

A SEQUEL TO 'A STUDY OF MONTHLY INDEXES FOR FOOD IN TRIPOLI TOWN (1959 – 1963)'

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In a previous study of monthly indexes for food¹, we presented an analysis of indexes for the period 1959 – 1963. It is interesting to examine the subsequent indexes to see whether they follow the old model or not.

In the previous paper we used the method of least squares for fitting the trend line and obtained the equation of :

$$Y = \frac{18202}{35990} X + \frac{204213}{1770}$$
$$= (.5057516) X + 115.3745763$$

or roughly $Y = .5X + 115.4$, where X stood for the month number as counted from January 1959, and the base year was 1955. The trend line represented the average behaviour very well.

In this note we use the figures for the period 1964 – 1966 in addition to those for 1959 – 1963 for study and comparison. The indexes are tabulated in Table I.

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1. Jangeshwar Dutta, "A Study of Monthly Indexes for Food in Tripoli Town, 1959 - 1963," *The Libyan Economic and Business Review*, Vol. I, No. 1, (Autumn, 1965), pp. 66-75.

TABLE I

*Monthly Indexes for food group, Tripoli Town**Base : January 1955 = 100*

Year	1959	1960	1961	1962	1963	1964	1965	1966
Jan.	114	128	136	133	149	146	161	173
Feb.	112	127	138	129	146	145	157	176
March	111	129	134	134	140	145	148	179
April	114	126	129	132	143	149	159	183
May	111	127	124	129	143	145	161	175
June	113	128	126	132	140	148	157	179
July	109	125	122	127	140	150	145	162
Aug.	118	125	125	133	141	152	144	169
Sept.	125	129	126	140	145	153	161	
Oct.	124	139	129	143	147	158	165	
Nov.	122	135	126	144	146	158	165	
Dec.	124	136	136	144	146	155	166	
Total	1397	1554	1551	1620	1726	1804	1889	1396
Mean	116.42	129.50	129.25	135.00	143.83	150.33	157.42	174.50

Source : Kingdom of Libya, Ministry of National Economy, Census and Statistical Department. **Monthly Cost of Living Index for Tripoli Town, January/August 1966**, (Tripoli : Census and Statistical Department, 1966).

The expected annual mean indexes for different years can be calculated from the formula

$$Y = aX + b = (.505)X + 115.374$$

by giving X the values: 6.5, 18.5, 30.5, 42.5, 54.5, 66.5, 78.5 and 90.5 respectively for 1959 to 1966. The actual annual means are shown against expected values in Table II.

TABLE II

Expected vs. Actual Annual Means.

Year	Expected or Calculated	Actual Observed
1959	118.65	116.42
1960	124.73	129.50
1961	130.81	129.25
1962	136.89	135.00
1963	142.97	143.83
1964	149.05	150.33
1965	155.13	157.42
1966	161.21	174.50*

* Based on Jan. - Aug. figures only.

It appears that the agreement was fairly good until 1965 but 1966 indexes are much higher than the expected.

We can separately fit a straight line to 1964-1966 data and compare the slope of the new line with that of the trend line of 1959-1963.

For this we have the month numbers: 61 for Jan. 1964 and continuing up to 92 for Aug. 1966.

$$\Sigma X = 61 + 62 + \dots + 92 = 2,448$$

$$\Sigma Y = 146 + 145 + \dots + 169 = 5,089$$

$$\Sigma XY = 61(146) + 62(145) + \dots + 92(169) = 392,017$$

$$\Sigma X^2 = 61^2 + 62^2 + \dots + 92^2 = 190,000$$

Hence the normal equations are :-

$$5,089 = 2,448a + 32b \quad (1)$$

$$392,017 = 190,000a + 2,448b \quad (2)$$

$$\text{Hence } a = \frac{5417}{5456} = .99285$$

$$b = 83.07808$$

where a is the slope and b is the extrapolated value for Jan. 1959 with the base year 1955. The expected value for Jan. 1944 = $83.08 + (.99285)60 = 142.65$.

Thus the rate of increase of the index in 1964-1966 is almost double of what it was for the period 1959-1963.

The index is rising much faster in 1966, the reason appearing to be a hundred per cent rise in the price of fresh vegetables, and about a two hundred per cent rise in the price of fresh fruits as compared to January, 1964. Meat and other protein sources have registered about 25% increase in price. All these have resulted in a 100% rise in the general food index.

What is true of Tripoli indexes applies to practically all towns in Libya and as such governmental control measures seem necessary. In this direction the government has already made arrangements for supply of mutton at cheaper rates by importing from Australia. It would be highly gratifying if fresh vegetables and fresh fruits also get necessary care.