Determinants of individual share of meat and the importance of consumption awareness to protect Egyptian consumers from spoiled or cheated meat consumption

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Research problem

The research problem is confined in the low average individual share animal protein in Egypt, as well as the inability of domestic production to meet the requirements of consumer animal protein, which resulted in lower self-sufficiency ratio of red meat in Egypt from about 86.9% in 1990 to about 73.6% in 2008, and this leads to a lower average individual share meat, in addition to a price rise at rates that exceed the increase in the individual share annual income. This resulted in a distortions and a significant increase in the prices of red meat and low demand during the last period.

The phenomenon of cheating trade is one of the negative repercussions of economic and social developments in a globalization world, estimated globally at $ (780) billion, or that the volume of commercial fraud, on the level world is about (5-10%) of the volume of world trade, while the volume of commercial fraud in the Arab countries about $ (50) million, representing about (6.4%) of the volume of global trade fraud, and therefore to the world in general and developing countries in particular to address this phenomenon, so it must be the government role in addressing and combating commercial frauds, not to mention the role that should be done by extension consumer awareness of consumers of the importance of the quality of goods purchased, but it should be noted that these roles are not enough to confront and Fraud Commercial.

Aims of research:

The research aims to study the factors affecting the individual share consumption and production and imports of red meat in Egypt during the period 1990-2008 to determine the main factors affecting the red meat market, identify the nature of the relationship prevailing red meat commodity.

The research also aims to forecast the average individual share of red meat and the red meat price in Egypt until 2020 through the identification of the best standard methods used in the forecasting model ("Box-Jenkins") "Autoregressive Integrated Moving Average" (ARIMA).

The research also aims to identify the role to be played by the government and consumer protection associations to protect of Egyptian household consumption of goods that was from spoiled and cheated goods markets from the viewpoint of those consumers, Identifying the current and expected role of consumption extension to aware the consumer to educate the Egyptian households of the importance of the quality of goods purchase.

Methodology

The research will use a form of (Recursive Equation Model), which consists of the following equations:

$Y1t = F(Y1t-1, X1t, X2t, X3t, X4t, U1t)$

$Y2t = F(Y2t-1, X5t, X6t, X7t, U2t)$

$Y3t = F(Y3t-1, Y1t, Y2t, U3t)$

Where the sample contains two types of variables (Endogenous variables and exogenous variables)

First: (Endogenous Variable)

$Y1t$ = total average individual share from consumption of red meat, total (domestic + imported) by kilo grams / year.

$Y2t$ = average individual share consumption of red meat only domestic by kilo grams / year.

$Y3t$ = average individual share consumption of red meat imported by kilo grams / year.

Second: (Exogenous Variable)

$X1t$ = Real retail price of red meat (pounds / kilograms).

$X2t$ = Real retail price of white meat (pounds / kg).

$X3t$ = Real retail price of fish (pounds / kg).

$X4t$ = Average individual share real income (Egyptian pound).

$X5t$ = Amount of feed manufacturer (thousand tons / year).

$X6t$ = Area of green fodder (thousand acres / year).

$X7t$ = Number of live animals (A header / year).

In addition to the three variables, an Exogenous lag time period of one (Lagged Endogenous Variable), namely:

$Y1t-1$, $Y1t-2$, $Y1t-3$

(Ordinary Least Square) method is used to estimate all parameters of the model .

- **Data sources:**

- Research was based on secondary data for periodicals and bulletins issued by the Ministry of Agriculture and Land Reclamation, and the Central Agency for Public Mobilization and Statistics, Arab Organization for Agricultural Development, and the Food and Agriculture Organization (FAO), questionnaire was used also to collect research data.In addition to drawing on some research and scientific studies and books related to subject of this research.

