An Analytical Study for Estimation the Agricultural Unemployment in Egypt

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Abstract: Egyptian agricultural sector captures an important situation, and comes in the second order after services sector in employing labor force, especially, household labor, it can be said that human labor input has affected the structural changes with economic liberalization policy in Egypt, that has direct effects on the structure of labor market. The research problem of this research can be summarized in the difficulty to estimate the agricultural labor force, and the difficulty to estimate unemployment in the agricultural sector. So the objective of the research is to find a method of estimation labor force and the unemployment rate in the agricultural sector. To achieve objective of the research, quadratic expenditure system (QES) was estimated, and data were collected from different sources to cover the period subject to the study (1990-2009). The study used three functional form of (QES) model, and chose the model that is listed in equation (1) according to the log likelihood function that was a minimum to equation (1). The results indicated that, expenditure on the leisure for agricultural labor came in the fourth order, among food, nonfood, and services good, and there was a negative relation between labor wage and the demand for leisure, so increasing in labor wage will lead to decreasing in the demand for leisure and increasing labor supply. Labor supply according to (QES) model reached about 5.64 million laborers, while the demand for labor reached about 4.96 million laborers; this mean there is 0.684 million laborers don't work, so the unemployment rate reached about 12.06% as average of the period (1990-2009). Finally some recommendations were introduced via research to raise agricultural employment, i.e., reclamation new land, expanding in cultivation crops that have intensity of labor, adoption technology encourage labor intensity; furthermore expanding the agricultural projects, i.e., small rural industrial.

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1. Introduction

The problem of unemployment, one of the most serious problems facing the Egyptian economist several years ago, the most serious were not at all. The fact that the challenge of the unemployment problem, is the most important measure to any program of economic reform in Egypt, especially with the presence of relatively high population growth resulting in increasing the magnitude of the number of people entering the job market every year. The deflationary policies have helped to stabilization and structural adjustment implemented by the Egyptian government since May 1991, to the increasing rate of unemployment in Egypt as such accelerated in recent years.

The Egyptian agricultural sector occupies a prominent place in the operation of the workforce, particularly the employment of family. Whereas, is ranked as the second after the service sector to absorb labor, where it can be said that, employment of human farming is a production elements important to increase agricultural production. So, the development of Human agricultural resources is one of the determinants of achieving economic and social development at the national level. During the past years have fallen relative importance of the contribution of agricultural employment in the labor market?

Therefore, the work on the face and treatment of unemployment is one-dimensional and hubs of economic, social and political programs of economic reform. This problem gain its important in light of the recession and economic depression, and the problem of domestic liquidity and the concomitant diminution of the size of investments, and the decline of Egyptian exports, as well as the inability of the private sector to fulfill the promise of new jobs.

It could be argued that the creation of productive jobs is a major goal of agricultural development strategy in Egypt, the agriculture is considered as a national industry which is underlying many other industries. Therefore, the problem of unemployment of agricultural perspective narrow does not mean unemployment of labor in the field of agricultural crops, but rather from the perspective of a more comprehensive unemployment in all areas of agricultural production and industries based on them.

Research problem:

The demand for the work is basically a request is

derived from the demand for goods and services, because demand for consumer goods and services is central to employment. Thus, the increase in consumer demand for certain goods and services lead to increase production of them, and then increase the demand on the element of the work, which is necessary to produce those goods and services. This in turn leads to lower demand factor on the leisure time. So, from this context, the research problem difficulty is of quantifying the strength of the agricultural labor and the available supply of the element of human labor in the agricultural sector of Egypt, and therefore difficult to determine the size of the unemployment of agricultural in Egypt.

The objective of work:

Due to the lack of an inventory and assessment for the labor supply of human agricultural sector, this research aims to find a way so that its assessment of the agricultural labor force represented in the labor supply of human. Through the deviation between supply and demand on the element of human labor can estimate the number of unemployed in the agricultural field and the rate of agricultural unemployment under the circumstances, consumer available in the Egyptian countryside.

2. Research method and sources for obtaining data:

Research was to use the square spending model to estimate the relationship between the supply of agricultural labor and the demand for consumer goods. The data statistical was obtained from the Ministry of Agriculture, Land Reclamation and the Central Agency for Public Mobilization and Statistics, and Ministry of Economic Development, during the period (1990-2009). As those data in the value of household consumer spending in the countryside, which in turn are divided into three commodity groups are food, non-food goods and services. The author has been using the index of consumer price in rural areas (2000 = 100), to prevent the effects of inflation.

