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Theoretical Model of Labor Patterns: Study Case Transition from Public Sector to Private Sector

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ABSTRACT

In this paper we try to analyze the selection mechanism of the labor force used by the private sector. As we know the objective of a private firm is the maximization of the profit, in order to fulfill this goal, the employer has to select the necessary number of skilled and unskilled workers, according to the technology of production. In our model we can see the unemployment resulting from the gap between the supply and the demand for labor affects only the unskilled individuals. The existence of unemployment among qualified individuals could be explained by the fact that the selection process has been done gradually. The higher salaries offered by the private sector determined the workers to quit prematurely their job; the supply of skilled labor was higher than the possibilities of absorbing those resources existing in the private sector.

Keywords: Labor patterns, sectoral shifts, wages contracts, production function, transitional process.

1. Introduction

The physical capital knows technological changes aimed to modernize the productive activities and to increase the level of technical progress. The correlation between profits and wages in private firm, induces structural changes in terms of employment. The production process is reoriented towards capital intensive activities, which require qualitative transformations on the labor market: the acquisition of higher technical knowledge through workers' retraining. The private sector, better endowed with productive techniques coming from investment in modern capital, requires a higher level of qualification than that existing in the public sector, where the technological improvement is less important.

In this paper we are going to characterize the structural changes associated to the reallocation of workers between two sectors, i.e. public sector and private sector.

2. The Model

Let define that there are two types of workers, qualified (*H*) and non-qualified (*L*). In our case, the level of qualification is given by two elements:

a. The diploma which shows if the individual is of type *H* or of type *L*. We assume that there are α workers possessing a high diploma (*DH*) and $(1-\alpha)$ workers having low diploma (*DL*). The *DH* diploma states that its owner is skilled (of type *H*), while the *DL* diploma certifies that the individual is unskilled (type *L*);
b. The effective productivity of a worker, known with certainty by the individual but unknown to the firm. However, the employer knows that among the α owners of a *DH* diploma there is a proportion q of skilled workers. At the same time, among $(1-\alpha)$ owners of a *DL* diploma there are *p* workers of type *H* who could not obtained the corresponding diploma. Consequently, (1-*q*) individuals from the group *DH* are actually unskilled and only (1-*p*) workers belonging to the *DL* category are of type *L*.

For the whole economy, we have therefore the situation presented in Table 1.

Table 1. The distribution of workers according to their qualification and their diploma

Diploma	Proportion	*H*	*L*
DH	α	*q*	1-*q*
DL	$(1-\alpha)$	*p*	1-*p*

We suppose that there are only two forms in the economy: the state enterprise (sector) using all resources of labor before the transition; the private firm (sector) which employs workers from the state sector. The firm pays therefore a wage rate $w_H > 0$ to *DH* workers, and $w_L < w_H$ to individuals belonging to the group *DL*.

Let us suppose that all workers have the same length of active life time T = 1 at the beginning of transition, and that the labor resources in the economy are constant. The total revenue of a DH worker in the public sector is therefore:

$$R_S(DH) = w_H \tag{1}$$

while an individual from the group DL receives a total salary:

$$R_S(DL) = w_L \tag{2}$$

When the private employer starts to hire workers, he knows that the total number of skilled workers is:

$$H = \alpha q + (1-\alpha)p \tag{3}$$

while the total resources of unskilled labor in the economy are:

$$L = \alpha(1-q) + (1-\alpha)(1-p) \tag{4}$$

In the process of production, the private sector uses the two types of workers in a certain proportion given by the production function. In order to attract the workers, the private firm offers a wage $w_p > w_H$ to qualified individuals, and $\omega(w_H > \omega > w_L)$ to unskilled workers. Taking into account the production technology and the wage rate, the private sector proposes a total number of contracts Γ, from which Γ^H represents the type H contracts (for skilled jobs) and Γ^L the number of type L contracts.

We have seen that in category (DH and DL) there are two types of workers (type H and type L). Each individual H from the group DH can choose between two alternatives: either to remain in the public sector for a wage w_H, or to join the private firm for a revenue $R_p(H)$ given by the salary w_p. A type L individual, in the same group DH, has three possibilities: to remain in the state sector with the wage w_H; to apply for a post H in the private enterprise, which offers him a revenue $R_p(H)$: to ask a type L job in the private sector which corresponds to a revenue $R_p(L)$, given by the salary ω.

