

The Impact of Labor Market Trends on Unemployment rates in Egypt using time series analysis model

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ABSTRACT

labor market indicators considered as quantitative or qualitative tools used to monitor changes or progress in the phenomenon belong to the labor market system and may be linked to other systems, as they are used to summarize the state of the labor market, and to assess the efficiency of the labor market system, furthermore it may be used to judge the efficiency of this system with others such as a system of higher education, for example: You can use the unemployment rate index – partially judgment – to measure the performance of the labor market system, as high unemployment means that there are defects in the labor market system may be caused by failing in the education system.

The Egyptian Labor force survey is quarterly survey of approximately 21352 households. The survey has been designed to produce reliable national estimates of Egyptian civilian labor force and its various characteristics, the level of employment in different geographic areas of the republic, the wages, and labor hours. In addition it is the only source in Egypt estimates the unemployment rates. The purpose of this paper is to identify the impacts of the labor market trends on the unemployment rates in Egypt through the period from 2004 until 2010, whereas this period enable us to identify the effects of the global financial crisis on the Egyptian labor market by putting an outline of the Egyptian labor situation after and before the global financial crisis using the time series analysis by SPSS (statistical package for social science) program.

Keywords: *Labor market, Labor force participation, Unemployment, and Unemployment rate.*

1. Introduction

It has become recognized that the human element is a determining factor for the degree of progress in any community, and there is no doubt that the good use of human power and attempting to raise his skills have the greatest impact on maximizing the production and achieving the progress.

Labor force employment rate in any country depends on basic elements which are:⁽¹⁾

1. Population size, age structure and annual growth rate.
2. Labor force characteristics and their structure.

If any defect occurs in growth rates or Economic development means lag in labor force participation rates in addition to the increasing in the population which both cause the high rates of unemployment.

Unemployment in general, the youth unemployment in particular, represents a serious issue that performance of any nation's economy may suffer. it reflects the failure of the economic system and the labor market to absorb the growing number of graduates each year. These graduates who government expends on their education which is considered an investment that should has its returns, in existing of high unemployment rate realizes wasting of this investment.

⁽¹⁾ Fatma El-ashry, Marim Delal, "population research and studies", CAPMAS, Vol.2, may 2010

The labor market indicators considered as quantitative or qualitative tools help us to understand the labor market situation and monitor the overall situation of economically active population, unemployment and employment. It is essential for macro-economic and human resources development planning and policy formulation, whereas the availability of appropriate and accurate data, as well as scientific researches about labor market indicators serve those purposes.

Therefore this research aims to put a comprehensive image Egyptian labor market and the unemployment situation through the period from 2004 to 2010, whereas estimate or asset the impact of labor market trends on unemployment rates, particularly before and after the global financial crisis.

2. Research objectives:

- 1) Identify the impact of labor market trends on the unemployment rates in Egypt from 2004 to 2010.
- 2) Monitor the most serious impacts of the global financial crisis on labor market in Egypt and the unemployment rates.
- 3) Put a comprehensive image of the unemployment situation in Egypt in the period from 2004 to 2010 to help the decision maker and the policy planner solving the problems of employment and unemployment in Egypt.

3. Basic definitions:

✕ **Labor market:** ⁽¹⁾

"Is a regular Economic institution in which labor supply and demand interacts and workers find paying work, employers find willing workers, in sense labor services are selling and purchasing and wage rates are determined".

✕ **Labor Force Participation :** ⁽²⁾

"Is also known as economically active population, comprises all persons above a specified age, of either sex, who furnish the supply of labor for the production of economic goods and services, and also who are available to work; but did not; and looking for ways to obtain a job or start an enterprise, during a specified time-reference period".

✕ **Unemployment:** ⁽³⁾

The unemployed comprise all persons over a specific age that during the reference period were:

- (a) Without work - were not in paid employment or self-employed.
- (b) Currently available for work - were available for paid employment or self-employment during the reference period.
- (c) Seeking work - had taken specific steps in a specified reference period to seek paid employment or self-employment.