Theoretical and analytical framework for research:

Abbott [(5)] illustrated that, there is a direct correlation between the number of workers and the worker's wage, meaning that the higher wage will increase so that the labor supply increase and the demand for the leisure time is decrease. In addition, there is also a positive relationship between market consumer goods and services and the labor market, as an increase in production of goods and services reflect the increasing demand on the element of human labor, which is on this production.

Because of the production supply curve is moving from bottom to top on the right, there for the price of the item will increase the quantity supplied from it will increase too. Although, there are some elements of the production is displayed by the individuals themselves, worker displays the time for action, and on the other side, the same worker used the time to vacuum in order to comfort, which is that part of the time, which did not expose him to work (for sale), called the situation as a self-request, or demand for leisure time "Demand for Leisure".

According to the theory of demand the impact of higher wage is divided into two factors as follows:

1 - The income Effect: It is the change of working supply as a result of changes in income at constant wage. Consequently, the increase (decrease) in income with stable wage leads to a lack of (increased) supply hours of work, there for increase (decrease) in demand for leisure time. Whereas, increased income leads to decrease of labor supply, and therefore the impact of income is negative. It may happen sometimes in the case of high wage to a certain level to ensure its adequate standard of living that it is prepared to offer shorter working hours in spite of higher wages. In this case, the supply work curve moving from the bottom to the top of the right, and then tends to the left is called the incline supply curve work. This is due to the increasing wages lead to higher income and thus increases the demand for consumption goods and services. Considering that leisure time or rest to the worker commodity value or opportunity cost of replacement is the sacrifice of his fees received by, the worker would prefer more leisure time and, hence, less job in the sense the increased demand for leisure time at the high wage to a certain level.

2 - Substitution Effect: It is the change in working supply due to change in wages with constant income. Consequently, the increase (decrease) in salary, with the stability of income leads to an increase (decrease) View hour of work, and therefore lack of decrease (increased) demand for labor free time, where wage increases lead to increased labor supply, and therefore the substitution is positive effect.

If the income effect is greater than the substitution effect, this leads to the reflection curve of labor supply, but if the effect of substitution between the wage-hour work and leisure time is greater than the income effect's there for the labor supply curve takes normal curve shape, which is moving from the bottom to the top with right slope (positive).

Description of the Quadratic Expenditure System (QES) model

"Pollak-Wales"(8) can description of (QES) as the follows:-

$$P_i Q_i = P_i \lambda_i + \beta_i (Y - \sum_{j=1}^{n} P_j \lambda_j) + (C_i - \beta_i) \gamma \prod_{j=1}^{n} (P_j)^{-C_j} (Y - \sum_{j=1}^{n} P_j \lambda_j)^2 \quad (1)$$

The Quadratic Expenditure System is characterized by its meets of the homogeneous conditions of zeros degree in prices, income, terms of the addition and symmetric conditions.

(Barnett) [6] explain that; the Quadratic Expenditure System can be obtained as follows:

$$Q_i = \lambda_i + (\beta_i / P_i)(Y - \sum_{j=1}^{n} P_j \lambda_j) + (C_i - \beta_i) \gamma \prod_{j=1}^{n} (P_j)^{-C_j} [(Y - \sum_{j=1}^{n} P_j \lambda_j)^2 / P_j] \quad (2)$$

As is clear from equation (2), it is the result of dividing equation (1) by the price of the product (Pi). Also it can obtain other mathematical form for the Quadratic Expenditure System by dividing equation (1) by the total expenditure on all goods (Y) as follows:

$$W_i = P_i \lambda_i / Y + \beta_i [1 - (\sum_{j=1}^{n} P_j \lambda_j) / Y] + (C_i - \beta_i) \gamma \prod_{j=1}^{n} (P_j / Y)^{-C_j} [1 - (\sum_{j=1}^{n} P_j \lambda_j)^2 / Y] \quad (3)$$

Where:

Q_i = the required amount of goods (i).

P_i= Price of goods(i).

Y_i =the value of expenditure on goods (i).

Y = Total value of expenditure on all goods (n).

B_i= Marginal Budget Share on goods (i), under condition of ($1>B_i>0$), this Provided that, the model does not allow a case of inferior goods.

λ_i = Required the least amount of goods (i).

$\sum_{j=1}^{n} P_j \lambda_j$ = Subsistence expenditure "Subsistence Expenditure", a minimum expenditure.

