MUTUAL RELATIONS AMONG FIRMS, LOCAL LABOR MARKETS AND CONSUMERS IN AN ECONOMY OF SHORTAGES: THE CASE OF POLAND

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Concepts and Definitions

This paper is addressed to the performance of an economy of shortages under current conditions. It is concerned with only a certain aspect of this type of economy, namely the mutual relations among firms, local labor markets, job-takers and consumers. Although the paper describes the case of Poland, certain more general observations are applicable to other European socialist countries.

The paper is concerned with two questions. First, it indicates some institutions and factors that affect the level of the price of labor in an economy of shortages, and compares these to a capitalistic, market oriented economy. Second, some suggestions are made to policymakers regarding changes that would improve the relations considered.

The discussion is cast in the comparative economic framework. Some basic concepts and definitions are presented at the beginning, whereas more detailed assumptions are developed in later considerations.

There are two basic concepts, namely the economic scene in which the described processes occur and the principal actors in that scene. The most important characteristics of this scene can be indicated by two definitions, i.e., of an economy of shortages and of a local labor market.

The notion of an economy of shortages is opposed to the idea of an economic equilibrium. Shortages are linked to disequilibrium or to an unbalanced economy. According to J. R. Hicks (1965) an economy is in equilibrium if, in correspondence to a given price (the equilibrium price), all economic actors can buy what they had planned to buy at that price and sellers can sell what they had planned to sell at that price.¹ This concept is employed here in a way that is accepted in much of the neoclassical literature. Equilibrium is that state in which economic actors find themselves in those positions at which they wish to be. It is worth noting that the above definition is opposed to the concept of equilibrium as a position of rest—a concept that can be found both in the classical and Keynesian analyses.

In contrast to equilibrium, disequilibrium may be defined as a state in which selling at a given price requires

less time and effort than buying, if buying is possible on some markets at all, i.e., demand always exceeds supply.² If two conditions are satisfied, namely that there is a structural background responsible for the situation and it has developed over a long period of time, such a state can be designated an economy of shortages. In the case of Poland, another condition should be taken into account. This is a persistent inflation rate that has averaged about 80 percent in 1988.

There are no capital and raw materials markets in an economy of shortages, i.e., in the socialist countries. Capital and raw materials are distributed by central planners on the basis of a national plan. In accordance with intended economic reforms, Poland and Hungary are slated to create such markets, but they still are in a nascent state. The only resource market that functions reasonably well in Poland is the labor market, and this market has some peculiarities related to the shortage economy. First, the hiring decisions of firms are severely limited by central regulations. A ceiling on the increase in wages is established each year and there are strict fiscal controls on firm income and wages. Second, there is no global or macro market for labor. Instead there are many local labor markets because of the high degree of spatial immobility of labor. The lack of apartments and other lodgings and other reasons contribute to this worker immobility. Third, due to the permanent state of disequilibrium, demand for manpower exceeds the supply of it. This means that there is full employment and also that, from the point of view of a given firm, the local labor market is formed by the remaining firms. In other words, there are as many local labor markets as there are firms in a given area. In summary, a local labor market embraces an area of economic space and the firms operating in that space. The firms are able to influence the propensity of workers to take jobs in their enterprises through wage offers, housing provided, and other social services. The extent of the labor market is approximately defined by the area needed to provide workers to a given firm. This means that the local labor market is a dynamic category. Worker availability is changeable, depending upon technological and economic progress in competing firms as well as in the hiring firm.

Two principal actors play on the economic scene, i.e., the firm and the job-taker-consumer. In analyzing relations between a firm and a local labor market, the

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average, or typical, firm is considered. This means that such subjective features of the firm as its economic position in the market and similar subjective aspects of workers are not taken into account. These features are included in the analysis when relations between firms and job-takers-consumers are examined. Thus two kinds of firms are analyzed:

- the firm selling in a balanced market where demand equals supply, and simultaneously purchasing labor in an unbalanced market where demand exceeds supply;
- the firm with a monopolistic position in its sales that operates simultaneously in an unbalanced labor market where demand is greater than supply.

Every day almost all individuals perform two basic functions as job-takers and as consumers. From the perspective of a firm, an individual is a job-taker when it purchases labor and a consumer when it sells its output. Thus it can be said that job-taking and consuming are inseparably linked. Each depends upon the other.

From the assumption that economic actors find positions in which they wish to be, another assumption follows. This is that the actors consciously employ strategies against each other to obtain favorable positions in their mutual dealings.

The Firm and the Local Labor Market

Each firm is assumed to have certain objectives. To achieve these objectives, the use of resources is required. Among these resources, people are the most important. In this connection, the firm constantly is interrelated with the local labor market in performing three tasks, i.e., in attracting new people to the organization, in motivating employees, and in retaining them (Dunn, 1972). The firm is in the best position if it concentrates resources on motivating people to achieve appropriate job performance. Assuming a constant level of output, a firm with effective employees will need to devote only a few resources to attracting new employees because of retirements and normal turnover.

