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Egypt's Rural-Urban Income Disparity: Is the Gap Diverging?

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1. INTRODUCTION

It is not difficult to note the striking disparities between the standards of living in rural and urban Egypt. Such differences appeared in the early studies on the Egyptian Economy in the sixties and seventies and targeted the government policies at that time toward alleviating such disparities. Nowadays, following fifty years of implementation of government policies aimed at achieving economic growth and development of the Egyptian economy in general and rural Egypt in particular - being a region of relatively lower income level - such disparities remain as clear as ever.

Despite the adoption of new liberalization policies and the initiation of the new land reclamation projects, living standards in the rural regions remain inferior to those of the urban inhabitants. Unfortunately, official statistics in Egypt do not estimate per capita income in the rural and urban regions separately nor do they estimate income levels according to size classes[1], but only consumption levels estimated through Family Budget Surveys (FBS) - later called Household Income, Expenditure and Consumption Surveys (HIECS). The objective of this study is not only to analyze the contemporary gap between rural and urban Egypt but rather to assess the evolution of the gap in the levels of per capita income and consumption between these two regions over the last twenty five years from 1981 till 2005, and estimate whether government policies have widened or narrowed the gap. In doing so, the paper thus attempts to answer a number of questions mainly:

* How wide was the gap in per capita income in 1981, and has the gap widened or narrowed in 2005?

* How was the gap in real consumption expenditure levels in urban and rural Egypt in the different income size classes in 1981 and 2005, and in which size class or classes has the gap aggravated?

* Does the gap in real consumption expenditure follow the same pattern as the gap in per capita income?

* Is the gap in per capita income and real per capita consumption reflected in a gap in real consumption of food and basic needs as well?

* What needs to be done to bridge the gap between per capita income in urban and rural Egypt?

The paper is divided into five sections. Following this introduction, section 2 provides a theoretical background on the rural urban income gap and reviews the literature on the levels and causes of such a gap. Section 3 attempts to estimate the evo-

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(1) Starting 1996, *Egypt Human Development Report 1996* (Cairo: Institute of National Planning (INP), 1996), provided estimates of per capita incomes related to each governorate and not to rural and urban Egypt in particular. Furthermore, incomes are not estimated according to size classes.

lution of the nominal and real rural urban income gap through estimating the levels of per capita income in rural and urban Egypt during the period studied. Section 4 assesses the evolution of the gap between the two regions concerning the levels of real total consumption expenditure and real expenditure on food and beverages over different expenditure classes during the period in question. Section 5 concludes and presents some policy recommendations.

2. THEORETICAL BACKGROUND AND LITERATURE REVIEW

Many economic theories have attempted to analyze the evolution of rural urban income disparities. Lewis explained the situation of a country at the very early phases of development where the existence of two sectors - a traditional agricultural sector having surplus labour and a modern productive industrial sector - leads to a wage differential in favor of the industrial sector and results in the migration of surplus labour from the agricultural to the industrial sector.[2] In his model, the relatively higher wage in the industrial sector is expected to remain constant since the unlimited supply of workers in the rural areas prevents agricultural wages from rising and preserves the wage differential with the industrial wage. However, when all the surplus labour in the agricultural sector is absorbed in the industrial one, any additional demand on labour will lead to a rise in agricultural wages and subsequently the industrial one as the supply of labour in the industrial sector becomes positively sloped rather than perfectly elastic. Higher wages in the industrial sector decrease the profits of the capitalists and eventually terminate the reinvestment of profits. It is at this stage when a country's transformation from an agricultural to an industrial economy is completed. Kuznets suggested that inequality in incomes has to accompany economic growth at the country's early stages of development but improves in later stages, a hypothesis widely known as Kuznets' Inverted-U hypothesis.[3] While Kuznets did not explain the procedure by which inequality rises and falls, some economists attributed rising inequality to the emergence of a modern industrial sector providing higher wages than the traditional agricultural sector; such a justification supports the Lewis model in that the rising inequality in Kuznets' model is an inequality between the rural and the urban incomes. Lewis and Kuznets' theories thus follow the neoclassical theory which asserts that the fall in labour supply in the labour abundant areas (rural) and the increase in labour supply in the areas where labour is scarce (urban), leads finally to wage equality or equilibrium.

In contrast to the neoclassical equilibrium theory, many economists contended

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(2) Arthur Lewis, «Economic Development with Unlimited Supplies of Labour,» *Manchester School of Economic and Social Studies*, vol. 22 (May 1954), pp. 139-191.

(3) Simon Kuznets, «Economic Growth and Economic Inequality,» *American Economic Review*, vol. 45, no. 1 (March 1955), pp. 1-28.

that regional wages and profits will tend toward disequilibrium rather than equilibrium. Lewis' model itself was criticized on the basis that several checks could delay or hamper a country's transformation from an agricultural into an industrial economy among which is the use of capital saving techniques in production by the industrial sector which may increase the wage of, but not the demand for, labour. The urban rural income differential would then widen rather than narrow. Myrdall explained in his hypothesis of *cumulative causation* how interregional differences could persist or even widen through time.[4] According to his theory, if two regions within a country have equal wages and the demand for labour increases in the first region leading to a rise in wages, then - unlike what the classical theory predicts that changes in labour supply resulting from the migration of labour from the second to the first region will ultimately lead to wage equilibrium - Myrdall asserted that changes in labour supply will be offset by opposite changes in labour demand, thus maintaining the initial state of disequilibrium. The reason for this is that the fall in supply of labour in the second region will be accompanied by a fall in demand for other inputs as well as goods and services in general leading ultimately to a fall in labour demand; at the same time, the rise in labour supply in the first region will be accompanied by a rise in other inputs as well as goods and services leading to a rise in labour demand. Accordingly, interregional disparities will tend to persist or even diverge as development proceeds.

Away from theory, institutional factors may play a role in aggravating the disparities in incomes between the rural and urban sectors. In most developing countries, industrializing the country cannot be financed except by relying on agriculture. Manipulating the terms of trade between agriculture and industry by depressing agricultural prices and raising prices of manufactured products, which is reflected in the wages of each sector is another check to the structural transformation process which may sustain the wage differential for a longer period. Empirical evidence supports the fact that agricultural policies adopted during Nasser's period have altered the domestic terms of trade through subsidization of agricultural inputs and interest rates on agricultural credit and the implicit taxation of the final produce by buying it from farmers at below-market prices and reselling it at the higher market prices. The objective of such policies was to extract the marketable surplus from agriculture in order to finance industrialization. The effect of such polices on rural income was debatable, for while some studies asserted that terms of trade at that period have not been counterproductive to agriculture[5], other studies have claimed that this policy re-

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(4) Gunnar Myrdal, *Economic Theory and Underdeveloped Regions* (London: Dukeworth, 1957; Methuen, 1963).

(5) Mahmoud Abdelfadil, *Development, Income Distribution and Social Change in Rural Egypt: A Study in the Political Economy of Agrarian Transition*, Department of Applied Economics Occasional Papers (Cambridge, MA: Cambridge University Press, 1975), p. 103.

sulted in the large rural urban income gap that prevailed in the sixties and seventies.[6] Furthermore, Nasser's industrialization at that time was accused of being capital-intensive,[7] thereby delaying the absorption of surplus labour from the countryside and thus preserving the rural - urban income gap. Egypt's rural - urban income gap was thus exemplary of economic theory intermingled with institutional factors.

