

## Evolution of poverty in Tunisia: 1990-2000

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### Abstract

The object of this article is to analyze the nature of poverty in Tunisia between 1990 and 2000. Several questions were raised: "did the rates of poverty increase or decrease during this period? How are they presented at the regional levels, professional socio categories...? Is there coherence between the evolution observed in regards of poverty and the evolution of the other non monetary indicators of wellbeing like the access to the basic services, health and schooling?. Finally, we analyze the evolution of the determinants of poverty in Tunisia".

**Keywords:** Poverty monetary, Tunisia, Determinants of poverty

### Introduction

The analysis of poverty in Tunisia was the main task of numerous works (Ayadi and al 1995, 2001, 2004, World Bank, 1990, 2003). Many conclusions have been reached concerning the incidence, the intensity as well as the severity of the phenomenon at the national and the regional level.

Several academic researches high lighted the evolution of these indicators whether inter areas or inter milieu. The general conclusions which emerge from these studies show that Tunisia had a substantial reduction at the level of poverty. However, all this research covers only the period before the 1990 s, and this is the mistake of the availability of the micro data and the studies after 1990 which are based on the published reports of the government agencies as well as the reports of missions of the WB and PNUD teams in Tunisia. But, to directly answer the questions of poverty and release who are the poor in Tunisia (i.e. where they do live, which are their educational levels, the sectors where they do work etc) we do need a base of micro data.

That's why, in this document, we use the two investigations budgets and the household consumptions for the years 1990 and 2000.

We briefly discuss the general methodology in section 1. In section 2 we deal with the tendencies of evolution of poverty as measured by our indicator of privileged well being, namely the expenditure of the house holds per capita. In section 3, we analyse the tendencies of evolution on the basis of non monetary measures. In the last section we treat the determinants of level of poverty in Tunisia between 1990 and 2000.

### I-Methodology

The construction of a poverty profile requires the choice of an adequate index of well being, the identification of a line of poverty and the choice of an index which seizes the various dimensions of poverty

### The choice of the variable of interest

The variables of interest are the alternative indicators of living standards which will be used for the analysis of poverty. The discussion of the choice of a variable of interest depends initially on the quality of the available data on the income and consumption. In our case, the used variables will be, therefore, the annual expenditure per capita. After having chosen to approach the living standard with expenditure, one generally asks two questions.

The first question will be concentrated on the choice of the analysis unit (the individual or the household when the household is chosen as a unit entity without being concerned with number of individuals who live there, the variable of interest is often the “total expenditure of the house hold”.

On the other hand, when we study the individual we reach the second question: which scale of equivalence do we have to use to distinguish the various categories of house holds?

### The choice of the line of poverty

They are two great approaches of determination of poverty line: absolute and relative approach.

The line of absolute poverty is founded on a heating minimum which is translated into minimal food expenditures to which we add a basket of non food goods which we judge that it constitutes an essential minimum.

The line of relative poverty is determined by the distribution of the expenditures from which it is calculated. We can obtain it while deciding on a poverty line as a percentage arbitrary and a preselected population carrying out this expenditure.

The two methods used to estimate the poverty absolute line are essentially the method of nutritive energy (FEI) and the method on behalf of the budget devoted to food (CBN)

In This study, the line of poverty was given according to the absolute approach of the INS<sup>1</sup>

*Table 1: Poverty lines in Tunisia in 2000 (constant price)*

	INS	
	1990	2000
Tunisie	278	428

*Source : National Institute of Statistics*

### The choice of the index of poverty

In this study, we have used the index  $P_\alpha$  ( $\alpha = 0$ ) which is developed by Foster, Greer and Thorbecke (1984). This index gives information on the incidence of poverty and it satisfies certain fundamental properties which are called the axioms. They are the axioms of concentration, monotonicity, transfer and decomposability.

