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# MARGINALISM AND PRICES OF NEW PRODUCTS. FROM THEORY TO PRACTICE

*The article introduces and analyzes views of the supporters of classical political economy, marginalists on pricing, different points of view on the problems of modern scientists and proposes non-cost based approach to new products pricing.*

In recent years in foreign economic literature we can observe critical debates of the basic meaning of price, is it cost or "value". Thus the debates between the representatives of classical political economy and marginalists moved from the field of pure theory into practical one. As supporters of different sides in discussion of their view points do not give any references on classics in political economy or marginalism it is quite necessary to follow the basis of these antagonistic trends. One of the contemporary representatives of the classical political economy John Stuart Mill states – "... the majority of things are naturally exchanged proportionally to productive losses or proportionally to what can be called the value of costs"[1, pp. 485].

According to the famous Russian scientist Vladimir K. Dmitriev, one of the first initiators of the "marginalist revolution" was Ferdinando Galliani. V.K Dmitriev believes that F. Galliani was the first economist who gave a completely correct definition of usefulness. V.K Dmitriev underlines that for Galliani "... the term "value" has no other meaning than the subjective assessment of things changing sides " [2, pp. 848].

More exact definition of the conceptual meaning of "value" was given by one of the pioneers of "marginalist revolution" and the head of the Austrian school Carl Menger. Carl Menger mentions that in one case for this economic individual welfare in of great value, in another case for the next economic individual welfare presents less importance and in the third case in of no importance at all, thus Carl Menger stresses: "value is rather individual not only in its essence but in its measure. Welfare always has its value fore appropriate business individuals and at the same time is of appropriate value itself" [1, pp. 187]. In this case, according to Menger, the amount of labour expended for creation of welfare is not necessarily connected with the quantity of value.

Analyzing the statement that the price from start to finish is a subjective product of appropriate value E. fon Böhm-Bawerk makes one of the most interesting comments which sounds quite modern. "The relationship between subjective assessments of received and given in exchange goods with special strictness stresses that every participant of exchange process must determine that certain point in increasing or decreasing the price and at the same time dictates the level at which for participants of exchange process it would be possible or it'll be better to reject it" [3, 337].

Using modern terms, E. fon Böhm-Bawerk practically describes price levels; low level is the price level that cannot be decreased by the producer of goods, upper level is the price level that doesn't satisfy the consumer who will refuse to pay and in the long run will refuse the bargain.

At the end of the past – the beginning of this century, economics once again pay their attention to the main problem – the cause "of poverty and wealth of the nation". And in this connection appears the figure of the Austrian economist Joseph Schumpeter. It was Schumpeter, who at the beginning of the twentieth century, revealed in his books limitations of Western economic theory, which was focused on the problems of statistical equilibrium and contrasted it to the theory of innovative development. Joseph Schumpeter criticized greatly economic theory that reduces all the processes to the graphs and equations. As a source of economic progress, he put not abstract notions of perfect competition but competition between businesses. In his view perfect competition can not be accepted as a model of ideal efficiency.

That what J. Schumpeter wrote about competition in his work "Capitalism, Socialism and Democracy": "Competition, that must be taken into account – is competition generated by new product, new technology, new sources of supply, new type of organization ... . Competition that determines the final cost of goods or advantages of the quantity; competition affected not the upper levels of profits or amounts of production is the very competition that undermines the foundation of the company. This kind of competition is more efficient then the others, as bombing of the doors is more effective than its opening. This kind of competition is so important that it becomes almost immaterial – is the functioning of competition fast or not in its common sense: it is a powerful lever, which in the long run increases production, improves performance and lowers the price – certainly, this mechanism is made from another substance" [4 , pp. 354].

According to the opinion of E. Dolan and D. Lindsey the main problem in testing the hypothesis of Schumpeter is the difficulty of evaluation of innovative processes in reality. "Probably it is the most neutral conclusion which can be done while considering Schumpeter's innovative processes", – the authors remark – "that they are too complicated and probably cannot be subjected to quantitative analysis" [4, pp. 355].