In the group DL, a skilled individual (of type H) faces two alternatives: to remain in the public sector for a revenue $R_S(DL)$, or to apply for a post H in the private firm which corresponds better to his effective qualification. In the second case, he will receive the wage w_p, thus a total revenue $R_p(H)$. A type L worker can also choose between the two sectors: to remain in the public enterprise for the same revenue $R_S(DL)$, therefore a wage w_L, or to apply for job in the private sector. If that worker asks a type L job, he expects to receive the salary ω, therefore a total revenue $R_p^e(L)$. He can also pretend that his real qualification is of type H and ask, in this case, a revenue $R_p(H)$.

We introduce the hypothesis that the private sector is going to test the workers who demand a post H: they will pass a testing period m < 1. We assume that m is fix and that after that period no further information concerning the workers' characteristics can be revealed. Since in the beginning the employer does not know the real qualification of an individual, the wage paid during the period m to all applicants for post H is set at ω for the individuals coming from the group DH, and at w_L for those belonging to the category DL. If the workers from the DL group pass the tests they will receive, at the end of the period m, a bonus $m(\omega - w_L)$ such that their effective revenue will be identical to that received by those applicants from the group DH who pass the test. Obviously, if an individual from DL category fails, the bonus will be zero. We assume that the cost of testing a worker $\sigma > 0$ is supported by the private firm.

Since the tests are costly, the employer decides to test only a proportion λ $(0 < \lambda < 1)$ of DH workers who apply for a post H. However, all individuals coming from the group DL who demand a type H job will be tested because the proportion p of unskilled workers in that category $(1-\alpha)$ is low.

All the workers who pass the test, as well as those who are not tested will receive a wage $w_p > w_H$ for the rest of their active life (1-m), thus a total revenue $(1-m)w_p$ after the probation period. The workers coming from the group DH who failed can remain in the private sector for the wage rate ω, thus as unskilled workers, receiving the revenue $R_p(L)$:

$$R_p(L) = m\omega + (1-m)\omega = \omega \quad (5)$$

Since all the workers from the group DL are tested if they ask a post H, in order to discourage the unskilled to apply for such a job we make the assumption that those who failed will be fired and they will receive the unemployment benefit $B < w_L$ (offered by the government) for the rest of their active life (the possibility to find a job in the state sector is zero), implying a total revenue:

$$R_p(B) = mw_L + (1-m)B \quad (6)$$

The wage ω, offered to L workers, is higher than the salary paid by the public enterprise for the same level of qualification. All individuals from the group DL are therefore willing to apply for a job in the private sector. Assuming that the total number of L jobs is limited by the production technology, the DL workers willing to enter the private firm are confronted with a probability t (0 < t < 1) to become unemployed. The expected revenue of a DL individual who asks a post L is therefore:

$$R_p^e(L) = tB + (1-t)\omega \quad (7)$$

Those workers who pass the test and those who are not tested will receive a total revenue:

$$R_p(H) = m\omega + (1-m)w_p \quad (8)$$

We have therefore the following cases associated to each category and to the sector for which a worker applies:

Table 2. The expected revenue of a worker in the private and state sector

<table>
<tr><th>Diploma</th><th>Sector</th><th colspan="4">Revenue</th></tr>
<tr><td rowspan="5">DH</td><td>Public</td><td colspan="4">$R_S(DH) = w_H$</td></tr>
<tr><td rowspan="4">Private</td><td rowspan="3">Type H</td><td rowspan="2">Tested</td><td>Passed</td><td>$R_p(H) = m\omega + (1-m)w_p$</td></tr>
<tr><td>Failed</td><td>$R_p(L) = \omega$</td></tr>
<tr><td>Untested</td><td colspan="2">$R_p(H) = m\omega + (1-m)w_p$</td></tr>
<tr><td>Type L</td><td colspan="3">$R_p(L) = \omega$</td></tr>
<tr><td rowspan="4">DL</td><td>Public</td><td colspan="4">$R_S(DL) = w_L$</td></tr>
<tr><td rowspan="3">Private</td><td rowspan="2">Type H (tested)</td><td>Passed</td><td colspan="2">$R_p(H) = m\omega + (1-m)w_p$</td></tr>
<tr><td>Failed</td><td colspan="2">$R_p(B) = mw_L + (1-m)B$</td></tr>
<tr><td>Type L</td><td colspan="3">$R_p^e(L) = tB + (1-t)\omega$</td></tr>
</table>

We can see that a type *L* worker from the group *DH* is not interested to apply for a post *L* in the private sector because the corresponding revenue is inferior to that received in the state firm: $\omega < w_H$. Within the *DH* category, a type *L* individual applying for a post *H* who fail will receive a revenue which is lower than $R_S(DH)$ but he tries to obtain such a job because he has a probability $(1-\lambda)$ to avoid the test and to receive the revenue $R_p(H) > R_S(DH)$.

