

Optimal Share and Efficiency of the Public Sector

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Summary: In this research it will be found a theoretical explanation of the efforts for increasing of the efficiency of the public sector. The significance of the government impact in the economy is discussed in many papers. At the same time the increasing degree of variability of the range of government functions is even more important than the size of the government. Comparing the public sector of Great Britain at the time of Newton with its development by the end of the XXth century, we can realize essential differences. That is why, today, in the XXI century, it is very important to accept, that the future of the public sector will be associated with even more dynamic changes, under conditions of globalization. Like an instance, the federal management of the United States uses the most modern tools for the optimization of the public sector, which in their essence are used by the companies in the private sector. Such instruments are the balanced scorecard and the ABC analysis. This is not a mere fact, since it is underlined in the specialized literature that the new management in the public sector uses the approaches and techniques of the corporate management.

This paper argues that the public and the private sectors are interdependent. At the same time the optimal share of the public sector is not a

fixed quantity and it is defined by the efficiency of its functioning.

Key words: effectiveness of the public sector, efficiency of the public sector, new management in the public sector, marginal utility of money.

JEL: H30, H60.

1. Globalization: A Major Factor in the Emergence of the New Management in the Public Sector

Globalization strains up competition among companies. Only the most competitive survive. "It is a great challenge. The rapid creation of cheap and convenient communications, transport and traveling has globalized competition and cosmopolitized consumption. Customers' preferences all over the world are simultaneously on the move to standardization and pluralization: with standardization meaning that now there are such preferences everywhere and pluralization meaning that people want the same diversity everywhere ... There are few companies that can escape the necessity imposed by intensified global competition. Almost all companies will have to extend their geographic scope and their offers. Even those choosing to specialize either geographically, or only in certain line will have to work on a global scale."¹

¹ Levitt, Theodore, Thinking about management. 1991, New York: Free Press, pp. 119-120 [quoted according to the Bulgarian translation published as: Левит, Т., Размисли за мениджмънта, Университетско издателство "Стопанство", С., 1994].

At the same time consumers are increasingly exacting to the goods. They demand higher and higher quality and, at the same time, lower price. (This means they look for increase of consumer surplus².) Kotler points out the opinions of managers from the business practice who "complain" due to the fact that "consumers are getting increasingly spoiled." To put it in his words: "Markets are merciless. Jack Welch, Chair of the Board of Directors of General Electric usually starts his business meetings with the advice: "You change or die." Richard Love of Hewlett Packard observes: "The pace of change is so rapid that the ability to change has now become a competitive advantage. The ability to change requires an ability to learn."³

The globalization processes are interrelated. The territorial integration of markets has not only a material and objective result. The reason is that markets are first of all a psychological phenomenon. In the course of development of the process of globalization, Drucker finds the exceptional significance of the common perception of people, their common judgment and world view. He argues that they change over time. Drucker points out⁴ that both new knowledge and changes of perception and values of society are of key importance for the relevant changes of economic reality. A similar notion can be found in Hristo Hristov's analysis of sociocultural factors.⁵

Under the conditions of globalization the society has a changed perception compared to

the one of preceding ages⁶. The main aspect of change is reduced to exceptional exactingness with respect to efficiency in each human activity. After the World War II and especially in 1960s, a striving for greater efficiency and effectiveness emerged in the US public sector by making a "results-oriented budget." Drucker proposed those ideas to the companies in 1964 in his book *Managing for Results*. Those ideas are indeed based on the Pareto principle stating that in social organizations 80 % of the effects come from 20 % of the causes. (This means that the efficiency of actions is not uniformly distributed). The ABC analysis has been built over the past 2-3 decades on the basis of that principle. But Drucker does not consider changes in perception only within the limits of society's values. In his opinion changes also occur in the paradigms of science. "BASIC ASSUMPTIONS ABOUT REALITY are the PARADIGMS of a social science, such as management."⁷ He goes on further: "[...] what matters most in a social discipline such as management are therefore the basic assumptions. And a CHANGE in the basic assumptions matters even more." In that sense, Drucker firstly states that the concept of management should not be taken only in the sense of business management. In his opinion, the first practical application of management theory did not take place in a business but in nonprofits and government agencies. In addition, he points out: "And insofar as we can predict, the [growth] sector in the 21st century [in developed countries]

² Mirkovich, K., *Microeconomics*, 2003, Sofia: Trakia-M, p. 98 [quoted according to the Bulgarian publication: Миркович, К. Микроикономика, Тракия-М, С., 2003].