Agricultural liberalization policies in the late eighties and early nineties were a response to demands from international organizations in the context of a structural adjustment program to raise the income of landholders. Accordingly, many policies from Nasser's legacy were abolished and alternatively a new agricultural liberalization policy was adopted whereby agricultural prices were freed and the state intervention in the cropping pattern and the supply of credit was terminated. The liberalization wave continued in agriculture through the new land tenancy law - law no. 96 of the year 1992 - which gave landowners and tenants a five years transitional period after which agricultural rents would be raised from 7 to 22 times the land tax. Upon the end of the transition period landowners took control of their lands and started renting their lands at market based rents which were 400 percent higher than the former rents.[8] The redistribution of income started going back from tenants to landowners. Very large investment projects began to be implemented in the non-cultivated lands in North Sinai and the New Valley; however, the impact of such projects on the well-being of the rural citizens remains debatable either because such projects were either capital intensive or due to their incompletion or both (such as the Toshki project). The new policy seems to have increased the income generated from agriculture rather than the income accruing to landholders. However, no studies have attempted to assess the effect of such policies on the rural urban gap in Egypt.

Various studies have analyzed the effect of the new agricultural policies on agricultural output in general in Egypt starting the beginning of the nineties but did not focus on the rural-urban income gap, especially the last twenty five year trend. Kheir-El-Din and El-Laithy assessed the impact of the growth of agricultural productivity for improving poverty and employment in Egypt.[9] Earlier studies by Jolliffe attempted to estimate poverty in Egypt in 1997 rather than estimating a time trend.[10]

(6) Karima Korayem, «The Rural Urban Income Gap in Egypt and Biased Agricultural Pricing Policy,» *Social Problems*, vol. 28, no. 4 (April 1981), pp. 417-428.

(7) Rodney Wilson, *Economic Development in the Middle East* (London: Routledge, 1995), pp. 39-40.

(8) Ray Bush «Politics, Power and Poverty: Twenty Years of Agricultural Reform and Market Liberalization in Egypt.» *Third World Quarterly*, vol. 28, no. 8 (2007), pp. 1605-1606.

(9) Hanaa Kheir-El-Din and Heba El-Laithy, «Agricultural Productivity Growth, Employment and Poverty in Egypt,» *Egyptian Center for Economic Studies* (February 2008).

(10) Dean Jolliffe, Gaurav Datt and Manohan Sharma, «Robust Poverty and Inequality Measurement in Egypt: Correcting for Spatial-Price Variation and Sample Design Effects,» *Review of Development Economics*, vol. 8, no. 4 (2004) pp. 557-572.

Datt et al assessed the response of nominal and real wages to changes in food prices in the period 1976 to 1993.[11] Many studies on other developing countries analyzed the effects of rural-urban income disparities on city size and urbanization.[12]

3. ESTIMATING THE RURAL-URBAN PER CAPITA IN-COME GAP IN EGYPT

Estimating the rural-urban per capita income gap

In this section we will attempt to estimate the income gap by determining the difference in per capita income between Egypt's two main sectors. Unfortunately, statistics on per capita income in rural and urban Egypt separately do not exist. Alternatively, Egypt's Human Development Report, published by UNDP and the Institute of National Planning, provides estimates of the per capita income in each Egyptian governorate separately. Based on the population of each governorate, we have arrived at two weighted average estimates for the per capita income in each of Egypt's two main sectors in some years starting 1990. Table (1) shows the results.

Table (1)
Annual Income Per Capita in Rural and Urban Egypt
(Based on UNDP estimates of Per Capita Income in Rural Governorates)

Year	Per Capita Rural Income	Per Capita Urban Income	Income ratio: Rural/Urban
1990/1 (PPP$)(**)	2128	2838.3	0.75
2001/2 (PPP$)(*)	3147.2	6405.40	0.49
2003/4 (PPP $)(**)	3402.71	6675.56	0.51

(*)   Including the frontier governorates of Red Sea, New Valley, Matrouh, North Sinai and South Sinai.

(**)   Only urban governorates of Cairo, Alexandria, Port Said and Suez were included in estimating the urban governorates as the per capita income in the frontier governorates was not estimated in those years.

Source: Calculated from appendix tables A.1 - A.6.

As evident from the results, the gap seems to have been much narrower during the early nineties and the initialization of the structural adjustment policies than at the beginning of the new millennium. In fact, the early years of the new millennium signified the divergence in incomes between urban and rural Egypt. According to the data in the table, the faster rising urban incomes during this period resulted in the fact that rural per capita income averaged only half the urban per capita in 2003 instead of 75 percent of it in 1990.

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(11) Gaurav Datt and Jennifer Olmsted, «Induced Wage Effects of Changes of Food Prices in Egypt,» *Journal of Development Studies*, vol. 40, no. 4 (April 2004), pp. 137-166.

(12) Jan K. Brueckner, «Analyzing Third World Urbanization: A Model with Empirical Evidence,» *Economic Development and Cultural Change*, vol. 38 (February 1990), pp. 587-610.

However, since our study begins from an earlier date, and to confirm the estimates derived from the data in Egypt's Human Development Reports, we will attempt to assess the per capita income in rural and urban Egypt by estimating the total income of the rural sector - both agricultural and non-agricultural - as well as the income of the urban sector (calculated as a residual after subtracting the rural income from national income). The income of each sector is then divided by their populations to arrive at the per capita income [13].

To estimate the incomes of the agricultural and non-agricultural rural populations, we have benefited from the Family Budget Surveys (FBS) - which were later published under the title Household Income, Expenditure and Consumption Survey (HIECS) in the selected years to arrive at the incomes generated from, and the percentages of households contributing to, each economic activity. The following equations will be used based on the previous assumptions:

1) $PCY_{agr} = \dfrac{GDI_{agr}}{POP_{agr}}$

(where $POP_{agr} = POP_{rural} \times Percent_{agr}$)

2) $PCY_{non\text{-}agr} = \dfrac{GDI_{non\text{-}agr}}{POP_{non\text{-}agr}}$

(where $POP_{non\text{-}agr} = POP_{rural} \times Percent_{non\text{-}agr}$)

3) $PCY_{rural} = \dfrac{(PCY_{agr} \times POP_{agr}) + (PCY_{non\text{-}agr} \times POP_{non\text{-}agr})}{POP_{rural}}$

4) $PCY_{urban} = \dfrac{GDI - GDI_{rural}}{POP_{urban}}$

Where:

PCY_{agr} = per capita income of the rural population engaged in agricultural and fishing activities.

$PCY_{non\text{-}agr}$ = income per capita of the rural population not engaged in agriculture and fishing.

POP_{rural} = rural population

$Percent_{agr}$ = Percentage of rural population engaged in agricultural and fishing activities to the total rural population as estimated from HIECS in the selected years.

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(13) A Somewhat similar methodology was used in earlier studies on the rural-urban income gap in the sixties and seventies; See for example: Korayem, «The Rural Urban Income Gap in Egypt and Biased Agricultural Pricing Policy».

Percent$_{non-agr}$ = Percentage of rural population engaged in economic activities other than agricultural and fishing activities to the total rural population as estimated from HIECS in the selected years.

GDI$_{agr}$ = total agricultural income in the rural sector at current factors cost estimated by knowing the income shares generated from agricultural activities in HIECS in the relevant years and using this percentage to estimate the GDI of the rural sector.

GDI$_{non-agr}$ = total non-agricultural income in the rural sector at current factors cost estimated by knowing the income shares generated from non-agricultural activities in HIECS in the relevant years and using this percentage to estimate the GDI of the rural sector.

GDI = gross domestic income at current factors cost

PCY$_{rural}$ = per capita income in the rural sector

PCY$_{urban}$ = per capita income in the urban sector

POP$_{urban}$ = urban population

Table (2) shows our estimates based on the equations used for the period 1981 till 2005.

Table (2)
Annual Per Capita Income in Rural and Urban Egypt
(1981/2 - 2004/5)

Year	Per Capita Rural Income (LE)	Per Capita Urban Income (LE)	Gap in Egyptian LEs	Income ratio: Rural/Urban
1981/2	252.4	600.8	348.4	0.42
1994/5	2560.7	4485.7	1925	0.57
2004/5	5022.8	10362.8	5340	0.49

Source: Calculated by the author, using the previously mentioned equations. See appendix table (B.1) for a step-by-step derivation of the values of the table in addition to tables (B.2), (B.3) and (B.4).

