

## THE ROLE OF COSTS IN THE PRICE POLICY OF SELF-MANAGED ENTERPRISES

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### 1 THE AIMS OF THE INVESTIGATION

#### 1.1. *Definition of the problems and tasks of the investigation*

Traditional price theory, which we could basically call instructive price theory, starts from the following assumptions:

- 1) Rational behaviour of management
- 2) That a firm has a single aim — profit maximization
- 3) That a firm can reliably determine a function of demand and cost function
- 4) That a firm's aim is being realized by means of the marginalistic principle  $MC = MR$ .

By recognizing the above assumptions, it is possible to determine product price under different conditions, selecting the adequate price-theoretical model.

The reality of neoclassical price theory has been frequently discussed. Although numerous investigations carried out up to now in some way lead to the solution of the so-called »marginalistic controversy« problem, it still remains open. From the business economy standpoint, this »controversy« can be reduced to the question of whether such an instructive price theory can be used as the basis of a descriptive theory.

Theoretically consistent results in economic science are achieved by using generally-recognized deduction methods in analyzing determining factors. But the question is whether such a solution reflects the real reactions of an enterprise in a given situation because it may not have chosen the most relevant factors. Since Benjamin Ward<sup>1)</sup> set the hypothesis on the behaviour of the self-managed enterprise with the functional goal of maximizing short run income per employee, rather comprehensive literature has been published on the behaviour of the

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<sup>1)</sup> See B. Ward, *The Firm of Illyria: Market Syndicalism*, American Economic Review, 4/1958.

self-managed enterprise.<sup>2)</sup> Accepting Ward's assumption, we come to the following conclusions:

- a) The self-managed enterprise is characterized by a negative slope of the supply curve, which causes instability,
- b) Increased capital intensity in relation to the capitalist firm — which causes unemployment, and
- c) The self-managed enterprise is less efficient in allocation than the capitalist firm.

All the above-presented conclusions were reached without any empirical testing of the actual behaviour of the self-managed enterprise. The first criticism of the mentioned hypothesis with the attempt of formulating a theory<sup>3)</sup> was given as late as 1967. The alternative hypothesis was advanced on the basis of experience, but unfortunately without rigorous empirical investigations. According to this, the working collective enterprise determines the aspirational level of personal income, which has a function of calculative wage rates. It also tries to maximize the remaining calculative excesses, i. e., accumulation funds. The mathematical structure of the goal function of the self-managed enterprise then directly results from it and is identical to the marginal price theory, and allocative efficiency is the highest. The abovementioned work has not been sufficiently recognized in the international debate (one of the most important reasons being that it has been published only in Serbo-Croatian), although the Western economists still think Ward's hypothesis to be correct.

Within this context of the behaviour of the self-managed enterprise, our intentions were the following:

- to test the basic hypotheses of the goals of the self-managed enterprise,
- to carry out an empirical investigation of the interdependence between formulating price policy and the goals of the self-managed enterprise,
- to carry out an empirical investigation of the place and role of costs in the price policy of the self-managed enterprise, and
- to test the presence of marginal approach in the price policy of the self-managed enterprise.

It is normal to suppose that the price policy of the self-managed enterprise would be conducted in different ways. It is logical that even with very comprehensive investigations, generalization would not be

<sup>2)</sup> B. Ward, *Beleške o Iririji: model jugoslavenskog planiranja*, Univerzitet danas, 9-10/1966; D. Dubravčić, *Prilog zasnivanju teorije jugoslavenskog poduzeća: mogućnost uopćavanja modela*, *Ekonomika Analiza*, 1-2/1968; Čičin-Sain, Mitović, Vahčić, *Ponašanje samoupravnog poduzeća centralno planirane teorije samoupravne tržišne privrede*, *Ekonomski institut — Zagreb*, 1971, and oth.

<sup>3)</sup> See B. Horvat, *Prilog zasnivanju teorije jugoslavenskog poduzeća*, *Jugoslavenski institut za ekonomska istraživanja*, separat 51/1968., Beograd.

possible because of heterogeneous material. However, this problem should not impose greater difficulties if the nature of this material is such as to give adequate basis for statistical analysis. It almost automatically directs us towards numerous conclusions.

This investigation project include, as mentioned, the price policy of the self-managed enterprise, with special emphasis on the importance of costs. The other parameters of behaviour of the self-managed enterprise, for example, advertising, product quality, service, etc., are taken in consideration with the usual assumption *ceteris paribus*.