SEARCH RESULTS AND DISCUSSION

I: The appreciation of the statistical equations of the form of successive affecting the individual share of red meat total (domestic and imported):
Table (1) refers the best results of the assessment of the statistical model, a Recursive Equation Model:

1 - Factors affecting the overall individual share of red meat, total (domestic and imported):
The first equation in table (1) shows significant influence of individual share of red meat consumption, total (domestic and imported) at the significant level of 1%, which indicates that consumption habits have the greatest impact in influencing the total amount, consumed red meat. Also agreed signal parameters of this function with economic and statistical logic. Estimating the regression coefficients of partial record of transactions, turns out that individual share consumption of red meat, total (domestic and imported) in the previous year in the first instance in terms of its relative impact on the quantity consumed red meat, followed by the retail price of the real red meat, the price of retail real white meat then the average individual share real income in pounds

2 - Factors affecting the individual share domestic production of local red meat only:

The second equation in table (1) shows significant influence of individual share of local red meat only in the previous year at the **significant** level of 1%, as agreed signal parameters of this function with economic logic and statistics. Estimating the standard partial regression coefficients of the estimated coefficients shows that individual consumption share of red meat only local in the previous year in the first instance in terms of its relative impact on the quantity of red meat consumed, followed by local area of green fodder per thousand acres, and the number of live animals per thousand head .

Table (1):Results from the Recursive Equations Model of red meat in Egypt during the period (1990-2008).

item	Model	R^{-2}	F	DW
individual share consumption of red meat overall (local + imported) (kg / year)	$\hat{Y}_{1t} = -44.758 + 8.824 \log \hat{Y}_{1t-1} + 4.017 \log X_{1t} - 5.497 \log X_{2t} - 2.264 \log X_{3t} + 4.437 \log X_{4t}$ $(4.05)^*$ $(1.96)^{**}$ $(-2.56)^*$ (-1.63) $(2.34)^{**}$	0.914	37	2.4
individual share domestic consumption of red meat (kg / year)	$\text{Log}\hat{Y}_{2t} = -4.148 + 0.398 \log \hat{Y}_{2t-1} - 0.004 \log X_{5t} + 0.144 \log X_{6t} + 0.465 \log X_{7t}$ $(9.52)^*$ (-0.58) $(8.31)^*$ $(19.5)^*$	0.999	4466	0.7
individual share consumption of red meat imports (kg/ year)	$\text{Log}\hat{Y}_{3t} = 0.426 + 0.125 \hat{Y}_{3t-1} + 0.43 \hat{Y}_{1t} - 0.468 \hat{Y}_{2t}$ $(-2.77)^*$ $(12.75)^*$ $(-10.83)^*$	0.967	167.4	2.1

•Significant at the potential level of 1%,
• ** significant at the potential level of 5%.
 Source: Compiled and calculated from: Data Supplement (1) research

3 - Factors affecting the individual share of imported red meat:

The third equation shows significant influence of individual share consumption of red meat imports at the significant level at 1%, which obtained through the introduction of ($\hat{Y}_{1t}$), ($\hat{Y}_{2t}$) estimating equations of the first and the second to the third scale equation (2) significant impact of individual share consumption of red meat imported at the significant level of 1%.

And estimate the regression coefficients of partial record of transactions estimated indicated significant effect of each of individual share consumption of red meat imported in the previous year, individual share total consumption of red meat (local and imported) in the current year, individual share consumption of red meat local in the current year at the significant level 1 %.

II: Forecasting average individual consumption share of red meat in Egypt using the methodology of "Box-Jenkins"

This section aims to forecast the average individual consumption share of red meat and the price of red meat in Egypt until 2020 through the identification of the best standard methods used in the forecasting model (Box - Jenkins "Box-Jenkins") "Autoregressive Integrated Moving Average" (ARIMA), in order to identify possible changes in the evolution of economic variables in the coming years, leading to the formulation of policies and economic plans of the state.

Forecasting Stage:

The forecasting results of average individual share consumption of red meat in Egypt set out in Table (2), it was about 21.4 kg / year in 2012 and then increased to about 30.6 kg / year during 2020.

As we see from the results, we can forecasting a price of red meat in Egypt that it was about 47.2 pounds / kilograms in 2012 and then increased to about 89 pounds / kilograms, in 2020.