³ Kotler, Philip, *Kotler On Marketing: How To Create, Win, and Dominate Markets*. 1999, New York: Free Press, p. 5 [quoted according to the Bulgarian translation published as: Котлър, Ф., Котлър за маркетинга, С., "Класика и стил", 2001, с. 5].

⁴ Drucker, Peter, *Innovation and Entrepreneurship*. 1993. Collins, p. 44 [quoted according to the Bulgarian translation published as: Дракър, П. Иновации и предприемачество, изд. "Класика и стил", С., 2002].

⁵ Hristov, Hr., *New Approaches to Management of the Public Sector*. 2005. Sofia: UISS [quoted according to the Bulgarian publication: Христов, Хр. Нови подходи в управлението на публичния сектор, УИСС, С., 2005].

⁶ Stoyanov, V., *Fundamentals of Finance*, volume I. 2003. Sofia, page 635 [quoted according to the Bulgarian publication: Стоянов, В., Основни на финансите, т. 1, ИК "Галик", С., 2003].

⁷ Drucker, Peter, *Management Challenges for the 21st Century*. 1999. HarperBusiness [quoted according to the Bulgarian translation published as: Дракър, П. Менеджмънт предизвикателствата на XXI век, изд. "Класика и стил", С., 2005, с. 2].

will not be “business”, that is organized economic activity. It is likely to be the non-profit social (public-P.M.) sector. And that is also the sector where management is today most needed and where systematic, principled and theory-based management can yield the greatest results and the fastest.”⁸

The importance of changed perceptions (and the new system of values) in the society is analyzed in a number of Drucker’s works but it is also considered by the specialists in the field of public finance, while taking into account the disadvantages of the administrative and bureaucratic model of managing the resources in the public sector: “The analysis of the administrative and bureaucratic model of managing the resources in the public sector is not made by chance. Each of the specified aspects reveals to certain extent *their inadequacy to the new system of values which started to prevail in 1980s and 1990s in the private business*. Thrift, efficiency, quality, customer care, perfection in organizational behavior are the guiding benchmarks in the behavior of private companies. Those have inevitably influenced the bureaucratically organized public sector. This explains the emergence of the new, market-oriented ideas of changes to its organization and management.”⁹ This means that globalization imposes other perceptions and views of efficiency in society not only with respect to the goods traded on the markets but also with respect to the goods created by the public sector.

The main problem of the strong public reaction in Great Britain in 1970s and 1980s could not be reduced only to limiting the government intervention in economy. If the public sector did not give rise to non-efficiency there would not be public reaction to limit its share in economy.

The main reason for the increased exactingness to the public sector is the exceptional contrast of the rather low efficiency in it and the increasing efficiency of the private sector. Against that background let us assume that the income before tax is conditionally distributed in two parts:

- **expenses** allocated in the form of taxes in order to obtain public goods;
- **expenses** (representing the remainder of the income) for acquisition of goods created by the private sector.

The second group of expenses is in fact a fixed budget spent for a basket of goods from the private sector. In this sense the individuals optimize that basket by the **principle of equal marginal utility**¹⁰:

$$\lambda = \frac{MU_A}{P_A} = \frac{MU_B}{P_B} = \dots = \frac{MU_N}{P_N},$$

where:

- A, B, ..., N are the goods in the consumer basket from the private sector;
- MU_A, MU_B, \dots, MU_N is the marginal utility of these goods;
- P_A, P_B, \dots, P_N are their prices;
- λ is the marginal utility of money.