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<sup>1</sup> National Institute of Statistics

The various groups which achieved the object of analysis are

✓ **Areas**

The two milieu, able to provide a first image of the space questions are the rural milieu and the urban milieu

✓ **Socio professional groups**

The socio professional groups include: seniors, farm labourer, non agricultural worker and independent owner

✓ **The educational level of the head of household**

Four categories of educational level of the head of household were retained within the framework of this research: illiterate, primary education, secondary education and higher education

✓ **The sex of the head of household**

The kind constitutes a tool for a relevant analysis, contemporary and powerful for all the studies of poverty

## II-data sources

Different data bases are used to analyse the evolution of poverty in Tunisia between 1990 and 2000. Our first source refers to the surveys carried out by the National Institute of statistics: Budgets and household consumption for the years 1990 and 2000, related to 2137 households in 2000 and 1195 households in 1990. The second source refers to the absolute poverty lines which are respectively 278 dinars in 1990 and 428 dinars in 2000. The third source is the expenditure per capita like indicator of living standard.

## III-Results of the study

In this work, the results of the analysis were calculated starting from the DAD 4.2 software using the data of the two surveys.

❖ **Poverty and place of residence**

According to table 1, poverty incidence in Tunisia was reduced between 1990 and 2000. This explains the national efforts which are applied to reduce this plague. the index of poverty  $P_0$  gives a clear idea on poverty in Tunisia.

The present analysis is reinforced by the use of curves FGT, which makes it possible to treat predominance in poverty of the expenditure distributions once compared to the others. Thus, curves FGT (0) make it possible to study the stochastic predominance of the first order.

Graph 1 gives an idea on the points of the curves of poverty incidence. These curves are useful for the analysis of poverty which they make it possible to visualize the rate of the poor population for a given poverty line.

This reduction of poverty at the national level masks the observed variation at the regional level.

Table 1, shows that poverty is increasingly higher in urban milieu than in rural milieu, for the periods 1990 and 2000.

Moreover, and according to graph 2, rural poverty showed a fall between 1990 and 2000. The curves of poverty incidence in the milieu show that the rate of the poor in rural zones dropped in a substantial way during this period.

In addition, and according to graph 3, the evolution of poverty in the urban milieu between 1990 and 2000, shows that the reduction of poverty in Tunisia is primarily due to the reduction of poverty in rural milieu. The curves of poverty incidence in urban milieu show that the rate of the poor population for the annual expenditure per capita inferior (superior) to 700 dinars is increased (or dropped) between 1990 and 2000.

#### **❖ Poverty and sex of the head of household**

According to graph 4, we note that there was in 1990 more poverty among the households directed by a man than among the households directed by a female .however the gap was decreased for both sexes ( without changing the direction)

The rate of the individuals in the households directed by a man has fallen between 1990 and 2000 (graphic 5). Also, for the households directed by a woman, the curves of poverty incidence in 2000 for the households directed by a woman is always below the ones of the nineties 90s (graph6).

This can be explained by increase in the participation of woman in the working population after the liberalisation. Moreover, women are always protected by their family in case of divorced, widowed with the culture.

#### **❖ Poverty and educational level**

The curves of poverty incidence (graphic 7) also show that the heads of households having an illiterate level are poorer than the other categories during the 90s.

According to table 2, the values of  $P_0$  calculated starting from the line of poverty; show that the heads of households who's educational level is "illiterate" is higher than the "primary "category. The educational level of the head of household is a determining factor of poverty in Tunisia.

Concerning the evolution of poverty for the illiterate heads of households between 1990 and 2000, Graphic 8, shows that their curves of incidence in the 90s is lower than be in the 2000s for an expenditure more than 450 dinars per capita per a year.

The over lapping of the two curves before 450 dinars per capita per a year does not allow us to rule on the predominance of the ones on the others.

#### **❖ Poverty and socio-professional categories**

Four socio –professional categories were identified: seniors, farm labourers, non agricultural worker and independent owners.

Concerning the numerical index and according to the curves of poverty incidence (Graphic 9) the classification of the number of the poor by ascending order is respectively the following: farm labourer, non-agricultural worker, independent owner and finally senior workers

We can note that the number of the poor in the category farm labourer is higher than the other categories.