## 1.2. ORGANIZATION OF INVESTIGATION

### 1.2.1. Choice of the Final Sample and Investigation Methods

The number of enterprises needed to represent our investigation sample is determined on the basis of consultation with experienced experts in this field from the Institute for Economic Sciences in Belgrade. It has been decided that the size of the final sample should be between 40 and 50 enterprises. Numerous investigations carried out at this Institute have shown that this sample size satisfies all the methodological and statistical requirements.

The main part of our investigation was based upon internal methods of investigation — the survey and the interview.

The interview as an investigational method can be elaborated in several ways. The type of interview we decided to use in our investigation was the so-called «in-depth» interview, which is, in economic investigation practice, probably better known as the «case study method». Combining the investigation techniques of the interview and the survey, we had the possibility of becoming thoroughly acquainted with the various fields of price policy, from the point of view of the authority in charge of price policy in an enterprise.

### 1.2.2. The Pretesting of Instruments and Pilot Study

The character of our investigation project obliged us to choose certain investigation instruments and analytical techniques for pretesting.<sup>4)</sup> We decided to test complete instruments, although it is possible to individually test parts of investigation instruments with very correct results. For pretesting, a random sample of five enterprises was chosen, the condition being that this sample not be a subsample of the final sample. Using this sample, we tried to determine sensibility, precision and acceptability from the point of view of several alternative investigation instruments. By comparative testing of the three composed surveys, we concluded the most successful variant of the basic survey in connection with its measurable qualities and other characteristics. We also simultaneously tested two versions of the interview. For the definite in-

<sup>4)</sup> See E. R. Babbie, *Survey Research Methods*, Wadsworth Publishing Company, Inc. Belmont 1973., pp. 203-223.

vestigation concept, a more adequate reduction was chosen.<sup>5)</sup>

The sample of five enterprises was chosen for a pilot study, as a subsample of the final sample.

The enterprises included in the pilot study sample were presented with those investigation instruments which pretesting indicated to be the most adequate for the final investigation. The identity of format, numeration and question structure was preserved.

By analyzing the data obtained from the pilot study, we also determined a definite number of analytical methods. Of the analytical procedures used for analyzing the data determined by pretesting the regression method proved to be inadequate, while at the same time, the possibility of using the scalogram increased.

### 1.3. The Extent and Classification of Collected Material

All the material collected in the investigation was classified into two groups: »main material« and »supplementary material«. The main material included those examined sample units which satisfied all the investigation conditions in relation to sufficiency and quality of information. Supplementary material is a result of additional investigations in the enterprises which, during the main investigation, did not give the most adequate information on mainly one or, more seldom, on several aspects of price policy. For these purposes the adapting of basic investigation instruments was effected. If the information obtained through additional examination gave satisfactory explanation, it would become an integral part of the »main material«. The extent of this integration is shown in Table No. 1/:

Table I

#### THE CLASSIFICATION OF EXAMINED ENTERPRISES ACCORDING TO INDUSTRY

Branch of Industry*	Main material no. of enterprises**	Additional information
Tobacco industry	2	
Printing industry	3	
Chemical industry	6	1
Rubber industry	2	
Building industry	2	
Non-ferrous metallurgy	3	

\*) The order of included industries simultaneously shows the average efficiency of these industries in the seventies.

\*\*) Classification has not been done according to basic units of economic activity in each BOAL, but instead, according to complete working organizations.

<sup>5)</sup> In reference to the aim of the investigation, our interview was identical to the survey. The difference existed only in the conceptualization of these instruments.

Foodstuff industry	5	2
Metal goods industry	6	
Footwear industry	3	1
Electronic and electrical ind.	3	
Woodware industry	2	
Ferrous metallurgy	2	
Textile industry	5	1
Paper industry	2	
<b>TOTAL</b>	<b>46</b>	<b>5</b>

Further classification (Table II) has been done according to the number of employees in the examined enterprises. This classification includes only the main material.