Many important observations appear from the figures in the above table. *Firstly*, although the per capita income gap declined during the period 1981 till 1995, yet it increased again from 1995 till 2005. As evident from the table, in spite of the fact that average rural per capita was 49 percent of the average urban per capita in 2005 up from only 42 percent in 1981, yet it is quite obvious that the gap in per capita income still remains. *Secondly*, compared to rural-urban gap estimates in the sixties and seventies which estimated rural per capita income at about 50% of the urban per capita income,[14] it is quite evident that a stagnant and resilient dis-

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(14) Ibid., p. 419.

parity in incomes seems to characterize the rural-urban scene in Egypt. Comparing our new estimates with our earlier estimates based on the UNDP Egypt Human Development Reports (tab (1)) proves that there is a rising trend in the gap from the 1990s till 2003. With the exception of the estimate of the early nineties, the two methods produced almost similar values of the gap, as the gap ranged about 50 percent in 2004. However, it should be noted that although in relative terms the gap seems to have narrowed, in absolute terms the nominal difference between the rural and urban per capita incomes seems to expand as evident from the table.[15] One *last* observation that can be gleaned from the above table is that the share of agricultural income to rural income is declining over time as evident from the share of incomes coming from households whose heads are engaged in agricultural and fishing activities relative to total rural incomes which declined from 55% to 38%. (See appendix tables B.2) (B.3) and (B.4).

The stagnant gap in per capita rural and urban income and the falling share of income generated from agricultural and fishing activities to total rural income supports the supposition that bridging the income gap comes through enhancing non-agricultural sources of income rather than the agricultural ones. It also questions the efficacy of the agricultural liberalization policies under the structural adjustment program in raising the livelihood of the majority of the rural population.

4. ESTIMATING THE RURAL-URBAN GAP IN EGYPT IN LEVELS OF REAL CONSUMPTION EXPENDITURE

A- Estimating the rural-urban gap using levels of real consumption expenditure

One important question forces itself here: Does the gap in per capita income entail a gap in consumption levels between Egypt's two main regions? While FBSs (or HIECSs) provide data on consumption expenditures in rural and urban Egypt separately according to size classes of expenditure groups, yet comparing the per capita levels would be inappropriate unless the inflation rate is the same in both regions. For example, spending LE 100 by two citizens in rural and urban Egypt might not buy the same amount of goods and services if the price level has been rising more in urban Egypt than in rural Egypt or vice versa. Accordingly, it would be appropriate to look first at the Consumer Price Indexes (CPIs) in both regions, and compare the regions' inflation rates. By deflating nominal expenditure we could arrive at tangible conclusions on whether differences in per capita incomes are reflected in disparities in real consumption expenditure in the two regions.

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(15) It should be noted here that the significance of the nominal differences in incomes cannot be assessed without considering the inflation rates in rural and urban Egypt during the period under study, which will be discussed in the next section.

As our study focuses on the period starting 1981 and ending in 2005, we will use the two surveys conducted in the starting and ending years of the study - the 1981/2 and 2004/5 Family Budget Surveys - and compare the gap in consumption levels in the two years. However, to avoid the distortions on the consumption levels resulting from changes in the price levels in the two regions and from changes in prices in general from 1981 till 2005, the levels of average nominal consumption of the household in each expenditure group in each region will be deflated by the consumer price index in each region. The same exercise will be conducted concerning the expenditure on food and beverages as they represent the highest percentage of expenditure of the average Egyptian family. In attempting to do so we have constructed two indexes (the first is a general CPI while the second CPI is related to the prices of food and beverages) for the whole period with the same base year for each of the two regions.[16]After deflating the figures in the two regions in 2004/5, the size classes in the two surveys in the two regions will be consolidated into larger size classes to facilitate the process of comparison for the low, middle and upper expenditure groups. Table (3) shows the comparative consumer price indexes for rural and urban Egypt over the last twenty five years.

A quick glance at column (c) in the table shows that if average consumer prices were rising by the same rate in rural and urban Egypt the value of the ratio would be equal to 1, while if prices were rising faster in rural Egypt than in urban Egypt the value would exceed 1 and vice versa. The above table displays how average consumer prices - if adjusted to the same starting point in 1980 - started rising faster in rural Egypt than in urban Egypt in the first half of the eighties; for example, the year 1983 showed that CPI for rural Egypt was 9% more than the CPI for urban Egypt compared to their same starting point in 1980. However, starting the second half of the eighties until the mid 2000s, the ratio of the rural CPI compared to the urban CPI started falling gradually until it reached 83% of the urban CPI in 2005. Such declines resulted from the fact that the rate of increase of the average rural prices was much slower than the rate of increase in average urban prices. The same trends could be tracked concerning the consumer price indexes related to food and beverages in rural and urban Egypt. As evident from the last column in the table, prices of food and beverages grew by almost the same pace in the two regions until the mid eighties after which the prices of such items started rising at a higher rate in urban Egypt. In 2005, the CPI related to food and beverages in rural Egypt was 77% the value of the CPI related to those items in urban Egypt. While the faster rate of increase of the CPI may give some implications of a higher standard of living in urban areas given the correlation between inflation and economic growth, yet such results cannot be conclusive since a higher inflation rate might also imply lower levels of real consumption.

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(16) Our index uses CAPMAS initial index which selected the base year 1966/7 = 100. As CAPMAS started new indexes with new base years in 1986/7, 1995/6 and 1999/2000, we extrapolated all these indexes to continue with the initial index. Finally, we set the new index to start with 100 in 1980 to reflect the period under study.

Table (3)
Comparative Consumer Price indexes for All Items and for Food and Beverages in Rural and Urban Egypt 1981 - 2005

Year	CPI Rural Egypt 1980 = 100 (a)	CPI Urban Egypt 1980 = 100 (b)	CPI ratio: Rural CPI/ Urban CPI (C) = a/b	Food and Beverages Final Index Rural Egypt 1980 = 100 (a)	Food and Beverages Final Index (g) Urban Egypt 1980 = 100 (b)	Food & Beverages Price Ratio: Rural FBI/Urban FBI(C) = a/b
1980	100	100	1	100	100	1
1981	113.6	110.5	1.03	114.1	114.2	0.999
1982	129.5	126.8	1.02	128.7	130.7	0.985
1983	160.7	147.2	1.09	164.1	154.9	1.059
1984	175.4	172.3	1.02	177.2	180.6	0.981
1985	195.9	195.3	1	198.3	175	1.13
1986	240.5	239.3	1.01	242.1	255.2	0.949
1987	272.7	286.2	0.953	269.9	313	0.862
1988	329.0	336.8	0.977	332.0	377.5	0.879
1989	406.8	408.5	0.996	428.2	473.2	0.905
1990	475.5	476.9	0.997	503.0	548.1	0.918
1991	553.5	571	0.969	573.2	638.6	0.898
1992	616.9	648.8	0.951	607.3	692.6	0.877
1993	681.6	727.4	0.937	649.6	745.2	0.872
1994	737.9	786.3	0.938	713.7	817.3	0.873
1995	793.7	852.4	0.931	777.8	901.3	0.863
1996	891.2	976	0.913	842.7	1007.9	0.836
1997	921.6	1021	0.903	873.1	1049.5	0.832
1998	881.8	1057.4	0.834	878.9	1102.9	0.797
1999	902.4	1083.8	0.833	895.3	1145.9	0.781
2000	927.8	1112.2	0.834	898.0	1173.7	0.765
2001	946.1	1138.6	0.831	902.5	1186.5	0.761
2002	966.4	1169.4	0.826	909.6	1236.4	0.736
2003	1034.0	1218.8	0.848	1003.0	1317.7	0.761
2004	1201.1	1419.9	0.846	1281.4	1667.1	0.769
2005	1238.6	1489.2	0.832	1355.0	1750.7	0.774

(a)   H. Helmy, «Consumption Trends in Rural Egypt 1981-2005,» *Ain Shams Magazine for Commerce and Economics* (January 2009).