Indeed, taking into account common competition based on supply and demand this task can not be solved. Balance between supply and demand can only be realized in actual practice of commodity-money relations. When it comes about decision making on the implementation of innovations, they do not fit into these limitations, because these decisions must be taken well in advance of the actual commodity-money relations. Also, one must be aware that the implementation of innovation can lead to a shift in supply and demand curves, i.e. to a break of market equilibrium, and for new products that are only created, such curves simply do not exist.

According to Menger value is subjective, not only in its essence but in its measure and therefore it is impossible to determine the price out of the market, because market price is determined by the changes of supply. Naturally, it can be stated that market is outside the mind of buyers and sellers as a result of competition and changes in supply and demand it generates market prices, but when innovative product is discussed initial prices should be formed long before the product can appear in the market. Obviously, it can be proved that researches of marginalists could not describe quantitative measurement of values and are mainly of theoretical nature and therefore have not received wide practical application.

"In order to manage", – noted D. Burchfield, – "it necessary to control. To control, we should be able to measure. In order to measure, we should be able to determine. Formulating the definition quantitative mark must be given" [5, pp. 320].

Modern representatives of value approach do not adapt market price formation. "These people", – stress R. Dolan and H. Simon, – "do not allow the "market" or "competitors" to set the price" [6, 14], but at the same time they did not propose any methods for measuring quantitative evaluation of price limits on which individuals of economic relations should come to conclusion.

World economic science somehow failed to notice the fact that domestic science even in the 70's of the last century has put and decided the problem of quantitative measuring of price levels which can not be violated neither by sellers nor by buyers.

In absence of competition with prices fixed by the state, it was necessary to find new methods that would provide interest to the establishment and operation of new equipment for both manufacturers and consumers. Naturally, these developments are in serious need of transformation because in modern conditions they should reflect the ratio of independent economic businesses. In general, pricing with economic efficiency of new equipment when the effect is divided between the producer and consumer of equipment does not essentially differ from the "... extracting value when the share of value created for consumers is returned to the company" [7, 385]. However, Western scientists have only recently begun to focus seriously on efficient price formation. "It has become important", – note T. Nagle and R. Holden, – "only after mastering the managers of technology creation and distribution of value between buyers and the company"[7, pp. 37]. At the same time it should be noted that in contrast to our scientists, who presented this process in a clear by formulated calculations, Western scholars

consider only certain aspects of the problem without providing specific formalized methods of calculation.

Despite some incompleteness of the development of supporters of "active pricing" their ideas should play an important role in over coming the "cost-based pricing". The fact is that even for large Western companies setting of prices is based on the total costs – the most popular method of price formation. Researches made in 1983 and later in 1994 among the largest companies showed that 82% and 70% respectively of these companies use method of pricing based on the total cost [8, pp. 429]. It is obvious that if such a researches where carried out by Ukrainian enterprises, these percentages would be significantly higher.

Certainly, the advantage of supporters of active pricing method is the fact that they paid attention to all important aspects that demonstrate benefits of "value price formation" which is not mentioned in discussions of representatives of the classical political economy and marginalists.

The discrepancy between the supporters of active price formation and pricing based on cost can be clearly seen in two positions:

- role of costs in price formation and;
- role of sales volume in price formation.

Supporters of cost-based pricing method offer that first of all should be set the volume of sales, than on the basis of this sales cost should be set the cost and at least on its bases would be formed the price, because only in this case we can avoid losses. According to D. Daly, many companies make decisions on prices having no real information about their costs, they practically do not no about the existence of prices that can not cover even half of the costs. Since traditional methods of allocating overhead costs significantly distort the real value of the unit cost of production and alternative to these methods in the late of 80-s appeared the method of allocation of costs on activities, including allocation of overhead costs on types of production.

