relative to the rest of the country.

Importantly, the timing of the change in expenditure varied based on pre-existing household characteristics. Households where the head had not completed primary school immediately decreased their expenditure, and this decline remained for the rest of the time period under analysis. Whereas, households where the head finished primary school were able to maintain their expenditure in October, but decreased their expenditure by December. Although the household survey did not collect information on savings, this evolution of expenditure is consistent with better-off households being able to utilize savings to maintain expenditure, but other households having to sacrifice expenditure and immediately utilize other coping strategies.

Additionally, this article analyzes a number of different types of coping strategies that households employed during this time. First, less educated households, who were not able to maintain their expenditure immediately following the capture of the city, significantly increased their purchases using credit from local stores. The increase in these types of arrangements likely helped these households at least initially maintain their food consumption following the shock.

Second, there was a large change in the nature of employment in the city that began immediately after the capture of the city. There is some evidence of a decline in household wage income, but little evidence of a change in the overall number of households that reported working in the past week. Rather, there was a large increase in the share of households that turned to self-employment following the capture, and the share turning to self-employment continued to increase throughout the occupation. The results are consistent with households turning to self-employment as a way to cope with the poor economic climate, as the earnings of self-owned enterprises declined and the vast majority did not earn enough to reach the poverty line following the capture.

Third, there was a significant worsening in both the quantity and quality of food that was consumed during this time period. Initially, there were not large changes in micro and macro-

nutrient consumption following the capture. However, by the third month, the magnitude of the changes increased and also were more precisely estimated. Furthermore, the decline in calorie consumption suggests that households were significantly struggling by the third month of the occupation, as a number of settings have demonstrated that diet quality is much more responsive to shocks than the quantity of calories (e.g., D'Souza and Joliffe 2012; D'Souza and Joliffe 2014; etc.).

Lastly, in addition to the decline in expenditure and the identification of a number of key coping strategies used by households, there is evidence that women fared particularly poorly in this setting. The capture of the city had adverse consequences on women's decision-making reported in the survey, where women had less control over measures of spending, and this control was transferred to primarily the male household head. The decline in control over food expenditure was especially pronounced, which was also one of the areas of spending where women in Sana'a had the most control prior to the capture of the city. This decline in decision-making is consistent with women being less able to leave the household than men due to safety concerns, where the change was immediate and did not get worse as household expenditure significantly declined in the later months of the occupation.

There are two primary contributions of these results. First, this article presents estimates of the economic effects of the capture of territory without wide-spread violence. Although previous settings have demonstrated that the severity of violence is correlated with economic activity (e.g., Abadie and Gardeazaba 2003; Guidolin and La Ferrara 2007; Besley and Mueller 2012; Klapper et al. 2013; Singh 2013, Amodio and Di Maio 2017, etc.), there is less evidence of how types of fragility that are largely non-violent might have affected household living standards. Furthermore, this setting allows a thorough investigation of the type of coping strategies used and their timing. Despite the significant reliance on coping strategies beginning immediately after the occupation, the estimates suggest that expenditure significantly dropped for a majority of individuals within a relatively short time period.

Lastly, the decline in women's decision-making demonstrates an important way in which fragility might impact individuals within the household differently. Many news organizations and humanitarian agencies report that, due to economic necessity, women become more involved in decision making and economic activity during conflict, but then revert back to the pre-conflict baseline once the conflict ends. For example, news reports in Yemen following the escalation of conflict in 2015 suggest that women are being forced to take a more active role in household decisions and income generation as the humanitarian situation became more dire.⁶ However, to my knowledge there has been little corroboration of these results.⁷ These results, along with the fact that there was little change in the small labor force participation of women during the occupation, contrast with the narrative of more responsibilities for women during

⁶For an example from Yemen following the escalation in conflict in 2015, see <http://www.aljazeera.com/news/2015/12/yemen-widows-weakest-victim-war-151215061011411.html>. However, these reports do not suggest that women are necessarily treated better, but rather that their responsibilities have increased.

⁷Mkutu (2008) demonstrates that an increase in widow-led households necessarily led to more participation of women in Uganda in a pastoral setting.

conflict.

This article is structured as follows. Section 2 describes the Yemen context and various manners in which the capture of territory from the government might affect households in non-violent settings; Section 3 describes the data; Section 4 describes the empirical strategy; Section 5 presents estimates of the change in expenditure and the change in coping strategies following the capture of the city; Section 6 presents estimates of the change in intra-household decision making; and Section 7 concludes.

2. The Capture of Sana'a and the Potential Effects on Households

The causes of the conflict in Yemen are complex and involve a number of factors. The Houthi rebels, originating from the northern governorate of Sa'dah, had repeatedly fought against the national government beginning in the mid 2000's. The Houthis' movement began as a theological movement that protested the national government. However, following this protest, the government used the military to try and arrest their leader, which led to a number of wars during which the group made few gains, and was repeatedly beaten back by the military.⁸

However, following the Arab Spring in 2011, the government led by Ali Abdullah Saleh was forced to hand over power to his vice president and a transitional unity government. Using this political vacuum and the unpopularity of the transition government, the Houthis began making military gains against the internationally-recognized government after its formation in 2012 in the hopes of having more representation in the transitional government. These military gains eventually led to the quick capture of the capital Sana'a in September of 2014, and then eventually an attempt to capture the southern part of the country.^{9,10}

The capture of Sana'a resulted in a number of shocks that could have affected households. First, the political uncertainty likely significantly impacted economic activity and investment. Although the evacuation of foreigners accelerated at the beginning of 2015¹¹, it is possible that the climate immediately following the capture of Sana'a could have caused many international

⁸See (accessed July 2017): <http://www.aljazeera.com/news/middleeast/2014/08/yemen-houthis-hadi-protests-201482132719818986.html>.

⁹See (accessed July 2017): <http://www.bbc.com/news/world-middle-east-29319423>.

¹⁰Some have posited that one of the potential reasons that the capture of the city was accomplished so quickly and with little violence is that it is possible that the military gains were aided by the former president, Ali Abdullah Saleh, who might have directed loyal military forces to stand down in the face of the Houthi aggression (see (accessed July 2017): <http://www.reuters.com/article/us-yemen-security-saleh-idUSKBN0MM1MV20150326>). Although it seems unlikely that the former president who waged many wars against the Houthis would then form an alliance with them, some have speculated that they each had a set of common rivals and could develop a mutually beneficial arrangement (see (accessed July 2017): <https://intpolicydigest.org/2017/05/11/houthi-saleh-alliance-convenience/>). This potential alliance is further corroborated by the targeting of enemies of both the Houthis and the former president by Houthi forces after the capture of Sana'a (see (accessed July 2017): <http://america.aljazeera.com/articles/2014/9/25/houthi-yemen-takeover.html>), the relative ease with which the Houthis were making military gains against a government that were elusive before Saleh was forced out of office, reports of the Yemen army fighting along the Houthi rebels (see (accessed July 2017): <http://www.reuters.com/article/us-yemen-security-saleh-idUSKBN0MM1MV20150326>), and a formal announcement of an alliance after the conflict escalated in March of 2015 (see (accessed July 2017): <http://www.aljazeera.com/news/2015/05/cloneofcloneofcloneofstrikes-yemen-saada-breach-150510143647004.html>).

¹¹See (accessed August 2018) <https://www.bbc.com/news/world-middle-east-32162364>.

businesses and foreign governments from removing some of its personnel from the country. The country already suffered from significant underemployment even before the capture of the capital (e.g., World Bank 2017), and one of the goals of this article is to investigate the degree to which the political uncertainty could have exacerbated these conditions.

Second, news reports suggest that safety was negatively impacted¹², which likely affected household members' ability to leave their households and seek employment opportunities. The decline in safety reported by news agencies is further corroborated by the ongoing household survey that was being conducted as the capital was captured. The survey included a subjective welfare module, which separately asked the head of the household and their spouse whether they were satisfied with security. Following the capture of the capital, there was a significant decline in the share of households where either a household head or spouse reported to be very satisfied with security from 11.6 percent of households to 1 percent, and this decline was not observed in the rest of the country. Importantly, this decline in safety might have had a worse impact on women than men, where not a single woman interviewed following the capture of the city (out of 235 total) reported to be very satisfied with security, whereas women were able to report being satisfied with other aspects of their life.

And third, the supply chains providing goods and services to the capital city were likely disrupted. Prior to the conflict, Yemen relied on international sources for the vast majority of its consumption, where approximately 90 percent of its food was imported from abroad (e.g., World Bank 2017). Imports to the capital city primarily came through a port in Al Hudaydah, and were then transported by truck to the capital city.¹³ Given the difficulty and uncertainty of transporting food and other goods across new checkpoints where safety and access were not guaranteed likely made it more difficult for goods to reach the capital city.

There is evidence consistent with this being a significant problem in Sana'a following the capture of the city. Utilizing average prices collected at markets in the city by the World Food Programme (WFP) each month for 14 food items and commodities, there was a significant increase in the price of a number of goods following the capture of the city. In particular, figure 1 demonstrates that fresh food items and fuel, all of which are imported on a regular basis from abroad, had large price increases in the months following the capture of the city that were not evident over the same time period in the two years prior to the capture of the city.

Thus, at exactly the time that prices of necessary goods and services were potentially rising, households potentially had a decline in household income. A vast literature has investigated the potential impacts of adverse income shocks across a number of dimensions. For example, it has been shown that adverse income shocks adversely affect the quality of food consumption but not overall calorie consumption (e.g., Block et al. 2004), can reduce school attendance amongst school-aged children (e.g., Edmonds et al. 2009; etc.), and potentially force households to sell a

¹²See (accessed July 2017): <https://www.hrw.org/news/2016/11/17/yemen-abusive-detention-rife-under-houthis>.

¹³See FAO's summary of food imports in Yemen at (accessed July 2017): <http://www.fao.org/giews/countrybrief/country.jsp?code=YEM>.

limited share of productive assets and reduce possible future income generation (e.g., Fafchamps et al. 1998). Alternatively, a number of contexts have demonstrated that household welfare significantly declines in the face of an adverse food price shock, where households reduce diet quality (e.g., Brinkman et al. 2009; D'Souza and Jolliffe 2012; D'Souza and Joliffe 2014).

Based on these other contexts, households in Sana'a might also be forced to adopt a number of these coping strategies. However, the coping strategies in this circumstance might be substantially different. For example, households might find it difficult to sell productive assets given the overall poor condition of economic activity; or, for example, it might be difficult to further sacrifice diet quality given the widespread food insecurity even before the capture of the city (e.g., WFP 2012).

