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Exploring the determinants of welfare distribution in Tunisia and Egypt: Two revolutions two patterns two schemes

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Abstract:

Poverty and inequality are considered as the main causes of the Tunisian and Egyptian revolutions. Measures that have been taken to remedy the situation of well-being in these countries have been criticized. The paper proposes to identify the main driving factors of welfare distribution in Tunisia and Egypt. In order to capture differences in both returns in employment and demographic characteristics, the methodology uses three data wave between 2005 and 2015 from both countries. Following Jmaii et al. (2017) Jmaii (2016), the author use counterfactual decomposition methods to compare the economic and demographic characteristics in both countries, as well as their impact on the distribution of consumption expenditures. This method one help to analyze the contribution of different characteristics for each country to welfare and make a comparison before and after their revolutions.

JEL classification: R2, I3

Keywords: semiparametric regression, RIF-regression, regional inequality, household consumption-gap, Tunisia, Egypt.

1 Introduction

Poverty and income inequality continue to clearly define socioeconomic landscape of developing countries, especially in Africa (Omomowo (2018)). As evidenced by the Millennium Development Goals, the extent of poverty has given rise over the past decade to a global awareness of the need to adopt a coherent strategy to combat this phenomenon. Considered as a social/economic

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goal, reducing regional welfare-gap remain a priority on the development agenda of governments. Thus, there exists an urgent need to assess the source of persistence consumption-inequalities at national levels (Jmaii et al. (2017)).

Measures of household-unit level consumption expenditures are central to determine household well-being as the consumption of good and services is considered as an important determinant of individual welfare (Deaton (1974), Deaton (1997), Deaton and Zaidi (2002)). The challenges of satisfying household consumption needs associated with the absence of well-structured collective consumption, could influence for the condition defined as poverty. Expenditures have significant implications for poverty and regional disparities in developing countries (Mussa (2014), Jmaii et al. (2017)). The analysis of the distribution of consumption allows to better assess the relevance of social policies. In fact, quality of life in a country depends on how consumption is distributed throughout its population (Ravallion and Chen (1997), Cutler and Katz (1992), Kanbur (2001)). Poverty and inequality are considered as the main causes of the Tunisian and Egyptian revolution. Measures that have been taken to remedy the situation of well-being in these countries have been criticized.

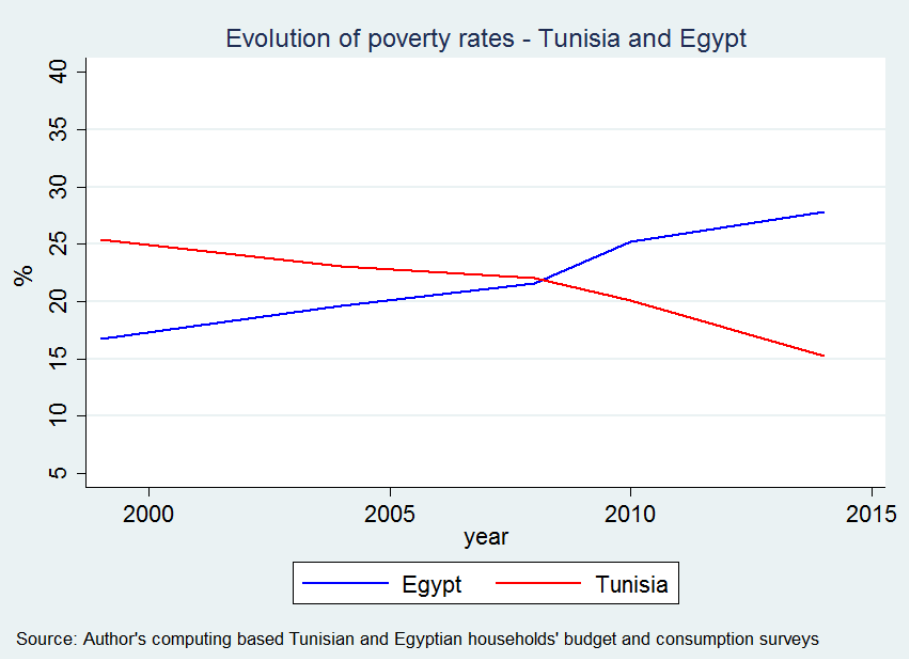
The objective of this study is twofold; first, we want to dissect regional inequalities in Tunisia and Egypt. Second, to analyze welfare condition in the two countries before and after the revolutions. This comparison one can help to analyze and improve the social welfare policies in each country. This paper aims to analyze this gap, on the one hand, by giving a snapshot of inequality in Tunisia and Egypt, and on the other hand, by exploring the driving factors of welfare in these two Northern African post-revolutionary countries.