✕ **Unemployment Rate:**

The percentage of the labor force that is unemployed, and is determined by calculating the total number of unemployed divided by the total labor force in any country.

4. Review of Literature:

The global financial and economic crisis has negatively been transmitted to the Egyptian economy particularly since mid-2008. The consequent social deterioration, the prolonged labor market recession, and the inability of the labor market to adjust are the most serious aspects of it. Thus exacerbating the problem of unemployment and accentuating the position of different groups

¹ "Labor force indicators", **El-gaser for development**, Vol.16, April 2003.

² Ralf Hussmanns, "**International standards on the measurement of economic activity, employment, unemployment and underemployment**", Bulletin of Labor Statistics, ILO, Geneva, 1989-1.

³ Labor force sample survey, **CAPMAS**, 2010.

particularly women and youth, unemployment rate which has been a chronic problem even with the rapid growth of the pre-crisis period, is on the rise. It increased from 8.4% to 8.8% over the last year, and expected to reach 10% by the end of this year.

It is proposed that Egypt's road to sustained recovery and to building the post-crisis economy and society should be done within the framework of a **national jobs pact**. (Samir Radwan, Economic and Social Impact of the Financial and Economic Crisis on Egypt, ILO 2009).

The unemployment problem in Egypt is more related to labor market insertion (finding the first job) than getting back on the job ladder. It is more about the educated youth than the illiterate, unskilled middle age workers. It particularly acute among women and it is worse in the urban areas. By reviewing the illustrative scenarios of unemployment such as "Low uneven growth scenario", "Neutral scenario", they suggested that The decline in unemployment associated with rapid economic growth would be substantially less if the labor force begins to expand even slightly faster than what has been the case in the recent past. (Mohamed Hassan, International Conference on "The Unemployment Crisis in the Arab Countries", 2008)

By analyzes long-term trends in labor force participation, employment, and unemployment by sex, using the Labor Force Sample Survey (LFSS) and the Egypt Integrated Household Survey (EIHS), this analysis provides an essential foundation for any attempt to forecast labor force growth and composition in Egypt. When combined with population forecasts by age and sex and school enrollment information, these forecasts are essential components of any human resource development policy. The study finds that a combination of educational policies, public-sector hiring and powerful social norms has resulted in a labor market that is strongly segmented along gender and educational lines. The study recommends that multitude of small and micro enterprise finance programs, create opportunities for self-employment among unemployed graduates through low-cost credit, microcredit mature women are important implications for alleviate poverty and unemployment in Egypt. (Ragui Assaad, Fatma El-Hamidi, and Akhter U. Ahmed, **IFPRI** Washington, US)

This paper will focus on studying the main characteristics of Egyptian labor force market and their influences on the unemployment rates during the period from 2004 through 2010 using time series analysis and depending on the Egyptian Labor Force Sample Survey. It also will attempt to forecast the unemployment rate in the future, whereas putting an outline of situations of unemployment before and after the global financial crisis and the best practices to decrease unemployment rates in order to achieving the welfare and economic growth.

5. Research methodology:

The calculation of unemployment rate will depend on the internationally recognized, and will be used time series analysis model to analyze the level of unemployment rate, especially The Seasonal Decomposition procedure which decomposes a series into a seasonal component, a combined trend and cycle component, the seasonally adjusted series is the most appropriate, because it represents the original series with the seasonal variations removed, furthermore will rely on this model to predict the values of this indicator in the future.

The source of research data is the Labor Force Sample Survey, approximately 21352 households, conducting by the Central Agency for Public Mobilization and Statistics (CAPMAS), regularly quarterly in four rounds (Jan. /Apr. /Jul. /Oct.), depending on several issues from the period starts from 2004 to 2010.

