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## **Inflation and Diets among Poor Mothers in Egypt**

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## Abstract

Global food price increases and widespread inflationary shocks negatively affect poor households' diets, particularly those of women who are more likely to be food insecure compared to men. This study evaluates the relationship between changes in food prices triggered by the Russia-Ukraine war in February 2022 and poor mothers' diets in Egypt, a country that heavily relies on imports of staple foods and is highly vulnerable to increases in international food prices. We combine food group specific governorate-level consumer price index (CPI) data with data on diets of 2,868 poor mothers in Egypt collected before and after the onset of the war. Additionally, we examine the potential protective effect of Egypt's large-scale food subsidy program, *Tamween*, whereby specific foods are sold at subsidized prices at specific retailers. Using two-way fixed effects models, we find that changes in food prices are significantly associated with changes in the composition of mothers' diets. Mothers were less likely to consume dairy and fish and more likely to consume pulses and sweetened beverages after the war began. Poor mothers decreased consumption of unsubsidized foods, suggesting a protective role of the Egyptian food subsidy program. This paper also provides suggestive evidence that poor mothers from households engaged in agricultural production could be slightly less responsive to changes in food prices compared to mothers from households that do not engage in agricultural production.

**Keywords:** Inflation, diets, mothers, questionnaires and surveys, government subsidies, agriculture, Egypt

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## 1. Introduction

Over the last few decades, recurring food crises characterized by growing inflation and surges in food prices have affected almost 800 million households worldwide (Swinnen et al., 2023). In 2022, the aftermath of the COVID-19 pandemic and the Russia-Ukraine war caused significant disruptions in global production and supply of grains, and triggered increases in global food prices (Abay et al., 2023; Zereyesus et al., 2022).

The Middle East and North Africa (MENA) region is particularly vulnerable to food, trade, and price shocks since it heavily depends on food imports (Abay et al., 2023; Arndt et al., 2023). Russia and Ukraine are two of the world's largest exporters of grain and Egypt is one of the largest importers of wheat in the world (Abay et al., 2023; Zereyesus et al., 2022). Consequently, Egypt was affected significantly by these events (Abay et al., 2023; Gentilini et al., 2022). The disruptions in global food markets were reflected in domestic food prices resulting in one of the highest rates of food price inflation worldwide in 2023 (World Bank, 2023). Specifically, year-on-year inflation of food and non-alcoholic beverages increased from 14 percent in January 2022 to 62 percent in February 2023 (CAPMAS, 2023). Concurrently, the MENA region is characterized by poor nutritional outcomes; it has the second highest rate of obesity in the world, more than 12 percent of the region's population are undernourished, and 35 percent of women are anemic (FAO et al., 2021).

Mothers and children are among the most vulnerable populations to food price inflation, as women are generally more likely to be food insecure compared to men, and more so in rural areas (FAO et al., 2023). Previous studies have found that higher food prices are associated with lower intake of micronutrients and higher levels of anemia, due to reduced consumption of nutrient-rich foods such as meat, fish, and legumes (Block et al., 2004; Iannotti et al., 2012). Similarly, using anthropometric data from the Demographic and Health Survey for 44 low- and middle-income countries in relation to food price inflation data, Headey and Ruel (2023) showed that maternal nutrition and diet quality deteriorate as food prices rise, triggering significant increases in wasting and stunting rates among children.

Food subsidies and price policy could act as a buffer to food price increases. In Egypt, exports of wheat, oil, fava beans, and lentils were restricted from March to October to control prices (FAO, 2022). Additionally, the national food subsidy program, *Tamween*, reaches about 70 percent of the population (Abdalla & Al-Shawarby, 2018). It comprises of ration cards to purchase

specific price-controlled subsidized foods and some cleaning items at dedicated retailers. Ration card beneficiary households also benefit from the separate but related bread subsidy program.<sup>1</sup> Throughout the Russian-Ukraine war, the government of Egypt kept highly subsidized bread prices fixed in nominal terms and increased families' food allowances under *Tamween* (Jovanovic & Glauber, 2024; Ahram Online, 2022). Consequently, in addition to the impacts on overall purchasing power discussed above, mothers' relative consumption of different food groups was affected by the lower opportunity cost of food items available under *Tamween*.