$Y - \sum_{j=1}^{n} P_j \lambda_j$ = Supernumerary Income expenditure on goods.

Thus, it is clear that, the Quadratic Expenditure System (QES) includes two stages:

1 – first stage: describes the expenditure of subsistence or minimum spending on goods $(\sum_{j=1}^{n} P_j \lambda_j)$ to purchase minimum quantities (λ_j).

2 - Second stage: showing the distribution over income or excess remaining $(Y - \sum_{j=1}^{n} P_j \lambda_j)$, according to the marginal consumption preferences described by (Green)[7]. $(\beta_i's)$

To calculate the elasticity's (QES) model will be as followed:

- Price elasticity: $\varepsilon_{ii} = -1 + (1 - \beta_i)(\lambda_i / Q_i)$
- Cross elasticity: $\varepsilon_{ij} = -\beta_i (P_j \lambda_j / P_i Q_i)$
- Expenditure elasticity: $\eta_i = \beta_i / W_i$

3. Results

From the data obtained it is Possible to estimate Quadratic Expenditure System of the relationship between agricultural labor supply and demand of agricultural, food commodities , non-food goods, and services in rural Egypt during the period (1990-2009), in a manner associated with the slope of the relationship not correlation apparently and non-linear, in order to estimate agriculture unemployment. In addition, it was possible to calculate the expense of leisure time per million days of work by multiplying number of workers in the agriculture sector (Q) multiply the difference between the number of hours of the day and the number of the actual daily working hours in the year, on the base of the working day farm is six hours, there for (3) the leisure time in the real agricultural worker wage by pound per today, after it was amended by the general index number record year for consumer price in rural areas as follows:

Ls = Q (24-6) / 24.365

Were distributed the real consumer spending by millions of pounds in the countryside on three commodity groups representing the private household consumer expenditure as set out in Table (1) in appendix as follows:

1 –The group of food commodities: includes food and drink.

2 –The Group of non-food items: include clothing, housing, furniture, home appliances and fuel.

3 – The group of services: including health, education, culture and entertainment.

The resulting assessment of the Quadratic Expenditure System was as follows:

The results from the Quadratic Expenditure System in table (1) showed the significance of the equations of the model at level of significance 0.01. The coefficient of identifying of each equation is equivalent to about 93%, 94%, 95%, 90% of the changes in spending on leisure time of agricultural labor, food prices, non-food commodities prices, and services, due to the change in the wage of agricultural, food and non-food commodity prices, services, and total expenditure on those goods, while the rest of the changes due to other factors than are not measured in each function. exaltation probabilistic logarithmic function "Log

The research was based on the estimation the Quadratic Expenditure System formed in equations (1), (2), (3), and the comparison between these models was on the basis of selection of the model that unapproachable the value of exaltation probabilistic

logarithmic function"Log Likelihood Function" (LLF). The value of this function (LLF) for each model to -217.88, -313.32, and 415.65, respectively.

Table (1): Results of the Quadratic Expenditure System during the period (1990-2009)

Demand function	Equation	Less consumed amount λ_i	Marginal Propensity to expenditure β_i	Coefficient of determination R^2	F Test
leisure time (Y1)	1	265.0 (4.27)**	0.15 (3.33)**	0.93	(125.3)**
Food commodities(Y2)	2	199.4 (4.36)**	0.41 (3.36)**	0.94	(172.8)**
Non Food commodities (Y3)	3	75.8 (2.55) *	0.33 (2.15)*	0.95	(87.6)**
Serveries (Y4)	4	55.3 (2.19)*	0.11 (2.45)*	0.90	(55.1)**

Where:
- The numbers in parentheses below regression coefficients indicate the values of (t) calculated.
- (*) (**) Indicate significant regression coefficients, or the model at level of significance 0.05, 0.01, respectively.
Source: collected and calculated from with the data of table (1).
Hence, the choice of the model contained in equation (1).

The results of the estimation of Quadratic Expenditure System in table (1) showed the minimum to be consumption of the labor leisure time was about 265 million days of work, and the minimum consumption of food commodities, non-food commodities and services around 199.4, 75.8 and 55.3 million pounds, respectively. The results showed also that, an increase in total expenditure by one pound, resulting in increased spending on leisure time by about 0.11 pounds per day, as well as increased spending on the groups of food commodities, non-food commodities and services by about 0.41, 0.33, 0.15 LE per unit of each commodity on the same order. Therefore, when income is increased, the spending on food commodities ranks first in the share of consumer distribution of LE by 41%, followed in order of non-food commodities, and services by 33%, and 15%, respectively. The spending of leisure time came in the last rank; it was found that it represents about 11% of the total consumer expenditure.