Importantly, these shocks- both the potential tightening of household budgets and the decline in safety- might have significantly different effects on women in the household than men. For example, increasing the constraints on households tends to lead to an excess burden being placed on vulnerable members of the household in a variety of settings (e.g., Rose 1999; Khanna et al. 2003; Miguel 2005; D'Souza and Tandon forthcoming; etc.), which could place an excess burden on women in Yemeni households given the country is typically ranked as having one of the highest (if not the highest) gender gaps in the world (e.g., World Economic Forum 2017). Furthermore, the potential increase in prices might similarly force households to substitute more home-produced goods and services for market-produced goods and services, which would most likely place a higher time burden on household women (e.g., World Development Report 2012). Additionally, the decline in safety might make it more difficult for women to leave the household and lead productive lives than men. In particular, women's movement and freedom are reported to be significantly curtailed in the country due to safety and family concerns (e.g., World Bank 2012), suggesting that they might even be less free to leave the household and make decisions following the introduction of conflict.

However, it is important to note that the effects of these shocks on women are empirically ambiguous. The decline in household resources might sufficiently burden households such that women are forced to take up income generating possibilities and other responsibilities that they were unable to do so before the conflict. As discussed in the Introduction, many news organizations and humanitarian agencies report that women are forced to take on more responsibilities, both inside and outside the household, in response to conflict.

3. Data

The 2014 Household Budget Survey (HBS), conducted by the Central Statistical Organization of Yemen with support from the World Bank, was in progress as the Houthi rebels captured the city of Sana'a. The survey's primary purpose was to update the official poverty rate in Yemen, which had not been updated since 2005. Given the relative lack of violence in the capture of the capital city, the survey was administered before, during, and after the capture of the city. The field work was conducted between January and December of 2014, and the total sample size was of 9391 households.

However, given the sampling design, the survey is able to be used to identify how households were affected by the capture. First, the sampling design was such that respondents were randomized over space and time, and there should be no differences in the households surveyed in the months before and the months after the capture of the capital if the survey was conducted as planned (World Bank 2017).¹⁴ Second, the survey is representative at the governorate/capital city level.

The 2014 HBS included a complete set of modules, including standard information on household consumption, employment, education, health, etc. that allow a thorough investigation of expenditure and household coping strategies. Appendix 1 presents summary statistics of expenditure and coping strategies, and demonstrate that households in Sana'a were far better off than the rest of the country. Poverty in Sana'a was approximately one-quarter of the rate in the rest of the country, and all other measures were similarly better in the capital city. Additionally, women were significantly more empowered in the capital city than in the rest of the country, but subjective welfare was approximately equal across all regions of the country. However, it is important to place these characteristics in historical context- poverty has significantly increased in Yemen since 2005, in part driven by the political uncertainty of 2012 and also the sharp increase in food prices beginning in 2011 (e.g., WFP 2012; Dang and Ianchovichina 2016; World Bank 2017).

Another advantage of the 2014 HBS is that there was a nearly identical 2005 HBS that allow one to conduct additional robustness checks. One can investigate whether changes following the capture of Sana'a were potentially due to seasonal factors, or due to a country-wide shock as opposed to the capture of Sana'a. In particular, the 2005 data allow an investigation of the difference-in-difference estimate of expenditure in Sana'a following the capture of the city. Additionally, the data further allow us to investigate the triple difference as well, where the difference-in-difference estimate in the city of Sana'a is compared to the difference-in-difference in the rest of the country. However, the women's decision-making module was not implemented in the 2005 survey, and specifications analyzing those measures can only analyze the difference in Sana'a following the capture of the city in 2014, and compare that difference to the change in the rest of the country.

Although the household survey continued following the capture of the capital, the identification strategy requires the sampling of households to not significantly change following the capture. Importantly, given the lack of violence, the survey was reported to have been carried out as planned. All enumeration areas and initial households to interview were selected approximately a year before the city was captured, none of the enumeration areas were replaced, and there were no reports of difficulties in completing the survey in the final quarter.

Despite these reports of little trouble, it is always possible that enumerators consciously

¹⁴Roughly equal numbers of households were surveyed in each month, where 78 households were surveyed in October, 80 households were surveyed in November, and 77 households were surveyed in December. A total of 235 households were surveyed after the capture of Sana'a was complete and 269 households were surveyed in the 3 non-Ramadan months leading up to the capture. However, the responses to the women's decision-making module were missing for one of the households in the pre-period, leaving one less observation in those specifications than the others. However, all results are robust to dropping that household from all specifications.

or unconsciously avoided more dangerous areas when replacing households. However, investigating the possibility, there does not appear to be any evidence that households surveyed before the capture were significantly different in observable characteristics that are unable to adjust to the conflict. Table 1 presents observable characteristics of households surveyed in the third and fourth quarter of 2014. Households surveyed in the third quarter all began their surveys prior to the capture, and households surveyed in the fourth quarter all began their surveys after the city had been captured. Consistent with the capture having little effect on the sampling, column (3) demonstrates that there is little difference between difficult-to-adjust characteristics following the capture of Sana'a. Additionally, column (4) presents estimates of a regression of a fourth quarter indicator on each of the variables analyzed in the table (restricting the sample to households surveyed in the third and fourth quarter), and demonstrates that one cannot reject the hypothesis that the all variables are jointly uncorrelated with the quarter indicator at standard significance levels (p-value of 0.366).¹⁵

While it has been documented that there are no average differences between the households sampled before and after the capture, there still might be differences in specific months. Figures 2a-2c address this concern by reporting confidence intervals for the means of a wide variety of household characteristics are reported by month, as well as the average pre-capture means of each of the variables.

Figures 2a-2c demonstrate that the 95 percent confidence interval of each monthly estimate of difficult-to-adjust control variable contains the pre-capture mean of the variable in the vast majority of instances. Of all the 95 percent confidence intervals reported (180), the pre-capture mean is contained in 96.7 percent of them (174). Importantly, of those confidence intervals that do not contain the pre-capture mean, the distance from the bound of the interval to the pre-capture mean is very small; there is no evidence that any particular variables had a large proportion of monthly confidence intervals that did not contain the pre-capture mean (the maximum for any variable is 2 of the 12 monthly confidence intervals not containing the pre-capture mean); there is no evidence that the post-capture months of October-December were contributing the majority of the instances where the pre-capture means were outside of the confidence intervals (1 of the 7 total instances were from those months); and there is little evidence that the confidence intervals were uniformly larger following the capture of the capital.

However, there is an important data issue to highlight that might affect estimating the impact of capturing Sana'a. Ramadan occurred primarily in July in 2014, and this might bias expenditure during the pre-period given that consumption patterns are significantly different during Ramadan (e.g., Joliffe and Serajuddin 2012, World Bank 2017). Thus, in specifications that use only the 2014 survey, all households surveyed during Ramadan are excluded from the sample, and the baseline specification uses the three non-Ramadan months prior to the capture of the capital as the pre-period to compare against the three post-capture months

¹⁵The results are similar when comparing changes between the third and fourth quarter in the rest of Yemen as well (see Appendix 2). The results are also similar when comparing the summary statistics of quarter 1 and 2 to quarter 4 (see Appendix 3).

of the survey. However, in specifications that compare the 2014 survey to the 2005 survey, households surveyed during July (Ramadan in 2014) or October (Ramadan in 2005) in either survey were excluded. However, it is important to note that the estimates are qualitatively identical when all interviewed households are included.

4. Empirical Strategy

Based on this setting, this article utilizes a difference-in-difference strategy to analyze the effects that the capture of Sana'a had on household expenditure and coping strategies. Figure 3 illustrates the strategy by plotting average annual household expenditure and a number of key coping strategies by month of the survey. Expenditure in Sana'a was maintained in October of 2014 on average, but by November and December, there was a sharp decline in expenditure such that there was little difference in expenditure between the city of Sana'a and the rest of Yemen despite the poverty rate being approximately four times less in the city of Sana'a (Appendix 1). Importantly, over the same time period, there was little change in expenditure in the rest of Yemen, and this pattern is similar for a number of other coping strategies that are observable in the survey.

Formalizing this empirical strategy, this article estimates the following specification:

$$(1) \quad Outcome_{ir} = \sum_{j=1}^3 [\beta_j Post_Month_j_{ir} * Capital_{ir}] + \alpha Y_{ir} + \gamma X_{ir} + v_{ir}$$

where i refers to household, r refers to region, $Post_Month_j$ are indicators equaling one if the household was interviewed during the j 'th month following the occupation¹⁶, $Capital$ denotes an indicator equal to one if the household is from the city of Sana'a, Y includes all lower-order terms (each of $Post_Month_j$ and $Capital$), and X is a vector of individual control variables.¹⁷ The baseline estimates restrict the households in specification (1) to households surveyed in the three non-Ramadan months prior to the capture and the three months following the capture of the city that the survey continued. Standard errors are clustered at the PSU level, and observations are weighted to make the estimates representative of the population. The coefficients of interest are β_j , which represent how much larger the percentage point change was in Sana'a (relative to the three months before the capture) than in the rest of Yemen for a variety of outcomes following the capture of the city.¹⁸

¹⁶Specifically, $Post_Month_1$, $Post_Month_2$, and $Post_Month_3$ respectively are indicators equaling one if the household was surveyed in October, November, and December.

¹⁷Control variables include household size, an indicator for whether the household head is married, the household head ever attended school, an indicator if the household head was a smoker, an indicator if the household head chews Qat, the years of schooling of the household head, an indicator whether the household has a child, an indicator if the household's dwelling is made of cut stone, an indicator equaling one if the walls if the household's dwelling were made of other material, an indicator equaling one if the household's roof that was made of reinforced concrete, an indicator equaling one if the household's roof was made of wood and concrete, an indicator equaling one if the household's roof was made of mud, an indicator if the household's floor was made of concrete, an indicator equaling one if the household's floor was made of tile, an indicator equaling one if the household had a flush toilet, and an indicator if the household was rural.

¹⁸Although the baseline specification is restricted to balance the number of pre and post-months and to use the pre-months that are closest in time to the capture of the city, Appendix 4 demonstrates that the results

However, in addition to estimating specification (1), this article also presents estimates of the simple difference in Sana'a following the capture of Sana'a to demonstrate the results are being driven by changes in Sana'a as opposed to changes in the rest of Yemen:

$$(2) \quad Outcome_i = \sum_{j=1}^3 [\beta_j Post_Month_j_i] + \gamma X_i + \epsilon_i$$

where all variables are the same as above.¹⁹ Specification (2) is restricted to households from the city of Sana'a, and the coefficients of interest are β_j , which represent the percentage point change in a variety of outcomes following the capture of the city relative to the three months before the capture.