6. Analyzing the impact of labor market on Unemployment rate using Seasonal Decomposition procedure:

The Examining autocorrelations and partial autocorrelations of a time series provide a quantitative decision about the underlying periodicity as following:

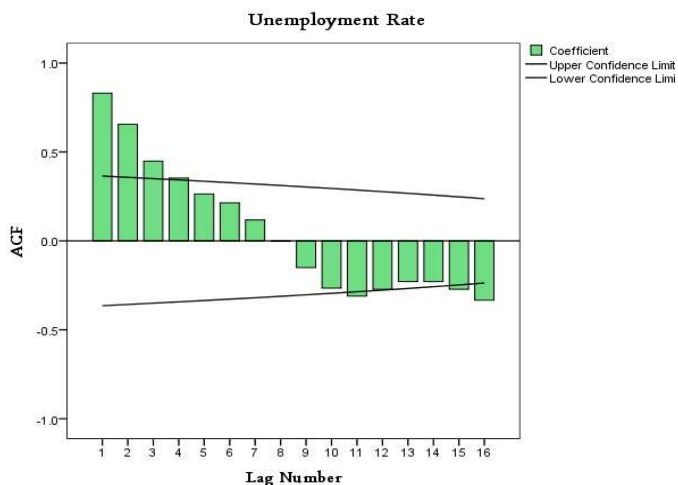


Figure (1)
Autocorrelation plot for unemployment rate

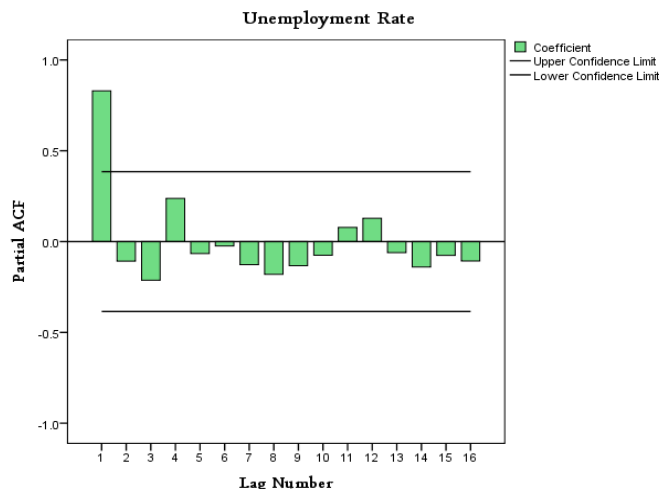


Figure (2)
Partial Autocorrelation plot for unemployment rate

The examination of autocorrelation partial autocorrelation function confirms the presence of a quarterly seasonal component in the data.

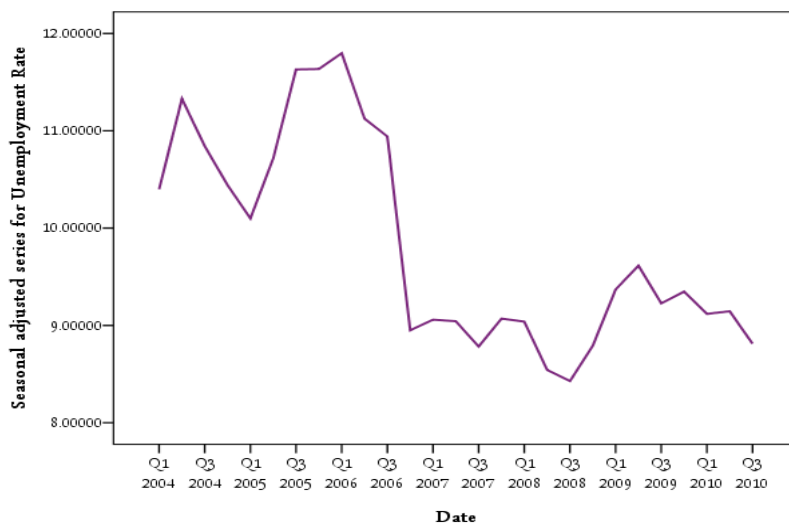


Figure (3)
Seasonally adjusted series for unemployment rate

According to the standard definition of unemployment and the market definition of economic activity population, unemployment rate in Egypt declined from 11.00 % in 2004 to 8.94 % in 2010.

