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Effects of high food prices on consumption pattern of Saudi consumers: A case study of Al Riyadh city



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Abstract This paper investigates how urban households in Riyadh city, capital of Saudi Arabia, coped with higher food prices depending on a survey for selected group of households. The primary data were obtained in a survey from a sample of 286 household heads. Before analysis, the collected data were first grouped and classified according to the income level of respondents and then descriptive statistics and analysis of variance were applied. The results showed that the consumption quantities of major food commodities decrease due to high prices and at the same time expenditure increases, which lead to erosion of some of the consumers' savings. High food expenditure makes lower income group more fragile and sensitive for any future increase in food prices. The perception of consumers for price increase in the future is also registered which reflects the lower consumer confidence in the food markets. The respondents iterate the absence of the role of the government to control the food market that may reduce the impact of higher food prices. Therefore, the paper recommends that government should intervene through food policy to mitigate the effects of food price volatility.

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1. Introduction

The consumption pattern is one of the most important drivers of the development pattern of industrialized world. The main factor explaining food consumption patterns is the level of disposable income. However, consumption pattern changes not

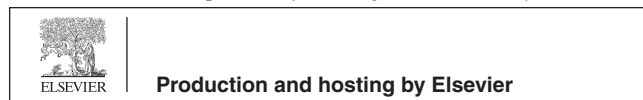
only measure increases in the amount of calories consumed with the rising income, but also the share of animal products in overall diets. There are other additional explanatory factors that determine consumption pattern rather than income like culture, religion or – possibly – lifestyle choices. Moreover, the consumption structure differs widely even at the same high income level (Reusswig et al., 2003).

The pattern of Saudis food consumption has been undergoing dramatic changes over the last 30 years due to high economic growth and living standards driven by oil revenues. The consumption of meats, dairy products, rice, fish, fresh fruits and fresh and processed vegetables has been increasing. Many factors have influenced Saudi food consumption pattern like higher household income, higher growth rate of population and a more westernized lifestyle. Saudi market depends

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mainly on the world market to cover its domestic demand for food products e.g. the food imports in Saudi Arabia represented 16.5% of total merchandise imports in 2010 (up from 15.3% in 2005) (WTO, 2012). Furthermore, Saudi Arabia does not expect to cover its food needs from domestic production with its present weather, limited water supply, rapid population growth and high living standards. This makes Saudi food market more vulnerable to the changes and fluctuation of the world food market production and prices.

Recently, soaring food prices have become a major concern amongst policy makers. For example, the group of 20 developed and leading emerging economies (G20) has put the food price spike and food security at the top of their 2011 agenda (Alem and Soederbom, 2012). In due time after the sharp decline from their peak in the second half of 2008, the international food prices soared again. Prices for cereals, cooking oils and sugar increased most, while the increase of meat prices was more moderate. Global supply and demand imbalances in agricultural commodity markets appear to have been a main driving factor for this recent increase. Unfavorable weather conditions in important producing countries and growing world population are the main driver of food prices. Other factors driving food prices (both on the supply and demand sides) are higher energy prices and the expansion of bio-fuel production (OECD, 2012).

Saudi consumers are not immune from the effects of high global food prices. High food prices might inevitably erode the Saudi household's purchasing power, especially low-income households reducing equity and efficiency standards (World Bank, 2008). In particular, high costs of food may curtail household spending for other essential goods and services, such as health care (Huang and Wu Huang, 2012).

Thus, it is important to investigate how consumers react and adjust to high food prices and evaluate the speculation of consumers to the future food markets. This paper investigate how urban households in Riyadh city, capital of Saudi Arabia, coped with higher food prices depending on a survey for selected group of households.

2. Analytical framework

2.1. The study area and data collection

A cross sectional study was conducted in the Riyadh city, capital of Saudi Arabia, to study the effects of higher food prices

Table 1 Marital status and family size.

	Frequency	Valid percent
Single	47	16.6
Married	231	81.6
<i>Family size</i>		
1–3	55	26.3
4–6	85	40.7
> 6	69	33.0
Divorce or widow	5	1.8

Source: survey results.

Table 2 Job description.