As an additional robustness check, this article also estimates specifications that allow the outcome to vary by month to better demonstrate when the changes in expenditure and coping strategies only occurred:

$$(3) \quad Outcome_{ir} = \sum_{j=1}^5 [\beta_j Month_j_{ir} * Capital_{ir}] + \alpha Y_{ir} + \gamma X_{ir} + v_{ir}$$

where $Month_j$ are indicators equaling one if the household was interviewed during the j'th month following the first month used in the base period²⁰, and all other variables are the same as above.²¹ The coefficients of interest are β_j , which represent how much larger the percentage point change was in Sana'a for a variety of outcomes month-by-month, including the two months leading up to the survey and the three months after. In order to attribute the decline in expenditure to the capture of the city, it is important to verify that expenditure was not trending differently leading up the capture. In such a scenario, it is possible that the expenditure declines could be uncovering the response to a shock that actually led to rebels capturing the city, as opposed to uncovering the response to the capture.

5a. Decline in Expenditure Following the Capture of the Capital

Table 2 presents estimates of how annualized expenditure changed following the capture. Estimates of specification (1) are presented in columns (1)-(2). Column (1) reports a sparse specification including only lower-order terms and not the control variables; and column (2) adds control variables to absorb unobserved heterogeneity and increase the precision of the

are qualitatively identical regardless of which months are used to construct the pre-period.

¹⁹Control variables are identical, but the rural indicator is omitted given that all households in Sana'a are urban.

²⁰Specifically, $Month_1 - Month_5$ are month indicators for August-December respectively.

²¹The appendix also investigates specifications that can better account for seasonality. Specifically, Appendix 4 estimates a difference-in-difference specification comparing the change in Sana'a in 2014 to the change in Sana'a in 2005; and Appendix 5 also estimates a triple difference specification that compares the difference-in-difference in Sana'a (between 2005 and 2014) to the difference-in-difference for the rest of Yemen. All results from those specifications are qualitatively identical to the baseline specification. However, given the long time period between the 2005 and 2014 surveys and the numerous events that happened between- political transition and food price shock- this article focuses on estimates from specification (1) that compare the change in household outcomes in the city of Sana'a to the rest of Yemen using only data from the 2014 survey.

estimates.

In both specifications, expenditure in the three months following the capture of the city is less than in the three months leading up to the capture. However, the change for households surveyed in October and November are lower in magnitude and less precisely estimated than the change for households surveyed in December. In the most complete specification reported in column (2), households surveyed in December had an expenditure that was 35.9 percentage points lower than in the three months leading up to the capture of the city. However, despite the increase in magnitude and precision as the occupation progresses, one can reject the hypothesis that the three post-conflict coefficients jointly equal zero at standard levels of significance (p-value of 0.039).

It is important to verify that the decline in expenditure is being driven by a reduction in expenditure in Sana'a, as opposed to a change in consumption in the rest of Yemen. Estimates of the single difference (specification (2)) in Sana'a are presented in column (3) of table 2. The estimates are nearly identical to the difference-in-difference comparing the change in Sana'a to the rest of the country, which suggests that the difference is being driven by a large change in expenditure in Sana'a and little change in expenditure in the rest of Yemen. The similarity of the coefficients in columns (2) and (3) are also consistent with Figure 3, which shows a similar pattern. Thus, the baseline estimates do not appear to be capturing a shock that is common to the entire country.

Additionally, it is important to verify that these changes in expenditure are being driven by the capture of Sana'a, and not uncovering a pre-existing change in expenditure. Column (4) of table 2 reports estimates of a specification similar to specification (3), but restricts the sample only to households surveyed before the capture; and column (5) reports estimates of the month-by-month difference in expenditure (specification 3).

The estimates in columns (4) and (5) are consistent with expenditure only changing in the months after the capture of Sana'a, and the change in expenditure being largest and most precisely estimated by December. In both columns (4) and (5), the magnitude of the estimates on the pre-capture months- August and September- are smaller than the change found in November and December, and one cannot reject the hypothesis that both coefficients are jointly equal to zero at conventional significance levels (p-values of 0.779 and 0.767 in columns (4) and (5) respectively). Furthermore, the coefficient estimates of the post-capture months (October, November, and December) are nearly identical in magnitude to the most complete baseline specification in column (2), and the change in expenditure only becomes statistically different from zero by December (figure 4).

Table 2 further decomposes expenditure into expenditure on food and expenditure on non-food items in columns (6) and (7) respectively. The estimates demonstrate that the changes in each type of expenditure are qualitatively identical to the baseline estimates in column (2). Importantly, expenditure on food was collected in a two-week diary, and all expenditure on food in households surveyed in post-capture months was collected after the occupation began. Alternatively, non-food expenditure had a number of different recall periods- two weeks, one

month, three months, and one year depending on the type of expense. Given the similarities between the change in food expenditure and the total household expenditure, it does not seem likely that the longer reference period of some consumption items is affecting the timing of the expenditure declines being uncovered in the baseline pattern.

Lastly, table 2 investigates potential heterogeneity in the drop in expenditure. Specifically, column (8) re-estimates the baseline specification, but restricts the sample to households where the head finished primary school; and column (9) re-estimates the baseline specification, but restricts the sample to households where the head did not finish primary school. The estimates in columns (8) and (9) demonstrate that the timing of expenditure drops varies between the two types of households. Less-educated households observe an immediate drop in expenditure in October, while one cannot reject the hypothesis at conventional significance levels that more educated households did not reduce their expenditure in October.²²

Thus, although there is an average drop in expenditure for all households by December, there is significant heterogeneity in when this decline in expenditure occurred. The results are consistent with better-off households being better able to cope with the occupation initially than less better-off households. Although the survey did not capture savings, one potential explanation for this pattern was that better-off households might have been able to rely more on savings than other households.

5b. Brief Discussion of Interpreting the Expenditure Changes

The above expenditure patterns are consistent with the declines being caused by the capture of Sana'a. It is important to note that these results are robust to two important concerns. First, one might be worried about the possibility that the poor economic conditions might have led to the capture of the city by the rebels, and the above patterns are capturing this pre-existing trend (e.g., Miguel et al. 2004). However, the Houthi capture of Yemen's capital city is a setting in which this concern is minimized. First, expenditure was not trending in the months prior to the capture of Sana'a. Only after the capital was captured did expenditure begin to change. Additionally, the capture of the city appears to be more facilitated by powerful politicians rather than the will of either the rebels or the population in response to economic conditions. Although the Houthis took advantage of the anti-government protests in September²³, their success seems more related to the fact that the majority of the army loyal to the former president did not resist the assault.²⁴ This is corroborated by the fact that the Houthis fought and lost numerous wars with the government over the prior decade, but only once the army did not resist their advances were they able to achieve more success.²⁵

Second, as is likely consistent with other conflict settings, the time immediately prior to

²²See Appendix 6 for estimates of a specification that interacts the difference-in-difference coefficients with an indicator that the household did not finish primary school.

²³See Al Jazeera (Accessed July 2017): <http://america.aljazeera.com/articles/2014/9/25/houthi-yemen-takeover.html>.

²⁴See (accessed July 2017): <http://www.reuters.com/article/us-yemen-security-saleh-idUSKBN0MM1MV20150326>

²⁵See (accessed July 2017): <http://www.aljazeera.com/news/middleeast/2014/08/yemen-houthis-hadi-protests-201482132719818986.html>.

the conflict was turbulent. In particular, the government temporarily removed a large fuel subsidy for the month of August that not only supported direct consumers of fuel, but also supported the transport of goods across the country and the use of fuel as an intermediate input of production. However, this temporary removal of the fuel subsidy did not appear to be driving the results. First, there was little-to-no immediate impact on expenditure for that month, where these outcomes only changed following the capture of Sana'a. Second, the subsidy removal was targeted at the entire country and not just Sana'a, whereas all the results analyzed here show a pattern of a clear change in Sana'a coupled with little change in the rest of the country.²⁶

5c. Coping Strategies

Given the unique opportunity to exploit a number of modules in the survey, this article further analyzes how households potentially coped with the capture of Sana'a. First, Table 3 re-estimates specification (3), but utilizes a number of indicators on the number, value, and source of loans made to the household.

First, the survey breaks up loans by source- where one of the most common sources of loans in the country was for households to make purchases on credit from a trader. Column (1) of table 3 estimates the change in the loans made from traders, and column (2) estimates the change in loans made from other sources (primarily relatives, friends, and banks). Column (1) demonstrates that there was an increase in the share of loans made by traders in all three months. However, the estimates are imprecise, and one cannot reject the hypothesis that there was no change in loans from traders over the entire post-conflict period (p-value of 0.245). Column (2) demonstrates very little change in loans from other sources as well.

However, when breaking up the pattern by education of the household head in columns (3)-(8) of table 3, a clear pattern emerges. Columns (3)-(5) respectively demonstrate that for households where the head did not finish primary school, there was a large increase in the number of loans from traders, there was a higher likelihood of a household having at least a single loan from a trader, and there was a larger total amount borrowed from traders. One can reject the hypothesis that there was no change in these three variables describing loans from traders (number of loans, likelihood of having a loan, and the value of loans) over the entire post-capture period at the one-percent significance level (p-values of 0.005, 0.009, and 0.008 respectively). Additionally, one can see in columns (3)-(5) of table 3 that the increase in loans from traders began immediately following the capture, which is also a time when these types of households were struggling and had lower expenditures (table 2, column 9).

However, columns (6)-(8) of table 3 demonstrate that there was little change in borrowing from traders for households where the head finished primary school. The magnitude of the coefficients are lower, and they are more imprecisely estimated. Although there are likely many coping strategies that are not observable using this household survey, the ones that are observable suggest there is heterogeneity in the types of coping strategies used by different

²⁶Appendix 7 further demonstrates that the change in expenditure is similar when using the matching estimator proposed by Abadie et al. (2004).

types of households throughout the occupation.²⁷

Alternatively, table 4 further investigates coping strategies involving employment. Column (1) re-estimates specification (3) but uses total income from wage activities in the past week as the dependent variable and restricts the sample to households that reported any wage activity, and columns (2)-(6) estimate the same specification but use measures of the amount worked by household members and utilize the entire sample. Column (1) demonstrates that there is some evidence of a wage decline following the occupation. Although the magnitude of the estimates suggest that the potential wage declines were large, the estimates are not precise, and the joint significance of the post-occupation effects are only bordering statistical significance (p-value of 0.133).

Furthermore, there was little evidence of individuals working less during this time period as expenditure significantly declined. Column (2) demonstrates that there appears to be very little change in the likelihood that at least one member of the household worked in the past week- the post-capture coefficients vary in sign, and are close to zero. Column (3) demonstrates that there was actually an increase in household heads reporting to having worked in the past week in December; and column (4) demonstrates that there was a decline in the share of household heads where non-heads reported working. However, the estimates in columns (4) and (5) are not precisely estimated, and it is difficult to claim that there was a significant reduction in the likelihood of working for any household member. Furthermore, columns (5) and (6) are qualitatively identical to the estimates in columns (4) and (5), demonstrating that there was little change to the total number of hours worked.