However, how poor households are affected by higher food prices also depends on their involvement in agriculture (Deaton, 1989). For net food consumers, increases in food prices could decrease purchasing power and encourage the substitution of relatively expensive micronutrient-rich foods with cheaper calorie-dense foods, which may lead to an increase in micronutrient deficiency rates (Headey & Alderman, 2019; Hirvonen et al., 2020). On the other hand, households that engage in agricultural production may be less affected by inflationary shocks as they can consume from their own production (Ivanic & Martin, 2014; Jacoby, 2016; Ravallion, 1990; Van Campenhout et al., 2013). Headey and Martin (2016) and Headey and Hirvonen (2022) find that increases in food prices are associated with reductions in poverty in countries with large rural populations. Accordingly, people who live in rural areas and engage in agriculture (these characteristics are correlated) may be less affected by inflationary shocks.

This study investigates the relationship between food price inflation and mothers' dietary diversity in Egypt before and after a significant surge in food inflation triggered by the onset of the Russia-Ukraine war on February 24, 2022. We also explore the potential protective role of Egypt's food subsidy program and examine heterogeneities across agricultural and non-agricultural households.

## 2. Methods

### 2.1. Sample and data

We draw on three sources of data. The first is data collected in-person from 3,345 mothers in 19 governorates between January and February 2022 (prior to the onset of the war), as part of a larger

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<sup>1</sup> Beneficiary households receive a ration card with 50 Egyptian Pounds (EGP) per household member per month to spend on subsidized items available at government-run *Tamween* shops. Under the *baladi* bread allowance, *Tamween* beneficiaries received five loaves of bread per household member per day at a subsidized price of 0.05 EGP per loaf until 2024 (Ecker et al., 2016; Kassim et al., 2018), while the same size loaf cost between 1 and 2.5 EGP in the market (Hisham, 2023).

household survey for an evaluation of the Ministry of Social Solidarity’s national conditional cash transfer program.<sup>2</sup> Applicants to the program undergo a screening by the Ministry and a proxy of their income is measured, in points. Those underneath a certain threshold of points, based on Egypt’s poverty line, receive the program. The sample was drawn from program applicants who were within 63 points of the threshold score for program eligibility.<sup>3</sup>

The survey collected detailed information on each household and its members, including household demographics, participation in various social programs, and their main source of income. Additionally, mothers’ dietary diversity was captured by asking about food groups consumed by the mother in the past 24 hours, where the food groups are defined as: 1) Grains, 2) Roots and tubers, 3) Pulses, 4) Dairy, 5) Eggs, 6) Meat and poultry, 7) Organ meat, 8) Fish, 9) Dark green vegetables, 10) Vitamin A-rich vegetables, 11) Other vegetables, 12) Vitamin A-rich fruits, 13) Other fruits, 14) Oils and fats, 15) Snacks, 16) Sweets, 17) Sweetened beverages, 18) Nuts and seeds, and 19) Seasonings.

The second source is data collected through phone surveys that targeted the same mothers from the in-person survey. The phone surveys were conducted in November 2022 (after the onset of the war) and collected information on consumption of the same food groups.

The third is the Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) data on food prices, which reports the Consumer Price Index (CPI) for a combined consumption basket as well as various food groups by governorate on a monthly basis (CAPMAS, 2023). The CPI represents the average market price for consumers of various food groups purchased on a regular basis. We assemble the monthly CPI associated with different food groups across all governorates in Egypt at the time of the surveys (January 2022 and November 2022) using the CAPMAS monthly inflation bulletins. We matched the food groups for which CPI data are available in the CAPMAS report with the 19 food groups in the dietary diversity module.<sup>4</sup>

Our working sample is comprised of mothers that were interviewed during both in-person and phone surveys for which we have food consumption data, and that come from governorates

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<sup>2</sup> *Takaful and Karama* is a cash transfer program that targets the poorest and most vulnerable families and provided a median of 450 EGP (approximately USD 15) per month per household in 2022.