Table II

#### THE CLASSIFICATION OF THE FIRMS EXAMINED ACCORDING TO NUMBER OF EMPLOYEES

Branch of industry	Number of employees			
	60	61—500	501—2000	over 2001
Tobacco industry			2	
Printing industry		1	1	
Chemical industry	2	1	1	2
Rubber industry			2	1
Building industry	2			
Non-ferrous metallurgy			2	1
Foodstuff industry		2	2	1
Metal goods industry	1	3	1	1
Footwear industry		1	2	
Electronic and electrical ind.			2	1
Woodware industry	1		1	
Ferrous metallurgy				1
Textile industry		2	3	1
Paper industry		1	1	
<b>TOTAL</b>	<b>6</b>	<b>11</b>	<b>20</b>	<b>9</b>
<b>TOTAL in per cent</b>	<b>13</b>	<b>24</b>	<b>43</b>	<b>20</b>

Categorization of firms on the basis of number of employees taken from Lj. Baban, Tržišna politika kmetijskih podjetij, (The Marketing Policy of Agricultural Enterprises).

licies of the Large Scale Enterprises, published by JAZU, Osijek, 1975.)

The following classification was done according to the number of employed in Yugoslav enterprises:

— small size enterprise	to 60 employed
— medium size enterprise	61—500 employed
— large size enterprise	501—2000 employed
— very large size enterprise	over 2001 employed

Being aware of the fact that such a classification and numeration of enterprises is arbitrary, we have decided to use it for the purpose of our investigation.

c) The intention of every investigation is to collect as much useful data as possible. The ideal situation in investigations of this kind is practically impossible, disregarding the validity of investigation instruments and the organization of investigation. Table III shows the level of adequacy of information received during the investigation. The rate of unusable answers varied regarding the investigation field, and the classification of answers was effected according to the groups of questions put.

Of course, the distinction of «usable answers» and «unusable or inadequate answers» is rather dubious, and that is the reason why it is mostly arbitrary.

In selecting the usable answers, we were mostly guided by the criterion that a satisfactory answer must give us a definite explanation of certain behaviour.

Table III

THE SYSTEMATIZATION OF USEFULNESS OF RECEIVED ANSWERS

Fields of investigation	Number of enterprises			
	Nature of answers			
	Usable answers	Unusable answers	Without answers	Not investigated
Goals of enterprises	33	6	2	8
Cost Conditions	11	25	8	2
Costing methods	36	3	4	3
Competition and demand conditions	35	7	3	1
Actual setting of price	39	2	4	3
Marginal concept presence	21	11	7	6

It is obvious from Table III that certain questions were not always put, especially those on the functional goals of enterprises, and also the

questions on marginal concept presence. The investigator decided not to put these questions in two cases:

a) When he felt that there was no possibility of getting a usable answer, and

b) When he felt that the person questioned did not hold such a position in the firm as to be able to give a usable answer.

2. FUNCTIONAL GOALS OF SELF-MANAGED ENTERPRISE BEHAVIOR

Before considering the functional goals of self-managed enterprise behaviour, because of the possibility of comparative analysis, we shall briefly point to some problems regarding the goals of capitalist firms.

Neoclassical price theory is based upon the hypothesis of maximization of profit as the basic motive of a firm's behaviour. It is frequently supposed that this goal lies in the actual basis of economic practice. However, within this context there is the dilemma of whether to accept a short-run or a long-run maximization of profit.

Price theory based upon (short-run) marginal costs and marginal realization also implies (short-run) optimal price. The theory also recognizes long-run maximization of profit if we reinterpret costs and marginal realization in the long-run. As Rothschild stressed,<sup>6)</sup> such an approach seems to be avoiding the problem rather than solving it.

Empirical investigations of the past several decades have contributed to the development of new views on this problem.<sup>7)</sup>

The new views can be seen in the following:

- a) accelerated growth of the firm and the role of the manager
- b) satisfying the behaviour of the firm<sup>8)</sup>
- c) long-run survival of a firm and market share goal<sup>9)</sup>
- d) risk avoidance and prevention of new competition entry<sup>10)</sup>

Which of these goals should be considered as the dominant one for the behaviour of a capitalist firm?

Although most economies are still operating with profit maximization as the main goal of a firm, the possible reasons being: theoretical buildup of marginalism, possibility of applying methodical apertures, elegant exposing, etc. Prof. Anthony is most probably right when he states: «Nowadays there is a full cost pricing in most companies. By it they attain satisfying profit.»<sup>11)</sup>

<sup>6)</sup> See V. K. Rothschild, *Price Theory and Oligopoly*, Economic Journal, 1947.

<sup>7)</sup> See the debate of the firm's goals the third chapter of mentioned M. A. Thesis.