The remainder of this Extended abstract is divided into five sections. Section 2 deals with a brief overview on regional inequality in Tunisia and Egypt. The methodology as well as a description of the used data are discussed in section 3. Section 4 focuses on some preliminary results. Finally, section 5 conclude and give rise some recommendations.

2 Background: Regional Inequality in Egypt and Tunisia

Inequality is no longer seen as an inevitable prerequisite for growth, but rather as an obstacle to both economic growth and poverty reduction (Bourguignon (2003); Duclos and Verdier-Chouchane (2011)). In a quantitative investigation using semiparametric methods to analyze the relationship between income inequality and economic growth, **?** found that higher income inequality is harmful for economic growth. Son and Kakwani (2008) found that initial levels

of income inequality and economic development have a positive and significant influence on poverty reduction.



In Egypt, the average poverty rate is increasing continuously it's currently affecting 27% (figure 1). Besides, poverty is urbanising and no longer concentrated only in rural areas (figure 2). This change needs different thinking on development. As many developing countries, poverty in Tunisia is concentrated in rural areas and in some regions of the country, particularly the West (INS report). Thus, the analysis of poverty and inequality at the regional level is very important in order to better understand and define the priorities for regional development. Inequality is still a predominant phenomenon. In fact, an asymmetric allocation of basic services (i.e. education and employment) attest that growth benefits do not drip equally among regions, which may cause a feeling of insecurity and injustice, and can lead to a potential social unrest.

In a study based on a new data set on inequality in the distribution of income, Deininger and Squire (1996) revealed a systematic link between growth and aggregate inequality variation in parallel with a significant positive relationship between growth and poverty alleviation.

For Tunisia, a strong variation in poverty rates between regions (Figure 3) may be the cause of social instability and population movements. The most vulnerable households are more concentrated in the West regions of the country than in the East ones.

3 Methodology

3.1 Data and descriptive statistics

a. Data

The analysis and the measurement of inequality in developing countries, and in particular in Tunisia and Egypt, is further impeded by difficulties in the choice of welfare indicator due to the limitations of the household/individual micro-data available from a specific population. In fact, there is a wide literature about the choice between consumption expenditures or income to measure inequality. The ideal is to use the two indicators as advocated by many researchers. In this study, we use welfare measures based-consumption expenditures because incomes are not observable/biased. Heterogeneity caused by between-individuals and between-countries differences are accounted for by three data sets for the two countries. The first Tunisia - National Survey on Household Budget, Consumption and Standard of Living, 2005, 2010 and 2015. The second, is related to Egypt - Household Income, Expenditure, and Consumption Survey 2004/2005, 2010/2011, 2014/2015. These surveys have been prepared and harmonized by the Economic Research Forum (ERF) to allow for more systematic comparative research. These data sets are conducted every five years and and provide socio-demographic (such as area of residence, households composition and size, gender of households' head ...) and economic characteristics (labor status, education...) of households and individuals as well as consumption of goods and services.