The lack of strong employment and wage effects as expenditure significantly dropped is puzzling. Furthermore, although estimates on the likelihood of heads working and the number of hours worked are imprecise, the sign and magnitude of the coefficient by December in column (3) is such that one can rule out the possibility of a large decline in their labor supply as expenditure dropped the most.

However, one can observe large changes to the nature of employment. Namely, there was a large increase in the share of households reporting owning their own enterprise. Column (7) demonstrates that there was a 17 percentage point increase in the share of households reporting owning their own enterprise in October, an 11.9 percentage point increase in November, and a 29.1 percentage point increase in December. One can reject the hypothesis that the three post-conflict coefficients are jointly zero at the one-percent significance level. Furthermore, one can see the large increase in Figure 3, as the share of households reporting their own enterprise nearly doubled to over 50 percent of the population in Sana'a between October and December.

At the same time that there was a significant increase in the share of individuals who were residing in households reporting their own enterprise, there is evidence that suggests that households were turning to self-employment due to a less favorable economic climate rather than households taking profitable opportunities. First, column (8) of table 4 re-estimates spec-

²⁷See Appendix 6 for estimates of a specification that allows the effects of the occupation to vary based on whether the household head finished primary school.

ification (3), but restricts the sample to households that report owning their own enterprise. The estimates in column (8) demonstrate that the income of self-owned enterprises that reported any income actually declined by December, suggesting that enterprises became even less profitable as more of them were started. Second, of the self-owned enterprises reported following the occupation of Sana'a, approximately 87 percent of them reported income that would not allow the households to reach the national poverty line (162,528 annual Yemeni Riyals per person).

In addition to investigating loans and employment, this section further investigates changes to food consumption following the capture of Sana'a. Table 5 reports estimates from specification (3), but uses the share of total expenditure devoted to food and consumption of all micro and macro-nutrients for which estimated average requirements are reported (Institute of Medicine of the National Academies 2006). There is little change to the share of expenditure devoted to food (row 1)- the estimate is positive, but one cannot reject the hypothesis that there was no change in the share following the capture. However, there is a significant drop in the consumption of nearly all micro and macro nutrients by December (14 out of 18 categories are statistically different from zero at the 10 percent level in December). Interestingly, there is a decline in calories consumed (row 2) as well as the quality of those calories (rows 3-19). These estimates would be consistent with households significantly struggling during the shock by December, as calorie consumption has been uncorrelated with a number of large price and income shocks across a variety of settings (e.g., Brinkman et al. 2009; D'Souza and Joliffe 2012; D'Souza and Joliffe 2014; etc.).

Additionally, the timing of the changes in food consumption in table 5 are similar to those reported in table 2- the magnitude of the estimates are largest in December, and the precision of the estimates similarly increases as the occupation progresses. Thus, the evidence is consistent with households trying to maintain their food consumption (through loans and unobservable means), but at some point being unable to maintain their consumption.

6. Women's Decision-Making

One of the advantages of this setting is the thoroughness of the 2014 HBS survey, which allows one to investigate the changes to a number of intra-household dynamics. As discussed above, the 2014 HBS also included a very thorough investigation of women's decision-making. Yemen had large inequities in opportunities within the household based on gender prior to the capture of Sana'a (e.g., Krishnan et al. 2016), and it is important to understand whether those with fewer opportunities and resources within the household were forced to bear a significantly larger burden of this shock, as has been shown in other contexts (e.g., Rose 1999; Khanna et al. 2003; Miguel 2005; D'Souza and Tandon forthcoming; etc.).

In particular, the survey inquired about the control women had over a number of different types of assets and spending in the household. However, this module was included only in the 2014 survey, and thus one cannot investigate the difference-in-difference comparing the 2014 change to the 2005 change. Thus, this article analyzes the simple difference in women's

decision-making in Sana'a and compares this difference to the rest of Yemen.

Specifically, this section re-estimates specifications (1) and (2), but uses an indicator equaling one if the spouse or the head of women-headed households made the decision to make a number of different types of purchases alone. Table 6 presents estimates of the women's decision-making specifications. Each cell represents an estimate of either the change in decision-making following the capture of Sana'a or the difference-in-difference in Sana'a relative to the rest of Yemen. Column (1) restricts the sample to households from the city of Sana'a; column (2) restricts the sample to households from the rest of Yemen; column (3) reports estimates of the difference-in-difference following the capture of Sana'a; and column (4) reports p-values of a test of the difference-in-difference estimate in column (3) being different from zero, adjusted for the fact that the estimation is using a number of dependent variables measuring women's decision-making.²⁸ Each row utilizes a different measure of women's decision-making as the dependent variable.

Table 6 demonstrates that there was a significant reduction in women's decision-making in one of the three types of spending that women actually had a significant role in making decisions (See Appendix 1). Specifically, row (1) of table 6 demonstrates there was a large reduction in the share of women that made decisions about food purchases in Sana'a, that did not occur in the rest of Yemen. The most complete specification in column (3) demonstrates that there was a 16.0 percentage point decline in the share of women who made decisions about food purchases.

This change represents over three-quarters of the women who were making decisions regarding food purchases prior to the capture, and the share of women who controlled food purchases in the city of Sana'a approached and even dropped below levels seen in the rest of Yemen. This fact is even more striking given the relative lack of power women had in food purchase decisions in the rest of Yemen.

The other two areas where women had significant control over purchases were clothing for women and children. The estimates suggest that there was a decline in the control over those purchases as well, but the estimates are not as precisely estimated. However, one potential reason for the lower precision might have been the frequency with which those purchases have to be made. Food has to be purchased at relatively frequent intervals, whereas if women were not able to leave the household during a tumultuous period, the purchase of women's and children clothing could be delayed. Thus, households might not have yet grappled with who would make purchases in other dimensions that required less frequent purchasing.

Similarly, the estimates in table 6 demonstrate that the estimated change in control over expenditures was negative for nearly all dimensions (elderly care is the only exception). Although the estimates are not as precisely estimated as the change in control over food spending, nearly one-third of the difference-in-difference estimates in column (3) are statistically significant at conventional levels.

Table 7 investigates this change in women's decision making more thoroughly. First,

²⁸The p-values use the correction used in Anderson (2008).

columns (1)-(2) investigate who might actually be taking over for women in the control of food purchases. Column (1) demonstrates that there is a significant increase in men having control over the food purchasing decision. Tellingly, the magnitude of the coefficient is roughly equal to the magnitude of the estimate in the first row and third column of table 4. On the other hand, column (2) demonstrates that there appears to be very little change in other adult members taking over food purchases in the household. Thus, the change in women's decision making in the household appears to be transferred to the male head.

Alternatively, one might be concerned exactly what the question about decision-making is capturing. Women's control over spending decisions and decision-making in general could be difficult to capture in simple survey instrument, and the responses might not align well with actual behaviors. However, column (3) presents evidence demonstrating that there did appear to be a change in behavior that was consistent with the change in responses. Specifically, the women's decision-making module was supposed to be administered to the most senior woman (whether head, spouse, or otherwise), but in the case that either the spouse was not there or the head would not allow the spouse to answer, other household members could respond to the module.

Following the capture of the city, not only was there a substantial reported transfer of decision making authority from women to men, there was also a significant increase in the share of women who responded to the module. This is broadly consistent with women being more likely to be in the household and less able to move about freely following the capture of the city. Following the capture of the city, the increase in the share of women who answered the module was 11 percentage points larger in Sana'a than in the rest of Yemen.²⁹ Thus, it does not appear that the change in decision making reported in table 6 is only describing a change in peoples' attitudes with little change in behavior.

Additionally, there are significant differences between the change in women's decision making and the change in expenditure described in Section 5. Specifically, column (4) estimates the changes in decision making but allows the effect to differ by month of the occupation. Unlike the estimates presented in table 2, there is an immediate drop in women's decision making following the capture, and very few households had women continue to control food purchases. This decline is relatively consistent throughout the entire occupation period analyzed, where one cannot reject the hypothesis that the change relative to the months prior to the occupation was identical in each month (p-value 0.332).

Furthermore, there was little difference in the change based on women's bargaining power inside the household. Using assets owned exclusively by the spouse as a proxy of bargaining power, columns (5) and (6) re-estimate specification (1) but restricts the sample to the approximately 45 percent of the households where the spouse owns gold and the rest of households where spouse does not own gold. The estimates are qualitatively identical, with both types of households demonstrating similar declines in the share of women who controlled food

²⁹The baseline estimates described in table 6 are qualitatively identical if the sample is restricted to only households in which the women answered the module, and also qualitatively identical if women answered the module not in the presence of a man.

purchases.³⁰

Similarly, the socio-economic status of households also did not seem to matter to the response. Columns (7) and (8) re-estimate specification (1), but restrict the sample to those in which the head finished and did not finish primary school respectively. In contrast to the expenditure changes estimated in table 2, there was little difference in the change in women's decision making between the two types of households.

All of these results suggest that the decline in women's decision-making in households in Sana'a following the capture of the city was nearly universal, and did not depend on either the status of the household or the status of women in the household. Given the two potential causes of the change in women's decision making- a worsening of household resources and a decline in safety- these patterns are more consistent with the decline in women's decision making being driven by a decline in safety. The change was immediate and did not seem to change as households' budgets got significantly worse in November and December. Furthermore, there was minimal amounts of variation based household characteristics and the standing of the spouse in the household. All of these factors similarly point to the initial decline in safety as opposed to the evolving nature of household budgets.

Alternatively, table 8 investigates how women's employment changed as the conflict progressed. As described in the Introduction, a number of news agencies and humanitarian agencies report that women actually have to increase their employment and income generation in times of conflict due to increased need. However, in every potential specification investigated so far, there is no evidence that women actually increased employment. In the baseline specification in column (3), the estimate is actually negative (-0.002), and the confidence interval is relatively small. Thus, the estimate precludes a large increase in employment as the city was captured, and certainly demonstrates that the potential increase in employment at the bounds of the confidence interval was significantly less than the share of women who lost their ability to make decisions about food purchases in tables 6 and 7. Furthermore, the estimates broken up by month in column (4) further demonstrate a pattern similar to that reported in column (3).

7. Conclusion

This article demonstrates that in response to a relatively non-violent capture of a city, expenditure significantly declined in a matter of months, households engaged in a number of coping strategies beginning immediately after the capture, and there were changes to intra-household dynamics. These findings are evident even though this setting lacked a number of aggravating factors that are generally present in longer and more violent conflicts, such as worse disruptions to supply chains (e.g., port blockades) and worse shocks to economic activity and safety.