<sup>8)</sup> F. Machlup, *Theories of the Firm: Marginalist, Behavioral, Managerial*, American Economic Review, 1/1969.

<sup>9)</sup> V. K. Rothschild, *Ibidem*.

<sup>10)</sup> R. Lanzetta, *Pricing, Objectives in Large Companies*, American Economic Review, 1958.

<sup>11)</sup> See P. Anthony, *The trouble with profit maximization*, Harvard Business Review, 36/1960.; H. A. Simon, *A Behavioural Model of Rational Choice*, Quarterly Journal of Economics, 1955.

As was previously mentioned, Benjamin Ward<sup>12)</sup> was the first to define the dominant goal of the self-managed enterprise, which has had an important echo in Yugoslavia and abroad.

Ward states that in relation to the neoclassical firm which maximizes profit, the self-managed enterprise tries to maximize the personal income of employees.

Researching the Soviet *kolkhozes*, Domar finds that they are similar to the self-managed enterprises. According to Domar,<sup>13)</sup> the goal of Yugoslav enterprises is similar to Ward's model. In 1967, Horvat criticized the abovementioned hypothesis and advanced a hypothesis of the identity of self-managed and neoclassical enterprises, i.e., that the self-managed enterprise behaves to maximize accumulation funds on the enterprise level. Horvat concluded that through the optimization of accumulation the working collective tries to optimize personal income, setting aside bigger or smaller parts of income for this purpose, which depends on the conditions prevailing in an enterprise, of the development of enterprise policy and the industry average.

Jaroslav Vanek, a theoretician of the Yugoslav self-managed enterprise, concludes on the basis of a small-scale empirical investigation that the main goal of the self-managed enterprise is maximizing the broad function of usefulness, with the dominant variable being income per employee.<sup>14)</sup>

As none of the abovementioned hypotheses have passed serious tests, we decided that all the assumptions should be included in our investigation instruments, and have also added two hypotheses;

1) The first one is related to the fact that the self-managed enterprise tries to attain satisfying behaviour, i.e., to realize moderate accumulation and moderate growth.

2) A self-managed enterprise tries to attain dynamic development with the aim of gaining relative independence within industry.

Table IV

## CLASSIFICATION OF ENTERPRISE ACCORDING TO THE GOALS TESTED

Goals of the self-managed enterprise	% distribution according to size of enterprise*			
	Small	Middle sized	Large	Very large
— Personal Income Maximization		1	1	

\*) The criterion of the number of employees was used here as before, to determine the size of the enterprise.

<sup>12)</sup> B. Ward, *Ibidem*.

<sup>13)</sup> E. D. Domar, *The Soviet Collective Farm*, American Economic Review, 1/1967.

<sup>14)</sup> B. Horvat, *Ibidem*.

— Accumulation Maximization		1	1	1
— Income Maximization	2			
— Moderate Accumulation, Moderate Growth		4	5	4
— Quick Growth — gaining independence		2	3	1
— Retention of Market Share <sup>1)</sup>	1		1	
— Other Goals	1		2	1

Table IV shows that there is a wide range of enterprise goals. The distribution of goals according to the size of enterprise shows that the goal of satisfying behaviour — moderate accumulation and moderate growth — can be considered the dominant goal of middle-sized, large-sized and very large sized enterprises. There is also a tendency of middle-sized and large-sized enterprises to attain quick growth and independence. The behaviour of small-sized enterprises is directed towards income maximization.

Further on, Table V shows the following:

a) The self-management enterprise of a highly-monopolized industry behaves primarily to reach the rate of moderate growth, i.e., moderate accumulation,

b) The self-management enterprise operating in a market structure where there are 4 to 15 competitors who have wider goals than the enterprises mentioned under a). However, the goal of satisfying behaviour also prevails in such a structure.

Table V

## THE CLASSIFICATION OF ENTERPRISES ACCORDING TO COMPETITION CONDITIONS WITHIN THE INDUSTRY

Goals of self-managed enterprise	% distribution according to size of enterprise			
	to 3	4—15	16—30	over 30
— Personal Income Maximization		1	1	
— Accumulation Maximization	2	1		
— Income Maximization		2		
— Moderate Accumulation		6	1	4
— Moderate Growth				
— Quick Growth-gaining independence		1	1	4
— Retention of Market Share	1	1		
— Other Goals	1	1		2

c) We do not have sufficient elements in a market structure with 15 to 30 enterprises to be able to draw a conclusion. The enterprises operating in such market conditions gave us the fewest usable answers.

d) Enterprises operating in industries where there are more than 30 producers are characterized by a duality of goals: a) satisfying behaviour, b) quick growth gaining independence.

