

GOVERNMENT INVOLVEMENT IN CONSUMPTION BEHAVIOUR

CRISTINA ZAMFIR, IOANA LUPAȘC, ADRIAN LUPAȘC *

ABSTRACT: *In this article, we will follow the involvement that the government has, through its expenses, on the consumption behavior. The involvement that the government has in the consumption behavior is made through fees and taxes that are applied on income. Fees and taxes are applied to the different forms of income but in this article we will be focused only on the influence of them on wages. In order to analyze the involvement of government expenses on consumption behavior an utility model will be used.*

KEY WORDS: *Cybernetic system of consumer; consumption; optimality; wage; consumption dynamics; utility; utility model*

JEL CLASSIFICATION: *D11, D12, D13, D31*

1. INTRODUCTION

Fiscal policy represents the way in which the government adjusts the level of its own expenses with the purpose to monitor and influence the economy. This is used by the government to influence the level of total request, to reach the set objectives that regard price stability, total employment and economic growth.

In the case in which the government is facing a budget deficit, the necessary funds for covering this deficit will be procured from public loans – expressed in the form of governmental bond, currency issue. By covering the deficit through bond issue will probably cause a growth in income tax on the market, because the loans that the government makes, will lead to an increase in the request of credits on the financial market. This increase of total credit request will lead to an increased need of income

* Lecturer, Ph.D. Student, University "Dunărea de Jos" of Galați, Romania, cpisica@ugal.ro
Lecturer, Ph.D., University "Dunărea de Jos" of Galați, Romania, alupasc@ugal.ro
Lecturer, Ph.D., University "Dunărea de Jos" of Galați, Romania, ioanalupasc22@yahoo.com

available to investment, thing which is contrary to the objectives of the budget deficit – concept named crowding out (Blaug, 1999).

Fiscal policy may also influence the level of macroeconomic production through the growth or decrease of duties and public expenses. This influence will hold back on inflation and will lead to a growth in employment, maintaining at the same time a good currency level.

In what regards fiscal policy, a balance between influences must be found. Thus, by stimulating a stagnating economy will lead to an increase in the risk of inflation, because an increase in consumption request may lead to a decrease of currency value – meaning that a greater quantity of currency will be needed to purchase a product than it was needed if the value of the currency was not modified (Dobrotă, 1997).

In the case of an economy that has a decrease, the level of unemployment and consumer expenses are high, and the businesses do not produce money, the government will decide to „put the economy back on its feet” by reducing duties, fact that will lead to increased consumer expenses and also governmental expenses to acquire services on the market. By acquiring more services, the government will create new work places and wages, which will influence the economy by pumping money and by reducing the level of unemployment. With more money in the economy and lower taxes to pay, consumers will request for more goods and services, which will lead to a „rebirth” of businesses.

When inflation is very high and powerful, an economic recession will be needed. In this case, government may use fiscal policy to increase taxes and duties instead of accumulating money from economy. Fiscal policy may dictate a decrease of currency circulation. The negative effects on long terms of such policy may be a slow economy and a very high level of unemployment (Gilbert, 1994).

The effects of fiscal policy are not always the same, these depends on political orientation and the goals that the politicians have set. Thus, a reduction of duties and taxes will affect the middle class (the biggest economic group). In the case in which an economic decline will occur, this same economic class will be influenced by the payment of higher taxes and duties.

In the present economy, usually, the necessary of resources exceeds the procurement possibilities. While resources have a limited character, the demand for them has a continuous growth tendency. Resources, as an element of national wealth, include in its structure, include not only material, human, informational, currency resources but also financial resources.

Among the financial resources of the society and the public financial resources there is a report as from a whole to a part, because the financial resources of a society have a wider range. Financial resources of a society include public financial resources and private financial resources. In theory, it is appreciated that the allocation of resources is optimal when consumer demand are satisfied at a peak level, by mean of private and public sector.

The structure of public finance differs from a country to the other, and during its historical evolution a lot of changes have been recorded. From the point of view of their economical content, financial resources are made up of: compulsory levied (fees,

taxes, contributions), treasury resources, resources resulted from public loans and resources resulted from non covered monetary emission.