<sup>3</sup> The full sampling description can be found in El-Enbaby et al. (2024).

<sup>4</sup> Appendix table A1 shows the mapping of the food groups from the dietary diversity module in our survey to the CAPMAS food groups.

for which we have CPI data, resulting in 108,908 observations (38 observations per mother – two observations for each of 19 food groups – for 2,868 mothers).<sup>5</sup>

## *2.2. Statistical analysis*

All statistical analyses were conducted utilizing STATA 18 (Stata Corp, College Station, Texas, USA).

The following variables are generated from the data, which is at the mother, food group, and time period (before or after the war) level. For each mother, food group, and time period, we create an indicator variable equal to one if the mother reported consuming that food group in the past 24 hours. An indicator variable equal to one for the second time period (after the war) is also created. The CPI for each food group, governorate, and time period is generated by mapping the food groups from our surveys to the food groups reported in the CAPMAS data. We take the natural log to focus on percentage changes in prices rather than levels when comparing across food groups. The mapping can be found in Appendix Table A1. An indicator variable equal to one is also created when a household engages in agricultural production, defined as any household member reporting engagement in agricultural for own consumption.<sup>6</sup>

We use a two-way fixed effects regression model, which is an ordinary least squares regression with the addition of both mother and food group indicator variables, to estimate the effects of price increases on consumption. In the first analysis, the outcome variable is an indicator variable equal to one if the mother reported consuming the food group at that time period. The CPI for a particular food group in a governorate for that time period is our independent variable of interest. Since we have two sets of observations for each mother (before and after the war for each food group), we include an indicator variable equal to one for each mother to reduce bias from time-invariant characteristics of mothers that may also explain consumption of a food group (such as income levels or preferences for particular food groups). We also include indicator variables equal to one for each food group except for grains, which serves as the comparison group because

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<sup>5</sup> Governorates for which we have CPI data are Cairo, Alexandria, Suez, Kalyubia, Kafr El-Sheikh, Gharbia, Menoufia, Behera, Ismailia, Giza, Beni Suef, Fayoum, Menya, Assuit, Souhag, Qena, Aswan, Luxor. We do not have CPI for New Valley governorate.

<sup>6</sup> Note that this variable represents a household that is a net consumer of food and thus would be negatively impacted by higher prices. For some who grow their own food and are also self-employed (for example, selling some of their household produce), the amount they would sell would be much lower than their consumption, thus still rendering them net consumers.

the difference in the consumption of grains before and after the war is extremely small (see Panel B of Figure 1). Standard errors are clustered at the governorate-food level.

The second analysis is the same as the first except that we additionally interact the post period indicator variable with the food group indicator variables to capture differential trends in consumption patterns across different food groups.

Finally, we explore potential heterogeneity in mothers' consumption of food groups based on i) whether the food group was subsidized versus unsubsidized, and ii) whether the household was engaged in agricultural production or not. We do so by separating the sample into subsidized and unsubsidized food groups and households engaged in or not engaged in agricultural production. We consider subsidized food groups to be: grains, pulses, sweets, and oils and fats. Unsubsidized groups are: roots and tubers, meat, eggs, fruits, vegetables, snacks, and nuts and seeds. In this analysis, we omit the following categories for which there is no clear majority of commonly consumed items that fall into the subsidized or unsubsidized categories: dairy, fish, sweetened beverages, and seasonings.<sup>7</sup>

We interpret the relationships we estimate as associational rather than causal because inflation is a complex process generated by the interaction of demand and supply of goods and services, which is likely to be accompanied by other macro- and micro-economic developments at the governorate level that can affect consumption patterns. Additionally, while we control for mother and food group fixed effects, there may still be time-varying characteristics of foods that are correlated with the CPI and affect consumption of the food group that cannot fully be accounted for.