Table VI

TESTING THE GOALS OF SELF-MANAGED ENTERPRISES  
ACCORDING TO AVERAGE EFFICIENCY OF INDUSTRY

GOALS	Average efficiency of industry		
	High	Medium	Low
— Personal Income		1	1
— Accumulation Maximization		2	1
— Income Maximization	2		
— Moderate Acc. Moderate Growth	1	7	5
— Quick Growth-gaining independ.	5	1	
— Retention of Market Share	2		
— Other Goals	2		2

The testing of the basic motives of self-managed enterprise behaviour according to average efficiency in a branch is shown in Table VI, which leads to the following conclusions:

a) Enterprises in branches with high efficiency accept accelerated growth as the main driving force of their behaviour. A statement says: "Intensive growth of our enterprise enables us to surmount difficulties that many enterprises in branches with low efficiency have. It also enables us to keep the level of personal income high". (A producer of chemical goods.)

b) The behaviour of self-managed enterprises in branches with medium and low average efficiency is characterized by attaining moderate accumulation and moderate rate of growth.

One statement says:

"Our industry is not favoured by society. This position drives us to set less „aggressive" goals than it would be possible in different conditions". (A producer of ready-made clothes.) In our investigation we also attempted to determine the time horizon of self-managed enterprise goals. There are the following indications in this sense:

a) long-run goals of large and very large enterprises,

b) small and most of the medium-sized enterprises in branches with low average efficiency mostly set their goals on a short-run basis,

c) frequent alteration of time basis or goals is met in some enterprises.

Considering a time framework of goals set in self-managed enterprises, we can state that the prevailing goal of self-managed enterprises

is attaining long-run moderate accumulation and a moderate long-run of growth.

The methodological approach to this problems certainly has some shortcomings. We are aware of the fact that probably the most correct investigation of self-managed enterprise goals would be to observe enterprise policy (comprehensive observation of the environment of the enterprise, its changes and interactions,) during several years. On the basis of such observations, we could draw conclusions about the dominant goal.

Of course, such a methodological approach is time-consuming and requires large available funds, which, in our case, was not possible.

### 3. KNOWLEDGE OF COST CONDITIONS

The aim of this chapter is not to analyze cost conditions in detail but to report how a self-managed enterprise observes its costs considering the production situation. Further on, this chapter deals with the accepted cost concept in costing. On the basis of this investigation material it is not possible to come to far-reaching conclusions but it is possible to indicate some trends. The literature dealing with business economy has up to now held that most industrial facilities can accept a proportionality of variable costs.<sup>15)</sup>

We should be cautious with such a generalization. Besides proportional moving in the enterprise, there are also degressive and progressive cost tendencies in particular production phases. According to some recent empirical investigations,<sup>16)</sup> it can be said that in most cases, in the first phase the costs are degressive, then proportional in the longest production interval, and finally in very big production series they are cost progressive. Within this context, we were primarily interested in whether cost proportionality can be taken as sufficient approximation for resolving practical problems.

Usable answers were received to the questions on cost conditions from about 60 per cent of the examined enterprises. According to the proportionality of variable costs, the answers could be classified as follows:

a) 19 enterprises consider that variable productive costs are proportional with, or are very near proportionality with a product,

b) 5 enterprises consider that proportionality of costs takes place at smaller production changes (10 to 20 per cent). The considerable growth of products and exceeding the point of maximal product capacity result in cost progression.

c) enterprises mention that with a very small product rise there is a slow cost degression, although they use cost proportionality in costing.

<sup>15)</sup> See J. Dean, *Statistical Cost Functions of a Hosiery Mill*, Chicago, 1941., and also by the same author, *Relation of Costs to Output for a Leather Belt Shop*, New York, 1941.

<sup>16)</sup> See p. Walters, *Production and Cost Functions: An Econometric Survey*, *Econometrica*, 1-2/1963.

## 4. COSTING METHODS

This chapter describes the practice of costing methods in the self-managed enterprise, which could then serve as an analytical framework for the discussion of pricing, on the basis of such costings.