The underlying idea of that principle is that the consumer basket gets optimized (maximization of the utility from it) if there is equal marginal utility of money for each expenditure made in it. (Here expenditure means expenditure for a separate good from the consumer basket in the respective quantity). Also important is the circumstance that the marginal utility of λ changes by change of income.

⁸ *ibid.*, p. 8.

⁹ Brown, Jackson, *op. cit.*, p. 243.

¹⁰ Brennan, M., Carroll, T., *Preface to Quantitative Economics & Econometrics*, 4-th edition, South-Western Publishing Co, p. 202.

Given that background, let us now assume that individuals reveal their preferences as regards the public goods by means of the respective curves of pseudo-demand. This means that at the level of income before tax the efficiency again requires compliance with the above principle as the equilibrium also includes the marginal utility of public goods and the respective individual tax prices.¹¹ Let us also assume that for a given individual the individual tax price is P_C . The individual tax price P_C for the individual is the one that levels with his marginal utility from the quantity of public good C that is common to all individuals. Under that condition there occurs a maximization of "pure utility" of the individual from the consumption of the public good C . This logic corresponds to the maximization of the consumer surplus of markets in the private sector.

In the context of that idea let us assume, for the sake of simplification (without thus limiting the generality of the reasoning) that in economy we have a total of just 3 goods: A, B and C. Let us also assume that there is only one tax: T. The goods A and B are created by the private sector and the good C is created by the public sector. At the level of income after tax the individual again attains efficiency by compliance with the principle of the equal marginal utility:

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B}.$$

If the income before tax of an individual is I_1 and such individual's income after tax is I_2 , then $I_1 = I_2 + T$, where T is the deducted tax.

But T is in fact the expenditure of the individual for acquisition of the public good C in such quantity as determined by the state.

Thus, in the general case $\frac{MU_A}{P_A} = \frac{MU_B}{P_B} \neq \frac{MU_C}{P_C}$, because the individual can determine neither

his tax, nor the quantity of public good. But if the state determines the tax T and the quality and the quantity of the public good in such manner as to comply with the above equation then there will not only be achieved efficiency but also the individual will not perceive the tax as suffered sacrifice in the sense of the sacrifice theory. Here the notion is that the individuals perceive the tax as suffered sacrifice due to the impossibility to apply the principle of utility in all cases. In particular, for the divisible public goods its application is possible and because there is a market principle for their consumption the above equation is complied with.

Against that background we should further make one thing clear. We have already made it clear that the technological advance cause two serious effects on the markets.

First. They increase the marginal utility of the goods at each level of supply.

Second. The reduce the prices of the goods. (The marginal manufacturing costs are reduced at each level of supply and under the conditions of strong competition the companies reduce their prices for the goods).

The two effects combined mean an increase of the marginal utility of money

(the relation $\frac{MU_A}{P_A}$ increases).

But this fact is present only for the basket of goods of the private sector. While analyzing the basket of goods of the public sector we find (provided that there is a high level of inefficiency) the curves of pseudo-demand reflecting the marginal utility of public goods, are translated downwards and at the same time the costs (by means of the taxes) for their creation are increased. This means that the marginal utility

¹¹ Hyman, D., Public Finance: A Contemporary Application of Theory to Policy, 4th ed., Dryden Press, 1993, pp. 159-161.

of money is reduced. Under the natural market conditions when the cost for a good is related to reduction of the marginal utility of money (below its optimal value), then the individuals reduce the consumption of such good. This would lead to a reduction of the market price of the good with reduced marginal utility. On the contrary, the state imposes a fixed (determined by it) quantity of public goods and at the same time it imposes their "price" by means of the taxes. In addition, we should note¹² the steady trend of increase of public expenditure in 20th century according to the Wagner's law. The share of government intervention in economy also is on the rise. This, in its turn, increases the overall degree of inefficiency in economy.