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<sup>7</sup> We defined a food group as subsidized when most commonly consumed food items by poor households from the food group (bread, fava beans, biscuits, sugar, oil, and lentils) are available and commonly purchased through *Tamween*. Namely, 82 percent of households in 2022 consumed fava beans or lentils, 85 percent consumed sugar, and 80 percent consumed oil. Subsidized white cheese exists, but only 3 percent of households in 2022 consumed subsidized cheese compared to 75 percent who consumed unsubsidized cheese. Similarly, almost no households reported consuming subsidized fish in 2022, while 21 percent of households in 2022 consumed unsubsidized fish. Chicken stock and vinegar are available through *Tamween*, but these are not the most consumed items in seasonings food group. Therefore, dairy, fish, and seasonings food groups are excluded from the analysis as they are not clearly defined as subsidized or unsubsidized. We also exclude sweetened beverages because sugar is subsidized and used in tea, but it is unclear if tea was defined as a sweetened beverage.

### 3. Results

#### 3.1. Household characteristics

Appendix Table A2 shows household characteristics of our sample. The average age of the household head is 37 years old and there is an average of three children between the ages of 0-18 in the household. Ten percent of households live in an urban area. Almost all households (96 percent) are enrolled in the *Tamween* ration program, with an average of two members holding a ration card and an allowance of 110 EGP per month on the card. Very few households own a car (1 percent), only 4 percent own a bicycle, but 98 percent of households have access to a mobile phone; proxies for household wealth. Around 12 percent of households have any member of the household involved in agricultural production.

#### 3.2. Food price inflation

Panel A of figure 1 shows the year-over-year inflation rates of each food group for January and November 2022. Except for potatoes and oils and fats, all food groups experienced an increase in inflation rates, and bread and cereals experienced the largest increase. Potatoes and oils and fats had lower year-over-year increases in inflation in November 2022 compared to January 2022. Some food groups such as beans and fish and seafood, which experienced very little inflation in January 2022 relative to January 2021, showed very large relative increases in November 2022 relative to November 2021.<sup>8</sup>

#### 3.3. Inflation and mothers' diets

Panel B of figure 1 presents the percentage of mothers that reported consuming each food group during the past 24 hours, before and after the onset of the war. The figure shows that essentially all mothers consumed grains both before (95 percent) and after (100 percent). Other vegetables and oils and fats were also almost universally consumed in both periods. Mothers were more likely to consume pulses and seasonings by 46 percentage points, sweetened beverages by 44 percentage points, dark green vegetables by 28 percentage points, vitamin A vegetables by 15 percentage points, other vegetables by 9 percentage points, fruits other than vitamin A fruits by 18 percentage points, nuts and seeds by 19 percentage points, and oils and fats by 10 percentage points after the onset of the war relative to before it. The consumption of roots and tubers decreased by 22

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<sup>8</sup> Note that the prices of beans, fish, and seafood happened to have experienced low rates of inflation in 2021. However, the large jump in prices is consistent with a general increase in prices due to the Russian invasion of Ukraine.

percentage points, and consumption of the other food groups remained almost unchanged between November 2022 and January 2022.