The purpose of costing used in an enterprise is to determine the basis for definite price setting. This motivated us to try to investigate the dependence between costing and determining the actual price. The investigation was directed towards the following fields:

- costing methods used in the self-managed enterprise,
- the influence of costing methods on price level,
- the adequacy of costing bases for pricing.

First we shall refer to the main costing categories existing in the costing procedure.

## 4.1. DIRECT COSTS

Every costing technique implies the division of costs into their direct and indirect components. Direct costs represent those charges which could be attributed to a product in costing procedure on the basis of direct observation. Indirect costs are on the opposite side of this costing category, and they cannot be precisely allocated to a certain product because it is difficult to divide them. In the business practice of self-managed enterprises, they are mainly taken to be parallel to labour costs (personal incomes of manufacturing) and material costs.

The self-managed enterprise considers material costs a reliable costing basis. An important problem in this field, the prices of material in book-keeping, is mainly solved in the practice of self-managed enterprises by using the planned (nominal) price of material.

All the examined enterprises stated that they recognize the proportionality of material costs with the volume of production. In some situations like those of varying degrees of material usability, quantity discount, etc., deviations from proportionality are, however, possible. If we do not include these deviations in the costing scheme, the final result will not be correct. Problems of labour costs computation, i. e., personal income of manufacturing, are rather similar to the abovementioned problems of material costs computation.

Self-managed enterprises imply, as in the case of material costs, the proportionality of the product with personal income of production. Although in some of the enterprises the progressive growth of personal income of production has been seen, computation is still being done on the basis of assumption of proportionality. It is also possible that enterprises do not take into consideration depression of the personal income of production, which leads to the underestimating or overestimating of labour costs; this distorts the correctness of costing.

## 4.2. COSTING METHODS AND ACTUAL SETTING OF PRICE

Self-managed enterprises use allocative costing and direct costing (marginal costing). The essential difference between these two costing methods, the allocation of fixed costs, has been effected. By allocating

costing, an enterprise tries to compute average total costs, i. e. a sum of unit variable costs and allocated fixed costs. Aggregated direct costs are frequently used as the allocating basis. Such an allocative system is accepted by medium-sized enterprises.

Very large-sized enterprises use a rather complicated system of allocation — various combinations of simple allocative principles, while small-sized enterprises are directed towards a simple system of allocation, primarily seen in «working hours».

Enterprises include only average variable costs, by direct costing which is different from allocative costing.

Allocative costing is a predominant costing method in self-managed enterprises. We received usable answers in 49 enterprises. They showed:

- All the investigated enterprises have been using allocative costing,
- 11 investigated enterprises used direct costing besides allocative costing.

We believe that the reasons for full or partial allocation of fixed costs can be mainly ascribed to habits, customs and tradition. In many of the investigated enterprises, there is a strong belief that only allocative costing leads to a normal or «fair» price. The management bodies in charge of price policy commonly think that the realized net income (net contribution) of each product should be known, which is possible only by using full costing principles.

The actual setting of price in the self-managed enterprises, as investigations showed, has a costing basis. Although there are certain modifications of costings, pricing in the self-managed enterprises can be reduced to two main models, showed on figure 1a and 1b.

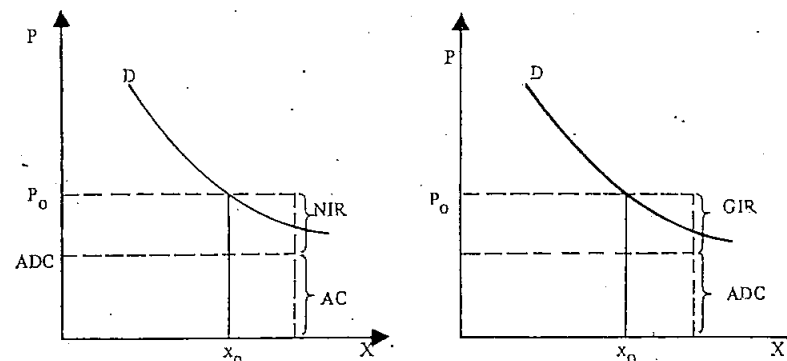


Figure 1a

Figure 1b

Where: X — Production,  $p_0$  — optimal price, ADC — Average Direct Cost, NIR — Net Income Rate, AC — Average Costs, D — Demand, GIR — Gross Income Rate

Figure 1a shows the actual setting of prices in the self-managed enterprise, following the average cost principle. To the computed unit total costs — direct production costs + allocated indirect costs — the

rate of planned income has to be added. The net rate of income depends upon a number of factors, of which we can emphasize the strength of competition and price elasticity.