If we shed light on the evolution of the number of the poor at the level of agricultural sector rather than any other economic sector of the country between 1990 and 2000, the probability of being poor people in this sector is substantially decreased during this period (Graphic 10).

#### IV-Evolution of other indicators of well being

The concentration on the household expenditure as an indicator of well being, does not exclude the existence of the other non monetary measures that can be used to give an idea of the evolution of well being in Tunisia during 1990 and 2000.

The Tunisian experience in the reduction of poverty and the improvement of living conditions is crucial. The government deployed since the independence of reforms and strategies in favour of the most under privileged citizens and regions in order to improve the living conditions.

Several social indicators summarize the improvement of the living conditions in Tunisia as an example of the results which are saved in the field of the health and education.

##### ❖ Health

There is also an improvement in terms of health. Life expectancy passed from 70.3 years in 1990 to 72.6 years in 2000<sup>2</sup> with life expectancy among males 70.6 years and 74.7 years among females.

The rate of infant mortality for one thousand is brought back to 23.8 for thousand in 2000<sup>3</sup> versus 37.3 in 1990 for one thousand.

We can add the crude death rate which was brought back to 5.6 in one thousand in 2000<sup>4</sup>. The ratio of the number of inhabitants per one doctor reached 1284 in 2000<sup>5</sup>, against 1825 in inhabitants in 1990.

##### ❖ Schooling

The sector of educational saw deep reforms in order to improve the level of education, the higher education and professional training. With these reforms the rate of schooling per kind was ameliorated for the age of 6 to 12. This rate reached 97.1% for the two kinds during the academic year 1999/2000.

In parallel, the rate of illiteracy witnessed a significant fall with a rate of 22.9% according to the results of census in 2004.

##### ❖ Access to the basic services:

We can also note an improvement of the living conditions indicated in particular through the evolution of the rates of electrification, drinking water service road and the connection of households to the network of cleansing which are reached respectively in 2000<sup>6</sup> to 94.8%, 92.3 and 70%.

Added to, the rate of possession of means of communications (telephone, mobile, internet and computer) which are strongly improved during this period.

Thanks to reforms, the committed socio economic policies ended with the improvement of the socio-economic indicators and consequently with the improvement of the index of human development. According to the world reports on human development, the progress within human development in Tunisia is remarkable (outstanding). The IDH passed from 0.721 in 1990 to 0.722 in 2000<sup>7</sup>. This level of the IDH made it possible for Tunisia to improve its world ranking

With the efforts and the policies implemented in Tunisia since the independence to improve the living conditions of the citizens. The rate of poverty was strongly lowered by 6.7 % in 1990 to 4.2% in 2000.

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<sup>2</sup> National Institute of statistics

<sup>3</sup> Idem

<sup>4</sup> Idem

<sup>5</sup> Idem

<sup>6</sup> Idem

<sup>7</sup> World report /ratio on the human development 2005, UNDF

Thus, the average annual expenditure per person was increased by 716 DT in 1990 to 1325 DT in 2000<sup>8</sup>. Moreover, the rate of inequality was slightly increased passing from 40.1 % in 1990 to 40.9% in 2000. Thus, the rate of unemployment was brought back in 2004 to 12.9% for males and 16.7% for females compared with 15% and 17.2% in 1994<sup>9</sup>.

### **V-Determinants of poverty**

According to the studies related to the determinants of poverty in the determinants of poverty in the developing countries, we used a linear model of regression of expenditure per capita. This model gives the factors which explain the expenditures and the households' living standard for the two years 1990 and 2000.

Thus, or model includes 9 fundamental variables for the explanation of the living standard : the age of the head of household size of the household, the kind of the head of the household( man ), the educational level( illiterate, primary, secondary, higher), the place of residence (rural) and socio-professional categories(Agricultural).

The results of the prediction of the expenditure logarithm per capita on the whole of the explanatory variables arise in Table 3. The models have explanatory capacity means since the  $R^2$  are respectively 0.28 and 0.32.

With regard to the demographic statistics of the households, there is a bond between the size of the household and poverty. Any increase in the number of individuals in the household reduces in a significant way the levels of expenditure in 2000s.

