

The Agricultural Investment in Libya

Usama Ben-Hamed, and Mosbah Elhoush

Abstract—Agriculture in Libya is still an important sector although its contribution in national income has declined. In 1954 its contribution was 26% this percentage influenced by discovering oil, the percentage became 5.6% in 1997, and 2.1% in 2007. However, agricultural contribution in national income increased to 8.2% in 2009 as a result of the government's orientation towards the diversity of national income sources

The agricultural investment is an important tool for agricultural development, and raising its efficiency is one of the important factors to achieve higher rates of economic growth and social development. Plus, the increase of the agricultural investment efficiency would contribute in increasing and developing the production in the agricultural sector. This study aims to estimate the function of agricultural investment in Libya at the current prices and determines the most important elements that have impacts on the agricultural investment in Libya. The data were collected from different public sources, to cover the period of the study. The study results showed that the volume of agricultural investment in Libyan economy during the study period has reached 253.64 million dinars, and estimated equation showed that there was a negative relationship between the interest rate and the agricultural investment, and a positive relationship between the agricultural investment allocations and the agricultural investment, and also there was a positive relationship between GDP and agricultural investment.

Keywords—Agricultural investment, economic growth, national income, development.

I. INTRODUCTION

THE overall strategy for economic and social development in Libya has characterized during the period (1971-1985) of trying to find an alternative source of income to liberalize the economy of the dominance of the oil sector, this strategy has targeted sectors of agriculture and industry to play a major role in the growth process and to provide an alternative source of income, and considered the agriculture sector and agricultural activity as an essential base for economic construction, and considered the industrial activity essential for achieving sustained growth for the economy. In addition, it depended on transform the economic development in Libya in its dependence on oil as the main source of financing investments in all economic sectors, particularly agriculture and agricultural reclamation.

As a result of the high cost of agricultural development, the investments in the agriculture sector have grown during

Usama Ben-Hamed, Azzaytuna University, Agricultural Economics Department, Tarhuna, Libya (+218917233132).

Mosbah Elhoush, Tripoli University, Agricultural Economics Department, Tripoli, Libya (+218926523585)

the period (1970-2003) as shown in Table 1, and it can be seen from data in Table 1 that the actual investment declined during the period (1981-1985) compared to the period (1976-1980), and this decline in investments in the agriculture sector, which coincided with the oil crisis in the early eighties was due to decline in oil revenues, which constitute the main source of finance, this decline has continued and achieved the lowest value in the period (1996-1999), and then the value of investments returned to increase in the period (2000 - 2003), which amounted to about 581.1 million dinars, While a decline in the value of investments can be seen in 2004 amounted to 262.7 million dinars. In 2005, investments have increased and reached 367.3 million dinars; however, in 2006 investments have decreased to reach about 175.3 million dinars, and noted that in 2007 investments amounted to about 330.14 million dinars.

II. RESEARCH PROBLEM

The increase in population, continuing food shortages and dependence on imports of the most important components of basic food are serious concerns. Therefore, we must find different approaches for the development of production capacities through policies that encourage public and private investment in the agricultural sector to achieve Agricultural development goals. In Libya, although the amounts that have been invested in the agricultural sector to achieve the desired objectives in bringing economic development in this sector and increase its contribution to the GDP, however, the agricultural sector did not respond to these investment flows and then did not achieve the development goals desired such as a high proportion of self-sufficiency, achieving efficient use of economic resources and diversifying the sources of agricultural income. The agricultural sector faced many problems, especially the insufficiency of these investments against this sector, rising prices of production inputs and lack of water resources, which caused a negative impact on the performance of this sector.

III. RESEARCH AIMS

This research aims to estimate the function of agricultural investment in Libya at current prices during the period (1970-2007) and also identify the most important variables that affect the agricultural investment in Libya. In addition, suggest some appropriate solutions to raise the level of agricultural investment in Libya and its contribution through the total investment to increase the level of GDP and inventory of agricultural resources and the size of the food gap with the proportion of self-sufficiency in food

commodities, which include requirements for agricultural investment and goals of its development, its motives and its economic development determinants.