All the above elements (the wage rate during and after the probation period, testing conditions, the duration of tests, etc.) are specified in the contract proposed by the employer. We can therefore introduce the following definition:

Definition 1:
A contract K represents the quintuple

$$K \equiv \left[\lambda; w_p; \omega; m; w_m\right]$$

which specifies:

(a) *the probability* $\lambda \in [0,1]$ *to be tested;*

(b) *the wage* $w_p \in \Re^+$ *received by those workers who passed the test and those who are not tested;*

(c) *the wage* $\omega \in \Re^+$ *offered to those who failed the test but who accept to remain in the private sector as type L workers;*

(d) *the probation period* $m \in (0,1)$*;*

(e) *the wage* w_m *(*$w_m = \omega$ *for the applicants coming from the group DH;* $w_m = w_L$ *for those belonging to the category DL who demand a post H) offered during the testing period.*

In order to discourage the unskilled individuals from the group *DH* to apply, the proportion λ of tested workers must offer them an expected revenue inferior to that received in the state sector. A type *L* individual belonging to the group *DH* expects the following revenue in the private firm:

$$R_p^e(DH_L) = m\omega + (1-m)\left[(1-\lambda)w_p + \lambda\omega\right] \qquad (9)$$

As long as there is a probability $(1-\lambda)$ to escape to the test, and this probability offers him an expected revenue which is higher than that obtained if he remains in the public sector, an unskilled individual from the group DH will apply for a post H in the private firm. Conversely, if $R_p^e(DH_L)$ is identical to the revenue $R_S(DH)$ offered by the state sector, that worker prefers to remain in the public firm. We can therefore make the following proposition.

Proposition 1:
An unskilled worker (of type L) belonging to the group DH applies for a post of type H in the private sector if and only if the expected revenue in that sector is higher than that offered by the public enterprise:

$$R_p^e(DH_L) > R_S(DH)$$

The same worker decides to remain in the state sector if the wage offered by that sector allows him to obtain the same level of revenue like that, expected, in the private sector:

$$R_p^e(DH_L) = R_S(DH)$$

The proposition λ of tested candidates is therefore given by the equality between the two revenues. Using (1) and (9), we can write:

$$w_H = m\omega + (1-m)\left[(1-\lambda)w_p + \lambda\omega\right] \tag{10}$$

The above identity gives the proportion λ :

$$\lambda = \frac{(w_p - w_H) - m(w_p - \omega)}{(1-m)(w_p - \omega)} \tag{11}$$

We assume that the private sector uses the two types of workers in a certain proportion given by the production function, which is supposed to have the following form:

$$Y_p = f\left(H_p, L_p\right) = \left(H_p\right)^{\beta}\left(L_p\right)^{1-\beta} \tag{12}$$

where Y_p represents the output produced, which is a function of H_p - the number of skilled workers, and L_p - the unskilled workers. The private sector chooses the optimal combination of type *H* and type *L* workers, knowing that the proportion λ is given by (11). Concerning the skilled workers, the private employer has two alternatives:
he hires a number of qualified workers which is inferior to the total number existing in the economy; he decides to employ all individuals of type *H*.

The optimal combination between H_p and L_p is given by the production frontier, taking into account the relative wage $\left(\frac{w_p}{\omega}\right)$. Since the two salaries are set by the private sector, and because the objective of a transitional economy is the expansion of the private sector, it is reasonable to assume that all qualified workers will be employed by the private firm. The employer chooses therefore the optimal ratio $\left(\frac{w_p}{\omega}\right)$ which allows him to use all resources of skilled labor. We have, in this case:

$$H_p = \alpha q + (1-\alpha)p \tag{13}$$

The total number of contracts Γ^H (of type *H*) proposed by the private sector is:

$$\Gamma^H = \alpha q + (1-\alpha)p \tag{14}$$

In such a situation, the private sector has to chose only the number of unskilled workers and the wage corresponding to each type of qualification (w_p and ω). The objective of the private firm can be written:

$$\max \Pi = \left\{ (H_p)^{\beta} (L_p)^{1-\beta} - C \right\} \tag{15}$$

where Π is the profit and C the total cost of production. The optimization program has the following constraints:

$$H_p = \alpha q + (1-\alpha)p \tag{C1}$$

$$w_p > w_H \tag{C2}$$

$$w_H > \omega > w_L \tag{C3}$$

$$\lambda = \frac{(w_p - w_H) - m(w_p - \omega)}{(1-m)(w_p - \omega)} \tag{C4}$$

In order to solve this problem, the private employer chooses initially the wage w_p, respectively ω. We know that the cost of testing *C*, is given by the total number of tested workers:

$$C_{\sigma} = \sigma\left[\lambda \alpha q + (1-\alpha)p\right] \tag{16}$$

Only a portion λ of individuals coming from the group *DH* will be tested, while all the workers from the *DL* category have to pass the probation period. Within each category, the testing cost will be:

$$C_{\sigma}(DH) = \sigma \lambda \alpha q = \sigma \alpha q \frac{(w_p - w_H) - m(w_p - \omega)}{(1-m)(w_p - \omega)} \tag{16 a}$$

$$C_{\sigma}(DL) = \sigma(1-\alpha)p \tag{16 b}$$

With respect to the technique of selection θ_{DH} , the employer has always another alternative: nobody is tested within the group *DH*; in this case, the cost $C_{\sigma}(DH)$ will be zero. If the same number of workers αq is employed, there will be a proportion (1-*q*) of unskilled among the αq workers hired. Those αq (1-*q*) workers will receive, if the tests are concealed, a salary w_p during their active life, while the wage which effectively corresponds to their qualification is $\omega < w_p$. In such a situation, the private firm has an additional wage cost:

$$\Delta R_{DH} = \alpha q(1-q)(w_p - \omega) \tag{17}$$

We can introduce the following proposition.

Proposition 2:

The private sector uses the technique of selection θ_{DH} *if and only if the cost of testing the workers* $C_{\sigma}(DH)$ *is lower than the additional wage cost* ΔR_{DH} *:*

$$C_{\sigma}(DH) \leq \Delta R_{DH}$$

No worker from the group DH is tested if the following identity holds:

$$C_{\sigma}(DH) = \Delta R_{DH}$$

At the equilibrium, the private employer will be therefore indifferent between the two alternatives:

$$\sigma q(1-q)(w_p-\omega)=\sigma\alpha q\frac{(w_p-w_H)-m(w_p-\omega)}{(1-m)(w_p-\omega)} \quad (18)$$

Following the same reasoning, if nobody from the group *DL* is tested, there will be a proportion (1-*p*) of type *L* workers within the same employment $(1-p)(1-\alpha)p$ individuals hired, given by the difference between the wage w_p effectively paid, and that corresponding to the real qualification (ω):

$$\Delta R_{DL}=(w_p-\omega)(1-p)(1-\alpha)p \quad (17\text{ a})$$

In order to determine the optimal wage ω, the employer compares therefore the two costs associated to the category DL, $C_\sigma(DL)$ and ΔR_{DL}. We make the following proposition.

Proposition 3:

The private sector uses the technique of selection θ_{DL} if and only if the testing cost $C_\sigma(DL)$ is lower than the additional wage cost ΔR_{DL}:

$$C_\sigma(DL)\le\Delta R_{DL}$$

No worker from the group DH is tested if the following identity holds:

$$C_\sigma(DL)=\Delta R_{DL}$$

At the equilibrium, the employer is again indifferent between the two alternatives:

$$(w_p-\omega)(1-p)(1-\alpha)p=\sigma(1-\alpha)p \quad (19)$$

The above equality gives the optimal wage differential between the two types of workers:

$$(w_p-\omega)=\frac{\sigma}{(1-p)} \quad (19\text{ a})$$

Replacing (19 a) in (18) we can obtain the wage w_p paid to skilled workers:

$$w_p=w_H+\sigma(1-p)^{-2}[m(1-p)+(1-m)(1-q)] \quad (20)$$

The wage offered to *L* workers will be therefore:

$$\omega=w_H-\sigma(1-p)^{-2}(1-m)(q-p) \quad (21)$$

where $q > p$. One can see that the two wages satisfy the conditions (C2) and (C3). Replacing w_p and ω in (C4), we obtain the final expression for λ:

$$\lambda=\frac{\sigma(1-q)}{(1-p)} \quad (11\text{ a})$$

The number of tested workers from the group *DH* depends on the proportion (1-*q*) of type *L* individuals existing in that category, as well as on the proportion (1-*p*) of unskilled workers from the group *DL*. If within the category *DH* the *L* workers are numerous, the employer has to increase the proportion λ of tested workers. On the contrary, if the unskilled are numerous in the group *DL* (*p* small), λ diminishes because the wage ω increases when (1-*p*) is high (we have already seen that the cost ΔR_{DL} is decreasing with ω, implying an inverse relation between λ and (1-*p*)).