(b)   Table (C.1) in appendix.

(c)   Obtained by dividing column (a) by column (b).

Source: Raw data obtained from CAPMAS, Consumer Price Index in Rural and Urban Areas, and ARE Statistical Yearbook, different issues.

To arrive at more conclusive results, we will use our indexes to deflate the per capita incomes estimated for rural and urban Egypt.

Table (4)
Annual Real Income Per Capita in Rural and Urban Egypt
(at 1981/2 prices)

Year	Per Capita Rural Income (LE)	Per Capita Urban Income (LE)	Gap in Egyptian LEs	Income ratio: Rural/Urban
1981/2	252.4	600.8	348.4	0.42
1994/5	406.6	649.8	243.2	0.63
2004/5	500.7	845.6	344.9	0.59

Notes and Sources: Per Capita incomes arrived at in table (2) were deflated according to the indexes in table (3). Averages of the price levels in 1981 and 1982 were used to reflect the price level in the fiscal year 1981/2 and use it as base year for deflating incomes in 1994/5 and 2004/5. Two year average CPIs were taken to represent the fiscal years of 1994/5 and 2004/5.
Note that the figures for 1981/2 were left unchanged as it is the base year.

A quick glance at table (4) illustrates that, in real terms, the rural-urban per capita income gap has improved over the period studied at a much greater extent than that revealed by the nominal rates, a direct consequence of the higher urban inflation rate. Rural per capita income now amounted to about 60 percent of urban per capita income instead of about 50 percent when nominal per capita incomes were considered (table 2). Due to the lower inflation rate in rural Egypt, real incomes have doubled while the real urban incomes have increased by only one-third, which means a decline in the difference in the amount of goods and services that could be bought by an average person living in the city to that living in the countryside in 2005 compared to 1981.

More decisive results could be reached by examining the real levels of consumption expenditure in the two regions at the beginning and at the end of the period under study which will be undertaken in the next subsection.

B - Assessing the gap in levels of real consumption expenditure on all items from 1981 till 2005

The objective of this section is to assess whether the gap in the levels of real consumption expenditure - or in other words the actual quantities consumed in money terms - has widened or narrowed between the two regions, especially with respect to different income or expenditure size classes. Figures revealed in the 1981/2 FBS on average annual expenditure of households in rural and urban Egypt were consolidated into only five large size classes on a weighted average basis of the number of households in each sub-group. As for the 2004/5 HIECS, the figures on households' expenditure in rural and urban Egypt were first deflated according to the CPI in-

dexes in rural and urban Egypt over the last twenty five years (table (3)). The size classes were then consolidated in more or less similar modal classes that appeared in table (5) on rural and urban annual average expenditure in 1981/2 to render the figures comparable.

A glimpse at the expenditure levels in 1981/2 shows that the very small size classes in rural Egypt were enjoying higher levels of expenditure than their counterparts in urban Egypt, signifying the non-existence of a gap with respect to the poor size classes. In the middle income or expenditure groups there is evidence of a slight gap (in favor of urban Egypt) which increases with the increase in the size class. In the middle expenditure groups, rural Egyptian households would spend only 94% of their counterparts in urban Egypt while, in the large size classes, the expenditure of the rural households was only 90% of the average expenditure of the households in urban Egypt in that size class. It is worth noting that these figures were not deflated but only consolidated to form larger size classes; that is, the actual published figures of the 1981/2 FBS are those used in the analysis.

Table (5)
Levels of Average Annual Consumption Expenditure on all Items in Rural and Urban Egypt in 1981/2

Average Annual expenditure Consolidated weighted average brackets	Average Annual expenditure in rural Egypt 1981/2 (LE per household) (current 1981 /2 prices) (a)	Average Annual expenditure in urban Egypt (LE per household) (current 1981/2 prices (b)	Rural-urban Gap in total expenditure in 1981/2 (c) = (a)/(b)
- < 400	257.1	236.6	1.09
400 - < 800	625.3	637.4	0.98
800 - < 2000	1222.4	1301.6	0.94
2000 - < 7000	2730.1	2879.2	0.95
> 7000	9371	10401.6	0.90

(a)   Using the 1981/2 Family Budget Survey table on average annual expenditure on all items in rural Egypt. Figures were then consolidated using weighted averages of the number of households in each expenditure group, table 2-3.

(b)   Using the 1981/2 Family Budget Survey table on average annual expenditure on all items in urban Egypt. Figures were then consolidated using weighted averages of the number of households in each expenditure group, table 2-2.

Sources: Central Agency for Public Mobilization and Statistics (CAPMAS), *Family Budget Survey* 1981/2 (Cairo: CAPMAS, 1986).

Comparing the 1981/2 figures with the 2004/5 ones clearly demonstrates the slight rising gap in annual expenditure, especially concerning the low expenditure groups (< LE400 at 1981/2 prices) and the middle expenditure groups (LE 2000 - < 8000 at 1981/2 prices) which comprised the majority of households in the sample. In

these two groups the ratio of the average rural to urban expenditure fell from 1.1 to 0.98 in the first size class and from 0.95 to 0.82 in the upper middle size class. What made the gap wider in this size class was not only the falling annual average expenditure in rural Egypt but also the rising average expenditure in urban Egypt in 2004/5 compared to 1981/2. The only opposite trend that took place was in the very large size classes of expenditure (equal and above LE 8000 at 1981/2 prices). For the households in this size class, real expenditure in rural Egypt rose during that period while that for urban Egypt fell creating an expenditure gap in favor of rural Egypt, as the average annual expenditure there was 1.3 times the average annual expenditure of a household in urban Egypt. However, apart from the first and last size classes of expenditure, all expenditure groups in rural Egypt showed deterioration in the levels of real consumption expenditure over the last two and a half decades.

Table (6)
Levels of Average Annual Consumption Expenditure on all Items
in Rural and Urban Egypt in 2004/5 (at constant 1981/2 prices)

Average Annual expenditure brackets in LE (broadly defined brackets at 1981/2 prices) (a)	Average total expenditure in rural Egypt 2004/5 (LE per household at constant 1981 /2 prices) (b)	Average total expenditure in urban Egypt 2004/5 (LE per household at constant 1981/2 prices (c)	Rural-urban Gap in total expenditure in 2004/5 at 1981/2 prices (b)/(c)
< 400 (392.7 rural, 398.5 urban) 398.5 urban)	296.4	302.2	0.98
400 - < 800 (785.4 rural, 797 urban)	612.1	618.1	0.99
800 - < 2000 (1962 rural, 1992.5 urban)	1114.9	1178	0.95
2000 - < 8000 (7357.5 rural, 7970 urban)	2524.8	3061.8	0.82
> - 8000	12511.8	9941.7	1.26

(a)   The 2004/5 figures on annual consumption brackets in rural and urban Egypt were deflated using the general CPI index constructed in table (3) for rural and urban Egypt. Then we consolidated the expenditure brackets in the two surveys (rural and urban surveys) to comprise more or less the same expenditure groups. Although the expenditure brackets selected were very close in the two surveys, they were not identical. The numbers in parenthesis show where the expenditure bracket starts or ends in the two surveys of rural and urban Egypt after deflation.

(b)   Using the 2004/5 Household Income and Expenditure Survey. Figures were then consolidated using weighted averages of the number of households in each expenditure group.

(c)   Using the 2004/5 Household Income and Expenditure Survey. Figures were then consolidated using weighted averages of the number of households in each expenditure group.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *Household Income and Expenditure Survey 2004/5* (Cairo: CAPMAS, 2006).

C - Assessing the gap in levels of real expenditure on food and beverages from 1981 till 2005

As expenditure on food and beverages comprises the bulk of the budget of most Egyptian families, we will attempt in this section to assess whether the gap in per capita income and real expenditure was reflected in a tantamount gap in real expenditure on food and basic needs. A similar exercise to the one done in the previous section was done with relevance to the expenditure on food and beverages in rural and urban Egypt in 1981/2 and 2004/5. The results appear in tables (7) and (8).