Interestingly, the response of Yemeni households to the fragility analyzed here appears to be strong when compared to the response to other shocks in Yemen, and shocks in other

³⁰Gold was the only asset that spouses owned in non-negligible numbers.

settings. Although Yemen is an understudied setting, the country has experienced both sharp and protracted shocks over the past decade that have increased poverty and food insecurity in the country. These shocks include a long-term issue with joblessness, fallout from the Arab Spring, and a significant increase in food prices in 2008 and 2011. However, the change in well-being due to these other shocks over the long term appear to be less pronounced than the short-term shocks analyzed in the current setting (e.g., WFP 2012; Dang and Ianchovichina 2016; World Bank 2017). Furthermore, comparing the capture analyzed here to shocks in other settings- there is a more precisely estimated decline in calorie consumption, which is relatively insensitive to shocks, in a matter of three months than was observed in response to the World Food Price Crisis in Afghanistan and the Global Financial Crisis (e.g., Brinkman et al. 2009; D'Souza and Joliffe 2012; and D'Souza and Joliffe 2014).

However, there are a number of questions unanswered by the current context. First, it is difficult to infer whether the subset of the population that initially maintained their consumption following the capture were able to do so through coping strategies that were no longer viable by December, or whether things progressively got worse over the course of the occupation. Section 5b demonstrates that there were coping strategies that households engaged in immediately following the capture, and thus some of consumption of households was probably maintained in this manner. However, the fact that there was a decline in calorie consumption, and the fact the magnitude of the expenditure changes increased so much by December, it is difficult to argue that things did not get worse as the occupation progressed. Furthermore, it is important to note that the survey ended one month before the Houthis significantly escalated began marching on Aden in the south of Yemen.

Second, these are all short-term changes, and it is unclear what might happen in the long term. For example, the coping strategies uncovered in this setting, such as loans from traders, might eventually become unavailable and the level of deprivation might significantly worsen; more sustained conflict might lead to more deprivation and cause women to be more rather than less engaged in household decision making out of necessity; and it is unclear how households might adapt after the cessation of conflict to avoid long-term adverse impacts of coping strategies (e.g., the speed with which households can improve diets and acquire basic health services following the conflict, etc.).

Third, as is the case in all conflicts, the times surrounding the empirical investigation in this setting were tumultuous. There were protests against the government, there was a quickly reversed removal of fuel subsidies prior to the capture of Sana'a, and there was lingering political uncertainty from the political transition that occurred in 2012. Thus, it is possible that the results described here might be context-specific, and it is possible that other countries might not experience similar shocks from the capture of territory from the internationally recognized government. However, the robustness of the empirical findings suggest that it is unlikely that these other factors are driving the results.

And lastly, it is important to emphasize that it is difficult to generalize the results from this setting to present-day Yemen. As noted before, the conflict is more violent, there are

substantial impediments to importing food, fuel, and medical equipment that were not present during the capture of Sana'a, and the escalation of the conflict has been going on for more than three years. Thus, it is likely that the challenges currently presented to households might be substantially different from those described in Sana'a in 2014, which could result in a different set of coping strategies (e.g., internal displacement) or place a different burden on disadvantaged household members (e.g. women and girls).

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Table 1. Differences between Control Variables in the Third and Fourth Quarters

	Sampled in Third Quarter	Sampled in Fourth Quarter	Difference (Quarter 4 - Quarter 3)	Dependent Variable: Q4 Indicator
Household Size	6.897	6.439	-0.458	-0.007
	[0.301]	[0.238]	[0.381]	[0.007]
Household Head Married	0.899	0.878	-0.021	-0.087
	[0.021]	[0.033]	[0.039]	[0.104]
Head Attended School	0.696	0.748	0.052	-0.083
	[0.051]	[0.043]	[0.066]	[0.110]
Head a Smoker	0.384	0.378	-0.006	-0.013
	[0.051]	[0.041]	[0.065]	[0.062]
Head Chews Qat	0.829	0.825	-0.004	0.012
	[0.031]	[0.036]	[0.047]	[0.081]
Years of Schooling- Head	7.936	9.184	1.248	0.012*
	[0.630]	[0.612]	[0.873]	[0.006]
Household Has a Child	0.805	0.856	0.051	0.053
	[0.027]	[0.032]	[0.042]	[0.085]
Walls Made of Cut Stone	0.306	0.227	-0.079	0.045
	[0.060]	[0.046]	[0.075]	[0.121]
Walls Made of Other Stone	0.509	0.645	0.136*	0.160*
	[0.062]	[0.048]	[0.077]	[0.096]
Roof Made of Reinforced Concrete	0.562	0.540	-0.023	0.014
	[0.075]	[0.058]	[0.094]	[0.100]
Roof Made of Wood and Concrete	0.268	0.283	0.015	-
	[0.064]	[0.056]	[0.085]	-
Roof Made of Mud	0.170	0.177	0.007	0.087
	[0.049]	[0.055]	[0.073]	[0.139]
Floor Made of Concrete	0.232	0.297	0.065	0.279*
	[0.046]	[0.051]	[0.068]	[0.164]
Floor Made of Tile	0.627	0.623	-0.004	0.242
	[0.066]	[0.058]	[0.087]	[0.158]
Household has a Flush Toilet	0.309	0.225	-0.084	-0.103
	[0.052]	[0.045]	[0.068]	[0.094]
P-value of test of all coefficients jointly equaling zero	-	-	-	0.3660

Notes: This table reports the average characteristics of surveyed households in the third and fourth quarter in the city of Sana'a in 2014 respectively in columns (1) and (2), and further reports that simple difference in column (3). Column (4) reports the estimates of a regression of a quarter 4 indicator on all control variables for a sample of households surveyed in the third and fourth quarters, and further reports a joint test of significance. The survey was designed such that there should be no differences between households between months of the survey, and thus if the sampling was done according to plan, the two estimates should be similar. There were 266 households surveyed in quarter 3 and 231 households surveyed in quarter 4. Estimates are weighted so as to be representative of the population, and standard errors are clustered at the PSU level. The statistical significance of the difference is reported for column (3). *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 2. Expenditure Changes in Response to the Capture

	Dependent Variable: ln(Expenditure)								
	Baseline Specification: How Much Larger Effects were in Sana'a Relative to the Rest of Yemen		Single Difference	Including Pre- Conflict Trends		Food Expenditure	Non-food Expenditure	Restrict Sample to More Educated Heads	Restrict Sample to Less Educated Heads
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>Post-Capture Months</u>									
October Indicator x Sana'a Indicator	-0.154	-0.041	0.016	-	-0.083	-0.012	-0.092	0.160	-0.361**
	[0.202]	[0.195]	[0.162]		[0.233]	[0.253]	[0.232]	[0.282]	[0.171]
November Indicator x Sana'a Indicator	-0.219	-0.177	-0.093	-	-0.220	-0.140	-0.234	-0.220	-0.396**
	[0.179]	[0.156]	[0.128]		[0.202]	[0.223]	[0.202]	[0.200]	[0.166]
December Indicator x Sana'a Indicator	-0.399***	-0.359***	-0.301***	-	-0.402**	-0.410**	-0.407**	-0.364**	-0.554***
	[0.153]	[0.128]	[0.099]		[0.182]	[0.192]	[0.183]	[0.167]	[0.175]
<u>Post-Capture Months</u>									
August Indicator x Sana'a Indicator	-	-	-	0.019	-0.001	-	-	-	-
				[0.209]	[0.210]				
September Indicator x Sana'a Indicator	-	-	-	-0.115	-0.129	-	-	-	-
				[0.207]	[0.209]				
Control Variables	N	Y	Y	Y	Y	Y	Y	Y	Y
P-value of Test of all Post-Capture Coeff. Equaling Zero	0.076*	0.039**	0.0142**	-	0.106	0.004***	0.012**	0.098*	0.012**
P-value- Test of Pre-Trend Coeff. Equaling Zero	-	-	-	0.779	0.767	-	-	-	-
Observations	4317	4317	504	2,189	4,317	4,317	4,317	2,681	1,636

Notes: This table estimates the change in expenditure following the capture of the Yemeni capital by rebels. Columns (1) and (2) estimate the baseline specification comparing the change in Sana'a to the rest of Yemen; column (3) estimates the simple difference in Sana'a alone; columns (4) and (5) estimate the change in expenditure in Sana'a relative to the rest of the country leading up to the capture; columns (6) and (7) analyze food and non-food expenditure respectively; and columns (8) and (9) estimate the effects separately for households where the head did and did not finish primary school respectively. All specifications exclude households surveyed during the month of Ramadan- July. All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses, and all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 3. Changes in Loans

	Dependent Variable:							
	Number of Loans from Traders	Number of Loans from Other Sources	Number of Loans from Traders	Indicator for any Loan from a Trader	ln(Amount Owed to Traders)	Number of Loans from Traders	Indicator for any Loan from a Trader	ln(Amount Owed to Traders)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>Post-Capture Months</u>								
October Indicator x Sana'a Indicator	0.166*	-0.036	0.304***	0.272***	2.849***	0.057	0.083	1.085
	[0.097]	[0.164]	[0.100]	[0.091]	[0.924]	[0.115]	[0.107]	[1.204]
November Indicator x Sana'a Indicator	0.038	-0.053	0.237*	0.237*	2.628*	-0.004	0.010	0.041
	[0.083]	[0.129]	[0.134]	[0.127]	[1.431]	[0.084]	[0.073]	[0.833]
December Indicator x Sana'a Indicator	0.286	0.066	0.777	0.108	1.293	0.177	0.152	1.624
	[0.221]	[0.138]	[0.626]	[0.156]	[1.716]	[0.129]	[0.115]	[1.133]
<u>Post-Capture Months</u>								
August Indicator x Sana'a Indicator	-0.027	0.001	-0.075	-0.050	-0.480	-0.019	-0.012	-0.221
	[0.054]	[0.167]	[0.047]	[0.036]	[0.389]	[0.069]	[0.048]	[0.546]
September Indicator x Sana'a Indicator	0.040	-0.003	0.099	0.070	0.631	-0.023	-0.005	-0.133
	[0.065]	[0.192]	[0.122]	[0.064]	[0.711]	[0.060]	[0.050]	[0.559]
Restrict Households to Those Where Household Head Did Not Finish Primary School	N	N	Y	Y	Y	N	N	N
Restrict Households to Those Where Household Head Finished Primary School	N	N	N	N	N	Y	Y	Y
P-value of Test of all Post-Capture Coeff. Equaling Zero	0.245	0.876	0.005***	0.009***	0.008***	0.511	0.534	0.432
Observations	4,317	4,317	1,636	1,636	1,636	2,681	2,681	2,681

Notes: This table estimates the change in the use of loans following the capture of the Yemeni capital by rebels. Columns (1)-(2) utilize the entire sample; columns (3)-(5) utilizes only households where the head has not finished primary school; and columns (6)-(8) utilizes only households where the head has finished primary school. All specifications exclude households surveyed during the month of Ramadan (July). All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses; all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 4. Changes in Employment