Table (2) illustrate price elasticity's, cross elasticity , and the expenditure elasticity of the Quadratic Expenditure System, where the elasticity's demand function for leisure time shows that, the elasticity price was around -0.82, and this shows that increasing the wage of agricultural labor by 1% leads to a decrease in demand for leisure by 0.82%, So the demand is inelastic. Therefore, the increase in farm worker's wage leads to increase the operation of agricultural labor as a result of lower demand for leisure time, and this line is consistent with economic logic, because the opportunity cost of leisure (labor free time) it means the agriculture labor's wage received by the working, the preference of leisure time means sacrificing wages by possible to get it.

The cross elasticity have reached between the demand for leisure time and all of the prices of food commodities, non-food commodities, and services to -0.12, -0.05, -0.03, respectively, and this explains the presence of a complementary relationship between them, as an increase in the prices of those goods by 1% leads to decrease in the demand for leisure by 0.12%, 0.05%, 0.03% for each of them respectively. The spending elasticity power showed that an increase of the total spending by 1% leads to increase demand for leisure time increased by 0.28%.

As for the elasticity's of demand function for food commodities, has been shown that price elasticity has amounted to about -0.236, as shown by the presence of a complementary relationship between the demand for food commodities and all of the wage labor of agricultural, non-food prices and prices of services, where cross elasticity's of them reached about -0.096, -0.199, -0.136, respectively. While, the value of spending power elasticity of food commodities reached to 1.278.

With regard to elasticity's demand function for non-food commodities, the elasticity price was -0.395 and hence the demand is an inelastic. As it turns out there is a complementary relationship between the non-food commodities demand and all of these, wage of labor agricultural, food prices, and services prices, which reached their cross flexibility about -0.144, -0.796, -0.203, respectively. In addition the value of elasticity's spending power on non-food is about 1.85.

For the elasticity's demand function for services, has reached the elasticity price of demand for services around -0.16, which is a demand is inelastic. The results showed the presence of a complementary relationship between the demand for services, all of the wage and prices of agricultural commodities, food

and non-food items, which amounted to cross them the elasticity to -0.105, -0.580, -0.217, respectively. The value of elasticity on the spending power services around 1.378.

Table (2): Matrix of cross, price and expenditure elasticity's to the Quadratic Expenditure System.

Equation	elasticity	Leisure time (ε_{i1})	Food commodities (ε_{i2})	Non Food commodities (ε_{i3})	Services (ε_{i4})	expenditure Elasticity (η_i)
1	Leisure time	-0.823	-0.121	-0.045	-0.031	0.281
2	Food commodities	-0.096	-0.236	-0.199	-0.136	1.278
3	Non Food commodities	-0.144	-0.796	-0.395	-0.203	1.850
4	Services (Y4	-0.105	-0.580	-0.217	-0.160	1.378

Source: collected and calculated from the table (1).

Estimate the size of unemployment in the agricultural sector in Egypt:

Quadratic Expenditure System is that which you can estimate the unemployment sector, and can therefore estimate the magnitude and rate of unemployment of agricultural in Egypt, through the Quadratic Expenditure System results contained a table (1), it is clear that the minimum duty of consumption of leisure-time (λ_1) agricultural worker was about 265 million days' work. By compensation for the value of the coefficient in the following equations can calculate the size of unemployment, agriculture, which are added in turn to a number of workers active in the agricultural sector and, hence, can be obtained the labor supply of agricultural, through by dividing the volume of unemployment of agricultural to the labor supply of agricultural obtained on the rate of unemployment in the agricultural sector as follows:

W = Total working time available in Year: $W = Q\frac{6}{24}\cdot 365$

Ws = surplus remaining work: $Ws = W - \lambda_1$

Un = the number of agricultural unemployed: $Un = Ws \div \left(\frac{(24-6)}{24}\cdot 365\right)$

LS = agricultural labor supply: $LS = Q + Un$

U = agricultural unemployment rate $U = \frac{Un}{Ls}100$

Table (3) showed that, the results could be obtained with respect to calculate the size of the supply of agricultural labor, and also the size and the agricultural unemployment rate during the period under analysis (1990-2009).