The education level of the household is apprehended by variables which record the heads of households with primary, secondary and higher education and the illiterate heads of households.

We note that the levels secondary and higher education are statistically significant for the years 1990 and 2000.

In 2000, the expenditure per capita was reduced by 10% for the heads of illiterate households. This reduction will increase the probability of being poor for this kind of household. Therefore, the necessity to engage a campaign against the phenomenon the illiteracy.

Moreover, the sex of the head of household has a significant and negative correlation with the household expenses in 1990 and 2000; the households led by a man have a great probability of being poor.

With regard to the age of the head of the household, the results of the prediction show that the coefficient of the variable "Age" is significant for the two years. This implies that the levels of expenditure increase with the increase in the age of the head of household it is worthy to note that the impact of the milieu of residence of the head of household on the living standard or of poverty, dropped between 1990 and 2000. The probability of being poor in 1990 is reduced from 73% to 23%.

Finally, we relate to the effects of the activity sector at the level of expenditure, and the agricultural sector in particular.

This is a negative relation between the agricultural sector and the level of expenditure. In 1990, being among the category "a farm labourer" engenders a fall by 28% of household expenditure per capita.

Moreover, the negative effect of this sector at the level of expenditure and poverty increased between 1990 and 2000. This increase is necessary the result of the drought that Tunisia had seen between 1993 and 1995.

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<sup>8</sup> National Institute of statistics

<sup>9</sup> Idem

## Conclusion

Poverty incidence in Tunisia was reduced passing from 6.7% in 1990 to 4.2 % in 2000. This reduction remains unequally distributed.

Poverty is an urban phenomenon which concerns more the heads of household's men and illiterate. At the level of socio-professional categories, farmers are the most concerned with poverty but its tendency was reduced between 1990 and 2000.

Finally this study shows that Tunisia has seen an improvement in living conditions, an improvement at the educational level and health between 1990 and 2000. This explains that the reforms and the strategies in favour of the citizens and the under privileged regions to improve living conditions have succeeded but it should be more efforts to make this reduction distributed and sustainable.

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**Table 1: Evolution of poverty in Tunisia between 1990 and 2000**

	Incidence of poverty ( P <sub>0</sub> en %)	
	1990	2000
<b>Tunisia</b>	<b>6.7</b>	<b>4.2</b>
<b>Urban</b>	<b>7.3</b>	<b>4.9</b>
<b>Rural</b>	<b>5.7</b>	<b>2.9</b>

Source : National Institute of Statistics

**Table 2: Evolution of poverty in Tunisia according to the educational level**

	Incidence of poverty (P <sub>0</sub> en %)	
	1990	2000
<b>Analphabet</b>	2.98	5.18
<b>primary</b>	2.96	2.22

Source: our calculation from DAD.4.2 software

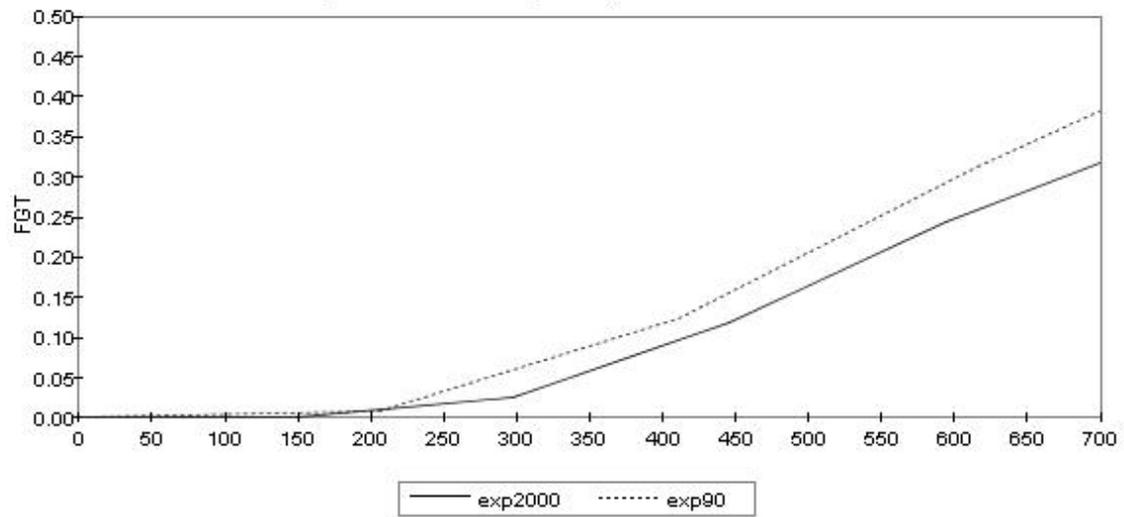
**Table 3: Models of expenditure of households per capita in Tunisia**