b. Descriptive statistics

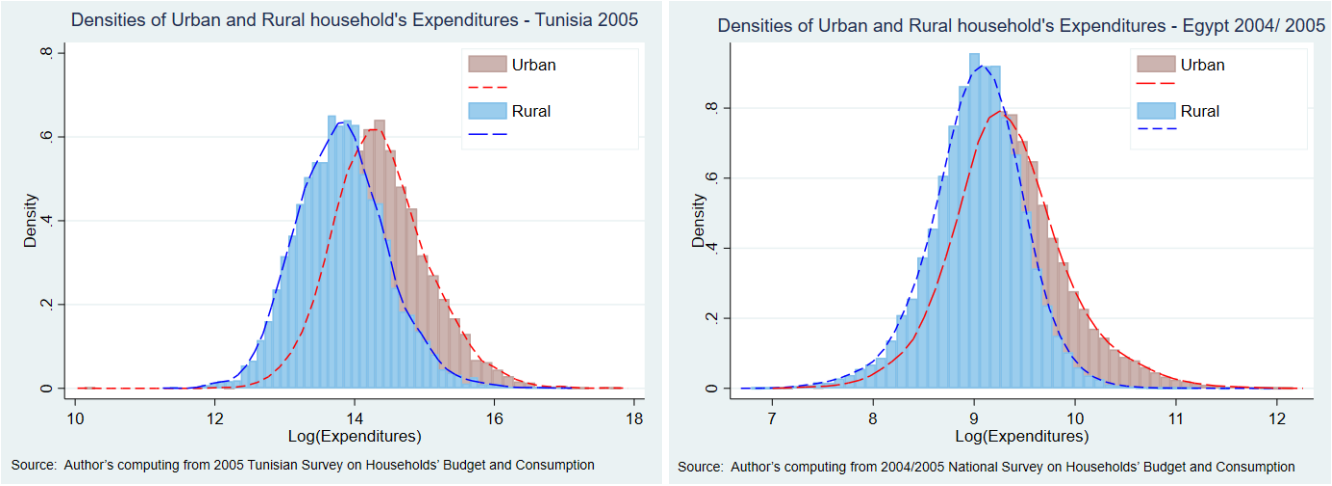
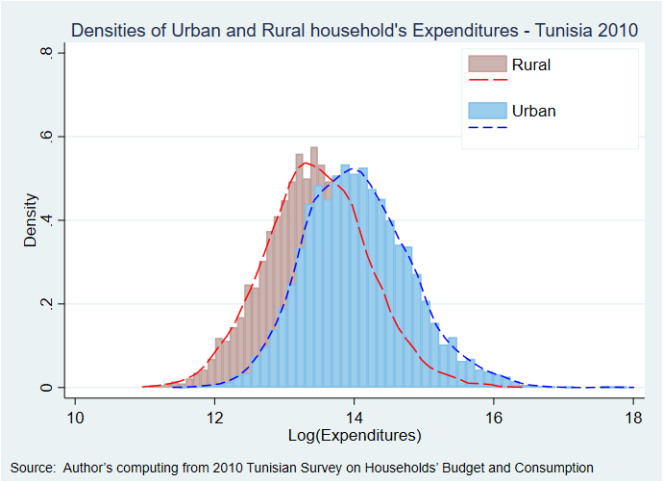