	Frequency	Valid percent
Government employee	174	63.0
Private sector employee	66	23.9
Freelancer	22	8.0
No job	14	5.1

Source: survey results.

Table 3 Income groups of the respondents.

	Frequency	Valid percent
Lower income group	49	17.8
Medium income group	158	57.2
Higher income group	69	25.0

Source: survey results.

on consumption pattern of households. Purposive sampling was used to select the study district in Riyadh city, while random sampling method was used to select the respondents. The primary data were then obtained in a survey from a sample of 286 household heads, using a structured questionnaire in 2011.

2.2. Analytical techniques

Descriptive statistics using frequency tables, graph illustration, and cross tabulation were applied to achieve the study objectives. Also, analysis of variance (one way anova) was

Table 4 Consumption pattern of the selected respondents in percent.

Commodity group	Lower income	Medium income	Higher income	F value
Food and beverages	24.0	23.0	22.4	2.0
Clothes and shoes	6.7	6.5	6.5	1.1
Rent	16.4	15.8	15.7	3.9*
Furniture	7.0	7.2	6.8	2.8
Medical services	2.6	2.7	2.4	1.8
Transportation	14.5	14.6	14.6	1.1
Education	5.7	5.6	5.6	1.1
Other services	23.1	24.6	26.0	4.4*
	100	100	100	

Source: survey results.

* Significant difference at 5%.

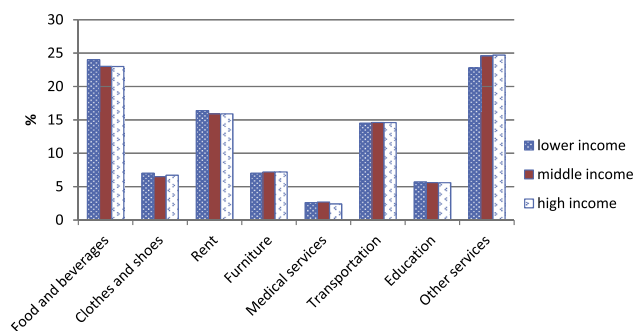


Figure 1 Consumption patterns of the selected respondents.

used to compare means of different income levels. The data were first grouped and classified according to the income level of respondents, and then the analysis was performed. This classification allows for more rigorous analysis to indicate which groups are most affected by high food prices. The respondents were classified into income groups, taking into accounts the living standards of Saudi Arabia, according to the following criteria: those with income less than 2500 SR per month are classified in the lower income group; and those with income range 2500–10000 SR per month are classified in the middle income group; and those with income higher than 10000 SR are classified in the higher income group.

Table 5 Average consumption quantities of basic food products.

Commodities group	Lower income	Medium income	Higher income	F value
Wheat flour (kg)	8.8	11.1	10.3	0.8
Rice (kg)	17.3	20.2	21.5	1.2
Sugar(kg)	9.3	12.2	12.2	1.6
Vegetable oil (liter)	3.7	4.8	5.4	3.0*
Tomato (kg)	8.9	11.8	13.5	4.1*
Goat/sheep meat (kg)	12.2	17.0	19.1	2.8*
Beef (kg)	9.2	7.7	6.9	0.6
Camel (kg)	7.0	8.5	12.3	2.4
Poultry (kg)	12.0	15.4	16.7	3.6*

Source: survey results.

* significant at 5%.

Table 6 Average price increase of basic food products for income groups (%).

Commodities group	Lower income	Medium income	Higher income	F value
Wheat flour	5.6	9.7	8.8	2.6
Rice	10.3	13.3	10.1	1.1
Sugar	20.7	14.9	11.9	3.0*
Vegetable oil	20.4	12.4	15.3	3.5*
Tomato	20.7	13.4	13.3	3.0*
Goat/sheep meat	22.2	16.4	19.3	2.7
Beef	14.8	16.0	13.9	0.3
Camel meat	21.0	17.2	13.8	3.1*
Poultry meat	17.5	12.1	12.8	2.7*

Source: survey results.

* significant at 5%.

Table 7 Anticipated increases in food prices in the future.