Table (7)
Levels of Average Annual Consumption Expenditure on Food and Beverages in Rural and Urban Egypt in 1981/2

Average Annual expenditure Consolidated weighted average brackets (a)	Average expenditure on food and beverages in rural Egypt 1981/2 (LE per household) (current 1981 /2 prices) (b)	Average expenditure on food and beverages in urban Egypt (LE per household) (current 1981/2 prices) (c)	Rural-urban Gap in food and beverages expenditure in 1981/2 (b)/(c)
< 400	171.8	153.9	1.12
400 - < 800	397.8	384.8	1.03
800 - < 2000	716.1	693.8	1.03
2000- < 7000	1374.1	1288.3	1.07
> 7000	2705.7	2539.5	1.07

(a)   Using the 1981/2 Family Budget Survey table on average annual expenditure on food and beverages in rural Egypt. Figures were then consolidated using weighted averages of the number of households in each expenditure group, table 2-3.

(b)   Using the 1981/2 Family Budget Survey table on average annual expenditure on food and beverages in urban Egypt. Figures were then consolidated using weighted averages of the number of households in each expenditure group, table 2-2.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), Family Budget Survey 1981/2.

Astonishingly enough, the figures reveal that rural Egypt does not stand behind urban Egypt in levels of expenditure on food; on the contrary, there is a gap in favor of rural Egypt in all size classes in that respect. It is urban Egypt which suffers the gap this time both in 1981/2 and 2004/5. In most size classes, real expenditure of the rural household was about 1.1 times that of the urban household. In the last or highest level of expenditure, real expenditure of the rural household on food was twice the value of the urban household in 2004/5.

Table (8)

Levels of Average Annual Consumption Expenditure on Food and Beverages in Rural and Urban Egypt in 2004/5 (at constant 1981/2 prices)

Annual expenditure broadly defined brackets at 1981/2 prices (a)	Average expenditure on Food and beverages in rural Egypt 2004/5 (LE per household) (constant 1981 /2 prices) (b)(b)	Average expenditure on food and beverages in urban Egypt 2004/5 (LE per household) (constant 1981/2 prices (c)	Rural-urban Gap in food and beverages expenditure in 2004/5 at constant 1981/2 prices (b)/(c)
< 400 (392.7 rural, 398.5 urban) 398.5 urban)	154.3	142.3	1.08
400 - < 800 (785.4 rural, 797 urban)	294.3	263.0	1.12
800 - < 2000 (1962 rural, 1992.5 urban)	505.2	439.7	1.15
2000 - < 8000 (7357.5 rural, 7970 urban)	866.7	777.3	1.12
> - 8000	3224.2	1521.4	2.12

(a)   The 2004/5 figures on annual consumption brackets in rural and urban Egypt were deflated using the general CPI index constructed in table (3) for rural and urban Egypt. Then we consolidated the expenditure brackets in the two surveys (rural and urban surveys) to comprise more or less the same expenditure groups. Although the expenditure brackets selected were very close in the two surveys, they were not identical. The numbers in parenthesis show where the expenditure bracket starts or ends in the two surveys of rural and urban Egypt after deflation.

(b)   Using the 2004/5 Household Income and Expenditure Survey. Figures were then consolidated using weighted averages of the number of households in each expenditure group.

(c)   Using the 2004/5 Household Income and Expenditure Survey. Figures were then consolidated using weighted averages of the number of households in each expenditure group.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *Household Income and Expenditure Survey* 2004/5.

However, it is worth noting that the gap estimates the difference between two levels, but this does not imply that the situation is improving whether in rural or urban Egypt. In fact, a thorough comparison of the expenditure figures in the same regions through time (rural 1981/2 with rural 2004/5 and urban 1981/2 with urban 2004/5) shows that real expenditure on food has been declining steadily in both rural and urban Egypt throughout the last twenty five years in all size classes. The only exception was the largest expenditure size class in rural Egypt, which experienced a rise in the levels of real expenditure on food.

5. CONCLUSION AND POLICY IMPLICATIONS

Although the study proved that the income gap between rural and urban continued to exist in the period under study, the study proved that the gap - when measured at real and current prices - diverged from 1994 to 2005 after converging from 1981 till 1994. If measured at current prices, Egypt's rural-urban income gap seems to diverge again at the beginning of the new millennium after some signs of conver-

gence in the nineties relative to the eighties. The study, which focused on various methodologies and was based on several official sample surveys and census data, demonstrated that rural per capita income after approaching more to the urban per capita income in the nineties amounted to only 50 percent of it in 2003, almost the same rate as that estimated by earlier studies in the sixties and the seventies. If constant prices are used, a different picture is depicted with the gap becoming narrower from 1981 to 2005 even though the trends in the gap - falling first in the eighties and then rising in the nineties - is preserved. The difference between the real and nominal per capita incomes is a natural consequence of the faster rising inflation rate in urban Egypt during the last twenty five years. However, since averages may be misleading if income inequality exists, we had to analyze the development of the gap in the low, middle and upper classes. In fact, the widening gap was witnessed in the levels of real consumption expenditure - albeit at a much lower extent - especially in the middle classes as average annual rural expenditure, when measured in real terms, amounted to only 82 percent of the urban counterpart as opposed to 95 percent in 1981. The relatively narrower gap in consumption compared to income is logical due to the exclusion of saving which usually widens the difference in incomes. Nevertheless, the study indicated that the gap has not enlarged enough to the extent that it is affecting food and basic needs. In fact, the real annual rural expenditure of the average rural household on food was higher than the value of his urban counterpart in all size classes indicating that food and basic needs are better fulfilled in the rural areas; in fact, there was a diverging gap but, in this case, in favor of rural Egypt.

An increasing rural-urban per capita income gap (in favor of the urban per capita) may have four implications: *first*, that both per capita incomes are rising but that urban per capita income is rising faster; *second*, that both per capita incomes are falling but that rural per capita income is falling faster; *third*, that urban per capita income is constant and rural per capita income is falling; *forth*, that urban per capita income is rising but rural per capita income is constant. Knowing the defects of past and present policies and suggesting the appropriate future policies imply knowing which of the four possibilities fits the Egyptian case. Concerning per capita income gap in general, it is quite clear that the first possibility best explains their trends with rural per capita income, after surpassing the urban per capita rate of growth in the eighties till the mid nineties, it started falling behind afterwards. It also explains the gap in real expenditures of the small and lower middle size classes of expenditure in the two sectors. The rapid growth of rural per capita income during the first period is a natural consequence of the structural adjustment program and the agricultural liberalization policies implemented in the late eighties and early nineties. Though the new agricultural liberalization policies were initially intended to raise the livelihood of farmers through removing implicit taxation under the compulsory procurement quotas of agricultural products at below-market prices, yet the effect of such policies seems to fade through time for several reasons: *first*, selling at market prices is an advantage to farmers if prices are rising and a disadvantage if prices are falling - a phenomenon which affected many agricultural products

some years after the implementation of the policy; *second*, the minute average landholding in Egypt (decreasing even more through time as a result of population growth and inheritance) diminishes the effect of profits resulting from a rise in prices. The following table shows the profit/feddan of some crops in some selected years.

Table (9)
Profit Per Feddan in Egyptian LEs of Some Major Crops in Egypt
(Selected Years)

Crop	1985	1993	2006/7
Cotton	195	1563	1299
Wheat	229	641	1769
Maize	135	353	3051
Nili maize	148	302	2451
Rice	220	657	3031
Sugar cane	474	1027	3902
Permanent berseem	337	699	3635
Lentils	267	274	635

Source: 1985 and 1993: Nabil Habashy [et al.], *The Effect of Agricultural Liberalization Policies on Important Variables in the Agricultural Sector* (in Arabic) ([n. p.]: Ministry of Agriculture, Agriculture Research Centre, Institute of Agricultural Research, 1995), p. 81.