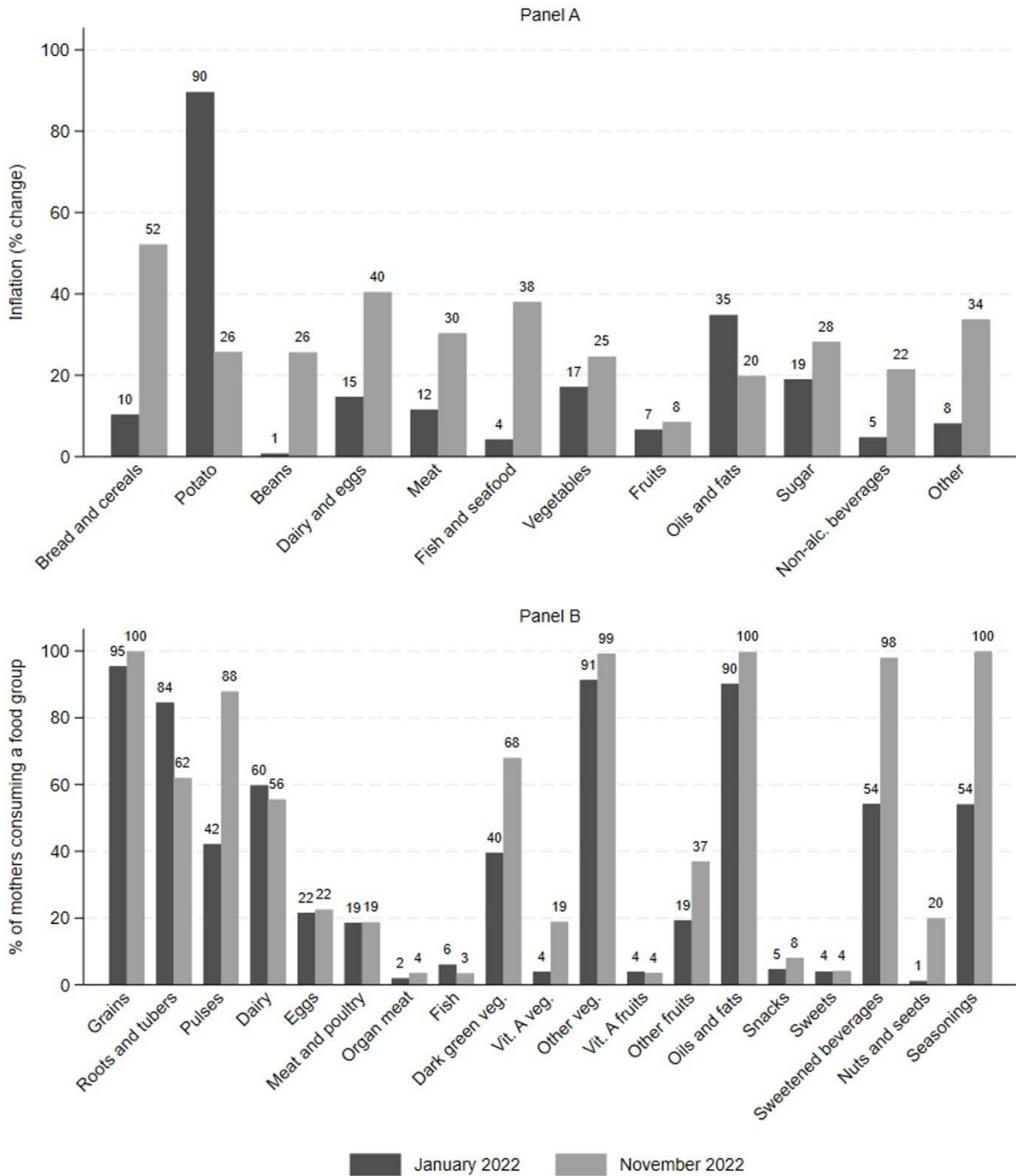


Figure 1. Panel A: Year-over-year inflation per food group in January and November 2022. Panel B: Share of mothers consuming a particular food group in January and November 2022.

Notes: Panel A uses data from the CAPMAS survey and Panel B uses data from the study’s survey. A mapping of CAPMAS food group to food groups from in-person and telephone surveys with mothers is available in Appendix Table A1. The food group “Sugar” in panel A includes sugar, jam, honey, chocolate, and confectionery.

Table 1 reports coefficient estimates from a regression of consumption of a food group in a particular time period on log CPI, mother fixed effects, time period indicator variables and food group indicator variables. We see that a one percent increase in the CPI of a food group is associated with, on average, a 0.19 percentage point decrease in the probability that the mother consumes that food ( $p < 0.01$ ).

Table 1. Food prices and mothers' food consumption

Variable	(1) Consumed a food group in the past 24 hours (yes = 1)
log food-group, governorate, time CPI	-0.190*** (0.059)
R-squared	0.538
Observations	108,908