That is precisely the reason for the sharp social reaction in the Great Britain in 1970s and 1980s as in fact the process of reduction of consumption of the the goods of the public sector was made by natural means by the mechanisms of public choice. "Between 1982 and 1986 the UK Government took a whole wave of privatization measures: it transferred the system of telephone networks and operations in natural gas and oil to newly-established private companies (in which the State held a part of the shares). In 1986, an initiative was launched in France which is expected to become the biggest sale of state-run enterprises to private investors in history..."¹³ The new management in the public sector is a wide concept which should not be associated only with the narrow limits of tools such as privatization and concession. The reasons for its emergence are associated with the high level of inefficiency of public power. Economists and politicians are studying the state's failures.¹⁴

In substance, the new management is oriented to the overcoming of the technical inefficiency (X: inefficiency) arising out of the actions of bureaucrats. "[...] the new management could be defined as a system of market-oriented approaches to management of institutions and resources in the public sector. It requires change of both the organization of public institutions and the overall model of their bureaucratic management."¹⁵ To that end a number of new approaches are used to increase efficiency of the use of budget resources of public institutions. The new management "[...] sets into motion some market forces in order to increase efficiency, responsibility and flexibility in the work of the bureaucratically organized public institutions. However, this does not happen in its pure form but by means of adaptation and imitation. This is why the new management is also characterized as a *quasi-market management approach*."¹⁶

To orient resources to results is one of the tools of the new management in the public sector. As noted in the analysis of the traditional management of budget institutions: "They lack purposeful orientation in the activity which is characteristic for the private economic units."¹⁷

As a result of the differences in terms of efficiency between the private and the public sectors it could be summarized that there exist 2 levels of optimization.

- at the level of the after-tax income the optimization relates to a high marginal utility of money due to the high efficiency of the private sector as a result of the exceptional competition among the companies;

¹² Wonnacott, P., Wonnacott, R., *Economics*, 2nd ed., Mc Graw-Hill, Inc., 1982, p. 72.

¹³ Stiglitz, J.E. *Economics of the Public Sector*. 1986. New York: W. W. Norton [Bulgarian quoted according to the Bulgarian translation published as: Стиглиц, Дж., *Икономика на държавния сектор*, УИ "Стопанство", С., 1996, с. 29].

¹⁴ Stiglitz, J.E., *op. cit.*, p. 5.

¹⁵ Brown, Jackson. *op. cit.*, p. 244.

¹⁶ *Ibid.*

¹⁷ Brown, Jackson. *op. cit.*, p. 242.

- under the conditions of globalization, at the level of the pretax income the optimization again must be made but a conflict arises between the high marginal utility of money in the private sector and the low marginal utility of money in the public sector.

In this sense the public strive for reduction of the share of the public sector in economy (given the specific low efficiency) is indeed an expression of the public pretax optimization of consumer basket of the society. The reduction of the share of the public sector increases the marginal utility of public goods. Then, if "their prices" are invariable the marginal utility of money invested in the public sector will increase.

At the same time that optimization has two sides. The reason is that when creating public goods the public sector also makes use of new technology and innovation. In their turn, they could increase the marginal utility of public goods or reduce their prices. This would result as an increase of the marginal utility of money invested in the public sector, and hence in the relevant change increasing its optimal share.

Drucker highlights that the textbook is a "modest innovation" of exceptional social effect because without textbooks even the best teacher can teach only a relatively much smaller number of children. He also highlights the fact that the hospital in its present-day form, an innovation of the 18-century Enlightenment, has had more tangible effect on the results in healthcare than most innovations in medicine. In this way, he practically gets to the conclusion that innovations in the public sector have much greater importance

than innovations in the business. Finally, he pays attention to the scientific belonging of the concept of innovation: "Thus innovation is rather an economic or social than technical concept. It could be characterized in the same way as J. B. Say defines entrepreneurship, as something that changes the yield of resources."¹⁸

Let us now focus on Say's definition presented by Drucker in the light of the aforesaid optimization: "The entrepreneur", said the French economist J. B. Say around 1800, 'shifts economic resources out of an area of lower and into an area of higher productivity and greater yield.'¹⁹ These words of Say have crucial importance on Drucker's overall scientific world view. As early as in 1964, in his book *Managing for Results* he advised companies to get their resources results-oriented. But in fact this process is reduced to optimization of consumer basket of activities of the companies as economic subjects. This means that Say's definition and Drucker's conclusions are reduced to the application of the principle of equal marginal utility. The conclusion is also true for the public sector organizations. The concept has strong correspondence to the theoretical foundations underlying the performance-oriented budget. We can find that in President Johnson's address²⁰. In August 1965, he announced his intention to introduce the Planning-Programming-Budgeting-System (PPBS)²¹ on a governmentwide basis, i.e. for the whole country, asserting that three major objectives would be achieved:

"1) It will help us find new ways to do jobs faster, to do jobs better, and to do jobs less expensively.