	Dependent Variable:							
	In(wages from work in the past week)	Indicator if anybody in the Household Worked in the Past Week (Wage or non-Wage Work)	Indicator if the Household Head Worked in the Past Week	Indicator if non-Heads Worked in the Past Week	Hours the Household Head Worked in the Past Week	Hours non-Heads Worked in the Past Week	Indicator for Owning an Enterprise	In(Total Profit from Own Enterprises)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>Post-Capture Months</u>								
October Ind. x Sana'a Ind.	-0.532	-0.012	-0.008	-0.074	3.402	0.139	0.170*	0.479
	[0.368]	[0.057]	[0.083]	[0.105]	[4.849]	[16.347]	[0.092]	[0.650]
November Ind. x Sana'a Ind.	-1.004**	-0.033	-0.012	0.006	0.315	6.774	0.119	0.378
	[0.438]	[0.085]	[0.101]	[0.117]	[5.073]	[12.815]	[0.086]	[0.471]
December Ind. x Sana'a Ind.	-0.359	0.034	0.110	-0.172*	6.261	-12.031	0.291***	-1.143*
	[0.339]	[0.044]	[0.088]	[0.103]	[4.832]	[13.951]	[0.075]	[0.610]
<u>Post-Capture Months</u>								
August Ind. x Sana'a Ind.	-0.278	-0.046	-0.080	-0.041	5.240	-14.618	0.028	-0.720
	[0.350]	[0.056]	[0.086]	[0.087]	[9.017]	[10.824]	[0.073]	[0.535]
September Ind. x Sana'a Ind.	-0.127	-0.038	-0.036	0.032	2.501	-11.692	0.022	-0.075
	[0.428]	[0.054]	[0.079]	[0.089]	[6.747]	[13.064]	[0.072]	[0.554]
Restrict to Households where Head Did Not Finish Primary School	N	N	Y	Y	Y	N	N	N
Restrict to Households where Head Finished Primary School	N	N	N	N	N	Y	Y	Y
P-value of Test of all Post-Capture Coeff. Equaling Zero	0.133	0.698	0.496	0.306	0.532	0.494	0.002***	0.131
Observations	2,458	4,317	4,317	4,317	4,317	4,317	4,317	644

Notes: This table estimates the change in employment and wages following the capture of the Yemeni capital by rebels. Columns (1) utilizes the sample of households that report any wage income in the past week; columns (2)-(7) utilize the entire sample; and column (8) utilizes the sample of households that report income from a self-owned enterprise. All specifications exclude households surveyed during the month of Ramadan (July). All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses; all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 5. Changes in Nutrient Consumption

	Post-Capture Months						Pre-Capture Months			
	October Indicator x Sana'a Indicator		November Indicator x Sana'a Indicator		December Indicator x Sana'a Indicator		August Indicator x Sana'a Indicator		September Indicator x Sana'a Indicator	
Share of Expenditure Devoted to Food	0.006	[0.006]	0.010	[0.007]	0.002	[0.007]	0.001	[0.005]	0.008	[0.012]
ln(Calories)	0.018	[0.224]	-0.146	[0.245]	-0.292*	[0.156]	-0.053	[0.194]	-0.067	[0.221]
ln(Choline)	-0.095	[0.142]	-0.106	[0.155]	-0.265**	[0.122]	-0.011	[0.144]	-0.061	[0.143]
ln(Protein)	-0.011	[0.135]	-0.145	[0.132]	-0.271**	[0.128]	0.011	[0.126]	-0.107	[0.148]
ln(Vitamin A)	-0.007	[0.169]	-0.035	[0.153]	-0.153	[0.156]	0.060	[0.102]	0.028	[0.123]
ln(Vitamin C)	0.085	[0.197]	-0.122	[0.259]	-0.192	[0.182]	-0.041	[0.158]	-0.019	[0.189]
ln(Vitamin E)	-0.097	[0.263]	-0.350	[0.281]	-0.425	[0.283]	-0.159	[0.236]	0.036	[0.265]
ln(Thiamin)	0.023	[0.181]	-0.297	[0.199]	-0.324*	[0.169]	0.036	[0.171]	-0.148	[0.199]
ln(Riboflavin)	0.013	[0.155]	-0.169	[0.158]	-0.292**	[0.137]	-0.004	[0.140]	-0.086	[0.159]
ln(Niacin)	-0.001	[0.164]	-0.252	[0.173]	-0.313*	[0.160]	0.067	[0.164]	-0.115	[0.175]
ln(Vitamin B6)	-0.099	[0.215]	-0.222	[0.192]	-0.370**	[0.173]	0.062	[0.178]	-0.100	[0.176]
ln(Folate)	0.009	[0.150]	-0.231	[0.167]	-0.251*	[0.148]	0.028	[0.148]	-0.106	[0.176]
ln(Vitamin B12)	-0.217	[0.220]	-0.251	[0.208]	-0.221	[0.213]	-0.088	[0.147]	-0.099	[0.180]
ln(Copper)	-0.004	[0.205]	-0.182	[0.211]	-0.286*	[0.162]	0.072	[0.172]	-0.075	[0.195]
ln(Iron)	0.044	[0.209]	-0.197	[0.219]	-0.314*	[0.166]	0.049	[0.175]	-0.109	[0.207]
ln(Magnesium)	-0.052	[0.249]	-0.269	[0.242]	-0.412**	[0.197]	0.046	[0.212]	-0.130	[0.217]
ln(Phosphorous)	-0.037	[0.197]	-0.213	[0.192]	-0.359**	[0.172]	0.062	[0.183]	-0.093	[0.180]
ln(Selenium)	-0.015	[0.200]	-0.226	[0.182]	-0.386**	[0.174]	0.079	[0.186]	-0.125	[0.183]
ln(Zinc)	0.007	[0.228]	-0.145	[0.239]	-0.349**	[0.175]	0.056	[0.202]	-0.079	[0.215]

Notes: This table estimates the change in consumption of micro and macro-nutrients following the capture of the Yemeni capital by rebels. Each row reports estimates from a separate regression analyzing different nutrients. All specifications include the entire sample, and exclude households surveyed during the month of Ramadan (July). All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses; all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 6. Control Over Household Expenditure by Women

	Coefficient on Conflict Indicator for Households in Sana'a Only	Coefficient on Conflict Indicator for Households in the Rest of Yemen	Coefficient Yielding How much larger the change in Sana'a was than the Rest of Yemen	P-Value Adjusted for Multiple Inference
Dependent Variable:	(1)	(2)	(3)	(4)
Women Responsible for Purchase of Food	-0.134*** [0.041]	0.021 [0.021]	-0.160*** [0.056]	.058*
Women Responsible for Purchase of Heads Clothes	-0.015 [0.019]	0.007 [0.015]	-0.025 [0.025]	.448
Women Responsible for Purchase of Womens' Clothes	-0.060 [0.083]	0.008 [0.034]	-0.070 [0.089]	.513
Women Responsible for Purchase of Childrens' Clothes	-0.043 [0.044]	0.005 [0.022]	-0.048 [0.051]	.448
Women Responsible for Purchase of Medicine for Spouse	-0.040* [0.023]	0.014** [0.007]	-0.051** [0.025]	.169
Women Responsible for Purchase of Medicine for Other Adult Women	-0.019 [0.019]	-0.000 [0.006]	-0.022 [0.020]	.439
Women Responsible for Purchase of Medicine for Children	-0.040** [0.018]	0.002 [0.007]	-0.042** [0.020]	.169
Women Responsible for Expenditure on Son's Marriage	-0.018 [0.011]	0.001 [0.003]	-0.019* [0.011]	.225
Women Responsible for Expenditure on Daughter's Marriage	-0.010 [0.007]	0.005 [0.004]	-0.019 [0.011]	.225
Women Responsible for Expenditure on Boys' Education	-0.012 [0.008]	-0.000 [0.009]	-0.017 [0.013]	.409
Women Responsible for Expenditure on Girls' Education	-0.019 [0.012]	0.000 [0.008]	-0.025 [0.015]	.225
Women Responsible for Expenditure on Elderly Care	0.003 [0.027]	-0.007 [0.023]	0.014 [0.040]	.73
Women Responsible for Taking on Debt	-0.010 [0.019]	-0.002 [0.007]	-0.010 [0.019]	.676
Observations	503	3,789	4,292	

Notes: This table estimates how women's decision-making ability changed following the capture of Sana'a. Each cell reports coefficients from a separate regression. Column (1) reports the simple difference in the share of households where women were responsible for the decision described in each row; column (2) reports the same specification but restricts the sample to the rest of Yemen; and column (3) presents estimates by how much larger the change was in the city of Sana'a than in the rest of Yemen. Column (4) reports p-values for the coefficient of interest adjusted for multiple inference as described in Anderson (2008). The difference-in-difference specification in column (3) includes all lower-order terms, and all specifications include control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses, and estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Table 7. A Closer Look at Decision-Making in the Household

	Dependent Variable:							
	Indicator if Head is Involved in the Food Purchase Decision	Indicator if Neither Spouse nor Head are Involved	Indicator if Spouse Answered Decision-Making Module	Indicator if Woman Responsible for Food Purchases				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-Conflict Indicator*Sana'a Indicator	0.155**	0.005	0.110***	-	-0.180*	-0.136***	-0.131**	-0.181**
	[0.069]	[0.042]	[0.042]	-	[0.093]	[0.052]	[0.059]	[0.071]
October Ind. x Sana'a Ind.	-	-	-	-0.139	-	-	-	-
				[0.092]				
November Ind. x Sana'a Ind.	-	-	-	-0.178**	-	-	-	-
				[0.087]				
December Ind. x Sana'a Ind.	-	-	-	-0.077	-	-	-	-
				[0.089]				
<u>Pre-Capture Months</u>								
August Ind. x Sana'a Ind.				0.030				
				[0.122]				
September Ind. x Sana'a Ind.				0.063				
				[0.105]				
Restrict Sample to Those Where Spouse Owned Gold	N	N	N	N	Y	N	N	N
Restrict Sample to Those Where Spouse Did Not Own Gold	N	N	N	N	N	Y	N	N
Restrict Sample to those where Head Did Complete Primary School	N	N	N	N	N	N	Y	N
Restrict Sample to those where Head Did Not Complete Primary School	N	N	N	N	N	N	N	Y
P-value of Test of Coefficients on October and December Higher-Order Terms Being Equal	-	-	-	0.332	-	-	-	-
Observations	4292	4292	4292	4292	1000	3292	2668	1624
<p>Notes: This table investigates a number of different specifications better describing the change in women's decision making following the capture of Sana'a. Each coefficient represents how much larger the change in the dependent variable was in Sana'a than the rest of Yemen in 2014. Column (1) utilizes an indicator equaling one if the household head was involved in the food purchase decision; column (2) utilizes an indicator equaling one if neither the head nor the spouse is involved in the decision to purchase food; column (3) utilizes an indicator equaling one if the spouse (or head if the household head was a woman) responded to the decision-making module; and columns (4)-(9) utilize an indicator if the spouse (or head if the household head was a woman) was in charge of the decision to purchase food. Columns (1)-(4) include the whole sample, while columns (5)-(8) restrict households based on measures of women's bargaining power and socioeconomic status. All specifications exclude households surveyed during the month of Ramadan (July). All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses; all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.</p>								