Using the equation (19 a), the proportion λ of tested workers coming from the group *DH* can be expressed as a function of the wage difference between the two types of workers:

$$\lambda = (1-q)(w_p - \omega) \tag{11 b}$$

As a first conclusion, the private sector sets the number of workers to be tested in the category *DH* as a function of two elements: the proportion (1-*q*) of unskilled existing in this group, and the difference between the two wage levels paid to each type of qualification. If the proportion *q* of type *H* individuals within the group *DH* is high, the employer tests a lower number of workers. At the same time, if the wage w_p is too high relative to the salary paid to *L* workers, the proportion λ must increase in order to reduce the expected revenue $R_p^e(DH_L)$ up to the level $R_S(DH)$ which makes the unskilled workers from the group *DH* indifferent between the private and the state sector.

The total revenue received by each type of workers during their active life is:

$$R_p(L) = w_H - \sigma(1-p)^{-2}(1-m)(q-p) \tag{5 a}$$

$$R_p(H) = w_H + \sigma(1-p)^{-2}(1-m)(1-q) \tag{8 a}$$

The gap between the two levels of revenue is therefore:

$$R_p(H) - R_p(L) = \frac{\sigma(1-m)}{(1-p)} = (1-m)(w_p - \omega) \tag{22}$$

Consequently, the individuals hired by the private sector are differentiated, according to their revenue, only after the probation period. If the technique of selection can be improved such that the period *m* is reduced, the gap between the two types of workers, in terms of their revenue, will be even higher.

The total number of unskilled workers L_p can be now determined by maximizing the profit (13), where the cost of production *C* represents the summation of the testing cost C_σ and the wage cost C_w, the later having the following expression:

$$C_w = H_p R_p(H) + L_p R_p(L) \tag{23}$$

Using (C1), (5 a), and (8 a), we get:

$$C_w = w_H\left[\alpha q + (1-\alpha)p + L_p\right] + \sigma(1-m)\left\{(1-q)\left[\alpha q + (1-\alpha)p\right] - (q-p)L_p\right\}(1-p)^{-2} \tag{23 a}$$

We can rewrite the cost of testing for λ given by (11 a):

$$C_\sigma = \sigma(1-p)^{-1}\left\{\alpha q(1-q) + (1-\alpha)(1-p)p\right\} \tag{16 a}$$

The total cost of production becomes:

$$\begin{aligned} C = {} & w_H\left[\alpha q + (1-\alpha)p + L_p\right] + \sigma(1-p)^{-1}\left\{\alpha q(1-q) + (1-\alpha)(1-p)p\right\} \\ & +\sigma(1-m)\left\{(1-q)\left[\alpha q + (1-\alpha)p\right] - (q-p)L_p\right\}(1-p)^{-2} \end{aligned} \tag{24}$$

The profit maximization subject to L_p gives the demand for unskilled labor in the private sector:

$$L_p = \left[\alpha q + (1-\alpha)p\right]\left[(1-\beta)(1-p)^2\right]^{\left(\frac{1}{\beta}\right)}\left[(1-p)^2 w_H - \sigma(1-m)(q-p)\right]^{-\left(\frac{1}{\beta}\right)} \tag{25}$$

The private employer proposes therefore Γ^L contracts of type *L*:

$$\Gamma^L = L_p \tag{26}$$

We have seen that the individuals belonging to the group *DL* willing to obtain an unskilled job in the private sector are confronted with a probability *t* to become unemployed if their number is greater than the demand. This probability reduces therefore the labor supply for jobs of type *L*. The expected revenue $R_p^e(L)$ is given by equation (7). We can introduce the following proposition.