The figure above represents the high unemployment rate in the year of 2004 and witnessed the highest value in the first of 2006 to reach 11.80%. Then declined to attained values ranged from 10.90% to 11.10% in the same year, until the end of 2006 to witness the sharp declination attained 9.00%. This declination continued until 2007 to attained 8.37%.

After the global financial crisis it returned again to rise in the end of 2008 to attained 8.84% and ranged from 9.37% to 9.40% in 2009. In onset of 2010 it witnessed a little declination to attain 9.12 and 8.96, until the end of 2010 as reported 8.94.

It can be explained the reasons related to the high unemployment rates in Egypt from the period 2004 until 2010 to the Egyptian labor force market circumstances within its two sides, as follow:

The labor supply side:

- A large number of young people are entering the job market each year searching for a first job. Of those unemployed, 92.1% are first time job seekers ⁽¹⁾, most of them are not qualified enough to commensurate with labor market needs. As they didn't take any professional or personal training to improve their skills. In addition to the defect in education systems.

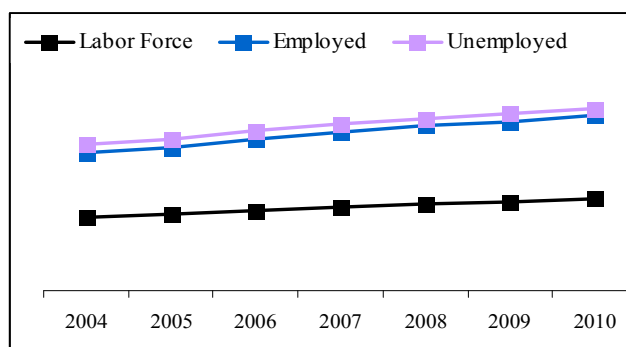


Figure (4)
Annual estimates of labor force status (2004-2010)

- The number of labor force increased from 2 million to 2.6 million with increasing in the number of unemployed people ranged from 21.5 thousand to 23 thousand through the period 2004 - 2010, although the number of decreased to 21.4 thousand in 2008 after attained 24.4, 24.3 in 2005 and 2006 respectively, the occurrence of global financial crisis led many people lost their job and the unemployed people increased again to reach 23.7 in 2009.
- Since 2006, the LFSS questionnaire has been developed by some inquiring questions to precisely identify employment status of each individual in the household (employed, unemployed, out of labor force, ...etc) before asking about work characteristics, which led to monitor the real situation of unemployment with more accuracy.

The labor demand side:

- The declination of unemployment rate in mid of 2006 until the years before the global financial crisis occurred because of number of procedures in the economy happened. Egypt has the opportunity to increase rates of growth in per capita income, increase savings rates, and deepen investments in human capital. All these procedures led to appearing of many investment projects and institutions and increasing the employment demand. It declined from 11.00 % in 2004 to in 8.37% in 2007. ⁽²⁾
- The global financial crisis came to overshadow negative impacts on performance of the Egyptian labor market. The impact on the real economy has been reflected in the following indicators: ⁽³⁾
 - Decline of GDP growth from 7.2% in 2007/08 to around 4% in 2008/09.
 - Reduced flow of FDI and a decline in domestic investment.
 - Increased strain on the balance of payments.
 - Capital market collapse.
 - Decelerating sectoral growth especially for tourism, manufacturing and Suez Canal.

It is expected that the decline in GDP growth, FDI, and decelerating the growth of tourism and manufacturing sector will curtail the ability of the economy to create new jobs. It has been estimated that the decline in employment opportunities by 1.6 percentage points, or 348,000

¹ Based on CAPMAS, Labor Force Sample Survey.

² - Ragui Assaad, "Labor supply, employment and unemployment in the Egyptian economy through the period 1989 -2006", **Economic research forum**, working paper No.0701, 2007

³ Samir Radwan, "Economic and social impact of financial and economic crisis in Egypt", **ILO**, ISBN 978 -92 - 2 - 122827 - 1, April 2009.

jobs. According to the ILO the number of unemployed increased in 2008 by 14 million. As the crisis continues to spread and job losses mount.