Table 8. Changes in Women’s Employment in Response to the Capture

	Dependent Variable: Indicator Equaling One if Spouse is Employed							
	Restrict Sample to Sana'a	Restrict Sample to Rest of Yemen	Difference-in-Difference Specification	Estimate Change by Month	Restrict Sample to Women who Own Gold	Restrict Sample to Women who Do Not Own Gold	Restrict Sample to Women in Households where Head Completed Primary School	Restrict Sample to Women in Households where Head Did Not Complete Primary School
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Post-Conflict Indicator	0.006	0.009	0.008	-	0.007	0.010	0.006	0.012**
	[0.025]	[0.006]	[0.006]	-	[0.012]	[0.006]	[0.008]	[0.006]
Post-Conflict Indicator*Sana'a Indicator	-	-	-0.002	-	0.032	-0.017	-0.003	0.008
	-	-	[0.025]	-	[0.048]	[0.027]	[0.033]	[0.020]
Oct Ind. x Sana'a Ind.	-	-	-	-0.045	-	-	-	-
	-	-	-	[0.036]	-	-	-	-
Nov Ind. x Sana'a Ind.	-	-	-	0.065	-	-	-	-
	-	-	-	[0.054]	-	-	-	-
Dec Ind. x Sana'a Ind.	-	-	-	-0.039	-	-	-	-
	-	-	-	[0.031]	-	-	-	-
Pre-Capture Months								
Aug Ind. x Sana'a Ind.	-	-	-	-0.020	-	-	-	-
	-	-	-	[0.035]	-	-	-	-
Sep. Ind. x Sana'a Ind.	-	-	-	0.005	-	-	-	-
	-	-	-	[0.034]	-	-	-	-
Observations	504	3,813	4,317	4,317	1,000	3,317	2,681	1,636

Notes: This table investigates a number of different specifications describing the change in women's employment following the capture of Sana'a. Columns (1) and (2) estimate a simple change in employment following the capture of Sana'a in the city of Sana'a and the rest of Yemen respectively. Columns (3)-(8) estimate how much larger the change in women's employment was in Sana'a than the rest of Yemen in 2014. Columns (1)-(4) utilize the entire sample, and columns (5)-(8) restrict households based on measures of women's bargaining power and socioeconomic status. All specifications exclude households surveyed during the month of Ramadan (July). All specifications include all lower-order terms and control variables. Control variables include all variables reported in Table 1 and an urban indicator. Standard errors clustered at the PSU level are reported in parentheses; all estimates are weighted so as to be representative of the entire population. *** denotes statistical significance at the 1 percent level; ** denotes significance at the five percent level; and * denotes significance at the 10 percent level.

Figure 1. Changes in Commodity Prices in Sana'a Following the Capture

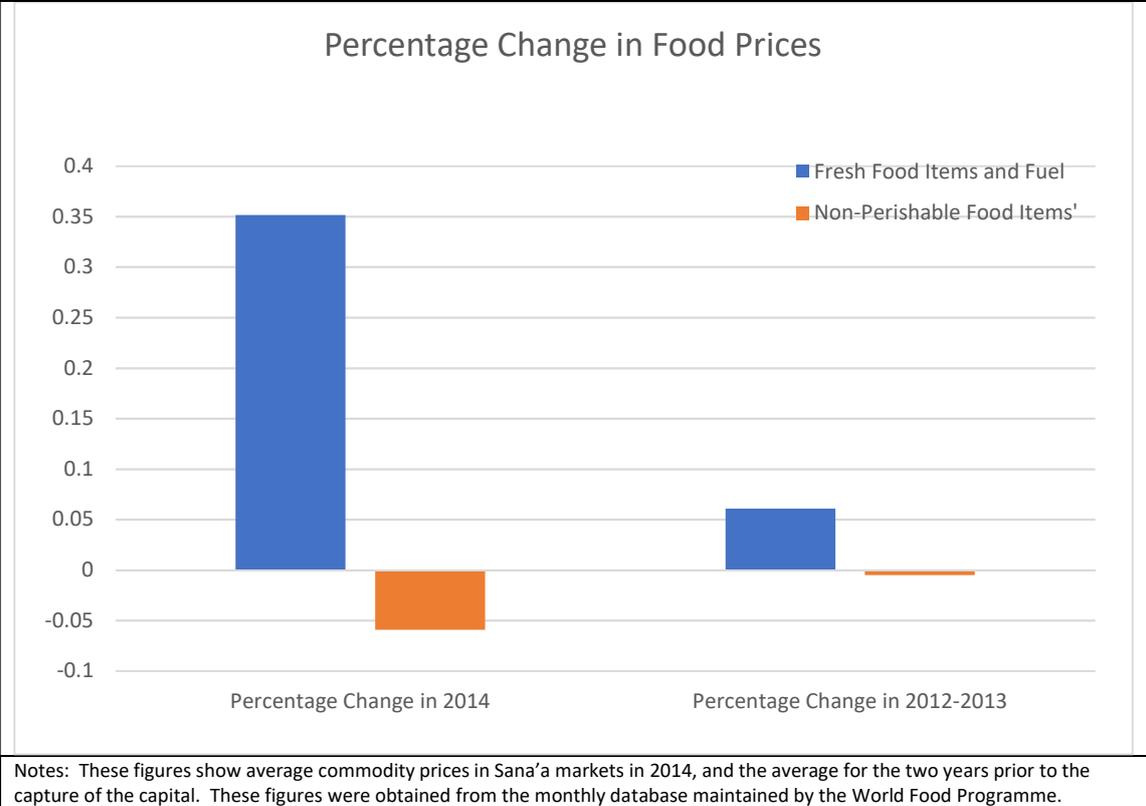
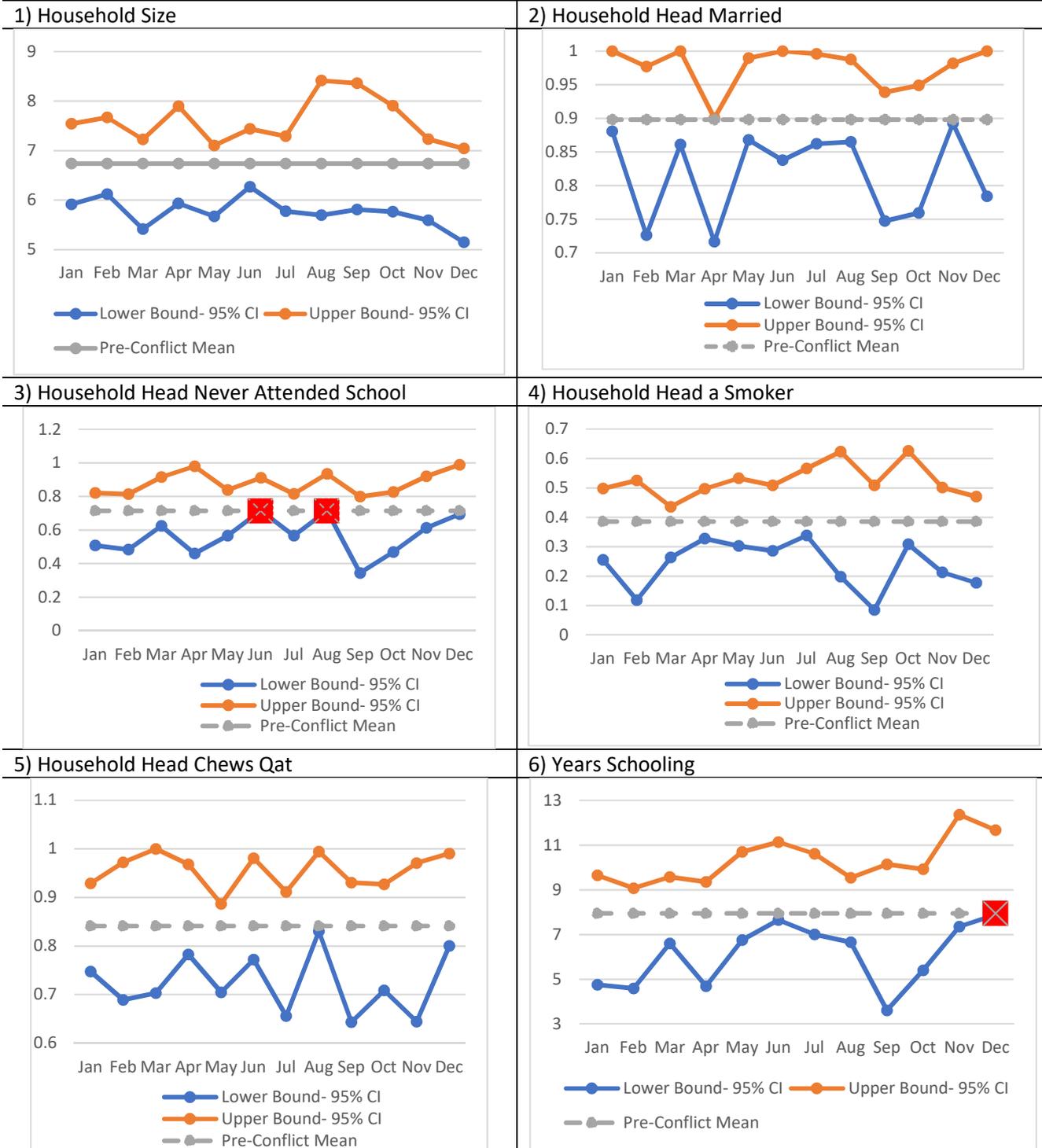


Figure 2. Monthly Confidence Intervals of Control Variables

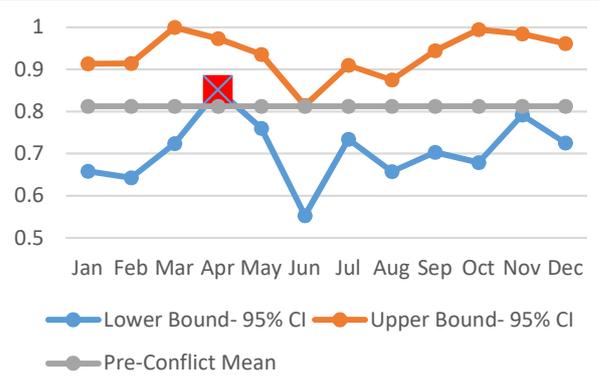
Figure 2a- Summary Statistics by Month



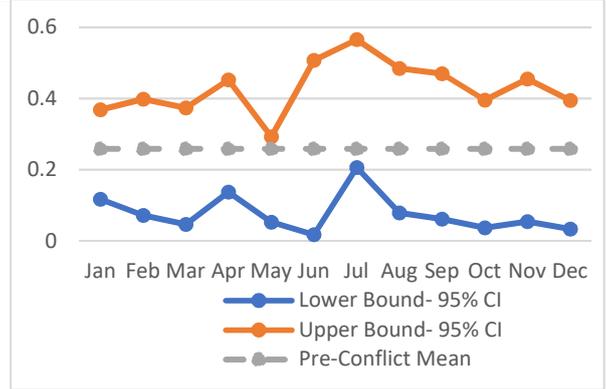
Source: 2014 Household Budget Survey, Author's Calculation