Central Agency for Public Mobilization and Statistics (CAPMAS), *Annual Bulletin of Estimates of Income from the Agricultural Sector 2006/7* (Cairo: CAPMAS, 2006).

As evident from the table the net profit per feddan for some crops has fallen following the liberalization policies, such as cotton; but even for those crops whose profits have almost quadrupled, such as sugar cane, such rewards would be modest, knowing that the vast majority of Egyptian farmers own or rent less than a feddan. The rewards would be even smaller if profits were deflated to reflect real profits in 1981 prices. Small farmers would probably find it more rewarding to use their produce for subsistence rather than sell it through the market which explains the study's finding of higher real food expenditure for most households in rural Egypt compared to urban households. In fact, levels of real consumption expenditure on food and beverages were higher in rural Egypt in 1981 and 2005 than in urban Egypt, showing that a gap (in favor this time of rural Egypt) existed between the two regions in those items.

Only for the large landholders would dependence on farming be very rewarding, which explains why the real average annual expenditure gap was in favor of rural Egypt only in the very large size class of expenditures. Hence there is a limit to incomes from farming for the majority of landholders, justifying the rising shares of rural incomes from non-agricultural activities. This is manifested in the fall in the share of income rising from agriculture compared to total rural income (HIECS, 2004/5). Further narrowing of the gap should thus concentrate on enhancing other non-agricultural sources of income in addition to remittances. As growth is a function of in-

vestment, the redistribution of investment from the urban sector to the rural sector, especially in the rural non-agricultural activities, might help in closing the gap.

Comparing the levels of real consumption expenditure of the lower middle size expenditure groups shows that the second possibility of both real average rural and urban expenditure falling but with the rural falling faster expounds the evolution of their gap. On the other hand, comparing the levels in the upper middle expenditure groups proves that the fourth possibility of stagnant rural income and rising urban income best explains the rising gap for these sections of households. These findings reconfirm our conclusion that agricultural liberalization policies and the concentration on capital intensive export agriculture have not affected the poor and close-to- poor rural classes, kept the living standard of the relatively better off middle classes stagnant but remarkably ameliorated the situation of the rural upper classes throughout the period studied. As there are two sides of the gap, closing the gap from the urban side would definitely not entail decreasing the urban real incomes, as this is not desirable from an economic growth perspective, but rather increasing investments in the rural areas. However, the studies findings of falling real expenditures in some middle size classes in both rural and urban Egypt pose questions on the crisis of development in Egypt.[17]

Appendix Table (A.1)
Estimation of per capita income in PPP US$ in urban Egypt using weighted averages of populations in urban Egyptian Governorates in 1990

Governorate (a)	Per Capita income in PPP US$ (b)	Population (000)[*)(c)]	Weight (d)	(b)*(d)
Cairo	2904	6069	0.624062	1812.275
Alex	2581	2927	0.300977	776.8213
Port Said	4004	401	0.041234	165.1007
Suez	2492	328	0.033728	84.04895
Red Sea	0	90		
New Valley	0	113		
Matrouh	0	161		
N. Sinai	0	171		
S.Sinai	0	29		
		9725	1	2838.246

(*)   According the 1986 Population Census.

Weighted average was calculated by the author according to the percentage of the population of the urban governorate to the total population in urban Egypt.

Source: Egypt Human Development Report 1994 (Cairo: UNDP, 1994), pp. 183 and 193.

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(17) According to the World Bank estimates, Egypt's per capita growth rate was modest over the last two decades as it averaged 2 percent annually from 1987 to 1997 and 2.5 percent from 1997 to 2007, < http://www. devdata.worldbank.org/AAG/egy-aag.pdf > .

Appendix Table (A.2)

Estimation of per capita income in PPP US$ in rural Egypt using weighted averages of populations in rural Egyptian Governorates 1990

Governorate (a)	Per Capita income in PPP US$ (b)	Population (000)(*) (c)	Weight (d)	(b) *(d)
Damietta	3387	740	0.019492	66.01817
Dakahlia	2668	3484	0.091769	244.839
Sharkia	2144	3414	0.089925	192.7991
Kalyoubia	1877	2516	0.066272	124.3917
Kafr El-Sheikh	2797	1809	0.047649	133.2747
Gharbia	2206	2885	0.075991	167.6362
Menoufia	2050	2221	0.058501	119.9276
Behera	1829	3249	0.085579	156.5237
Ismailia	2457	545	0.014355	35.27104
Giza	2502	3726	0.098143	245.5539
Beni Suef	1774	1449	0.038167	67.70778
Fayoum	1882	1551	0.040853	76.88613
Menia	1729	2645	0.069669	120.4584
Assiut	1754	2216	0.05837	102.3802
Suhag	1825	2447	0.064454	117.6287
Qena	1979	2259	0.059502	117.7548
Luxor		0	0	0
Aswan	1826	809	0.021309	38.91042
		37965	1	2127.961

(*)   According to the 1986 Population Census.
       Weighted average was calculated by the author according to the percentage of the population of the rural governorate to the total population in rural Egypt.

Source:Egypt Human Development Report 2004 (Cairo: UNDP, 2004), pp. 183 and 193.

Appendix Table (A.3)

Estimation of per capita income in PPP US$ in rural Egypt using weighted averages of populations in rural Egyptian Governorates (2001/2)

Governorate	Population (000)	Weight (a)	Per Capita income in PPP ($) (b)	(c) = (a) X (b)
Damietta	1035	0.02	4282.6	85.652
Dakahlia	4747	0.09	2995.7	269.613
Sharkia	4906	0.09	2864.4	257.796

to be Continued

Continued

Kalyobia	3732	0.07	3693	258.51
Kafr El Sheikh	2492	0.05	3450.6	172.53
Gharbia	3791	0.07	3640.4	254.828
Menofia	3112	0.06	2885.4	173.124
Behera	4515	0.08	3200.7	256.056
Ismailia	825	0.02	4102.3	82.046
Giza	5427	0.10	4214.7	421.47
Beni Suef	2162	0.04	2281.7	91.268
Fayoum	2321	0.04	2474.6	98.984
Menia	3875	0.07	2682.2	187.754
Assuit	3281	0.06	2682.2	160.932
Suhag	3655	0.07	2245.3	157.171
Qena	2820	0.05	2692.1	134.605
Luxor	407	0.007	2767	19.369
Aswan	1077	0.02	3274.4	65.488
Weighted average				3147.2

Population: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Year-book 1995-2005* (Cairo: CAPMAS, 2003), Table 1-1, p. 2.

Weighted average was calculated by the author using the percentages of each governorate's population to the total population in rural Egypt in 1/1/2003, as cited in: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook*.

Source: Per capita income: Ibid., p. 183.

Appendix Table (A.4)
Estimation of per capita income in PPP US $ in urban Egypt using weighted averages of populations in urban Egyptian Governorates (2001/2)

Governorate	Population (000)	Weight (a)	Per Capita income in PPP ($) 2001/2 (b)	(c) = (a) X (b)
Cairo	7497	0.57	6964.3	3969.65
Alexandria	3691	0.28	5525.2	1547.06
Port Said	522	0.04	8287	331.48
Suez	469	0.04	6272.1	250.884
Red Sea	179	0.01	5487.5	54.875
New Valley	163	0.01	3887.9	38.879
Matrouh	255	0.02	4362.5	87.25
North Sinai	295	0.02	4287.2	85.744

to be Continued

Continued

South Sinai	62	0.005	7916.4	39.582
Weighted Average of urban and frontier governorates				6405.40

Population: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook 1995-2005* (Cairo: CAPMAS, 2003), Table 1-1, p. 2.