From the viewpoint of any firm, the increase in cost of employee motivation has a certain definite limit. The increase in cost is beneficial to the point at which the increase in benefits (value of increased output) becomes equal to the increase in costs of motivation. That point is defined by the following formal statement:

$$\frac{DE_m}{DC_m} = 1 \quad (1)$$

where:

- E_m = benefits of motivation-increased work productivity, improved production quality;
- C_m = costs of motivation—wages, rewards, bo-

nuses, costs of training and education.

In any real economy worker turnover must be taken into account. Turnover is costly. On the other hand, some turnover is desirable, particularly when unproductive employees leave the firm and are replaced by more productive, more skilled people. It can be shown that turnover benefits the firm to the point that its positive effects become equal to its costs, as follows:

$$\frac{DE_t}{DC_t} = 1 \quad (2)$$

where:

E_t = benefits of turnover;

C_t = costs of turnover.

In light of the above it is evident that the costs and effects of employee motivation and turnover, and thus of attracting and holding employees, are interrelated. A firm can be presumed to sustain the increased costs and accept the benefits of motivation to the point at which that ratio equals the ratio of the benefits of turnover to the costs of turnover. This relationship can be represented by the following expression:

$$\frac{DE_m}{DC_m} = \frac{DE_t}{DC_t} \quad (3)$$

The above analysis is based on the assumption that to a certain point the benefits of employee turnover exceed its costs. This situation is more likely to prevail in balanced (competitive) labor markets than in unbalanced markets. In competitive markets, firms usually do not have difficulty in recruiting employees. The situation is different in an economy of shortages where the demand for labor constantly is higher than the supply at the going wage and firms compete for manpower. In such conditions it is highly likely that maintaining a balance between incoming and outgoing employees produces higher costs of turnover than benefits at any moment. Simply put, inferior employees either replace better employees, or maintaining the balance requires that new employees be paid more than those they replace. In this case relation (2) becomes:

$$\frac{DE_t}{DC_t} < 1 \quad (4)$$

From an employee motivation viewpoint, the results of the relationship above are unfavorable. Additional expenditure is required, if the firm is to neutralize the negative relation between benefits and costs of turnover and maintain the former level of motivation effects. In other words, eliminating the negative influence of attracting inferior employees means that the firm must become more aggressive in its motivation efforts to hold employees. Adding this expenditure to that required in a balanced economy raises the costs of employment and makes the

use of labor less efficient. To achieve the level of motivation benefits E_m (equation 1) it is necessary to increase the costs of motivation C_m by an amount indicated by inequality (4). In an economy of shortages the relationship described in equation (1) assumes the following form:

$$\frac{DE_m}{C_m + DC_m \frac{bDC_t}{dDE_t}} \quad (5)$$

where:

$$\frac{DE_t}{DC_t} < 1, \text{ or } \frac{DC_t}{DE_t} > 1$$

If $\frac{DE_t}{DC_t}$ is represented by "s", then relationship (5)

can be expressed as:

$$\frac{DE_m}{DC_m (1 + \frac{b}{s})} \quad (6)$$

As has been indicated, the "s" in expression (6) represents the relation between the benefits and costs of employee turnover. The "s" can be designated the coefficient of market scarcity of labor in a shortage economy. The value of s will vary with the level of technology and with other conditions in the economy. When the supply of labor exceeds the demand for labor, the value of the coefficient will be less than one. The more unbalanced the labor market, i.e., the greater the relative shortage of labor, the smaller the coefficient in the range ($0 < s < 1$). The value of the coefficient s can be thought to represent the difference in the effects of employee motivation in balanced and unbalanced economies.

As the time horizon is extended the value of the coefficient s may rise due to the process of substitution (of better labor for inferior labor, of capital for labor). The ability to make such substitutions depends on the financial condition of the firm and its ability to obtain improved technology. In a shortage economy this ability is severely limited, and in many cases has approached zero. The firms that operate in such an economy suffer deep capital shortages at all times.³ Thus they face the following alternative strategies:

- maintain the planned level of employee motivation effort and accept the resultant increase in employee motivation and retention costs;
- reject additional expenditure for employee retention, rendering motivation effort less effective and increasing turnover.