Figure 2b- Summary Statistics by Month

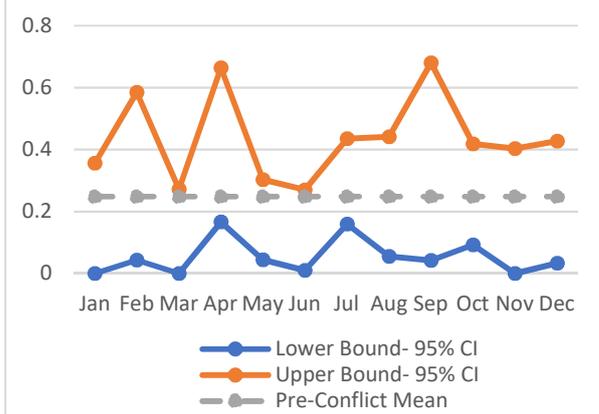
7) Household has a Child



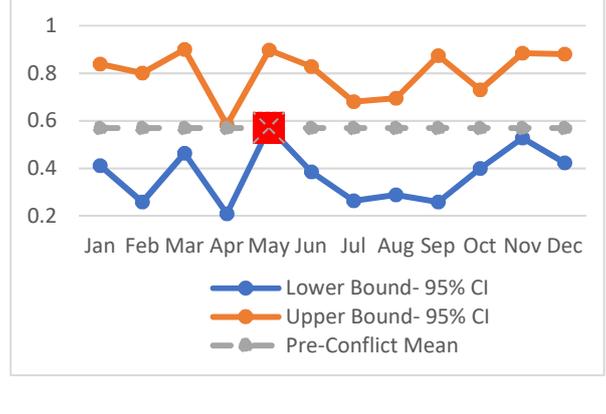
8) Household has a Flush Toilet



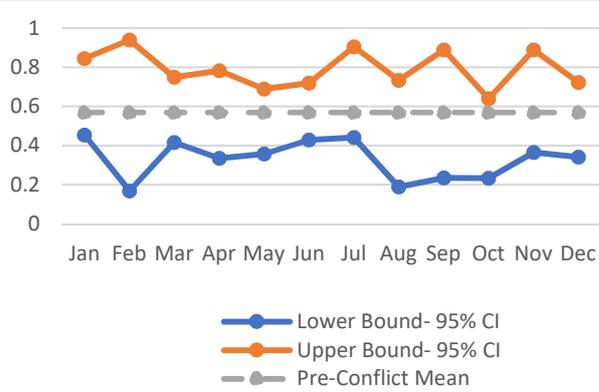
9) Walls Composed of "Cut Stone"



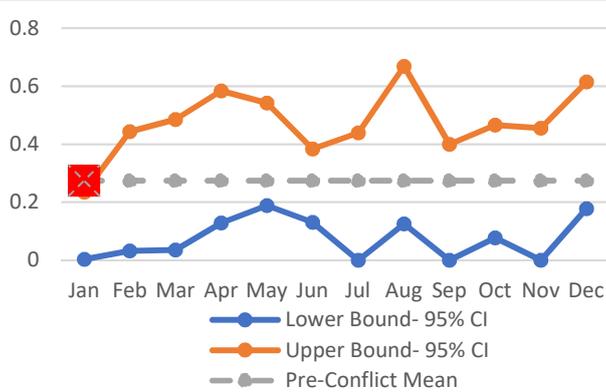
10) Walls Composed of Other Material



11) Roof Composed of Reinforced Concrete



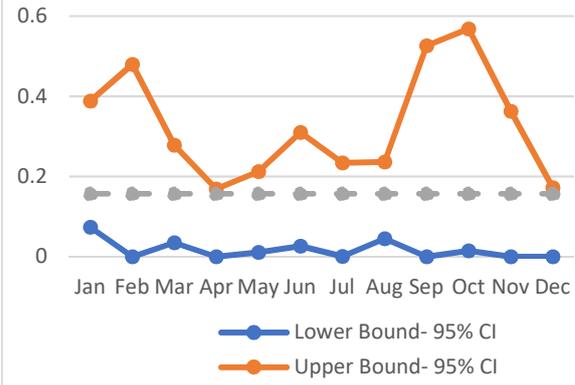
12) Roof Composed of Wood and Concrete



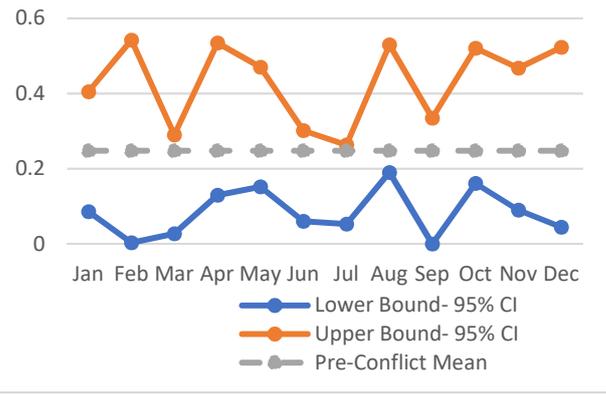
Source: 2014 Household Budget Survey, Author's Calculation

Figure 2c- Summary Statistics by Month

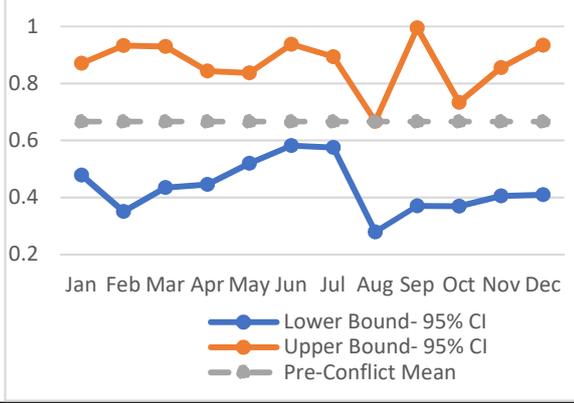
13) Roof Composed of Mud



14) Floor Composed of Concrete



15) Floor Composed of Natural Tiles



Source: 2014 Household Budget Survey, Author's Calculation

Figure 3. Expenditure and Coping Strategies by Month

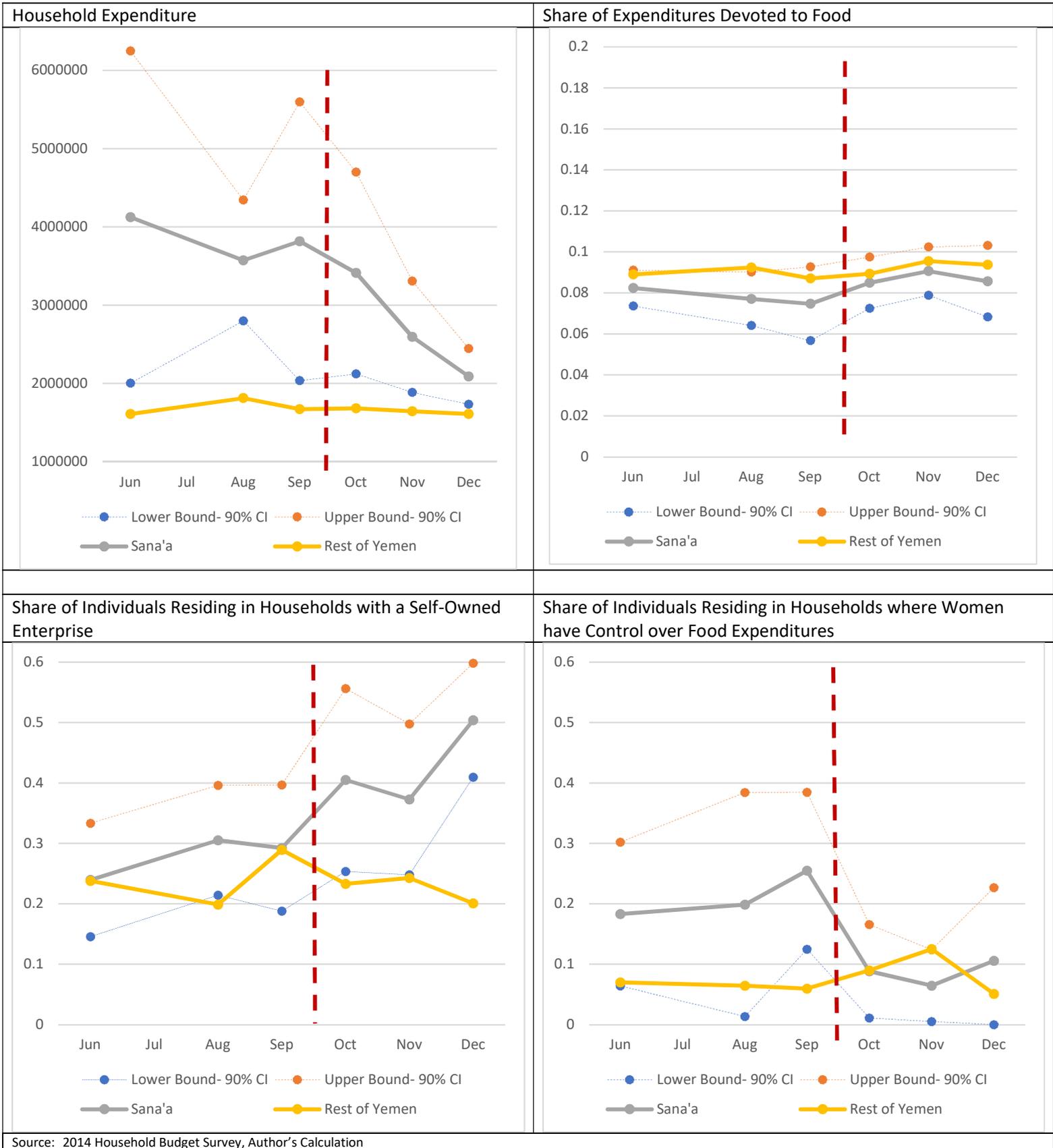


Figure 4. Coefficient Estimates and Confidence Intervals from the Baseline Specification by Month