TABLE I
AGRICULTURAL INVESTMENT AND AGRICULTURAL DOMESTIC PRODUCT IN
LIBYA DURING THE PERIOD (1970-2007)

| years | Agricultural Investment | Agricultural Domestic Product | Price Index | Changes agricultural investment | Changes agricultural GDP |
|---------|-------------------------|-------------------------------|-------------|---------------------------------|--------------------------|
| 1970 | 2.08 | 2.91 | 11.36 | - | - |
| 1971 | 4.33 | 2.97 | 11.09 | 2.25 | 0.06 |
| 1972 | 5.71 | 3.86 | 11.27 | 1.38 | 0.89 |
| 1973 | 7.13 | 4.75 | 12.62 | 1.42 | 0.89 |
| 1974 | 17.01 | 4.89 | 13.22 | 9.88 | 0.14 |
| 1975 | 16.60 | 5.68 | 14.59 | -0.41 | 0.79 |
| 1976 | 18.30 | 6.33 | 15.74 | 1.70 | 0.65 |
| 1977 | 16.23 | 5.53 | 16.25 | -2.07 | -0.80 |
| 1978 | 12.80 | 5.54 | 22.02 | -3.43 | 0.01 |
| 1979 | 19.95 | 7.37 | 19.03 | 7.15 | 1.83 |
| 1980 | 25.70 | 12.43 | 19.03 | 5.75 | 5.06 |
| 1981 | 25.62 | 14.37 | 19.03 | -0.08 | 1.94 |
| 1982 | 11.78 | 10.90 | 26.20 | -13.84 | -3.47 |
| 1983 | 8.73 | 10.45 | 28.97 | 3-3.05 | -0.45 |
| 1984 | 8.31 | 10.23 | 31.56 | -0.42 | 0.22 |
| 1985 | 5.14 | 9.62 | 35.57 | -3.17 | -0.61 |
| 1986 | 3.28 | 10.47 | 36.74 | -1.86 | 0.85 |
| 1987 | 2.75 | 10.72 | 38.34 | -0.53 | 0.25 |
| 1988 | 2.46 | 10.40 | 40.67 | -0.29 | -0.32 |
| 1989 | 3.51 | 10.65 | 41.29 | 1.05 | 0.25 |
| 1990 | 4.86 | 10.78 | 44.78 | 1.35 | 0.13 |
| 1991 | 4.71 | 10.83 | 50.10 | -0.15 | 0.05 |
| 1992 | 0.53 | 11.50 | 54.79 | -4.18 | 0.67 |
| 1993 | 3.23 | 11.74 | 60.36 | 2.70 | 0.24 |
| 1994 | 0.20 | 11.85 | 69.83 | -3.03 | 0.11 |
| 1995 | 0.08 | 12.04 | 77.49 | -0.12 | 0.19 |
| 1996 | 0.65 | 12.25 | 87.71 | 0.57 | 0.21 |
| 1997 | 1.74 | 12.67 | 100.00 | 1.09 | 0.42 |
| 1998 | 0.55 | 12.45 | 111.93 | -1.19 | -0.22 |
| 1999 | 0.42 | 11.40 | 127.14 | -0.13 | -1.05 |
| 2000 | 1.14 | 11.64 | 123.46 | 0.72 | 0.24 |
| 2001 | 1.33 | 12.37 | 112.53 | 0.19 | 0.73 |
| 2002 | 1.64 | 13.29 | 101.46 | 0.31 | 0.92 |
| 2003 | 1.24 | 13.85 | 99.30 | -0.40 | 0.56 |
| 2004 | 3.34 | 16.88 | 78.68 | 2.10 | 3.03 |
| 2005 | 4.58 | 18.04 | 80.23 | 1.24 | 1.16 |
| 2006 | 2.11 | 19.79 | 83.00 | -2.47 | 1.75 |
| 2007 | 3.87 | 22.35 | 85.23 | 1.76 | 2.56 |
| Total | 253.64 | 405.79 | 2002.6 | 6.73 | 19.44 |
| Average | 6.67 | 10.67 | 52.70 | 0.17 | 0.51 |

Source: The Ministry of Planning, the report of the implementation of the transition budget for the year 2006, Part I and II of Tripoli, Libya, 2007.