Commodities group	Lower income	Medium income	Higher income	F value
Wheat flour	15.5	11.4	8.9	1.8
Rice	17.9	14.1	13.1	0.8
Sugar	16.0	12.3	12.6	1.0
Vegetable oil	18.2	10.1	8.8	4.4*
Tomato	11.1	9.3	8.6	0.2
Goat/sheep meat	16.7	12.1	12.5	1.3
Beef	9.1	9.9	14.5	1.7
Camel meat	7.7	12.7	11.4	0.6
Poultry meat	10.3	8.9	8.9	0.3

Source: survey results.

* significant at 5%.

3. Results and discussion

3.1. Socio-economic characteristics of the sample

There are many socio-economic factors that affect consumption pattern and consumer behavior of individuals and their response to the changes in commodity prices such as family size, marital status, income level and job descriptions, which are considered in this part of analysis.

More than 80% of the selected respondents are married and have children, while the rest are either single or divorced or widowed. About 40% of married couples have 4–6 children and 33% of them have more than 6 children (Table 1). High percentage of the selected respondents (63%) are government employees, 24% are working at private sector, the rest either do not have a precise jobs (freelancer) or have no job (Table 2).

Table 3 shows the classification and grouping of data according to the income of respondents. The middle income group dominates the selected respondents by 57%, while higher income group account for 25% and the rest (17.8%) of the respondents belong to the lower income group.

3.2. Consumption pattern

Consumer expenditure of the selected respondents for the three categories of income is almost identical as indicated by F test. They almost spend about between 22% and 24% of their income on food and beverages, 16% on rent, 14% on transportation (Table 4 and Fig. 1). This result reflects high standard of living for Saudis as there are no big divergence between lower income group and high income group in basic needs. The main objective of the government policy of Saudi Arabia is welfare of its citizens as they subsidized food commodities especially

strategic food products (wheat and wheat flour), and interfere and control the market in favor of consumers.

Table 5 shows the average consumed quantities of the main food commodities for the three levels of income groups. The figures in the table show that there is no significant difference between three groups in the amount consumed of main food

Table 10 Expenditure increase on consumption of basic food products, in percent.

Commodities group	Lower income	Medium income	Higher income	F value
Wheat flour	8.5	7.5	8.2	0.3
Rice	15.0	11.1	8.4	2.4
Sugar	15.1	10.3	8.4	3.5*
Vegetable oil	7.2	8.3	7.3	0.4
Tomato	8.3	7.2	7.3	0.2
Goat/sheep meat	10.5	13.4	9.2	1.9
Beef	11.8	9.8	7.7	0.5
Camel	7.2	9.6	7.5	1.2
Poultry	8.1	9.8	6.8	2.3

Source: survey results.

* significant at 5%.

Table 11 Saving erosion after higher prices, in percent.

	Lower income	Medium income	Higher income
1–25%	44.0	33.3	50.0
25–50%	28.0	52.7	38.6
> 50%	38.0	14.0	11.4
	100	100	100

Source: survey results.

Table 8 Reasons for price increase of basic food.

Item	Lower income	Medium income	Higher income
Increase of world price	46.6	70.0	60.7
Lower subsidy	72.4	75.4	72.2
Wholesaler Monopoly	72.8	85.2	94.7
Importer/exporter monopoly	80.7	79.4	92.8
Weak government Control of market	87.1	85.5	92.8

Source: survey results.

Table 9 Average reductions in consumption quantities of basic food products after price increase, in percent.

Commodities group	Lower income	Medium income	Higher income	F value
Wheat flour	4.9	6.3	6.0	0.4
Rice	8.7	7.5	5.7	1.2
Sugar	9.9	6.7	5.3	2.7
Vegetable oil	8.9	6.1	2.9	4.3*
Tomato	10.6	5.6	3.4	5.1*
Goat/sheep meat	15.8	10.5	8.1	3.6*
Beef	11.3	6.3	3.1	2.6
Camel	8.9	8.1	3.2	2.5
Poultry	8.3	5.9	5.6	1.3

Source: survey results.

