

The Depreciation of Diploma in Tunisia: Rising Unemployment Rate of Graduates of Higher Education

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Abstract: This note suggests characterizing the Tunisian labor market for the young graduates of higher education by taking into account the phenomenon of depreciation of the diploma. The increase of the number of graduates in the labor market depreciates the diploma. There is not only one criterion of recruitment in the labor market. The appearance of other criteria has a big role to depreciate this diploma. This study, so, allows us to verify this phenomenon by means of a questionnaire with the graduates of higher education.

Keywords: The depreciation of diploma, unemployment rate, Tunisia.

1. INTRODUCTION

The theory of the human resources (Becker, 1964, 1975) and the theory of the signal and the filter (Arrows, 1973 & Spence, 1974) are the first foundations estimating the output of education. These theories are placed beside the offer of the work by neglecting variables relative to the demand.

In spite of the contribution of the theory of the human resources to explain the role played by the education, defined as an investment, in the determination of the professional situation of the individual on the labor market. This contribution is, moreover, insufficient to approach the question of the occupational integration. So, the carelessness of the questions relative to the nature of the information about the labor market contributes to the development of the other theories offering new interpretations when in the role of education.

So, these various economic approaches of the diploma have as a common limit to take into account insufficiently interdependences between the structures of production of diplomas and those who use these diplomas (Vinokur A., 1995). The theories of endogenous growth take into account various transformations that teaching has known these last years. So, these theories take into account various transformations known by the productive system, and which have an influence afterward on the development of the graduates' production and on their insertion on the labor market.

The function of the diploma remains essentially that of "filter" to identify the inherent capacities of an individual rather than to reflect really their skills, and the increase of the number of university students strengthens this function. The employers find themselves obliged to rise more and more the level of training necessary to occupy a post to identify the most competent candidates, so generating the phenomenon of «inflation of diplomas ».

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The employers' confidence decreased the power of diploma by reflecting the sought skills. They grant little importance to the training certified by a diploma, and often favor the training to the internal, preferring an acquired experience "on the ground" or individual qualities as the versatility or the capacity of adaptation to the specific working forms in the company.

2. THEORETICAL ASPECTS

Since the sixties, the theory of the human resources has established the dominant theory which studies reports between education and employment.

The fundamental hypothesis of the theory of the human resources is to consider the education as a shape of investment that affects the productivity of the individuals as well as their salaries. According to this theory (Becker, 1975), the differences of insertion are understandable by the differences in the educational investment. Income is a function of the qualification determined by the accumulated human resources. The obtaining of a diploma, so, corresponds to the acquisition of a stock of knowledge and skills susceptible to be put in contribution in employment to acquire a supplement of productivity which will be valued on the labor market against an income.

If the theory of the human resources is the model dominating in the economy of education, there are, however, alternatives with which the function of earnings of Mincer and the empirical estimations which ensue from it are compatible. It is the case in particular theories of the filter and the signal (Arrow K.J., 1973 and Spence M., 1974) which question the role of the educational system and, more exactly, its capacity to increase the productivity of the individuals.

Contrary to the theory of the human resources, these theories abandon the hypothesis of completed information about the labor market. The transparency of the labor market is imperfect. The productive capacities of the candidates for a post of the work are badly known by the employers. So, the differences of productivity and thus salaries of the individuals result from differences in the natural capacities which the individuals indicate to the employers thanks to the acquisition of a certain level of study. The diploma is thus used as an imperfect signal to filter the job applicants.

The theory of the human resources and the theories of the signal and the filter estimate the marginal earnings of the education by being situated both on the supply side of work. The functions of earnings, indeed, suppose that the distribution of insertion of the workers is directly bound to their individual characteristics and of schooling. So, these theories neglect the relative variables at the request of work which can, too, influence the marginal earnings of the education and the link education-salary. The diploma does not remain any more the only signal of recruitment. The practical training can, also, play a very important role next to the fundamental training.

Thurow L.C. (1975)'s model of competition for the employment or the model of " Job competition " being inspired by the model of the description and the rest close to standard theories. Thurow resumes Becker's hypothesis according to which «on-the-job training» (Teissier J. and Rose J., 2006) always comes to complete the workers' school training.

This theory rests on a vision turned to the demand rather than to the offer by highlighting the heterogeneousness of jobs. The individuals do not bring capacities completely developed on the labor market, but they acquire them fundamentally in the employment. Therefore, the individual has to acquire the qualifications for the post asked inside the company.