The most important category of public financial resources is the compulsory levied, which is presented in the form of fiscal and non fiscal revenues. Fiscal revenues are those imposed by the state, as a result of its financial sovereignty, in its position of public right subject and are imposed on revenues created by economic units and population, also linked to the fact that the latter own imposable proprieties and fortunes. These fiscal revenues are formed of fees, taxes and direct contribution and non direct fees and taxes (Krusell, 2004).

The consumer, as employee of a company, is interested in the first place by the salary that he receives in hand and not by the salary that he receives „on paper”. The employer also does not take into account only the brut salary that he is paying to the employee, and is also taking into account the contributions he has to pay to the state in the form of employer paid contributions. Thus, for an employer, the value of the work of an employee is given by the base salary to which it adds the contributions paid to the state. Due to this fact, each employee must know that roughly half of what he gains from his work goes to the state in the form of fees and taxes applied to his labour.

2. CONSUMPTION BEHAVIOR – THE INFLUENCE OF GOVERNMENTAL EXPENSES

The government represents the agent that buys consumption goods and finances these acquisitions by sums obtained through fees and taxes levied from consumers and other economic agents. We will mark by g the amount of goods that the government buys, represented here in the form of governmental expenses. This is considered as being an exogenous variable, because it is involved in the calculus of various macro economical indicators, such as GDP or prime budgetary deficit. In the budget that the government has there must be a balance between expenses and income, this being represented by the following relation, where τ represents total fees:

$$g = \tau \quad (1)$$

In order to make the problem of fees easier, it is presumed that the government will destroy the goods it acquired, a false thing in most cases. This assumption will not be made in the case when we wish for the optimal determination of governmental acquisitions (Oprescu, et al., 2004). Taking into account this assumption, we will also assume that governmental expenses are introduced in the utility function of the consumer expressed in the form:

$$w(c, \ell, g) = u(c, \ell) + v(g) \quad (2)$$

where $w(c, \ell, g)$ represents the utility function of the government, $u(c, \ell)$ is the utility of the consumer, and $v(g)$ represent a function of governmental expenses.

Knowing that the utility function of government is separable (it is independent of the two inputs), and g is an exogenous variable (the expenses do not bring any change to the analysis), it will be presumed that the governmental expense function is null

($v(g)=0$), and the only factor of production (labour) is expressed in the form: $y=zn$, where y represents the salary income, z tariff salary, and n the number of labour hours.

The consumer optimization problem, taking into account the fees and taxes levied, can be defined like this:

$$\begin{cases} \max_{c,\ell} U = u(c, \ell) & (3a.) \\ \text{ținând cont de condiția} & , \\ c = w(1 - \ell) - \tau & (3b.) \end{cases}$$

where c represents consumption, w – labor income and ℓ - free time.

Being an optimization problem, we will first set up the Lagrange, as follows:

$$L = u(c, \ell) + \lambda[w(1 - \ell) - \tau - c] \quad (4)$$

where λ represents the Lagrange multiplier. For the Lagrange function the first degree conditions will be written, as follows:

$$\begin{cases} \frac{\partial L}{\partial c} = 0 & (5a.) \\ \frac{\partial L}{\partial \ell} = 0 & (5b.) \\ \frac{\partial L}{\partial \lambda} = 0 & (5c.) \end{cases}$$

By solving the first degree conditions the equilibrium conditions will be obtained:

$$\begin{cases} U'_c - \lambda = 0 \\ U'_\ell - \lambda w = 0 \\ w(1 - \ell) - \tau - c = 0 \end{cases} \Rightarrow \begin{cases} U'_c = \lambda & (5a') \\ U'_\ell = \lambda w & (5b') \\ c = w(1 - \ell) - \tau & (5c') \end{cases}$$

The equilibrium conditions determined define the following laws for optimal decisions:

- consumer decision reported to the free time is optimal if the marginal utility of the consumer is inversely proportional to the obtained salary for the labour executed;
- the marginal rate of substitution between consumption and free time is equal to

the inverse of salary income: $RMS_{c/\ell} = \frac{U'_c}{U'_\ell} = -\frac{d\ell}{dc} = -\frac{1}{w}$ and it shows by

how much the free time decreases if consumption raises by one unit.