Diagram 1b shows another model of pricing in the self-managed enterprise. After determining all the direct cost components charged to the product (if an enterprise divides indirect costs into fixed and variable components, it is also possible to include indirect variable costs into direct costs), the gross rate of income is added to direct costs. This gross rate covers the net income of the enterprise and, depending upon market conditions, the normal or sub-normal part of indirect costs.

Seen analytically, the latter model is more adequate than the former one. The model shown in Figure 1b implies strict definition of average direct costs which are constant through relevant production intervals, during the time in which indirect costs remain unchanged.

The models shown in Figure 1a and 1b were not constructed according to the traditional assumption of the U-shaped average total, i. e., the average variable costs curve.<sup>17)</sup> Accepting a modern cost concept, our assumption was that, on the economically relevant production interval, there is an invariability of unit variable costs resulting from the existence of the reserve capacity. Long-run average total costs are also invariable and are identical with marginal costs.

In accordance with the abovementioned, there is no obstacle to allocative costing providing the same results as direct costing. So, in principle, there is equivalency between the above models 1a and 1b regarding the reach of the optimal price. In this context it is of no greater importance whether indirect fixed costs are allocated on the basis of current or planned, i. e., normal prices. Having reached the same results by using different models, the results should be taken as a theoretical construction because the collected material does not give us a consistent answer to the right selection of a theoretically optimal price. In formulating a price policy of the self-managed enterprise, there is no clear distinction between cost factors and factors representing fundamental income determinants. Costing is influenced by market conditions in such a way that they frequently become its integral part. Thus, it was in many cases impossible to separate costing from actual price setting. Thus, the price policy of an enterprise, reduced to income policy, is not only oriented towards the net income rate but also towards costing.

The practical aspects of definite price setting still remain to be considered. In this sense we shall try to classify various formal procedures for setting the sale price — prices at which the producers sell their goods to wholesalers or retailers. Methods of setting the sale prices can be classified as:

1. *Inelastic Pricing on the Average Cost Principle* — is a mechanical setting of the price by adding rigid income rates to computed unit costs (total or variable).
2. *Elastic Approach to the Average Cost Principle* — there is an analogy between the method under 1, the only difference being the elas-

<sup>17)</sup> The argumented debate of the deviation of modern and traditional cost theories is given in the second chapter of the M. A. thesis.

tic approach to income rate.

3. *Intuitive Pricing* — fixing the price is closely connected with the experience of the management bodies in charge of pricing.<sup>18)</sup>

This practice is most frequently used with products that are not produced in series, and with those products with an important psychological variable in demand function.

4. *Imitative Pricing* — the producer accepts the sale price set by a competitor. This method is especially applied by enterprises operating in asymmetric oligopolistic conditions.

5. *Setting the Definite Price on the Basis of a Self-Management Agreement* — producers set the price of their products according to agreed frameworks of prices which are stated in the Self-Management Agreement.

Setting definite prices is frequently a combination of two or more of the abovementioned methods, which brings us to the conclusion that it is impossible to include all the formal procedures of a definite price setting.

#### ULOGA TROŠKOVA U FORMIRANJU CENA U SAMOUPRAVNOM PREDUZECU

Stjepan GJURINEK

*Empirijsko istraživanje ponašanja samoupravnog poduzeća u domeni politika cijena upućuje na niz zaključaka.*

- a. *Glede testiranih postavki Warda, Domara, Horvata i Vaneka o ciljevima samoupravnog poduzeća može se primjetiti slijedeće: (a) Horvatova postavka — maksimiranje osobnih dohodaka po zaposlenom kroz optimalizaciju akumulacije, kao i autorova hipoteza o ponašanju samoupravnog poduzeća u smislu postizanja primjerenog dohotka, primjerene akumulacije i rasta osobnih dohodaka po zaposlenom, najbliže su empirijski utvrđenoj funkciji cilja samoupravnog poduzeća. Ona pokazuje da samoupravno poduzeće stremi prema zadovoljavajućem ponašanju iako je ponekad kratkoročno usmjereno na: održavanje tržišnog udjela, maksimiranja osobnih dohodaka, dinamičan rast poduzeća i slično. Takvo ponašanje samoupravnog poduzeća rezultat je čestih promjena u »okruženju« poduzeća. Rezultati empirijske studije o ciljevima samoupravnog poduzeća J. Prašnikara — samoupravno poduzeće nastoji ispuniti planirane ciljeve — u najvećoj mjeri su koherentni sa ciljem zadovoljavajućeg ponašanja.*
- b. *Istraživanja troškovnih uvjeta u kojima posluje samoupravno poduzeće pokazala su da ista relativno slabo poznaju vlastitu funkciju troškova.*