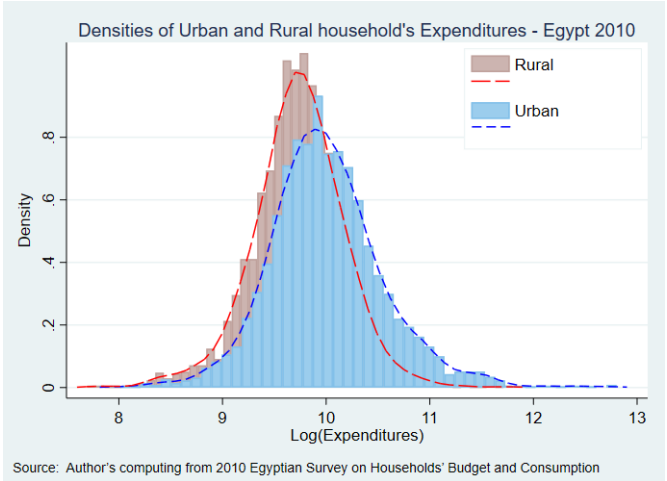
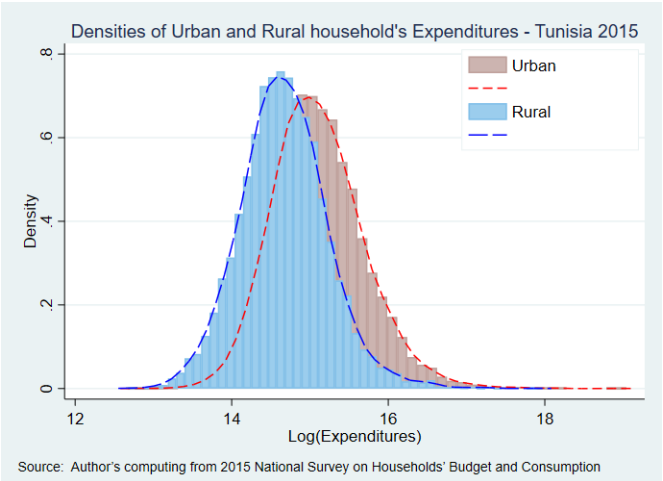
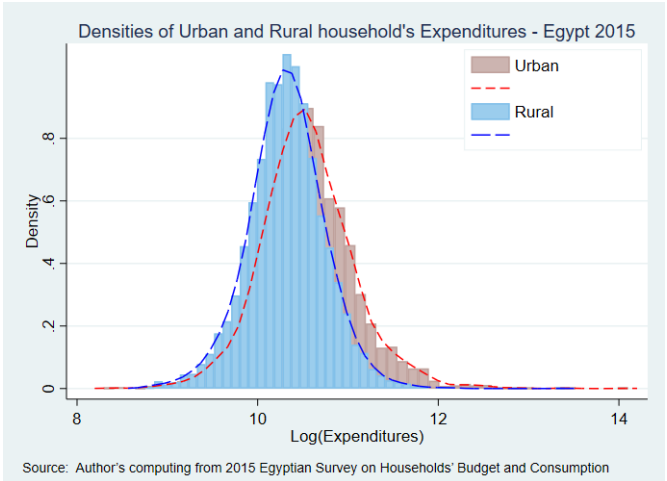