Using the relations (5a') and (5b') the following relations will be obtained:

$$wU'_c - U'_\ell = 0 \tag{6}$$

By substituting the consumption c in the objective function, and by maximizing the free time ℓ , the first degree condition of the problem will be presented in the form of an equation which will be solved in ℓ :

$$-wu_0[w(1-\ell) - \tau, \ell] + u_1[w(1-\ell) - \tau, \ell] = 0 \tag{7}$$

where u_i represents the marginal utility in report to the two factors: consumption or free time.

The relation (7) represents the consumption equation in report to free time and is represented in diagram 1, by AB. Point D that appears represented on AB represents the competitive equilibrium point between consumption and free time.

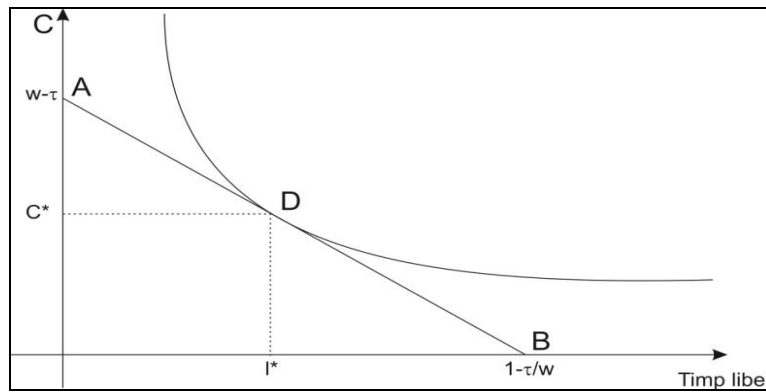


Figure 1. Constrainers regarding economical resources

What is important is the effect that the alteration of governmental expenses will have, expressed in fees and taxes (from the equality 1), applied to consumption and employment. In figure 2 we notice that if governmental expenses g increases from g_1 to g_2 , resource constrainers will be modified. In the case of a constrainer of governmental budget, this will lead to an increase of income applied fees (wage). This increase of the fees will represent for consumers an increase of the income effect, meaning it will lead to an increase in the time given to work, in detriment of free time.

Taking into account that free time and consumption are considered as normal goods, than their amount will drop leading to an displaced of private consumption, but the decrease of consumption will be lesser if the increase of governmental acquisitions (expenses that government makes), which in turn leads to an increase in yield.

Deriving the relations (6) and (7) and arranging in a system we will obtain:

$$\begin{cases} (wU''_{00} - U''_{10})dc + (wU''_{01} - U''_{11})d\ell = -U'_c dw & (8a.) \\ dc + wd\ell = (1 - \ell)dw - dg & (8b.) \end{cases}$$

where $U''_{ij} = \frac{\partial^2 U(\cdot)}{\partial x_i \partial x_j}$, and x_i represent the consumption factor or the free time. The relation (8a.) represents the second degree condition and it verifies the hypothesis of the utility function (second degree utility function is negative), because the Hessian matrix is negative. The second relation of the system represents Slutsky's general equation. With the help of the system we will analyze the effects that external factors have: wage (dw) and governmental expenses (dg) on consumption (dc) and free time ($d\ell$).

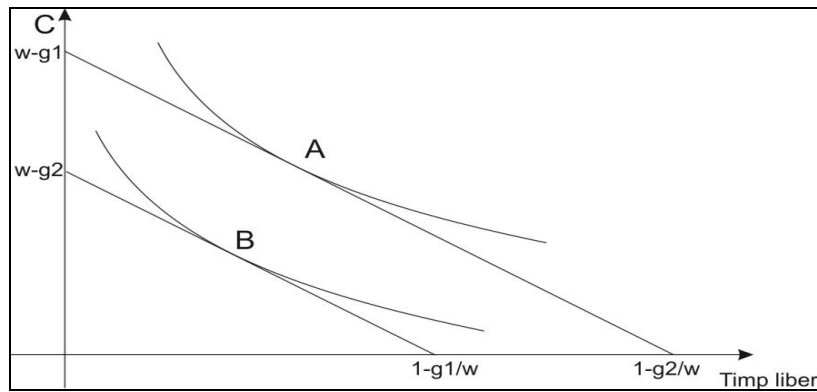


Figure 2. The influence brought by the modification in governmental expenses

By solving the system (8.) we will obtain:

$$d\ell = m_{11}dw + m_{12}dg \quad (9)$$

where:

$$m_{11} = \frac{(1-\ell)(wU''_{00} - U''_{10}) - U'_0}{\Delta} \quad (9a.)$$

$$m_{12} = \frac{wU''_{00} - U''_{10}}{\Delta} \quad (9b.)$$

and $\Delta = 2wU''_{10} - U''_{11} - w^2U''_{00}$ and

$$dc = m_{01}dw + m_{02}dg \quad (10)$$

where:

$$m_{01} = \frac{(1-\ell)(wU''_{10} - U''_{11}) + wU'_0}{\Delta} \quad (10a.)$$

$$m_{02} = \frac{U''_{11} - wU''_{01}}{\Delta} \quad (10b.)$$

In what regards the signs of the multipliers m_{01} , m_{02} , m_{11} and m_{12} , these are easily determined by taking into account the fact that the second degree derivatives of the utility functions are negative and $U''_{10} < 0$ from the Hessian matrix conditions. In conclusion, $\Delta < 0$.

By using the relations (9.), (10.), (9b.) and (10b.) we will analyze the effect of the increase of governmental expenses on consumption and free time:

1. *the effect of the increase in governmental expenses on free time* is manifested through:

a. substitution effect: $\Delta_g^S = \frac{wU''_{00}}{\Delta} > 0$

b. income effect: $\Delta_g^V = -\frac{U''_{10}}{\Delta} < 0$

The reaction to an increase in governmental expenses, represented to the population by mean of fees and taxes, is manifested through an increase of labour time, due to reduction of wage income (substitution effect). This reduction of wage income will lead to a decrease in population spending power, which will lead to an increase in labour time and a decrease in free time.

2. *the effect of the increase in governmental expenses on consumption* is manifested the same in the case of an increase in governmental expenses, but in the opposite direction:

a. substitution effect: $\Delta_g^S = -\frac{wU''_{01}}{\Delta} < 0$

b. income effect: $\Delta_g^V = \frac{U''_{11}}{\Delta} > 0$

An increase in governmental expenses will lead to a decrease in acquisition power, due to the reduction of wage income. Such a reduction in the acquisition power will lead to an increase in labour time and a decrease of free time.

3. CONCLUSION

Maintaining a balance in macro economics cannot be done only through monetary policy, but also through fiscal policy and income policy which must have a supporting role, taking a bit from the stabilization efforts.

The state, through its fiscal policy, should encourage exports and productive economic activities in order to acquire supplementary income, which in turn it will use to acquire goods or to pay wages in the public sector. If it will encourage exports and not imports, the state will not be forced to increase fees and taxes, and the employees will not be forced into working overtime in order to satisfy their needs.

REFERENCES:

- [1]. **Blaug, M.** (1992) *Teoria Economică în Retrospectivă*, Editura Didactică și Pedagogică, București
- [2]. **Deaton, A.** (1992) *Understanding Consumption*, Oxford University Press, London
- [3]. **Dobrotă, N.** (1997) *Economie Politică*, Editura Economică, București
- [4]. **Gilbert, F.A.** (1994) *Economie Politică*, Editura Humanitas, București
- [5]. **Krusell, P.** (2004) *Lecture Notes on Macroeconomics*, Yale University Press, USA
- [6]. **Opreșcu, G.; Imperato, A.; Andrei, A.** (2004) *Cibernetica Consumatorului. Abordare Statică și Dinamică*, Editura ASE, București
- [7]. **Opreșcu, Ghe.; Spircu, L.; Zaharia, M.** (1997) *Bazele Ciberneticii Economice*, Editura Infocrec, București
- [8]. **Opreșcu, Ghe.; Marin, D.; Andrei A.** (1996) *Modele Dinamice ale Economiei de Piață. Studii de Caz*, Editura F.F. Press, București