	1990			2000		
	Coef.	t	P>t	Coef.	t	P>t
size	.0034602	0.37	0.711	-.1027545	-14.66	0.000
Age	.0028438	1.94	0.052	.0107657	9.91	0.000
male	-.1434747	-2.04	0.042	-.0800575	-2.23	0.026
rural	-.7358375	-7.59	0.000	-.2331274	-4.48	0.000
illiterate	.0855669	1.00	0.317	-.100635	-2.08	0.038
prim	.0551629	1.20	0.231	.1278597	2.38	0.017
secon	.3853624	7.27	0.000	.5050877	8.57	0.000
high	.7986179	11.03	0.000	.9976109	12.95	0.000
agric	-.2880732	-2.64	0.008	-.0933388	-1.65	0.100*
_cons	6.777106	55.25	0.000	6.925615	76.61	0.000
R <sup>2</sup>	0.2834			0.3210		

Source: estimations from data of the budget and consumption survey of households for years 1990 and 2000

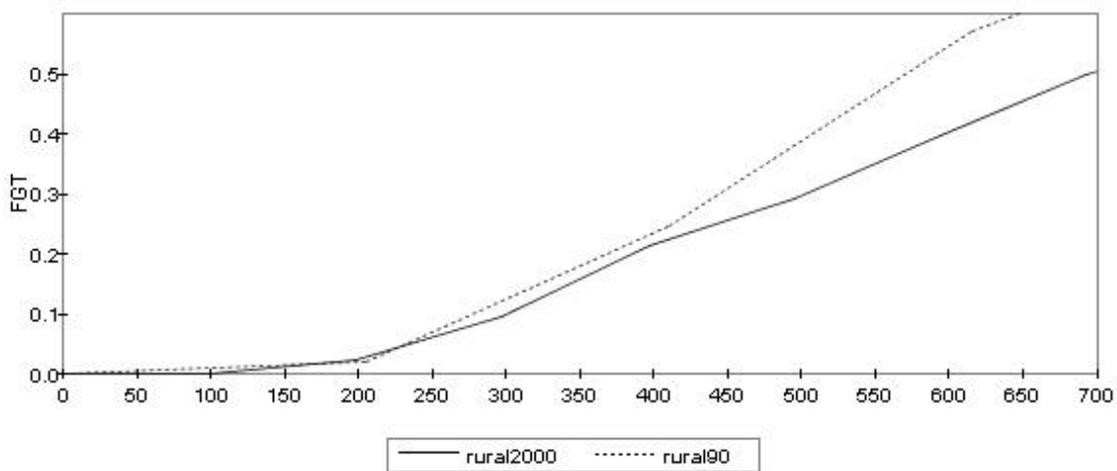
\*Significant at 10%

**Graphic 1: Curves of poverty incidence in Tunisia**

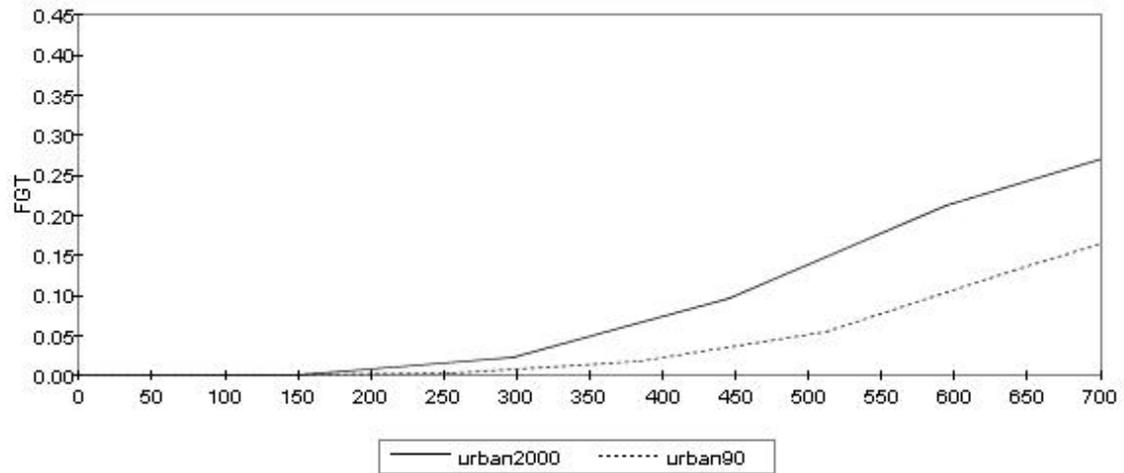