Notes: The dependent variable is an indicator variable that equals one if the mother consumed a particular food group in the past 24 hours. The independent variable is the natural log of the CPI for that good group, in a particular governorate, before or after the war. We include an indicator variable for each food group, an indicator variable for the second round of data collection, and mother fixed effects. The analysis is based on 108,908 observations (38 observations per mother, for 2,868 mothers). Standard errors in parentheses are clustered at the governorate-food level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Turning to the second analysis on particular food groups, Figure 2 reports the coefficient estimates associated with each interaction term of the food group indicator variables and the indicator variable for the second period, capturing differential trends in the probability of consumption by food group obtained from the regression analysis. The results exhibit three main patterns in mothers' diets following the inflationary crisis triggered by the war. First, relative to the change in the probability of consuming grains, mothers were less likely to consume roots and tubers ( $p < 0.01$ ), dairy ( $p < 0.01$ ), fish ( $p < 0.01$ ), and vitamin A-rich fruits ( $p < 0.05$ ), all of which are considered nutritious foods. However, mothers were more likely to consume some nutritious foods like pulses ( $p < 0.01$ ), dark green vegetables ( $p < 0.01$ ), vitamin A-rich vegetables ( $p < 0.01$ ), other fruits ( $p < 0.01$ ), and nuts and seeds ( $p < 0.01$ ). Finally, the consumption of unhealthy foods such as sweetened beverages ( $p < 0.01$ ) increased. Pulses, seasoning, sweetened beverages, and dark green vegetables experienced the largest increases in consumption between January 2022 and November 2022, while roots and tubers experienced the largest decrease.

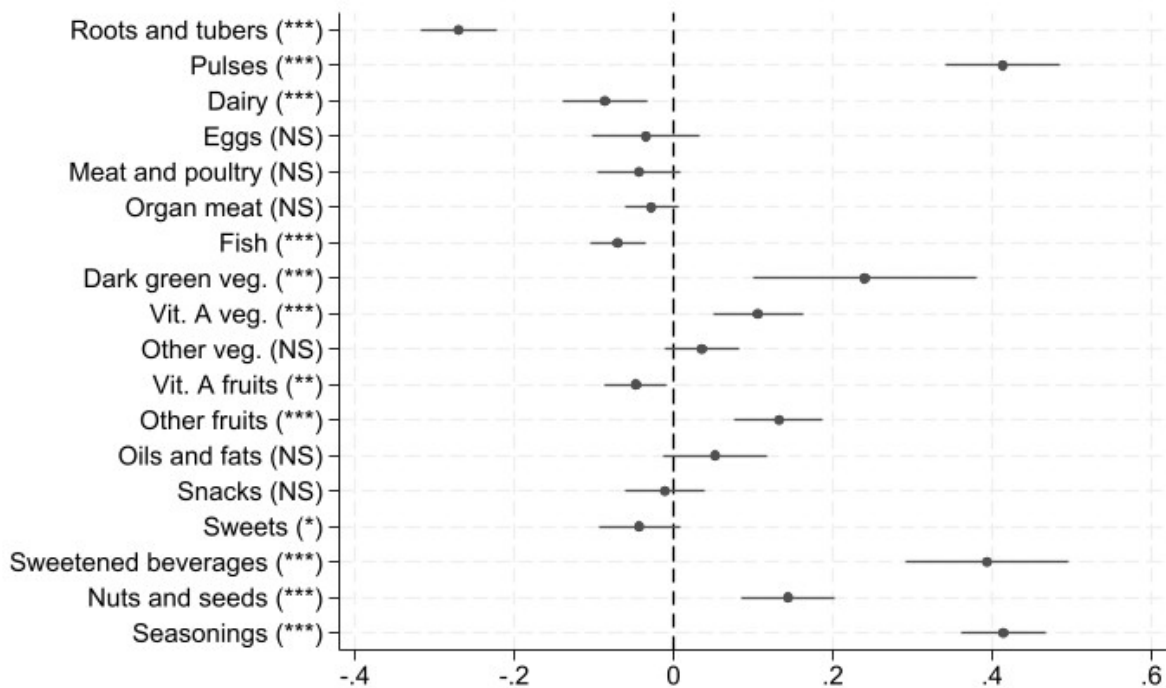


Figure 2. Changes in composition of mothers' diets

Notes: This figure is a plot of the regression coefficient estimates of indicator variables for consumption of a particular food group on food groups interacted with an indicator for the second round. The food group “Grains” is used as the base category. We also include an indicator variable for each food group, an indicator variable for the second data collection round, and mother fixed effects. The analysis is based on 108,908 observations (38 observations per mother, for 2,868 mothers). Standard errors are clustered at the governorate-food level. Parentheses indicate: NS  $p > 0.10$ , \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

### 3.4. Heterogeneity analysis

Looking at potential heterogeneity in mothers’ consumption of subsidized and unsubsidized food groups, we note that when testing each group separately, there is a significant reduction in consumption of unsubsidized food groups ( $p < 0.01$ ) while this is not the case for subsidized food groups ( $p > 0.1$ ; Panel A, Table 2).