The most immediate impact of the crisis has been the inability of the labor market to adjust, thus exacerbating the problem of unemployment, and accentuating the position of different groups particularly women and youth. Unemployment was on the rise as increased from 8.84% to 9.40% at the end of 2009.

7. Forecasting of unemployment rate:

The forecasting period will be for 5 quarters, October 2010 through October 2011.

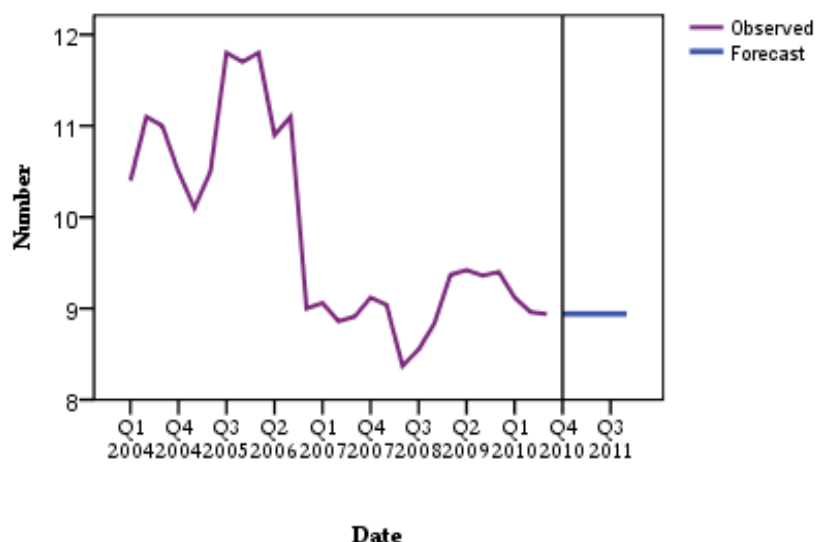


Figure (5)
Forecasting of unemployment rate

Table (1): PREDICT THRU YEAR 2011 QUARTER 4

Years	Predicted value
2010_Q4	8.94
2011_Q1	8.94
2011_Q2	8.94
2011_Q3	8.94
2011_Q4	8.94

According to the model, the Forecasting of unemployment rate predicts a stability of it at 8.94% until the fourth quarter of 2011 as an expected result after the ending of the global financial crisis.

8. Results and recommendations:

First: The Results

- 1) There is a mismatch between the supply and demand for labor. To gauge the order of magnitude, labor supply grows at 3% every year, while the demand for labor grows only at 2.8%, with the difference continually swelling the ranks of the unemployed.
- 2) The global financial crisis had negative impacts on performance of the Egyptian labor market in mid of 2008 and 2009 which led to increasing in the unemployment rate to range to 9.37% and 9.40% and the number of unemployed increased in the end of 2008 by 14 million.
- 3) The availability of the opportunities to increase rates of growth in per capita income, increase savings rates, and deepen investments in human capital in Egypt resulted to decrease in the unemployment rate and led to appearing of new jobs.

Second: The Recommendations:

1. Take into account the geographical distribution of government projects with achieving the balancing between the needs of the rural and urban areas, and targeting the most governorates which suffer from high rates of unemployment. It is also important to focus on labor-intensive projects to contribute effectively in the creation of employment opportunities. ⁽¹⁾
2. Support the most affected industries, such as clothes and textiles by following some methods for example: facilitate the organization of international exhibitions, search for new markets in Africa, and Eastern Europe, and government support the producers not to lay off workers.
3. Awareness and encouragement the private sector to create the suitable working environment in the existence of the transparency and equality of opportunity between men and women. By focusing on providing appropriate incentives to the private sector to encourage it to engage in these initiatives, and ensure the application of legislation and regulations that protects the rights of women in the workplace.
4. For solving the problems of employment and unemployment. We need active labor market policies include: ⁽²⁾
 - A. Employment services and job search assistance, training programs for the unemployed and youths.
 - B. Job creation through wage/employment subsidies, public works, self-employment and micro-finance services.

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