The above theoretical model and alternative strategies developed from it were tested in research conducted in Poland in the period 1983-1986 (Frackowiak and Hamrol,

1986). The final conclusion was that, of the three tasks of any firm obtaining employees through a local labor market, two tasks, i.e., attracting and holding employees, had absolute priority. These tasks required so many financial and organizational resources that motivating employees to improve job performance was regulated by the firms to the position of least important managerial function. Thus the firms preferred the strategy listed first above. There are two important implications of this preference. First, because of the lack of resources for employee motivation, wages and salaries lose their incentive function and play mainly a social role, maintaining consumption. Second, since such a strategy was employed by all firms, it became a source of additional inflation. In the jargon of Polish economists, this strategy has been called "the wage race."

There is no need to verify these observations in 1989. The strategy still is being followed by firms, giving evidence that such behavior is inherent in a shortage economy. Discussion in the section below indicates that the processes outlined above are enhanced by relations among firms, job-takers and consumers.

Job-takers, Firms and Consumers

If the view is accepted that firms in a shortage economy routinely try to attract and hold employees, the conclusion that there is interfirm competition for manpower in the local labor market is inescapable. This process implies weighty consequences in the sphere of relations between firms and individuals. The consequences affect individuals in both their potential job-taker and consumer-buyer roles.

Consider, first, a one-level market economy. In such an economy there are only sellers and buyers. The economy is self-regulating with no outside intervention. The only economic power is in the hands of the buyers-consumers and the extent of this power is determined by the size of their incomes. Such an assumption can be made only if the market is balanced.

The situation is quite different in an unbalanced economy where two conditions require further analysis:

- there is a market for sellers, i.e., consumers are waiting for products and services that are sold at once;
- there is a permanent shortage of labor.

In light of the above, it is evident that the economic power in an unbalanced economy is in the hands of the disposers of scarce resources and services, e.g., work. Two conclusions follow from the foregoing. First, the income of a consumer is not an effective measure of his power over the firm in such circumstances. This is true because it is not possible for the consumer to exchange all

his income for preferred goods and services. Second, the loss or decline of the economic power of consumers over firms can be recompensed to a certain degree. This results from the fact that the consumer has at his disposal a scarce resource that is valuable to the firm, the work that he can do. The potential of the consumer for working in a number of firms provides an economic power that substitutes for reductions in income. When there is a labor shortage in an unbalanced economy, an individual can substitute lost power as a consumer for increased power over firms as a potential job-taker. The possibility for such substitution increases with the following:

- scarcity of a given kind of labor;
- mobility of a given kind of labor;
- trade union position;
- significance of wages in the economic policy of the state.

Relations between a job-taker-consumer and a firm can be defined in economic power terms. The level of the economic power of an individual is the resultant of his loss of power as a consumer and his increase in power as a job-taker. Let P_c represent the loss in power of an individual over the firm as a consumer and P_j indicate his increase in power over the firm as a job-taker. Then:

$$P_m = \frac{DP_j}{DP_c} \quad (7)$$

where:

P_c, P_j - as defined above;

P_m - marginal rate of substitution of P_j for P_c .

If $P_m > 1$, the dependence of the firm upon the job-taker is greater than the dependence of the job-taker upon the firm that provided the job. On the other hand if $P_m < 1$, the consumer is more dependent upon the firm for a job than is the firm upon the work that the job-taker can provide. If $P_m = 1$, the mutual dependence of the firm and the potential employee is the same in both directions. This third condition means that:

- the firm has achieved equilibrium with the consumer in its product sales and with the job-taker in its purchase of labor;
- there is no incentive to substitute labor for capital, or vice versa.

If $P_m > 1$:

- the firm is in disequilibrium, and the tendency toward increases in wages is stronger than the tendency toward increases in commodity prices;
- economic conditions favor substituting manpower for capital.

But if $P_m < 1$:

- the firm is in disequilibrium, and the tendency toward increases in commodity prices is stronger than the tendency toward increases in wages;
- economic conditions favor substituting capital for labor.

The relationships described above are intended as generalizations that refer to a typical firm operating under typical conditions of shortage. On the other hand, the coefficient P_m can be used to show how the market relations of a firm with respect to its product sales and its hiring of labor operate to change the price of labor. If L_{pe} is the equilibrium price of labor, this price is changed under disequilibrium conditions by the marginal rate of substitution of worker power for consumer power, P_m , as indicated below:⁴

$$L_{pd} = L_{pe} (1 + P_m) \quad (8)$$

where:

L_{pd} - the price of labor in disequilibrium.

As was indicated above, two types of firms are dominant in the Polish economy. Both types will be examined as to the level of the coefficient P_m under which they operate and the implications of that level for their behavior.

A monopolistic firm has a greater willingness than other firms to accept an increase in wages, P_j , because it is in a better position to influence the price of commodities and services, P_c . This is true because the monopolistic firm has the best opportunity to recover losses due to the increasing dependence of firms on job-takers, and perhaps to obtain a surplus, by making consumers dependent in the same or even in a higher degree. For such firms the following condition holds:

$$\frac{DP_j}{P_j} \leq \frac{DP_c}{P_c} \quad (9)$$

That is to say, $P_m \leq 1$, with a tendency toward $P_m < 1$.