The evolution of the number of employed and unemployed in the agricultural sector of Egypt:

The following shed light on the evolution of the number of employed and unemployed and presentation of the agricultural labor force and agricultural unemployment rate, according to the results obtained in Table (3):

1) The evolution of the number of agricultural workers in Egypt:

The results shown in table (3) illustrated that, the average number of workers in the agricultural sector has reached about 4.96 million workers, during the period under study (1990-2009), where the number of agricultural employees ranged between minimum was about 4.51 million workers in 1990, and the maximum was about 5.55 million workers in 2007.

Assessing the evolution of the employees numbers in the agricultural sector, the equation of the general time trend number (1) in table (4) describes that, the number of the agricultural employed, takes statistically a general increasing significantly trend amounted to 52.65 thousand workers, and with an annual increase of approximately 1.06% of the average number of the agricultural workers, amounting to around 4.96 million jobs in the average duration of the study period.

2) The evolution of the agricultural labor force in Egypt:

The results showed in table (3) illustrated that, the average agricultural labor force was about 5.64 million workers, during the period under study (1990-2009), where the size range of agricultural labor force is between a minimum of around 5.05 million workers in 1990, and the maximum was about 6.43 million workers in 2007.

Assessing the development of the agricultural labor force, the equation describes of the overall time trend No. (2) in table (4), it has taken a general trend increasing significantly statistically at about 17.65 thousand workers, and with an annual increase of approximately 2.59% of the average of the agricultural labor force, amounting to around 5.64 million workers during the average time period under study.

3) The evolution of the number of the agricultural unemployed in Egypt:

The results show in table (3) that the average

number of unemployed farm in Egypt, has reached about 684 thousand unemployed, during the period under study (1990-2009), Where the number of unemployed ranged between a minimum of around 540 thousand unemployed in 1990, and the maximum was about 880 thousand unemployed in 2007.

Assessing the evolution of the number of agricultural unemployed labor, the overall time trend shows that number (3) in table (4), that the volume of unemployment farm has taken a general increasing trend significantly was about 70.16 thousand unemployed, and an annual increase about 1.24% of the average number of agricultural unemployed in Egypt, amounting to around 684 thousand million jobless people in the average duration of the study.

Table (3): Assessment of agricultural unemployment in Egypt during the period (1990-2009)

Years	Agricultural Workers Number (Q), (Million workers)	Total Available working time per year (W), (million working day)	Surplus Work Remaining (Ws), (million working day)	Agricultural Unemployed Number (Un), (million unemployed)	Agricultural Employment), (LS) (million workers)	Agricultural Unemployment Rate (U), %
1990	4.51	411.8	146.8	0.54	5.05	10.62
1991	4.55	415.4	150.4	0.55	5.10	10.77
1992	4.58	417.7	152.7	0.56	5.14	10.86
1993	4.62	421.7	156.7	0.57	5.19	11.02
1994	4.66	425.0	160.0	0.58	5.24	11.15
1995	4.69	428.2	163.2	0.60	5.29	11.27
1996	4.75	433.2	168.2	0.61	5.36	11.46
1997	4.80	438.2	173.2	0.63	5.43	11.64
1998	4.86	443.2	178.2	0.65	5.51	11.82
1999	4.92	448.5	183.5	0.67	5.59	12.00
2000	4.97	453.7	188.7	0.69	5.66	12.18
2001	5.02	457.9	192.9	0.70	5.72	12.31
2002	5.02	457.9	192.9	0.70	5.72	12.31
2003	5.08	463.9	198.9	0.73	5.81	12.51
2004	5.16	470.6	205.6	0.75	5.91	12.71
2005	5.24	478.4	213.4	0.78	6.02	12.95
2006	5.33	486.6	221.6	0.81	6.14	13.18
2007	5.55	506.0	241.0	0.88	6.43	13.70
2008	5.42	494.7	229.7	0.84	6.26	13.40
2009	5.40	493.0	228.0	0.83	6.24	13.36
Average	**4.96**	**452.28**	**187.28**	**0.68**	**5.64**	**12.06**

Source: collected and calculated from the model results (QES) schedule (1) and spreadsheet (1) with the

(4) The development of agricultural unemployment rate in Egypt:

The results in table (3) show that the average rate of unemployment in the agricultural, in Egypt has reached about 12.06%, during the period under study (1990-2009), where the rate ranged between a minimum around 10.62 % in 1990,and the maximum was about 13.70 % in 2007.