ABC method is very complicated, expensive to implement and has many disadvantages but in this case the conceptual approach to price formation on the basis of ABC method, which is called ABP model, is of great importance. According to D. Daly, a key feature of ABP model is that formed price depends on the volume of sales.

Quite on the opposite positions are the supporters of pricing based on value. Representatives of this trend are Thomas G. Netl, Reed K. Holden, Robert Dzh. Dolan, Hermann Simon. "The mistake of specialists who form prices on costly based principle", – say Netl G. and R. Holden, – "is not in the fact that they take into account losses in pricing, but is in the fact that they determine the volume of future sales and customers, which they will serve before price formation. Then they try to impose prices based on costs that may be greater or less than what buyers are willing to pay. In contrast to that, successful developers of prices make quite opposite decisions. First of all they evaluate the readiness of the consumers to pay and only then choose the volume of production and market for service" [7, pp. 39-40].

About the account of full cost pricing supporters of active price formation are rather exact and categorical. "If you are setting prices based on the full cost", – say R. Dolan and H. Simon, – "as it is quite common – the price is determined by constant costs, but it is not logically true" [6. 46]. What is the main mistake of the position of supporters of cost pricing concerning the role of volume and total costs in price setting?

The question of evaluation of sales volume influence on price formation decision making is, on the one hand, very complicated but on the other hand, is controversial, especially in the case of various items of production. If we look at the output of one unit production, we can conclude that the greater the volume of production, the lower the cost is and it allows to determine the price of the product. Output of large amounts of items of production the increase of sales volume of certain goods will not necessarily lead to lower cost of this product as a possible reduction of the activity of the enterprise by reducing the volume of production can lead to the increase of the cost of this given output as well as the cost of other produced goods. Opposite situation can exist too, when the volume of a new product output is decreasing and with

an increasing activity of the enterprise as a whole, the cost in this case will be lower than in the previous one. Thus in the first case, a landmark on full costs in price formation will lead to its overestimation, and in the second case, it may be lower than the consumers would have the willingness to pay. In addition, when innovative product is discussed, the price must be determined in the early stages of forecasting when less reliable information can be obtained only on direct costs (salary and materials).

In order to change the quantity of value of a new product for consumer it is necessary to solve two problems. First – to determine the price ... "below which goods should not be sold" [6, 47]. Second – to determine the price above which the goods will not be of value to the consumer, and he will refuse to buy it. At the same time, supporters of active price method do not disclose in their work how to determine the price below which the goods are not sold. Meanwhile, without defining the lower level, one can not reasonably allocate "the value of the product" between the producer and the consumer of this product, and this underlies the concept of active pricing.

In the basis of lower price level is the requirement of "equal profits" of production of new goods and substitute goods for the manufacturer of new products. In the 70-s of last century domestic scientists proposed to calculate the lower price level using the total cost of new product and effective cost of substitute goods. This is purely a cost approach. Total cost of new products, as well as the profitability of a substitute goods can be seriously distorted by the traditional methods of allocating overhead costs. However, the main disadvantage of this approach is that the cost and the price depend on the activity of the enterprise (production) and opportunity to obtain reliable information about direct costs on early stages.

In these circumstances it is necessary to reconsider seriously the requirements concerning "equal profits" in setting prices, "below which goods should not be sold". This problem can be solved with marginal approach only.

The products can be regarded equally profitable when comparing to the output provide comparison with a replacement product of the same mass of marginal profits and, hence, the profit itself. This requirement is maintained in the calculation of the original price (its lower level) according to the following formula:

(1)

$$P_{low} = \frac{VC_n}{1 - C_{mp}},$$

where: $VC_n$ – variable costs per unit of new production (hrn);

$C_{mp}$ – the coefficient of margin profit (the ratio of margin profit to the price) for a substitute product.