¹⁸ Drucker, Peter. *Innovation and Entrepreneurship*. 1993. Collins, p. 41 [quoted according to the Bulgarian translation published as: Дракър, П. *Иновации и предприемачество*, изд. "Класика и стил", С., 2002].

¹⁹ Drucker, Peter. *Innovation and Entrepreneurship*. 1993. Collins. p. 25 [quoted according to the Bulgarian translation published as: Дракър, П. *Иновации и предприемачество*, изд. "Класика и стил", С., 2002, с. 25].

²⁰ GAO March 1997 *Performance Budgeting. Past Initiatives Offer Insights for GPRA Implementation*. [http://people.cas.sc.edu/tyer/Web %20articles/GAO %20Performance %20Budgeting.pdf](http://people.cas.sc.edu/tyer/Web%20articles/GAO%20Performance%20Budgeting.pdf)

²¹ Planning, Programing and Budgeting System.

- 2) It will insure a much sounder judgment through more accurate information, pinpointing those things that we ought to do more, spotlighting those things that we ought to do less.
- 3) It will make our decision-making process as up-to-date [...] as [...]”

The second major objective overlaps in substance with Drucker's recommendation to organizations proposed by him in *Managing for Results*. It says that resources should be allocated to the few activities generating most of the results. (Here we mean that both the activities and the utility thereof are quantifiable as cost can be calculated per unit of activity.)

Thus we can identify two issues which are interrelated:

First. What is the optimal share of state intervention in economy (i.e. what is the optimal share of the public sector).

Second. What expression does efficiency find in the public sector and how to increase it.

The interrelation of those issues is manifested in the fact that the higher efficiency in the public sector gets, the higher the marginal utility of money invested in it gets and therefore the share of the public sector can be correspondingly increased in the context of the principle of the equal marginal utility. This directly relates to the respective budget.

2. Optimal share of the public sector

Dozens of scientists write on the problem of argumentation of the need of state intervention in economy. Without repeating what

has been said above, we will highlight 2 points which have not been sufficiently emphasized in the author's opinion.

The first specific thesis says that a systematic approach should be employed upon the assessment of the optimal state intervention. In particular, the [public and the private sectors can be presented as 2 subsystems in the overall system of economy as there are relations of symbiosis and parasitosis between the two subsystems. First of all, it should be clear that if the public sector didn't exist, the private sector of economy would not exist as well for the state establishes the regulations for the functioning of the private sector. In this extreme case, there would be no economy at all. The economic relations of exchange (i.e. market laws) did not emerge before the private property is guaranteed and the trade relations are statutory regulated. Otherwise, the main driving force of human behavior (the instinct of self-preservation) would help for the satisfaction of the needs in a state of anarchy²². In this sense, the functioning of the public sector guarantees the existence of the private sector. The contrary logic is not true considering the possible existence of a command economy. This presumes a key importance of the public sector in economy.

For that reason one may not freely argue that funding (and existence) of the public sector has an alternative price in the sense of profit lost by the private sector, due to the allocation of resources of economy to the public sector. The realized benefits of the private sector are only possible when there is a public sector in place.

In its turn, the functioning of the private sector funds the public sector. This means that the two sectors help each other's existence and one of the subsystems can not exist without the other. The main emphasis is, as we pointed

²² Раунов. М. Motivation, 2003. Sofia: Stopanstvo University Press [quoted according to the Bulgarian translation published as: Паунов, М., Мотивация, УИ "Стопанство", С., 1999].

out, that there are effects of symbiosis between the two systems.