Furthermore, we examine heterogeneity based on mothers who live in households’ where one or more members report engagement in agriculture for own consumption and report the results in Panel B of Table 2. A one percent increase in CPI is associated with around 0.20 percentage point reduction in the probability of consuming a food group, on average, for mothers who do not work in the agricultural sector ( $p < 0.01$ ) and about a 0.14 percentage point reduction for those who do ( $p < 0.1$ ), compared to consumption of grains.

Table 2: Heterogeneity in effects of food prices and mothers' food consumption

*Panel A: Heterogeneity across subsidized and unsubsidized food groups*

	Consumed a food group in the past 24 hours (yes = 1)	
	Subsidized food (yes = 1)	Unsubsidized food (yes = 1)
log food-group, governorate, time CPI	0.003 (0.056)	-0.222*** (0.075)
R-squared	0.697	0.469
Observations	22,940	63,024

*Panel B: Heterogeneity across the agricultural and non-agricultural sample*

	Consumed a food group in the past 24 hours (yes = 1)	
	Non-agricultural sample	Agricultural sample
log food-group, governorate, time CPI	-0.197*** (0.059)	-0.138* (0.073)
R-squared	0.539	0.534
Observations	96,416	12,492

Notes: The dependent variable is an indicator variable that equals one if the mother consumed a particular food group in the past 24 hours. The independent variable is the natural log of the CPI for that good group, in a particular governorate, before or after the war. Each coefficient is a separate regression. We include an indicator variable for each food group, an indicator variable for the second round of data collection, and mother fixed effects. Standard errors in parentheses are clustered at the governorate-food level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

#### 4. Discussion

Following the onset of the Russia-Ukraine war, Egypt experienced one of the highest rates of food price inflation worldwide (World Bank, 2023). The objective of this paper was to examine the association between changes in food prices triggered by the Russia-Ukraine war and the diets of poor mothers in Egypt. Due to the increasing number of inflationary shocks, particularly food price shocks, that are occurring globally, estimating the associations between dynamics in food prices and changes in diets is important to inform policy responses to inflationary shocks.

We observe a change in mothers' diet composition as mothers consume less of a food group as prices increase (on average, a 0.19 percentage point decrease), and they substitute food items that experienced relatively higher inflation rates with food items that experienced relatively lower inflation rates. For instance, mothers increased consumption of pulses and sweetened beverages, and reduced intake of dairy and fish in response to changes in food prices. Pulses are likely to be the most affordable source of protein, and their prices remain relatively low in Egypt, compared to fish or meat. This substitution of expensive nutritious food such as dairy and fish to cheaper

food items is expected as consumers' real income and purchasing power fell following the increase in inflation. Moreover, the consumption of bread did not change, as expected, likely due to low elasticity of demand and the presence of the *Tamween* program's bread subsidy. These findings are consistent with recent studies establishing the relationship between inflation and malnutrition (Block et al., 2004; Headey & Ruel, 2023; Headey & Alderman, 2019; Hirvonen et al., 2020).

Our study shows some evidence that poor mothers decreased their consumption of unsubsidized food groups while consumption of subsidized food groups remained unchanged, suggesting a potential protective role of the national food subsidy program. These results are consistent with Meyimdjui and Combes (2021), who found that subsidies helped mitigate the negative impacts of price shocks on consumption in a cross-country analysis. Of course, while food subsidies may be a powerful method of cushioning the negative effects of food price shocks, this does not imply that subsidies are an ideal policy for other goals. For example, Valero-Gil and Valero (2008) show in Mexico that food subsidies targeting the extremely poor had a minimal impact on poverty, justifying additional government policies and complementary interventions to improve the impact of these interventions (Wodon & Zaman, 2010).