Figure 1 – Urban-rural welfare differentials in Egypt and Tunisia









It is sometimes thought that welfare differentials, like those observed in figures 1 and 2, arise from failure to standardize for other factors determining earnings. Regional inequality in particular is attributed by some to differences in the educational composition of various regions. The two countries exhibit substantial variation in expenditure and consumption across regions.

3.2 Counterfactual decomposition methods

General Chernozhukov-Decomposition Method

Many decomposition methods were developed to analyze the gap between two regions (Fortin et al. (2011), Chernozhukov et al. (2013), Chernozhukov et al. (2013)).

$$F_{Y(u\backslash \mathtt{u})} - F_{Y(r\backslash \mathtt{r})} = \underbrace{[F_{Y(u\backslash \mathtt{u})} - F_{Y(u\backslash \mathtt{r})}]}_{\textit{Difference in characteristics}} - \underbrace{[F_{Y(r\backslash \mathtt{u})} - F_{Y(r\backslash \mathtt{r})}]}_{\textit{Difference in coefficients}} \quad (1)$$

Recentered Influence Function (RIF)

RIF regression (Fortin et al. (2011)) is a convenient tool to conduct OB type decomposition for other methods besides the mean such as quantiles regression. Therefore, when we perform

quantile model, RIF regression will be considered as a rescaled linear model. According to this definition, the rescaling factor relies on the estimate of the interest quantile density:

$$RIF(y, Q_q) = Q_q + \frac{q - 1\{y \leq Q_q\}}{f_y(Q_q)} \tag{2}$$

The distributional statistic can be written based on the conditional expectations of its recentered infl uence function: We, then, can perform an OB decomposition using the RIF as response variable (dependent variable).

$$(\overline{Y^u} - \overline{Y^r}) = \underbrace{((\overline{X^u} - \overline{X^r})\beta^u)}_{\textit{Difference in characteristics}} - \underbrace{(\overline{X^r}(\hat{\beta}^u - \hat{\beta}^r))}_{\textit{Difference in returns of characteristics}} \tag{3}$$

4 Decomposition Results

Following Jmaii et al. (2017) Jmaii (2016), this study uses two decomposition methods in order to explore regional inequality patterns in Tunisia and Egypt before and after the revolution.

Table 3.8 - Regional disparities decomposition - Tunisia

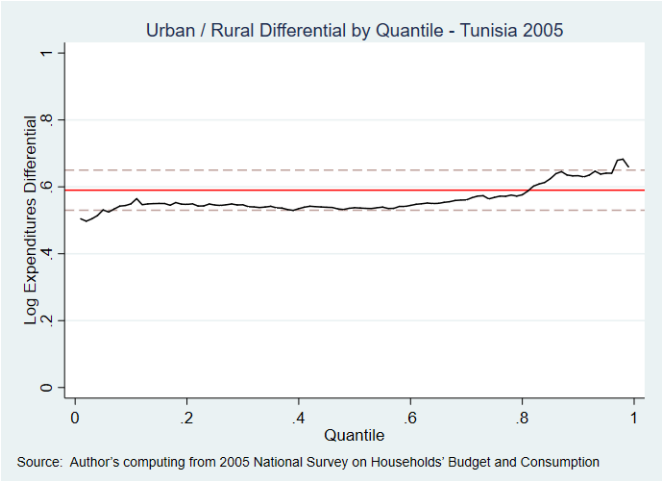
	10^{th} percentile		50^{th} percentile		90^{th} percentile	
	estimated	std	estimated	std	estimated	std
Reference Group: Urban Coef.						
Estimated log expenditure gap: E[RIF_q (ln(Exp^u))]-E[RIF_q(ln(Exp^r))]	-0.633***	(0.023)	-0.564***	(0.018)	-0.614***	(0.025)
Composition effects attributable to						
Age, gender, household size, foreign transfer and logement	-0.069***	(0.021)	-0.071***	(0.015)	-0.075***	(0.021)
West region	-0.070***	(0.011)	-0.077***	(0.007)	-0.056***	(0.011)
Education	-0.116***	(0.020)	-0.117***	(0.013)	-0.156***	(0.020)
Employment	-0.029**	(0.013)	-0.034**	(0.009)	-0.035**	(0.014)
Agregated characteristics effects	-0.297***	(0.030)	-0.314***	(0.021)	-.614***	(0.025)
Regional structure effects attributable to						
Age, gender, household size, foreign transfer and logement	0.494	(0.319)	-0.079	(0.224)	-0.036	(0.353)
West region	0.031**	(0.013)	0.003	(0.009)	0.017	(0.014)
Education	-0.116***	(0.020)	-0.084**	(0.033)	-0.148***	(0.051)
Employment	0.075**	(0.031)	0.041*	(0.021)	0.040	(0.033)
Constant	-0.0936***	(0.330)	-0.073	(0.232)	-0.117	(0.366)
Agregated coefficient effect	-0.335***	(0.036)	-0.249***	(0.024)	-0.277***	(0.037)