* significant at 5%

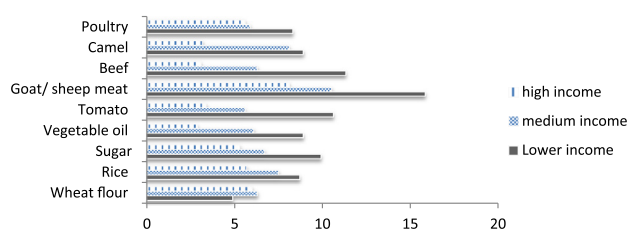


Figure 2 Price effects on food quantity reduction.

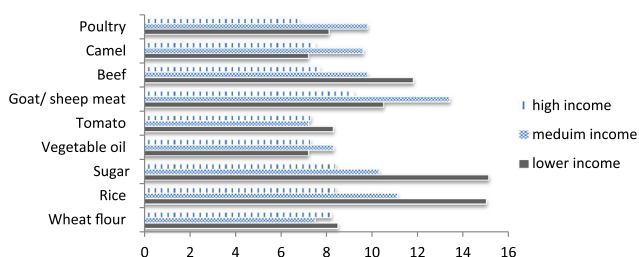


Figure 3 Price effects on food expenditure increase.

products like wheat flour, rice, sugar and beef, but there is a significant difference in consumption of meat especially mutton, poultry and camel meat. Lower income group in general consumes less than other groups while the highest consumption is observed for high income group.

3.3. Food price increase

Tables 6 and 7 illustrate the average level of food price increase based on the respondent's record for the main food products. First of all there is no significant difference between three income groups in food price increase except for sugar, tomato and vegetable oil where the lower income group provides high prices due to burden imposed on them from surge of food expenditure. In general, high price increase is registered for vegetable oil, sugar and goat, sheep and camel meat, and moderate price increase for rice, beef and poultry. Low price increase is recorded for wheat flour. The respondents were also asked for their speculation for future food prices and the results are reported in Table 6. Most of the respondents expected food price to increase in the future, but speculation of lower income group is a little bit more than the other income groups. This reflects lower consumer confidence in the economy both at the local and international levels.

3.4. Reasons for food price increase

Table 8 shows the answers of the respondents to the reasons for food price increase. The three income groups agreed with varying degrees that increase in world food prices, lower government subsidy, wholesaler monopoly, trade (export and import of food products) monopoly and weak government control of the market are the main reasons responsible for an increase in local food prices.

3.5. Effect of food price increase on consumption of basic food products

The average reduction of quantity consumed of the major food commodities is moderate and almost similar except for

vegetable oil, tomato and sheep and goat meat where the lower income group was mostly affected (Table 9 and Fig. 2). The higher reduction is registered for meat products especially goat and sheep meat, beef and camel for the lower income group. This is mainly due to a high increase in their prices as indicated in Table 6. Meanwhile, the consumer expenditure on food products is increased as indicated in Table 10 and Fig. 3. High food expenditure makes lower income group more fragile and sensitive for any future increase in food prices which might curtail their ability to provide their basic needs. Therefore, there is a need for government intervention policy to control the food market and to subsidize food prices of major food items as food policy interventions aimed at protecting the consumption of the poor can be justified on both equity and efficiency grounds.

Higher food prices and increase in expenditures on food commodities erode savings of the consumers especially lower income group where 38% of lower income group respondents said their savings decrease by more than 50%, meanwhile the medium income group is moderately affected as 52% of their savings decrease by 25% to 50% (Table 11).

4. Conclusion

There is a trend in recent time of world food price increase due to many factors mainly drought in major producing areas and changing of consumption pattern especially in emerging developing economies. This has an impact on consumers' demand, choices and welfare. This paper investigates the impact of high food prices on Saudi consumers by taking Al Riyadh city as case study. The results showed that the consumption quantities of major food commodities decrease due high prices and at the same time expenditure increases, which lead to erosion of some of the consumers' savings. The perception of consumers for price increase in the future is also registered which reflects the lower consumer confidence in the food markets. The respondents iterate the absence of the role of the government to control the food market that may reduce the impact of higher food prices. Therefore, the paper recommends that government should intervene through food policy to mitigate the effects of food price volatility.

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