Weighted average was calculated by the author using the percentages of each governorate's population to the total population in urban and frontier governorates in Egypt in 1/1/2003, as cited by: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook*.

Source: Per capita income: *Egypt Human Development Report 2004*, p. 18.

Appendix Table (A.5)
Estimation of per capita income in PPPUS$ in rural Egypt using weighted averages of populations in rural Egyptian Governorates (2003/4)

Governorate	Population	Weight (a)	Per Capita income in PPP ($) 2003/4 (b)	(c) = (a) X (b)
Damietta	1035	0.02	4686.2	93.724
Dakahlia	4747	0.09	3278.8	295.092
Sharkia	4906	0.09	3135.1	282.159
Kalyobia	3732	0.07	4042.2	282.954
Kafr El Sheikh	2492	0.05	3776.7	188.835
Gharbia	3791	0.07	3984.5	278.915
Menofia	3112	0.06	3158.2	189.492
Behera	4515	0.08	3503.2	280.256
Ismailia	825	0.02	4490.1	89.802
Giza	5427	0.1	4613.1	461.31
Beni Suef	2162	0.04	2497.3	99.892
Fayoum	2321	0.04	2708.5	108.34
Menia	3875	0.07	2935.8	205.506
Assuit	3281	0.06	2255.7	135.342
Suhag	3655	0.07	2457.6	172.032
Qena	2820	0.05	2946	147.3
Luxor	407	0.007	2871.2	20.0984
Aswan	1077	0.02	3583.1	71.662
Weighted Average				3402.7114

Per Capita income: *Egypt Human Development Report 2005* (Cairo: UNDP, 2005).

Weighted average was calculated by the author using the percentages of each governorate's.

population to the total population in rural Egypt in 1/1/2003 as cited by : Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook*.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook 1995-2005* (Cairo: CAPMAS, 2003), Table 1- 1, p. 2.

Appendix Table (A.6)
Estimation of per capita income in PPPUS $ in urban Egypt using weighted averages of populations in urban Egyptian Governorates (2003/4)

Governorate	Population (000)	Weight (a)	Per Capita income in PPP ($) 2001/2 (b)	(c) = (a) X (b)
Cairo	7497	0.57	7622.6	4344.88
Alexandria	3691	0.28	6047.4	1693.27
Port Said	522	0.04	9070.3	362.812
Suez	469	0.04	6864.9	274.596
Red Sea	179	0.01	0	0
New Valley	163	0.01	0	0
Matrouh	255	0.02	0	0
North Sinai	295	0.02	0	0
South Sinai	62	0.005	0	0
Weighted Average of rural governorates				6675.56

Source: Population: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook 1995-2005* (Cairo: CAPMAS, 2003), Table 1-1, p. 2.

Per Capita income: *Egypt Human Development Report 2005*. Weighted average was calculated by the author according to the percentage of the population of the urban governorate to the total population in urban Egypt.

Appendix Table (B.1)
Calculation of Per Capita Rural and Urban Incomes in
Egypt 1981/2 - 2004/5 According to Four Equations in Text

Equation or variable	1981/2*	1994/5	2004/5
Estimating equation 1: $PCY_{agr} = \underline{GDI_{agr}} \, POP_{agr}$ (where $POP_{agr} = POP_{rural} \times Percent_{agr}$)			
Rural population (POP_{rural}) (1)	27.038	32.068	39.656
Percentage of population whose main activity is agriculture or fishing relative to population in rural areas ($Percent_{agr}$) (2)	0.52	0.38	0.38
Population engaged in agricultural activity in rural areas (POP_{agr}) (3)	14.060	12.186	15.069
Agricultural income in LE (GDI_{agr}) (4)	3742.4	32050	75291
Per capita income in LE of the agricultural sector in rural Egypt (PCY_{agr}) (5)	266.2	2630.1	4996.4
Estimating equation two: $PCY_{non-agr} = \underline{GDI_{non-agr}} \, POP_{non-agr}$ (where $POP_{non-agr} = POP_{rural} \times Percent_{non-agr}$)			
Percentage of the rural population engaged in activities other than agricultural in rural areas ($Percent_{non-agr}$) (6)	0.48	0.62	0.62
Population engaged in non agricultural activities in rural areas ($POP_{non-agr}$)(7)	12.978	19.882	24.587
Estimated non-agricultural rural income in LE ($GDI_{non-agr}$) (8)	3081.0	50066.3	123891.5

to be Continued

Continued

Per Capita income of the rural non-agricultural sector in LE (PCY $_{non-agr}$) (9)	237.5	2518.2	5038.9
Estimating equation three in LE : (10) PCY $_{rural}$ = $\dfrac{(PCY_{agr} \times POP_{agr}) + (PCY_{non-agr} \times POP_{non-agr})}{POP_{rural}}$	252.4	2560.7	5022.8
Estimating equation four: PCY $_{urban}$ = $\dfrac{GDI - GDI_{rural}}{POP_{urban}}$			
Gross domestic income of Egypt at current factors cost in LE (GDI) (11)	19571.1	191010	506511
Income of the rural sector in LE (GDI $_{rural}$) (12)	6824.2	82116.3	199182.5
Population of the urban sector (POP $_{urban}$) (13)	21.216	24.276	29.657
Per Capita income in the urban sector in LE (PCY $_{urban}$) (14)	600.8	4485.7	10362.8
Ratio of rural per capita to urban per capita (15)	0.42	0.57	0.49

(1)   CAPMAS, are statistical Yearbook, different issues.

(2)   Calculated by the author from Family Budget Survey of 1981/2 or the Household Income and Expen-diture Surveys (HIES) of 1994/5 and 2004/5 on the percentage of households engaged in agriculture and fishing relative to all households in the sample. See appendix tables (B.2), (B.3) and (B.4) Notice that calculating the same variable alternatively from census data gave very close percentages. How-ever, for consistency purposes, we gave preference to estimate it from FBS and HIES as we will esti-mate the percentage of agricultural income to total income from the same source. See appendix tables (B.2), (B.3) and (B.4).

(3)   Equals (1) X (2)

(4)   Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook* (Cairo: CAPMAS, different issues on of agricultural income at current factors cost).

(5)   Equals (4) /(3)

(6)   Equals 1 - (2).

(7)   Equals (6) X (1)

(8)   The rural non-agricultural income was estimated by knowing the income shares generated from non-agricultural activities in the household surveys and using this percentage to estimate the GDI of the rural sector. See appendix tables (B.2), (B.3) and (B.4). For example, If agricultural GDI was 75,291 million in 2004/5 and the income generated from agricultural activities was 37.8% according to HIES, then the total rural GDI would be (LE 75291m X100)/37.8 = LE 199182.5m. Rural non-agricultural income would then be equal to LE 199182.5m - LE 75291m = LE 123891.5m

(9)   Equals (8)/(7).

(10)   Equals [(5) X (3) + (9) X (7)]/(1)

(11)   Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook* (Cairo: CAPMAS, different issues issues on national income at current factors cost).

(12)   Equals (4) + (8)

(13)   Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook* (Cairo: CAPMAS, different issues).

(14)   Equals [(11) - (12)]/(13)

(15)   Equals (10)/(14)

(*)   Population figures on 1981/2 are based on the 1986 census

(**)   It should be noted that aggregate figures on GDI of the agricultural sector and of Egypt as well as popu-lation censuses for a certain year may be different in different issues of: Central Agency for Public Mobi-lization and Statistics (CAPMAS), *ARE Statistical Yearbook* (Cairo: CAPMAS, different issues).

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *ARE Statistical Yearbook* (Cairo: CAPMAS, different issues).