The subsample analysis suggests lower responsiveness of mothers from households engaged in agricultural production to changes in food prices consistent with most households likely being net food consumers, although the difference is not statistically significant.

Our study's main strength is that it describes a significant change in consumption patterns in Egypt and relates it to changes in prices using a unique survey dataset combined with detailed location- and food group-level specific inflation data. We examine the effects of inflation on mothers' food group consumption using individual-level panel data, whereas much of the existing evidence on the relationships between inflation and food prices and household welfare relies on aggregate cross-country estimations, simulations, and model-based analyses (Headey & Hirvonen, 2022; Headey & Martin, 2016; Warr, 2008). Additionally, household-level measurements, rather than individual measurements, can obfuscate the impacts of rising food prices on individual diets, particularly of vulnerable populations such as mothers.

The present study also has limitations. First, we did not measure quantities of food consumed or purchased per food group, but only the probability of consuming each food group. Second, we cannot claim causality, but simply associations, as inducing a price shock in a randomized manner would be difficult and unethical. Third, the overlap between CPI food groups

and food groups from the in-person and telephone surveys is not perfect. Still, we believe the match is sufficiently close that the conclusions of our study would not be affected.

The surge in food prices following the onset of the Russia-Ukraine war has demonstrated the importance of adopting policies that aim at containing domestic inflation, especially in countries like Egypt with a high dependence on food imports. Specifically, our results provide suggestive evidence on the protective role of Egypt's food subsidy program, which is a cornerstone of its social protection strategy that serves 72 million Egyptians (Abdalla & Al-Shawarby, 2018). The overall shift away from animal source foods towards sweetened beverages as prices rose, while expected, is unfortunate and may contribute to the double burden of malnutrition, exacerbating the already high rates of malnutrition and obesity in Egypt (Abay et al., 2022; Ecker et al., 2016). Consequently, improving the design of food subsidy programs, taxes on unhealthy foods, and possible expansion of nutrition education initiatives may improve the effectiveness of these programs.

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## Appendix

Table A1: Mapping of the survey's food groups to the CAPMAS food groups

	Survey food group	CAPMAS food group	Included in subsidized category <sup>a</sup>
1	Grains	Bread and cereal	Yes
2	Roots and tubers	Potato	No
3	Pulses	Beans	Yes
4	Dairy	Dairy and eggs	–
5	Eggs	Dairy and eggs	No
6	Meat and poultry	Meat	No
7	Organ meat	Meat	No
8	Fish	Fish and seafood	–
9	Dark green vegetables	Vegetables	No
10	Vitamin A vegetables	Vegetables	No
11	Other vegetables	Vegetables	No
12	Vitamin A fruits	Fruits	No
13	Other fruits	Fruits	No
14	Oils and fats	Oils and fats	Yes
15	Snacks	Sugar, jam, honey, chocolate, and confectionery	No
16	Sweets	Sugar, jam, honey, chocolate, and confectionery	Yes
17	Sweetened beverages	Non-alcoholic beverages	–
18	Nuts and seeds	Other foods	No
19	Seasonings	Other foods	–

<sup>a</sup> We omit from the analysis food groups for which it is not clear if they fall into the subsidized or unsubsidized category.

Table A2: Household characteristics

Variable	Mean (SD)
Household head age (years)	36.83 (5.71)
Number of children 0-18 years old	3.35 (0.98)
Household lives in an urban area (yes = 1)	0.10 (0.29)
Any household member has a <i>Tamween</i> ration card (yes = 1)	0.96 (0.19)
Number of family members registered for <i>Tamween</i> ration card	2.37 (3.73)
Total monthly cash allowance for rationed food (EGP)	110.35 (39.33)
Any household member owns a car (yes = 1)	0.01 (0.07)
Any household member owns a motorcycle (yes = 1)	0.04 (0.19)
Any household member owns mobile phone (yes = 1)	0.98 (0.12)
Any household member is involved in agriculture (yes = 1)	0.12 (0.32)
Observations	2,868

Notes: SD stands for standard deviation. We report standard deviations in parentheses.

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