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So, in these models of description, the individuals, in competition to obtain the best signals, enter a race in pursuit of studies leading to gradually depreciate the diplomas of lower level. The diploma has then a value of very strong information during the access to the first jobs, but generally a decreasing value as the employers observe the individual's real productivity in the company, or have information on their career (Belman D. and Heywood J.S., 1997). The youth unemployment is deteriorated further to the school expansion. The protective role of the diploma against the unemployment has thus weakened with the time (Goux D. and Maurin E., 2007).

3. THE EVOLUTION OF THE STRUCTURE OF THE WORKING POPULATION

At the end of the 1980s, the employment market in Tunisia was characterized by an imbalance between the demand and the offer of the work. Several determiners were situated in the accentuation of this imbalance. The structural transformation of the Tunisian economy led to important specific

changes of the job application such as the increase of the number of women on the labor market; in particular the considerable increase of the number of the graduates of the higher education arriving every year on the labor market.

The structure of the population according to the level of education slightly improved. So, the proportion of the people who have a high school level of education had marked an increase of more than 4 points during the period 2004-2010; also, the proportion of those who have a higher school level had increased by meadows of 3 points during the same period to affect 11,5 % in 2010 (National Institute of Statistics (NIS)). The part-active persons having an upper level had increased 7 points in passers-by from 9.1 % in 1999 to 16.2 % in 2010 to 21.5 % in 2014. Also, the part of the working population having a high school level had increased by meadows of 6 points in passing from 31.1 % in 1999 to 37.2 % in 2010 to 39.1 % in 2014 (Development plan (2010-2014)).

So, this increase of the workers belonging to the population old enough to work, in particular the more and more demanding qualitative additional demand (awarded a diploma from higher education), was only worsening the imbalance of the employment market. The Tunisian economy is, as a consequence, in trouble to satisfy the job application and to reduce the unemployment.

Job creations were 12.9 thousand jobs between the fourth quarter and the third quarter of 2012. In the fourth quarter of 2012, the number of the working population became established in 3255,8 thousand and left in 2451,0 thousand men and 804,2 thousand women. By comparing these figures with the third quarter of 2012, the clear creations of the employment of the men are considered at 6.7 thousand jobs against 6.2 thousand jobs for the women. The comparison of the results of the year 2006 to those of the fourth quarter of 2012 and 2013 shows that the proportion of the posts created decreased about 30 points for the men and about 18.3 points for the women. All in all, this creation decreased in 48.9 points (National Institute of Statistics (NIS)).

The academic level of the working population does not stop improving. The creations, however, tend to correspond better to the needs of the job-seekers having a high school level than those having a higher education level, which translates one of the fundamental weaknesses of the Tunisian labor market worth knowing a persistent, even increasing inadequacy between supplies and demands of jobs. The incapacity of the Tunisian economy to absorb the workforce tends to aggravate unemployment especially of the graduates. The increase of job creations was widely compensated with the development of the offer of the working strength.

The economic growth will not thus be self-important to answer the additional needs for jobs. The growth rates of the GDP (Gross Domestic Product), registered during the last decade, were not able to generate sufficient creations of jobs, which needs a necessary growth in workability. So, to answer the pressures and the challenges which faced Tunisia, in respect of employment and of the reduction of unemployment in particular, it is imperative for the country to reach a higher growth rate of the GDP (equal to or upper than 7 % per year).

4. DISPLAY OF THE SURVEY

The purpose of our research is to judge the relevance of the initially formulated hypotheses. The used method is a survey by means of a questionnaire. We distributed this questionnaire for the graduates of higher education. These graduates are belonging to various levels of education: Bachelor degree, master degree and doctorate.

The questionnaire is the empirical tool which will allow us to validate or not our hypotheses. This questionnaire tries hard to raise a vision of the occupational integration of the young graduates, in particular the graduates of higher education.

The impact of the diploma, the additional training and the work experience on the occupational integration of the graduates are formulated through two hypotheses. The first refers to the positive effect of the diploma on the occupational integration. The second hypothesis refers to the effect of the additional training and the work experience as complementary criteria to the diploma on the occupational integration.

5. MODEL SPECIFICATION

The econometric analysis in which we were engaged is the modeling of the choice "inserted" versus "not inserted" and the analysis of the determiners of the probability of being inserted or not for the graduates of higher education. To model the insertion of the graduates, a multinomial logit is used which is defined as follows:

Y_i : the dependent variable 1 if the graduate "i" is inserted at the time of the survey, and 0 if not. The equation of regression to predict a value of Y. The basic equation was the following one:

$$Y_i = b_1 + b_i X_j + \varepsilon_i$$

Where: b_1 : The constant.

b_i : The estimated term corresponding to each variable.