**Graphic 2: Curves of poverty incidence in Tunisia**

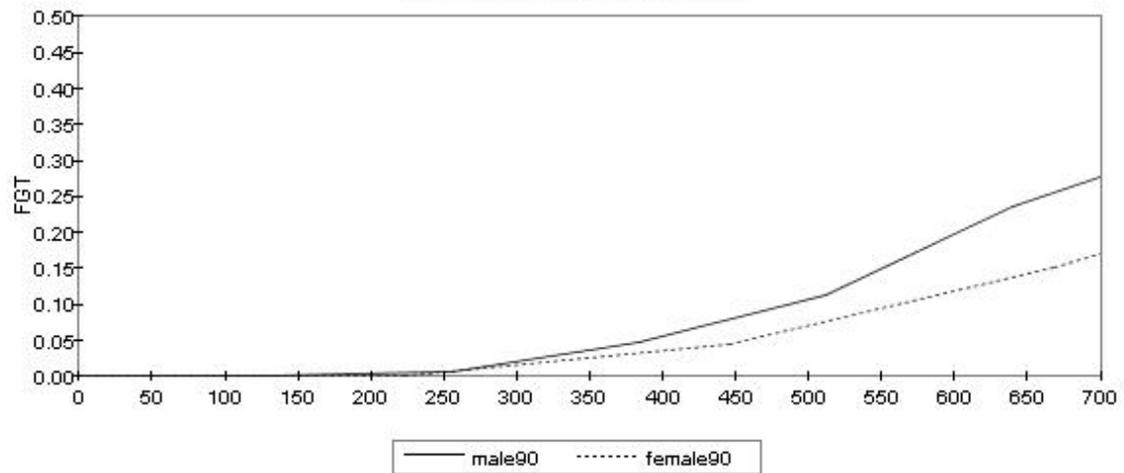
**Rural**



**Graphic 3: Curves of poverty incidence in Tunisia**  
**Urban**

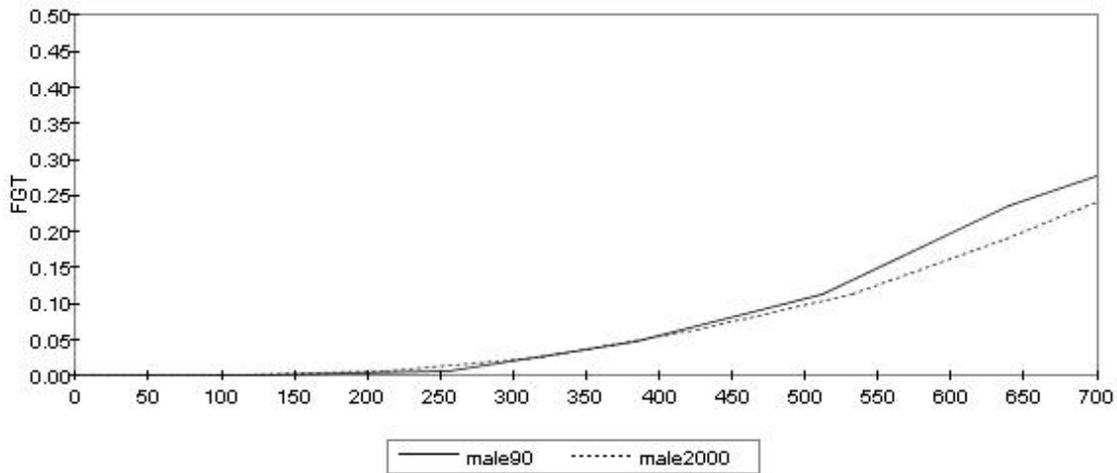


**Graphic 4: Curves of poverty incidence in Tunisia**  
**genre of chief of household**



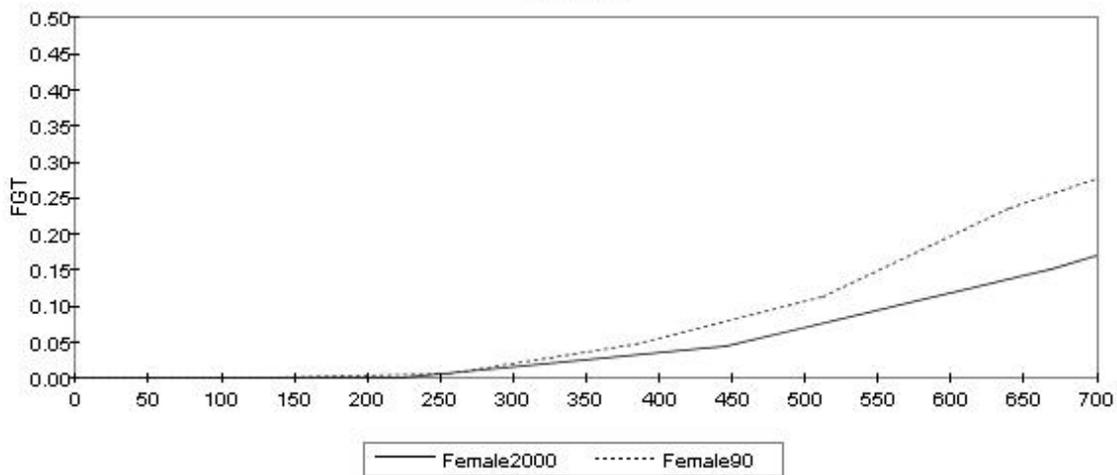
Graphic 5: Curves of poverty incidence in Tunisia