IV. METHOD

The Investment is that part of the gross national product, which takes various forms, such as new construction, production machinery and an increase in inventory, and many theories have discussed the determinants of the investment, which led to the formulation of different models represent a function of investment based on these theories. By economies that have been formulated which these models making it do not fit in the economy of developing countries, including Libya, so the need arise to take advantage of these theories in the formulation of a function of investment in the agricultural sector and that are commensurate with the Libyan economy was as follows

$$I = F(R, II, Y) \quad (1)$$

Where:

I: agricultural investment in Million dinars.

R: Interest rate.

II: Allocation of agricultural investment in million dinars.

Y: Gross national product (GDP) in million dinars.

Function 1 indicates that agricultural investment is a function depends on the interest rate, investment allocation and GDP. In this function, the investment is a dependent variable, and the rest of the variables in the function are independent variables.

V. RESULTS

The agricultural investment function has been estimated by using multiple regression in four forms which are exponential and logarithmic and linear and half- logarithmic in the independent variables, it was found that the best equation was in exponential form as follows:-

$$I = -1891.112 - 226.962 \ln R + 123.372 \ln AG + 74.31 \ln GDP \quad (2)$$

(4.372) (-3.214) (6.881) (2.673)

$$R^2 = 0.766$$

$$D.W = 1.584$$

$$F = 37.067$$

$$N = 38$$

Where:

I: Agricultural investment in million dinars.

$\ln R$: The natural logarithm of the interest rate.

$\ln AG$: The natural logarithm of the current allocations for the agriculture sector in million dinars.

$\ln GDP$: The natural logarithm of Gross Domestic Product in million dinars.

Data from equation (2) indicate that the variables $\ln R$, $\ln AG$, $\ln GDP$ are significant at the level of 0.01, as well as the results indicated that equation for the model as a whole as spirits F reached 37.067 calculated at 0.01, ie indicate the influence of the independent variables in the function on the dependent variable. When a test Durban Watson (D.W) through the calculated value equation (1.584) and comparing

its value lower and upper tabular ($d_l = 1.07$, $d_u = 1.52$) shows that there is no autocorrelation problem .

Estimate the marginal impact of the response of the change in investment equation independent factors No. 2, showing that the investment elasticity in response to the change in the interest rate has reached about - 1.211, and this means that the interest rate increase by 10% leads to a decrease in real investment rate of 12.11% in the average, assuming other variables constant. As also shown that elastic response of investment to a change in the allocation for the sector was estimated at 0.6574 and where it is positive and less than one correct They reflect the investment alone decreasing in the sense that the increase in financial allocations by 10% leads to increase agricultural investment in real terms to about 6.6% on average, assuming all other variables held constant.

As for the elastic response of investment to GDP has turned out to be estimated at 0.3960, and where it is positive and less than one correct it if it reflects the state investment alone decreasing, in the sense that the leadership GDP by 10% leads to increase agricultural investment in real terms to about 3.960%, assuming other variables constant.

As for the marginal effect of the independent variables equation 2 on the dependent variable , it became clear that the marginal effect of the interest rate on agricultural investment has been estimated at about – 6134.108 This means that the decreasing the interest rate by one unit leads to increase the investment by 6134.108 with all other variables held constant. For the marginal impact of the financial allocations, the study results and through equation 2 showed that it estimated at about 0.537 this means that the increase in financial allocations one unit leads to increase the agricultural investment by 0.537 with the stability of the two other variables, while the marginal effect of GDP the study results showed that it was estimated at 0.00573 and this means that the increase in gross domestic product (GDP) one unit leads to increase the agricultural investment by 0.00573 with all other variables held constant in the equation.

VI. CONCLUSION

One of the main requirements of agricultural investment in Libya is that the agricultural sector compared to other sectors needs a sophisticated and integrated investment environment to decrease degrees of risk to that may face the agricultural investment compared to investments in other sectors in order to ensure the continuity and growth.

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