Proposition 4:
An unskilled worker (of type L) from the group DL applies for a post of type L in the private sector if and only if:

$$R_p(L) \geq w_L$$

The same worker decodes to remain in the state sector if the wage offered by that sector allows him to obtain a total revenue $R_S(DL)$ *strictly superior to the expected revenue in the private sector:*

$$R_p(L) < w_L$$

Consequently, the unskilled individuals from the group *DL* will apply for a post *L* until the two revenues are equal:

$$w_L = tB + (1-t)\omega \qquad (27)$$

The above equality gives the probability of unemployment *t* to which the unskilled workers from the group *DL* are confronted when they demand a post *L* in the private sector:

$$t = \frac{(\omega - w_L)}{(\omega - B)} \qquad (28)$$

or, replacing ω from (21):

$$t = \frac{(1-p)^2 (w_H - w_L) - \sigma(1-m)(q-p)}{(1-p)^2 (w_H - B) - \sigma(1-m)(q-p)} \qquad (28\ a)$$

At the same time, the probability *t* is given by the excess supply L_p^S, relative to the demand for labor L_p:

$$t = \frac{\left(L_p^S - L_p\right)}{L_p^S} \qquad (28\ b)$$

Equating (28 a) and (28 b), we get the total number of type *L* candidates in the private sector:

$$L_p^S = \left[\alpha q + (1-\alpha) p\right](1-\beta)^{\frac{1}{\beta}} \left[(1-p)^2\right]^{\frac{(1-\beta)}{\beta}} \frac{(1-p)^2 (w_H - B) - \sigma(1-m)(q-p)}{(w_L - B)\left\{(1-p)^2 w_H - \sigma(1-m)(q-p)\right\}^{\frac{1}{\beta}}} \qquad (29)$$

The unemployment level (which is equivalent to the unemployment rate in the economy) is given therefore by the difference between L_p^S and L_p:

$$U = \left[(1-p)^2 (w_H - w_L) - \sigma(1-m)(q-p)\right] \frac{\left[\alpha q + (1-\alpha) p\right](1-\beta)^{\frac{1}{\beta}} \left[(1-p)^2\right]^{\frac{(1-\beta)}{\beta}}}{(w_L - B)\left[(1-p)^2 w_H - \sigma(1-m)(q-p)\right]^{\frac{1}{\beta}}} \qquad (30)$$

The unemployment affects only the group *DL*, more precisely, the unskilled workers belonging to that category. The qualified individuals do not face the risk of loosing their jobs because we supposed that the private sector is willing to hire all workers of type *H*, no matter the group from which they come. The new technologies require highly qualified workers; a private firm is therefore interested to select the best workers among the pool of employment.

3. Conclusions

The objective of a private firm is the maximization of the profit. In order to fulfill this goal, the employer has to select the necessary number of skilled and unskilled workers, according to the technology of production. The candidates for a skilled job are therefore selected according to a specific technique which supposes a certain cost per each individual tested, a period of probation, and other conditions. The process of selection described in our model requires several steps.

Firstly, the employer determines the proportion λ of candidates to be tested coming from the group *DH*. The number of workers to be tested should be sufficiently high in order to discourage the unskilled individuals to apply for a qualified post. Consequently, λ is given by the level of revenue paid by the state sector which should be identical to the expected revenue in the private sector. Within the *DL* category, where the proportion of unskilled workers is relatively high, we assumed that all applicants for a type *H* job will be tested.

Secondly, the employer chooses the total number of qualified workers to be hired. Since the goal of the transition is the expansion of the private sector, we made the assumption that all resources of skilled labor (coming from both categories) will be hired in the private firm.

During the third phase, the employer sets the salary to be paid after the probation period to each type of workers. The wage ω offered to unskilled individuals is given by the two alternatives the employer faces: the testing procedure implying a certain cost, and the situation when no worker is tested, which implies an additional wage cost given by the surplus of salary paid to the proportion of unskilled workers existing within the same number of individuals employed. The same trade off determines the wage w_p paid to skilled workers.

Once w_p and ω set, the profit maximization gives the number of unskilled workers L_p required by the production function. This level of employment is lower than the number of workers who apply for such a job, due to higher wages paid in the private sector relative to the public enterprise. The unemployment resulting from the gap between the supply and the demand for labor affects only the unskilled individuals.

The existence of unemployment among qualified individuals could be explained by the fact that the selection process has been done gradually. The higher salaries offered by the private sector determined the workers to quit prematurely their job; the supply of skilled labor was higher than the possibilities of absorbing those resources existing in the private sector.

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