Table (2): The results of better forecasting models using dynamic methodology "Box-Jenkins

year	Average individual share consumption of meat In Egypt (Kg / year)	Average price of red meat in Egypt (Pounds / kg)
2010	19.589	36.14
2011	20.474	37.092
2012	21.402	47.232
2013	22.375	53.563
2014	23.393	47.662
2015	24.459	48.314
2018	27.965	62.605
2019	29.243	62.475
2020	30.58	87.996

The results showed (Recursive Equation Model) to estimate the determinants of individual share consumption of red meat in Egypt during the period (1990-2008):

1. The most important factors responsible for the overall average individual share consumption of red meat, total (domestic + imported) in the current year is the average total individual share consumption of red meat, total (domestic + imported) in the previous year, real retail price of red meat (LE / kg), the real retail price of white meat (pounds / kg), and the average individual share real income of the Egyptian pound.

2. The most important factors responsible for the average individual share consumption of red meat in the local current year is the average individual share consumption of red meat, local in the previous year, the area of green fodder (thousand acres / year), and the number of live animals (A header / year).

3. The most important factors responsible for the average individual share consumption of red meat imported in the current year is the average individual share consumption of red meat imported in the previous year, the average individual share total consumption of red meat, total (domestic + imported) in the current year, and the average individual share domestic consumption of red meat in the current year.

1. Increase the average individual share consumption of red meat in Egypt to about 30.6 kg / year in 2020.
2. Increase in the average price of red meat in Egypt to about 89 pounds / kilograms in 2020.

III: The role to be played by the government to protect Egyptian consumers from consumption of spoiled and cheated goods from the viewpoint of those consumers:

- **It is already clear need for the Government to implement all or some of these roles to protect consumers from falling into the consumption of bad food cheated which adversely affect the health and security, in particular roles associated with the control of markets, and law enforcement fraud trade for violators, and tighten the sanctions imposed on the production, sale and distribution of spoiled and cheated goods.**

V: The role of consumer protection associations in reducing the marketing of spoiled and cheated goods from the viewpoint of Egyptian consumers

Consumer protection associations are concerned with consumer interests in all areas that could be the provision of goods or services as a threat to his health safety and currency has released a consumer protection law number (2) for 2008, which provided in Article (2) which does not prejudice the fundamental rights of consumers namely

1 - requirements of consumer goods of different medicines, water, housing, health care, proper nutrition, education, culture, training, and services in the areas of finance and banking, electricity, insurance, transport, energy, communications, tourism and other services of interest to consumers,

2 - to ensure consumer safety and health when he uses the product,

3 - to obtain information and guidance and advertising right for all the offers of its products and services,

4 - education and awareness of their rights and responsibilities, economic and guidance in terms of consumption and means of development on an ongoing basis to be able to exercise,

5 - ensure the exercise of their rights to choose the most appropriate product and service available to him in the market, according to his wishes,

6 - represented by his association and heard the views of my actors, which means interests,

7 - ensure a healthy environment and healthy for life people who care for them (Khalaf, 2008).

VI: The current and expected role of consumption extension to aware of Egyptian consumers by importance of the quality of goods purchased:

- In connection with the current role consumption extension to aware of Egyptian families by importance of the quality of goods purchased have found no extensions specialists in this area, but there are some female extension workers in rural development are doing some interviews with the wives of heads of Egyptian households and provide all the information they need guidance and advice and to answer some queries on the quality and consumption of food commodities and a half, durable and durable goods. With regard to the expected role to aware the consumer to educate Egyptian families the importance of the quality of goods purchased, it noted respondents some of the proposals would make to guide consumer has an important and effective in this area, it has been possible to arrange these proposals Descending from the viewpoint of the respondents described in the study.

recommendations

Research Recommendations

A - To increase the area of green fodder to ensure the provision of breeding animals, leading to reduce the cost of animal production.

B - Working to devise calves genetically improved and high productivity to ensure improved efficiency and increase the types and numbers of these animals, leading to increased production of red meat.

C - Working on direct investments in animal production with the need to adopt modern techniques in this area.

D - the need to expand the production of animal feed manufacturer of all kinds in order to ensure lower prices and provide affordable, leading to increased production of red meat, and even the low production does not lead to increases in domestic prices and the consequent reduction in the average individual share

E- increasing the role of Government to control of markets, and tighten the sanctions imposed on the production, sale and distribution of spoiled and cheated goods.