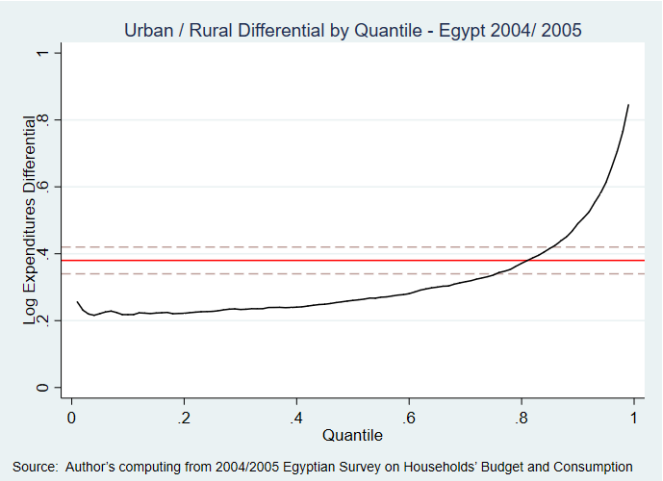
standard errors are in parentheses and(*** significant at 1% ,** significant at 5%,*significant at 10%)

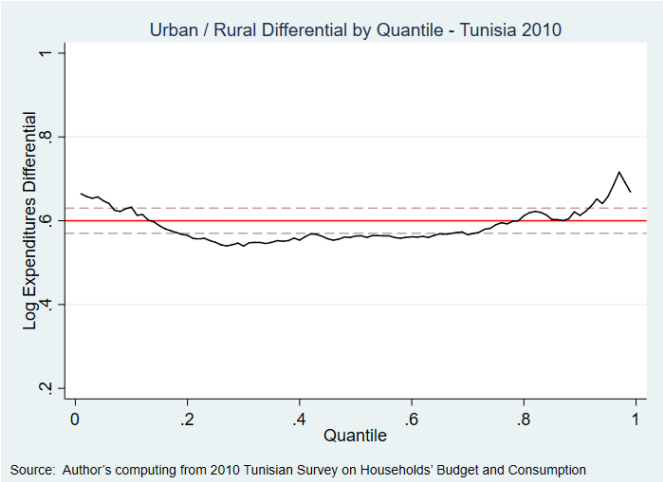
Table 3.8 - Regional disparities decomposition - Egypt

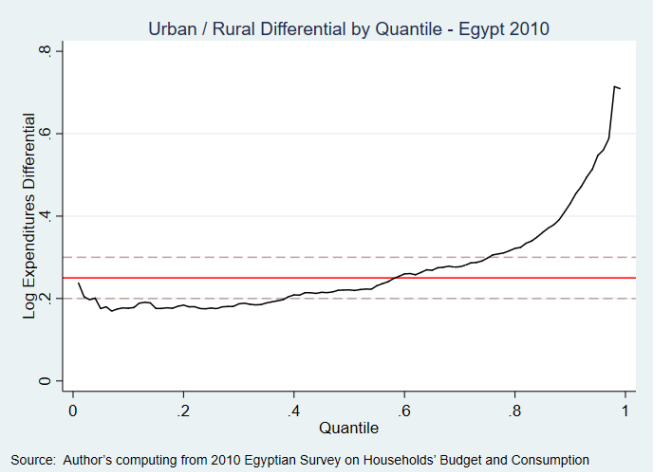
	10^{th} percentile		50^{th} percentile		90^{th} percentile	
	estimated	std	estimated	std	estimated	std
Reference Group: Urban Coef.						
Estimated log expenditure gap: E[RIF_q (ln(Exp^u))]-E[RIF_q(ln(Exp^r))]	-0.821***	(0.044)	-0.743***	(0.024)	-0.812***	(0.037)
Composition effects attributable to						
Age, gender, household size, foreign transfer and logement	-0.300**	(0.078)	-0.071***	(0.015)	-0.075***	(0.021)
South region	-0.160**	(0.061)	-0.128***	(0.011)	-0.088***	(0.019)
Education	-0.233**	(0.066)	-0.179***	(0.018)	-0.156***	(0.020)
Employment	-0.196**	(0.082)	-0.076**	(0.102)	-0.145***	(0.112)
Agregated characteristics effects	-0.423**	(0.140)	-0.602**	(0.263)	-.866***	(0.143)
Regional structure effects attributable to						
Age, gender, household size, foreign transfer and logement	0.494	(0.319)	-0.079	(0.224)	-0.036	(0.353)
South region	0.096**	(0.053)	0.012*	(0.018)	0.066	(0.011)
Education	-0.433**	(0.102)	-0.192**	(0.126)	-0.366**	(0.445)
Agregated coefficient effect	-0.624**	(0.088)	-0.463***	(0.132)	-0.683**	(0.046)