Male

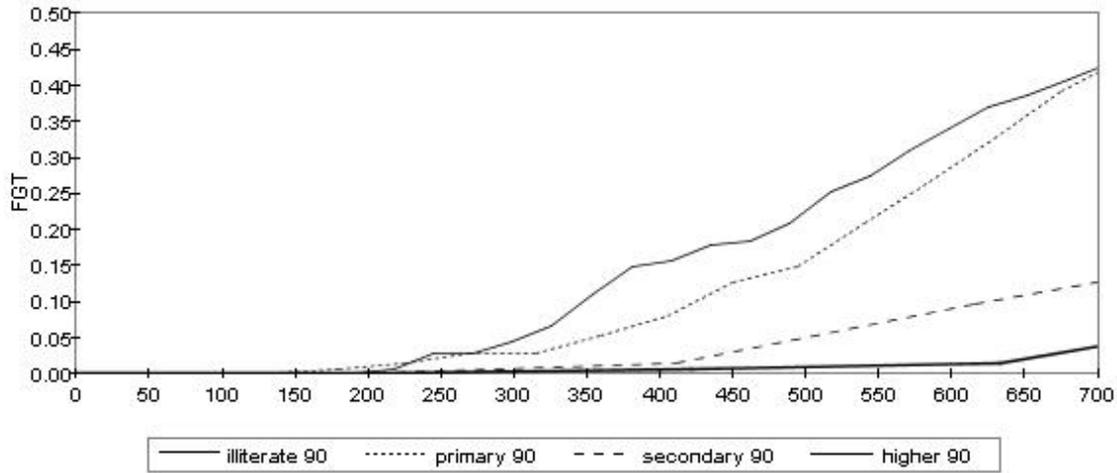


Graphic 6: Curves of poverty incidence in Tunisia

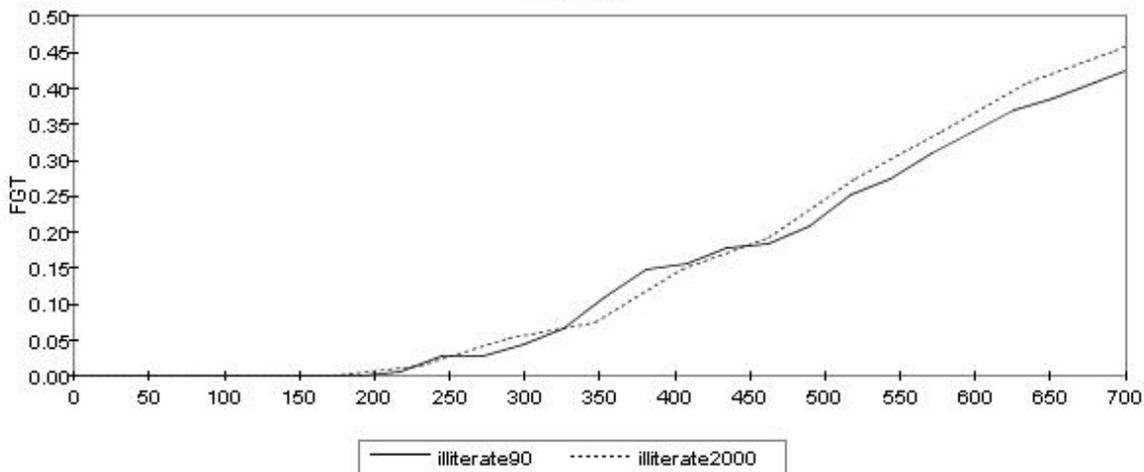
Female



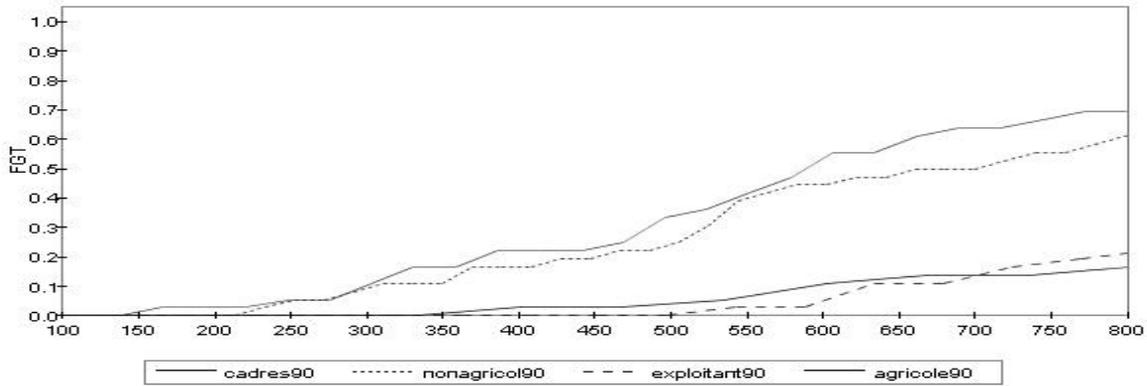
**Graphic 7: Curves of poverty incidence in Tunisia  
educational level**



**Graphic 8: Curves of poverty incidence in Tunisia  
illiterate**



**Graphic 9: Curves of poverty incidence in Tunisia,  
SP of chief of household**



**Graphic 10 : Curves of poverty incidence in Tunisia  
agriculture worker**