The tendency toward $P_m < 1$ will hold as long as price increases occur under an inelastic demand for commodities. In this condition, total revenue increases as the price rises. The coefficient $P_m = 1$ at the point at which a formerly inelastic demand assumes unitary elasticity. At this point the marginal increase in price is accompanied by a proportional marginal decrease in quantity demanded. This means, *ceteris paribus*, that there is no change in global revenue. This reflects a situation in an economy of shortages in which there is equilibrium between the monopolistic firm and the consumer job-taker.

In light of the above, the most interesting question is: When is the monopolist forced to economize in employment of labor? This will happen when:

- other factors such as a high rate of inflation or trade union action force the monopolist to approve an increase in wages that yields a $P_m < 1$;
- a demand of unitary elasticity is transformed into an elastic demand, i.e., a demand with a price elasticity greater than 1;
- the increase in wages is due to a decision by the central planners, and/or when commodity prices are determined by the state.

The situation is quite different for a firm operating in a balanced market in selling its output and simultaneously in an unbalanced market in purchasing labor. In this circumstance there is little opportunity for the firm to offset its increasing dependence on job-takers by rendering consumers more dependent on the output of the firm. A more rapid increase in the value of P_j than in the value of P_c , i.e., $P_m < 1$, means that this firm must begin immediately to economize on its labor input, if it is to maintain previous levels of revenue and profit.

Summary and Conclusions

In the perfectly competitive model, the equilibrium price of labor is established at a point where the demand for and supply of labor are in balance. In what sometimes is referred to as a balanced real economy the actual price of labor usually is higher than the equilibrium price. Several factors are responsible for this result. The three most important of these factors are:

- the welfare policy adopted by the state, e.g., the minimum wage; trade union policy and actions;
- the rate of wage decrease usually lags the rate of profit decline in a recession, one of the basic tenets of the Keynesian analysis.

As a result of the "stickiness" of wages on the downside there is relatively permanent unemployment that is augmented by reallocation of resources among industries and sectors and by technological progress.

Apart from the factors listed above, the price of labor is determined in an economy of shortages by three closely related factors, namely: (1) the permanent shortage of labor; (2) a level of monopolization higher than in other industrialized countries; and (3) a lack of capital to substitute for labor.

As a matter of fact, the shortage of labor is only apparent. Firms tend to keep an excess of labor on their payrolls. This is true because labor is the cheapest factor

of production and because of the unstable conditions created by very changeable central policy, including the tax system. Speaking graphically, whereas unemployment is seen on the street in a capitalist economy, it is found inside the plants of firms operating in an economy of shortages.

In an economy of shortages in which most firms are monopolistic, the equilibrium sales position of the firm is established at a point at which the firm wishes to be; its position as a purchaser of labor is accepted wherever it has to be. This schizophrenia arises because of the interrelations among the monopolist, consumers and job-takers discussed above.

Firms in the Polish economy that operate in a balanced market as sellers of products and in an unbalanced market as buyers of inputs (primarily labor) are closest to what would be found in a "normal" economy. Taken together, they represent a small enclave of relatively rational economic activity. Further development of the economy toward the general equilibrium model should be based on the activities and progress of these firms to spread the pattern as widely as possible. Development of such firms should be stimulated by central economic policy by providing tax incentives and access to capital. If such encouragement is not forthcoming, these firms soon will be transformed into oligopolists or monopolists and will contribute to deeper shortages in the national economy.

The policy suggested above will not guarantee complete success in the long-run. The suggestion represents only a first step that should be taken. The required next steps are more serious in nature. First of all, there is great need to create other markets—markets for capital, money and other financial assets, raw materials. In the absence of the other markets, the labor market can be only a caricature of a real market. The free entry (and exit) rule also should be observed.

The argument above leads to the general conclusion that the elimination of shortages in an economy such as that of Poland is impossible without fundamental institutional and ownership changes. In the absence of such fundamental changes, other changes can have only palliative effects. But that is a topic for another paper.

Notes

¹The notion of equilibrium as a position of rest is well defined by Machlup (1963), "We may define equilibrium in economic analysis as a constellation of selected interrelated variables so adjusted to one another that no inherent tendency to change prevails in the model which they constitute."

²In a market economy the price rises when the quantity demanded exceeds the quantity supplied. In a centrally planned economy prices are controlled by the state which also sets a ceiling for the increase in prices in its national plan.

³For example, the income tax rate was 65 percent in Poland in 1988. According to some estimates in recent years, about 85 percent of the total income of firms has gone to central and local government budgets in taxes of various forms.

⁴The wage policy of the state and the influence of trade unions is not taken into account at this point.

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