Estimating the evolution rate of unemployment in the agricultural sector of Egypt, describes the general time trend equation number (4) in table (4) that, the agricultural unemployment rate had taken increasing trend of Statistically significantly at about 0.16%, and an annual increase approximately 1.33% of the average an unemployment rate, amounting to around 12.02 % during the average time period under study (1990-2009).

Recommendations:

1 - Focusing on the reclamation and cultivation of new lands, national projects and provide the means of attraction of population in the form of services, education, housing, transportation and facilities.
2 - Promoting the role of the private sector to work gatherings of rural agro-industries.
3 - Rehabilitation and vocational and professional training for the workers of the agricultural sector to raise their productivity.
4 - Activating the role of the Social Fund for Development to provide funding for small-scale industries.
5 - Activating the role of the productive families to provide job opportunities

6 - Activating the role of driver training and the transfer of the Social Development Fund to train workers and training transfer to meet the needs of labor market demand.

Table (4): The evolution of the number of employees, the number of unemployed and the Agricultural unemployment rate in Egypt during the period (1990-2009).

Dependent variable	Serial	Constant unit B0	Regression coefficient B1	Coefficient of determination R^2	Average	Annual rate %
Agricultural labors number (thousand labor)	1	4403 (162.6)**	52.65 (23.3)**	0.97	4957	1.06
Agricultural labor force (thousand labor)	2	496.6 (52.5)**	17.65 (20.3)**	0.96	5641	2.59
Agricultural unemployment number (thousand unemployed)	3	4901.8 (138.3)**	70.16 (23.7)**	0.97	684	1.24
Unemployed rate (%)	4	10.33 (168.3)**	0.16 (31.3)**	0.98	12.06	1.33

Where:
- The numbers in brackets below the regression coefficients indicate the values of (t) calculated.
- (**) Refers to the sig at the level of 0.01.

Source: collected and calculated from the data table (3).

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Appendix

Appendix Table (1): spending leisure time agricultural employment, and household consumer spending on food and non-food commodities, and services millions of pounds, in rural Egypt during the period (1990-2009).

year	Leisure time		Food commodities		Non Food commodities		services	
	value	salary*	value	price	value	price	value	price
1990	15115.7	69.6	13477.8	12.2	78.7	7074.0	4282.9	63.2
1991	14870.7	72.1	13676.1	11.9	80.7	7067.8	4296.1	64.7
1992	14734.2	73.3	13804.5	11.8	82.9	7437.0	4236.1	66.6
1993	15103.5	75.6	13678.4	11.9	84.8	7444.0	4345.5	69.0
1994	15194.0	77.5	13763.2	11.9	87.0	7560.4	4424.9	70.5
1995	16243.4	78.7	13906.7	12.6	88.9	7697.8	4513.5	72.5
1996	15310.6	85.7	13118.4	11.8	92.7	7309.6	4327.9	82.5
1997	15530.9	97.4	12863.3	11.8	94.7	7211.2	4284.9	87.6
1998	17849.6	95.5	13044.9	13.4	96.0	7366.9	4405.7	91.9
1999	17711.1	98.4	13098.7	13.2	98.3	7478.0	4513.2	96.2
2000	17830.2	100.0	12936.1	13.1	100.0	7497.7	4572.6	100.0
2001	18786.8	100.9	12981.7	13.7	100.5	7590.4	4680.4	107.2
2002	20537.0	101.3	17815.4	14.9	101.8	9899.4	6522.1	108.5
2003	21816.7	110.3	18074.2	15.7	106.8	10116.6	6668.5	111.8
2004	22043.9	142.2	17298.6	15.6	118.1	9649.8	6511.9	117.2
2005	23562.3	146.6	17876.3	16.4	122.0	10040.0	6484.2	120.8
2006	24320.4	160.0	18137.6	16.7	125.6	10698.9	6296.1	124.0
2007	25888.3	167.6	18441.8	17.1	130.1	11526.6	6294.3	133.5
2008	26518.3	179.2	19674.4	17.9	134.5	12749.0	6321.1	142.8
2009	27779.6	193.1	20723.0	18.8	138.9	13554.8	6453.8	151.7
mean	18033.0	99.1	14679.5	13.5	97.6	8184.7	5021.6	91.4

Source:

- Central Agency for Public Mobilization and Statistics, "Bulletin of record" various issues.
- Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, "records department costs," unpublished data.
- Ministry of Economic Development, "Plan of economic and social development," various issues.

* Agricultural workers earn in pounds per