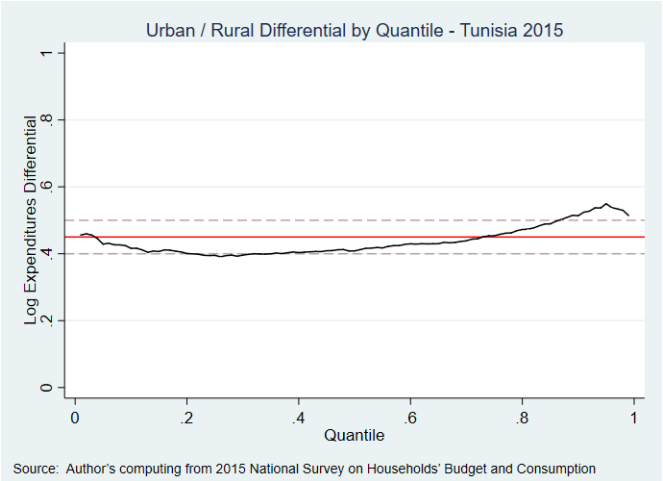
standard errors are in parentheses and(*** significant at 1% ,** significant at 5%,*significant at 10%)

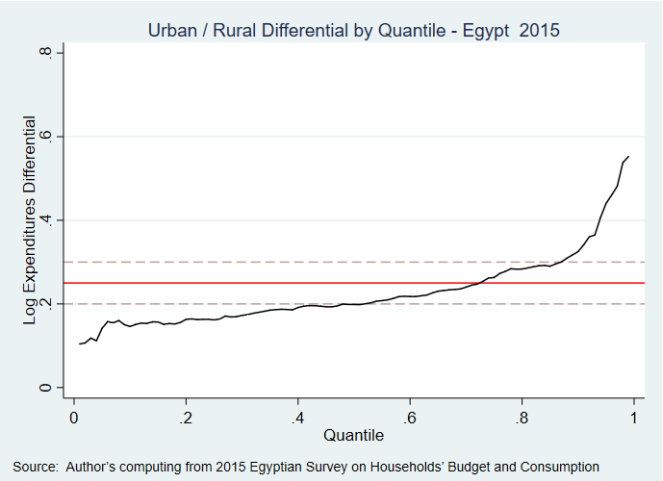












5 Conclusion

The objective of this study is twofold; first, we want to dissect regional inequalities in Tunisia and Egypt. Second, to analyze welfare condition in the two countries before and after the

revolutions. This comparison one can help to analyze and improve the social welfare policies in each country. For these purposes, we use semi-parametric regression- based decomposition methods to assess the source of welfare gap between urban and rural areas. Results of the study are in agreement with the type of policies that have been established in the two countries. In Tunisia, for several decades, the government has implemented reforms that promote education in the rural area, especially the west region. Nevertheless, it did not take into consideration the quality of the education program; as a result, educated youth in these areas do not have the capacity to succeed in their national Jalan and Ravallion (1998) arena and are unable to compete with other graduates in the private market. Indeed, the lack of a good educational level may limit the opportunities for these individuals to find a decent job.

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