At the same time, there can be produced some effects of parasitosis between the two subsystems. One of the main, but not the only, factor strongly influencing the nature of the relation between the subsystems (symbiosis or parasitosis) is the share of the state intervention in economy as well as its efficiency.

Each deviation from the optimal division of economy between the two subsystems means, in fact, a violation of the symbiosis between them and arising of effects of inefficiency. The crowding out effect as a manifestation of the violated optimal share of public sector is in fact a violation of both the symbiosis and the Pareto-efficiency. The fact that someone has reduced his/her welfare is sufficient.

In essence, symbiosis in economic relations is a Pareto's improvement. Pareto's criterion of the increase of social welfare has been fulfilled. In order that the said criterion is fulfilled, it is sufficient to increase the welfare of an economic system without thus reducing the welfare of

another economic system.²³ In case of symbiosis, there is a simultaneous increase of the welfare of both economic systems due to the effects of mutual assistance. But how is the optimal share of the public sector in economy to be determined? Figure 1 shows the analysis of that issue. The logic proposed by us is an optimization in terms of the society as a whole, i.e. if taken as a single consumer of the aggregate utility of the two sectors. The model can serve as a conceptual theoretical framework.

The capital in economy is divided between the public and the private sectors. The increase of the state purchases in the light of the Keynes's theory leads to the so-called "crowding out" (especially when made not at a time of recession). This means that the increased demand of capital by the state increases the rates of interest and thus "pushes" some projects into the private sector, by making them inefficient. (The internal rate of return of those investments turns out to be lower the cost of capital used as rate of discount.)²⁴

For a fixed level of capital²⁵ is allocated between the two sectors (within a certain period of time)

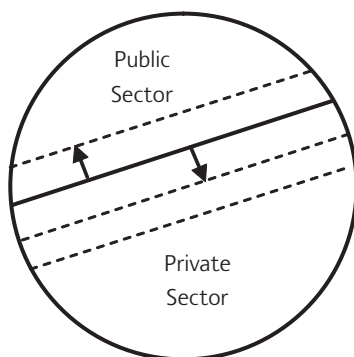


Figure 1. Analysis of public sector's optimum share in economy

²³ The mechanism of change of welfare is based on changes to the allocation of resources and exchange of goods.

²⁴ For the problem of crowding out проблема на изместването, see Brusarski, R. Benefit-Cost Analysis. 2003. Sofia: Stopanstvo University Press [quoted according to the Bulgarian translation published as: Брусарски Р., Анализ ползи – разходи, УИ "Стопанство", С., 2003].

economy can be presented as a basket of two goods, which are precisely the utility aggregated by the public and the private sector as each of them is taken as a whole. The optimal share of each of the two sectors is obtained by application of the principle of equal marginal utility of each of the two sectors per one Bulgarian lev invested in each of them. This means:

$$\frac{MU_S}{P_S} = \frac{MU_P}{P_P},$$

where:

- MU_S is the marginal utility of the public sector;
- MU_P is the marginal utility of the private sector;
- P_S and P_P are the respective averaged prices of the activities of the public and private sectors.

The state must not restrict the market's free development but it must at the same time

intervene in economy by means of such policy that maximizes the efficiency in the sense of the above analysis. From that point of view, the efficiency of the public sector lies in the modeling of the above target. In substance this means to get the resources of economy results-oriented.

Indeed, when analyzing the reasons that caused the emergence of the new management we found that the main reason is the low efficiency of costs in the public sector and, in particular, its irrationally increased share in economy.

In its part, the new management is in no case a mechanical and routine solution for the problems that arise in the public sector. This makes us realize that there is a imminent need of a new theoretical model for decision-making in the public sector that is to give a new meaning to the existing concepts from a new point of view in order to reflect the changes that have occurred in economy and society upon the entry into a new age of social perceptions. **VIA**

²⁵ Brusarski, R. Y. Theory of Public Finance. 2007. Sofia: Stopanstvo University Press, p. 163 [quoted according to the Bulgarian translation published as: Брусарски, Р. Й., Теория на публичните финанси, УИС, С., 2007].