<sup>18)</sup> With the setting of the final price in a self-managed enterprise, the following are alternatively occupied: (a) management, (b) marketing managers and (c) price committees. It is often the case that the workers' council (mainly in a small-sized enterprise) decides on the final price.



Kod većeg broja poduzeća primjećena je relativna elastičnost jediničnih troškova uslijed smanjenja opsega proizvodnje i relativna neelastičnost kod povećanja opsega proizvodnje.

- c. Ispitivanja metoda kalkuliranja troškova u samoupravnom poduzeću nedvosmisleno upućuju na alokativni obračun kod kojeg agregirani direktni troškovi predstavljaju najučestaliju osnovu za alokaciju.
- d. Kreiranje politike cijena u samoupravnom poduzeću uglavnom je troškovno orijentirano. Rezultati istraživanja sagledani u svjetlu suvremene teorije troškova ukazuju na mogućnosti približavanja nekoj teoretski optimalnoj cijeni, bez obzira na to da li poduzeće koristi prosečno-troškovnu ili marginalnu metodu formiranja cijena. Organi zaduženi za politiku cijena u samoupravnom poduzeću vjeruju da određivanje cijena na principu punih troškova vodi poduzeća prema ostvarivanju umjerene akumulacije, umjerenog porasta platnih stavova i pokrivanja troškova »normalno« korištenog proizvodnog kapaciteta.

Nadalje, rukovodioci samoupravnog poduzeća smatraju da jedino metodom punih troškova samoupravno poduzeće može ostvariti svoje dugoročne ciljeve, tj. ispuniti planove, dok marginalna metoda obračuna ima uglavnom karakter privremenosti.

Njezina primjena, najčešće, rezultanta je kratkoročnog »snalaženja« poduzeća.

## THEORETICAL AND ACTUAL PERFORMANCE OF THE WORKER MANAGED ECONOMY

Jože MENCINGER\*

In the theory of economic systems, the Yugoslav economy serves as the one example of what is called the self-managed, the participatory, the labour-managed, the worker-managed or the socialist market economy.<sup>1)</sup> Benjamin Ward's »Illyrian Firm«; Evsey Domar's »producers cooperative«, Jaroslav Vanek's »labour-managed market economy« and Branko Horvat's »realistic model« have all been directly or indirectly inspired by the particularities of the Yugoslav institutional setting.

Vanek's works represent by far the most comprehensive attempt to develop the macroeconomic theory and the policy implications of such an economy. His conclusions about the performance of the self-managed economy are extremely favourable.

»Comparatively — leaving aside the Soviet-type model as a basically inefficient one (except perhaps when it comes to income distribution) — there is every reason to believe that the participatory economy is, all other things considered, superior to, the western capitalist economy. In the sphere of how well it allocates resources in production, it has both advantages and disadvantages compared to the Western market alternative. It has a definite advantage in generating full employment, long-run price stability, and growth.« (Vanek, 1971, p. 38).

In an indirect critical note to Vanek's article on the macroeconomic theory and the policy implications of an open, worker-managed economy in which Vanek modified some of his previous conclusions (Vanek, 1972, pp 255—267), Horvat arrived at macroeconomic implications similarly favourable to those of Vanek's previous works (Horvat 1972, pp. 288—293). Among them the following three are relevant for our analysis. First, high rates of growth are assured by a higher propensity to invest due to reduced risk and uncertainty. Second, in a recession aggregate output in the labour-managed economy would be higher than in a comparable capitalist environment due to the reluctance of workers to dismiss fellow-workers and due to the accumulation of inventories. Third, despite strong cost-push pressures, control of inflation in a la-

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<sup>1)</sup> Vanek has recently made a clearcut distinction between the labour-managed and the worker-managed economies, both the subsets of the self-managed economy (Vanek, 1978, p. 7).