Thus, the pricing according to formula (1) – can not be considered as costly approach, because the calculation does not take into account fixed costs. But this is not a method for calculating price by percent increase to the variable cost, which is offered by many foreign and domestic authors. Coefficient of margin profit is defined as the ratio of margin profit to the price and reflects the potential profitability at the level of exchangeable goods. Since the value of margin profit (the difference between price and variable costs on types of production) does not depend on fixed costs and the degree of activity of enterprise, so in this calculation, we ignore the level of fixed costs prevailing in the enterprise. Thus, when calculating the lower price level we can reach and form the price with low percent of expenditures.

In the methods of pricing for new products on industrial purposes appeared in 70-s of the last century calculation of upper price level took into account annual operating costs for consumers and used basic and new means of labour but without taking into consideration amortization means as new and basic means of labour. Thus, in was necessary to calculate the total cost per unit of output (excluding funds for depreciation) for the consumer. In this case, the same problems appear as in the case of calculation of the lower price level recommended in

these methods. Firstly, the same problem of distribution of fixed costs, but in the sphere of consumption of new products, and secondly, the same distorting effect on the volume of these costs per unit of output with different rate of enterprise activity (capacity utilization). It must be also taken into consideration that new and the basic means of labour can be used in various enterprises, where these costs are not comparable.

These problems can be easily removed, when upper price level would be calculated with the following formula:

$$P_{up} = P_{ube} \times \frac{V_0}{V_1} + \frac{VC_0 - VC_1 + E_{cc} \times (CC_0 - CC_1)}{S_a + E_{cc}} \quad (2)$$

where: $P_{ube}$ – price per unit of the basic equipment;

$V_0, V_1$ – annual volume of output produced with basic and new means of labour;

$VC_0, VC_1$ – annual variable (direct) costs for consumers using basic and new means of labour, based on the volume of production produced using new instruments of labour;

$CC_0, CC_1$ – related capital costs (excluding the cost on means of labour), based on the volume of production produced using new instruments of labour;

$E_{cc}$ – coefficient of efficiency of capital costs (the rate of bank credit);

$S_a$ – share of deductions for amortization (renovation) of basic and new means of labor.

Having replaced total costs into variable ones, we avoid the distortion of costs associated with traditional methods of distribution of fixed costs, as well as distortions associated with different degrees of activity of the enterprise, and suppose that the value of overhead costs (particularly distorted) should not affect the evaluation of the effectiveness of new production.

Thus, the difference between the upper and lower levels, is precisely the "value" described by marginalists. And as K. Menger noted, the value is subjective in its essence and in its measure it has certain value for certain individuals and businesses. In general, this "value" (Z) can be shown as the following formula:

$$Z = P_{up} - P_{low}, \quad (3)$$

where: $Z$ – is not an annual effect of using new means of labor and is not the effect for the period of its service, as it was represented by many scholars. This is the value which you add to the lower price level and the effectiveness of using new means of labor due to the increase of capital costs and depreciation deductions will be reduced to zero, and as it is noted by Böhm-Bawerk, in this case, the buyer (the customer) will be forced to refuse his further participation in the exchange.

In a centralized economy, this difference was distributed between the manufacturer and the customer with special distribution coefficients, which are fixed by the state. Under market conditions, this approach can not be used. The subjects of economic relations put the prices themselves. And in this case with quantitative calculations certain subjective decisions may occur. In addition, determining the selling price it must be taken into consideration that enterprise that produce new products bears the costs associated with the design and development of new products and these costs are not taken into account when calculating the lower price level. For this purpose, limit price must be calculated, with account of cost on design and scale of production of new goods. As a result, the selling price should be higher than the limit price, which will provide the producer not only the planned profit, but will compensate expenditures on

design and manufacture of new product. Thus the price is set in accordance with the pricing policy, taking into account the competitive situation of the company – an innovator on the given market.

Thus, ideas of marginalists that prices should be set not on the basis of producers cost but on the value of those goods for consumers and can be implemented in reality with the help of given methods of calculation. To achieve these objectives, it is necessary on the state level to develop appropriate techniques and methods which would give certain recommendation for the subjects of economic relations.

## Literature


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