Appendix Table (B.2)
Estimation of the percentage of households engaged in agricultural activity and percentage of expenditures resulting from agricultural activity to total expenditure according to the 1981/2 FBS

Size	Ave.exp	No.HH	Exp.class	HH.agr*	Exp.agr**	%Exp.agr/ Tot exp	%HHagr/ Tot HH
< 200	110.7	160	17712	22	2435.4		
200- < 300	254.2	226	57449.2	31	7880.2		
300- < 400	351.2	255	89556	72	25286.4		
400- < 500	452.7	387	175195	144	65188.8		
500- < 600	553.1	474	262169	249	137722		
600- < 700	650.9	605	393795	340	221306		
700- < 800	752.9	662	498420	391	294384		
800- < 900	850.3	766	651330	459	390288		
900- < 1000	948.5	683	647826	400	379400		
1000- < 1100	1048.3	646	677202	351	367953		
1100- < 1200	1147.5	624	716040	355	407363		
1200- < 1300	1249.4	524	654686	275	343585		
1300- < 1400	1347.2	450	606240	256	344883		
1400- < 1500	1454.2	318	462436	184	267573		
1500- < 1600	1551	249	386199	118	183018		
1600- < 1800	1693.5	388	657078	205	347168		
1800- < 2000	1892.2	230	435206	135	255447		
2000- < 2500	2213.2	314	694945	179	396163		
2500- < 3000	2720.6	140	380884	76	206766		
3000- < 3500	3241.3	59	191237	29	93997.7		
3500- < 4000	3704.6	20	74092	8	29636.8		
4000- < 5000	4443.4	14	62207.6	7	31103.8		
5000- < 6000	5342	10	53420	7	37394		
6000- < 7000	6564.2	5	32821	5	32821		
7000- < 8000	7626.5	2	15253	1	7626.5		
8000- < 10000	8425	3	25275	0	0		
> 10000	11218	3	33654	3	33654		
Total/ave	1089.5	8217	8952325	4282	4910042	54.84655	52.11148

Sources and notes:

HH* refers to the number of households who are headed by persons the main activities of whom are agriculture and/or fishing.

** Exp.agr. refers to total expenditure in size class by households whose activites are agriculture and/or fishing.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *Family Budget Survey 1981/2* (Cairo: CAPMAS, 1981), tables 2-2 and 6-30.

Appendix Table (B.3)
Estimation of the percentage of households engaged in agricultural activity and percentage of expenditures resulting from agricultural activity to total expenditure according to the 1994/5 HIECS

Size class	Ave.exp	No. of HH	T.exp in Class	HH.agr*	Exp.agr **	%exp.agr/ T.exp
< 1000	756.07	77	58217.39	6	4536.42	
1000-	1098.14	44	48318.16	2	2196.28	
1200-	1408.74	166	233850.84	21	29583.54	
1600-	2020.65	445	899189.25	129	260663.85	
2400-	2837.03	738	2093728.14	307	870968.21	
3200-	3611.19	987	3564244.53	383	1383085.77	
4000-	4414.34	1123	4957303.82	470	2074739.8	
4800-	5194.38	1123	5833288.74	466	2420581.08	
5600-	6166.81	1333	8220357.73	521	3212908.01	
6800-	7348.03	838	6157649.14	326	2395457.78	
8000-	8843.67	710	6279005.7	278	2458540.26	
10000-	10800.3	288	3110486.4	101	1090830.3	
12000-	12816.9	129	1653383.97	53	679297.29	
14000-	19955.4	182	3631888.26	68	1356969.24	
Total/ave	5711.85	8183	46740068.6	3131	18240357.8	39.02509

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *CAPMAS Household, Income, Expenditure and Consumption Survey 1995-6* (Cairo: CAPMAS, 1995), tables 5-25 and 3-111

* Refers to HH which the main economic activity of the head is agriculture and fishing.

** Exp.agr. refers to total expenditure in size class by households whose activites is agriculture and/or fishing.

Appendix Table (B.4)
Estimation of the income resulting from agricultural activity according to the 2004 -5 HIECS

Size class	Ave.exp	No. of HH	T.exp in Class	No.H-H.agr*	T.exp.agr**	%exp.agr/ T.exp	%HH.ag-r/Tot.HH
< 2000	1579.2	207	326894.4	0	0		
2000-	2561.1	494	1265183.4	0	0		
3000-	3557.6	980	3486448	385	1369676		
4000-	4543.3	1644	7469185.2	708	3216656.4		
5000-	5534	2330	12894220	1025	5672350		
6000-	6511.9	2787	18148665.3	1134	7384494.6		
7000-	7500.4	2949	22118679.6	1179	8842971.6		

to be Continued

Continued

8000-	8487.1	2792	23695983.2	1075	9123632.5		
9000-	9487.3	2390	22674647	921	8737803.3		
10000-	10694.3	2869	30681946.7	1080	11549844		
11500-	12192.8	1982	24166129.6	731	8912936.8		
13000-	13889.3	1600	22222880	595	8264133.5		
15000-	15899	825	13116675	293	4658407		
17000-	18271.7	643	11748703.1	215	3928415.5		
20000-	21904	379	8301616	116	2540864		
25000-	27044.2	129	3488701.8	39	1054723.8		
30000-	36051.8	82	2956247.6	29	1045502.2		
50000-	60563.8	15	908457	10	605638		
75000-	0	0	0	0	0		
100000-	127541.5	2	255083	0	0		
total/ave	9161.1	25100	229943610	9535	86908049.2	37.80	37.99

* Refers to the number of HH in which the main economic activity of the head is agriculture and fishing.

** Refers to the expenditure from households whose main activity is agriculture and/or fishing. Both values were derived and calculated by the author from: Central Agency for Public Mobilization and Statistics (CAPMAS), *CAPMAS Household, Income, Expenditure and Consumption Survey 2004/5*, tables 1-35.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *CAPMAS Household, Income, Expenditure and Consumption Survey 2004/5* (Cairo: CAPMAS, 2004), table 12-1.

Appendix Table (C.1)
Consumer Price Index for All Items and for Food and Beverages
In Urban Egypt 1980 - 2005

Year	All items Final index1966/67 = 100 (c)	All items Final index 1980 = 100 (d)	Food and Beverages Final Index 1966/67 = 100 (e)	Food and Beverages Final Index (f) 1980 = 100
1980	272.7	100	335.6	100
1981	301.2	110.5	383.1	114.2
1982	345.8	126.8	438.5	130.7
1983	401.4	147.2	519.7	154.9
1984	469.9	172.3	605.9	180.6
1985	532.5	195.3	587.3	175
1986	652.5	239.3	856.3	255.2
1987	780.8a	286.2	1050.4a	313
1988	918.4a	336.8	1266.9a	377.5
1989	1113.9a	408.5	1587.8a	473.2

to be Continued

Continued

1990	1300.6a	476.9	1839.4a	548.1
1991	1557.1a	571	2143.6	638.6
1992	1769.3a	648.8	2324.1a	692.6
1993	1983.7a	727.4	2500.6a	745.2
1994	2144.2a	786.3	2742.5a	817.3
1995	2324.4a	852.4	3024.4a	901.3
1996 (1)	2661.6a	976	3382.3a	1007.9
1997 (1)	2784.3a	1021	3521.8a	1049.5
1998 (2)	2883.5b	1057.4	3701b	1102.9
1999 (2)	2955.5b	1083.8	3845.2b	1145.9
2000 (2)	3033.1b	1112.2	3938.7b	1173.7
2001 (2)	3105b	1138.6	3981.5b	1186.5
2002 (2)	3189b	1169.4	4149.0b	1236.4
2003	3323.8b	1218.8	4421.7b	1317.7
2004	3872.2b	1419.9	5594.4b	1667.1
2005	4061.1b	1489.2	5874.9b	1750.7

(1):   With weights according to 1990/91 Family Budget Survey.

(2):   With weights according to 1995/96 Family Budget Survey.

a: extrapolating using the 1986/87 = 100 index.

b: extrapolating using the 1999/2000 = 100 index.

d: Using CPI (c) but starting the index from 100.

f: Using the CPI (e) but starting the index from 100.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), *Consumer Price Index in Urban Areas* (Cairo: CAPMAS, different issues).