X_j : The independent variables.

ε_i : The term of error.

The independent variables are:

Level of study: lev.stu

Work experience: work.exp

Additional training: Add.tra

The used methods are logit, probit and linear estimation of the categories current status (inserted or not inserted).

6. ESTIMATION, RESULTS AND INTERPRETATION

Table1. Estimation binary logit

Variables	Coeff	Std Error	T-Stat	Signif
Constant	1.129841561	0.410044659	2.75541	0.00586185
lev.stu	-0.079286851	0.100191093	-0.79136	0.42873611
work.exp	-0.296589485	0.199726941	-1.48497	0.13755049
Add.tra	-0.246366706	0.180770912	-1.36287	0.17292444

Table2. Estimation binary probit

Variables	Coeff	Std Error	T-Stat	Signif
Constant	0.703914181	0.254276413	2.76830	0.00563490
lev.stu	-0.048756573	0.062251914	-0.78321	0.43350143
work.exp	-0.185294743	0.124901774	-1.48352	0.13793532
Add.tra	-0.153724112	0.112820018	-1.36256	0.17302103

Table3. Estimation linear regression

Variables	Coeff	Std Error	T-Stat	Signif
Constant	1.782324471	0.099891870	17.84254	0.00000000
lev.stu	-0.022168228	0.024591412	-0.90146	0.36777578
work.exp	-0.075843123	0.049274635	-1.53919	0.12438876
Add.tra	-0.055804615	0.044399584	-1.25687	0.20938548

The various used methods (logit, probit and the linear estimation) of the categories current status (inserted or not inserted), give us the sign expected from the various explanatory variables whether they are level of study, work experience or additional training. These various variables have a negative effect on the non-insertion of the graduates, which explains that the increase of each of these variables allows decreasing the risk of the non-insertion of the graduates in the labor market. So, the more the level of study is increased, the more the risk of being inserted is decreased. It is also the case of the work experience and the additional training. These various variables are not significant in spite of the negative effects which were found on the current status of the graduates.

The result showed that the coefficient of determination is very low; it is 1 %, which means that these variables explain together 1 % of the unemployment. This model is ineffective to explain unemployment.

So, to improve the effect and the significance of these various variables, we used other methods of estimation. But, the better result is given by the multinomial logit method. So, the level of study allows to decrease the risk of being inserted by 9 %, the work experience by 30% while the additional training by 22,75 %.

The most important effect is the one of the work experience and the additional training. This can explain the depreciation of the role of the diploma on the labor market. So, the level of study has no effects noticed by the work experience and the additional training. The latter decreased the unemployment of an equal proportion of almost 50 %. It is the most important proportion which gives a value to these two more important factors on the labor market.

Table4. *Regression multinomial logit*

Variables	Coeff	Std Error	T-Stat	Signif
Constant	1.147493863	0.404735622	2.83517	0.00458015
lev.stu	-0.090502874	0.098444312	-0.91933	0.35792265
work.exp	-0.307164042	0.200076900	-1.53523	0.12472736
Add.traï	-0.227576453	0.181061837	-1.25690	0.20879019

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These effects validate our hypotheses where the diploma does not remain any more the only selected criterion on the labor market. The work experience and the additional training come to compete with the diploma on the labor market. These various criteria are afterward going to depreciate the role of the diploma on the labor market.

The initial training plays a determining role in the phase of occupational integration, but it gradually loses its influence as young people acquire some experience and new skills on the labor market.

So, the hypothesis of the theory of the human resources and the alternative theories (The theories of the "filter" (Arrow, 1973) and that of the "signal" (Spence, 1973)) are rejected. These models are bound to the reasoning "all things being equal" in particular to the hypothesis of a stability of the demand of skills and the distribution of the capacities from a period to another one.

7. CONCLUSION

The introduced variables do not contribute to improve significantly the variability being understandable by model. But thanks to the significance of the various variables, our model is not the best model to explain the status of the graduates on the labor market.

The classic theories of the occupational integration seem incapable to explain the disparities of the occupational integration of the graduates. Very often, the explanation of certain theories rests on the lack of information or on the individual attitudes of the employment seekers (lack of mobility, lack of adequate training, requirements or disproportionate expectations with regard to the offer, etc). Indeed, the information at request of work circulates especially in restricted circles, and is not always accessible to the whole population. For the economically difficult periods, the deskilling and the depreciation of diplomas are heavy variables of the occupational integration.

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