Keynesian substantiation of the marketing policies in local development

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KEYNESIAN SUBSTANTIATION OF THE MARKETING POLICIES IN LOCAL DEVELOPMENT

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ABSTRACT

The local development means the existence of several goods and services and their performance, expressed through adequate marketing policies, thus determining the overall development performance.

The paper approaches the economic fundamental issues of local development and in this context it determines the basic components of public service marketing, relevant for local development: price, multiplier of revenues/expenditures, respectively the export multiplier.

Those elements will express the ratios between resources and outcomes and their balance is based on a Keynesian model in an open economy.

KEY WORDS

local development, public marketing, Keynesian approach

INTRODUCTION

The Keynesian approach, at the level of a local economy, „is identical to the simplest version of the Keynesian model within an open economy, the only difference being that all variables refer to the local economy, instead of the national one". (Constantin, 2004, 85)

The field literature comprises general approaches on modelling the local development (Matei and Anghelescu, 2010; Klein, Welfe and Welfe, 2003), systemic approaches (Matei, 2008) or statistic modelling (Matei and Anghelescu, 2010).

In that sense, this study is focused on the cumulative effects of stimulating the demand and the public investments, by combining the following elements:

- *subsidizing* the least competitive sectors, in order to ensure an acceptable local level of revenues and of the demand;
- *direct productive investments* in the creation of state enterprises or in the participation of the state to the social capital of private companies;
- *public investments in infrastructure,* in view of attracting potential investors, often from outside the borders of the respective territorial-administrative unit;

The approach to this type of development highlights, on the one hand, the fact that *industrial enterprises are the axis of local development*, and on the other hand, the fact that success can be rarely reached by only one isolated company.

The capacity of modern firms arises from competitive grouping or co-operation, a phenomenon which favours the reaching of higher levels of efficiency and flexibility, otherwise rarely accessible to isolated producers.

1. THE KEYNESIAN MODEL OF LOCAL DEVELOPMENT

1.1. Building and defining the model

The Keynesian model of a local economy is represented by the relations of causality among variables which are influencing one another in ensuring the economic equilibrium on the market of goods or services.

By economic equilibrium we understand the moment when the real demand for goods or services **(D)** equals the offer of goods or services **(Y)**, an expression which may be written as:

$$Y=D \quad \text{(the equilibrium condition on the market of goods or services)} \qquad (1.1)$$

In the structure of the Keynesian model, (Gilbert, 1998, 334) the demand (**D**) is defined as a sum of demands for consumer goods and services **(C)**, divided into the demand for goods and services for investments **(I)**, and the real demand for goods and services for export **(X)**. Therefore, by replacing the components of the demand **(D)** in the relation (1.1), the economic equilibrium is maintained, and the relation obtained has the form:

$$Y = C + I + X \qquad (1.2)$$

Schematically, the equilibrium between the demand and real offer of goods and services is presented in Figure 1.

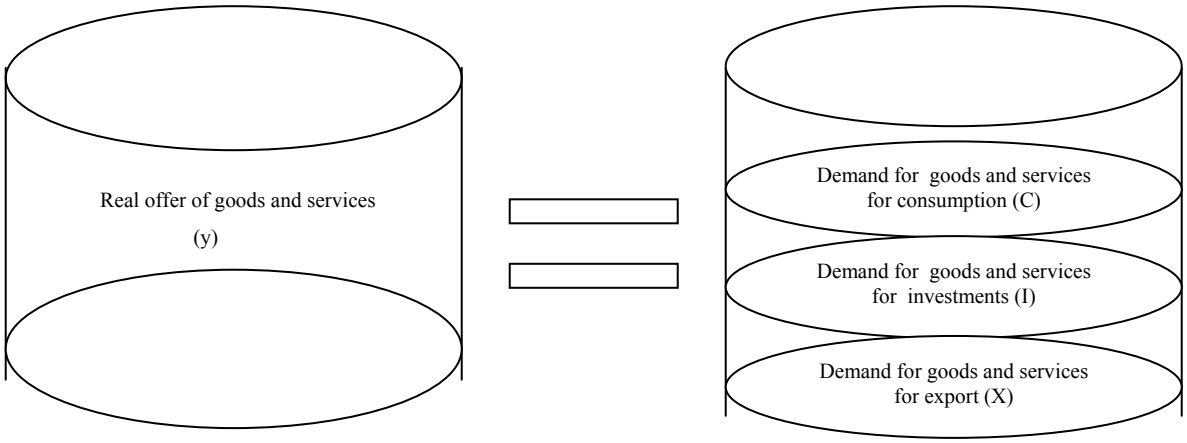

Figure 1-Echilibrium between the offer and real demand for goods and services

Considering the open character of the economy to the autochthonous consumption of goods and services, the consumption of import goods and services (**M**) must also be added. Imports within a local economy refer to those goods and services purchased from other territorial-administrative units belonging to the same county or region, or even from other countries. Identically, the consumption of import goods or services must be added to the consumption of autochthonous investment goods. Thus, by adding the imports (**M**) to the relation 1.2, we get the equation:

$$Y = C + I + X - M \qquad (1.3)$$

Considering the fact that the state or the territorial-administrative units may intervene in a local economy in view of sustaining certain expenditures in the form of transfers or subsidies, we are going to put these actions down as (**G**) and to include them in the relation (1.3), thus obtaining:

$$Y = C + I + G + X - M \qquad (1.4)$$

The expression (1.4) actually defines *the Keynesian model of a local economy*, which may be applied both to a product, in which case the expression can be quantitative, and to the economic and social aggregate defining the local development, a situation in which every term is the result of the sum at local level, in valued expression, of each destination.

1.2.-The local multiplier of revenues / expenditures and the multiplication effect

The determination of the local multiplier of revenues / expenditures is based on the structure of the Keynesian model of local development as previously defined.

By associating the revenues (Y) with the imports (M) in the expression (1.4), we naturally obtain equilibrium between the total resources (Y+M) and the total destinations (C+I+G+X), an expression which may be written as:

$$Y + M = C + I + G + X \qquad (1.5)$$

The equation (1.5) expresses the reality according to which, in any local development process, it is only possible to consume, invest and export as much as it is created from the autochthonous production and the resources attracted by imports.

Since local development implies the existence of several goods and services, each term of the Keynesian model of a local economy may be regarded, on the one hand, as a sum of the product between the quantity and the average price of each product, or as the sum between the quantity and the average tariff for the services provided in the domestic production, and on the other hand, as a sum of the autochthonous components plus the import component (by import we understand those goods or services purchased by a territorial-administrative unit from another territorial-administrative unit or from another country).

Thus we may write:

$$C=\Sigma C_{int} x p(t)_{int}+\Sigma C_m x p_{ext} \quad (1.6)$$

$$I=\Sigma I_{int} x p(t)_{int}+\Sigma I_m x p_{ext} \quad (1.7)$$

where:

$p(t)_{int}$ = price or tariff used on the domestic market

p_{ext} = price or tariff on the external market

C_m = import of goods and services for industrial and household consumption

I_m = imports for investments

Considering that investments, governmental expenditures and exports are determined , then:

$$I=I_o ; \quad G=G_o \text{ and } \quad X=X_o ; \quad (1.8)$$

The local consumption as well as the other components of revenue, such as export or necessary import, is expressed by linear equations under the form:

- *for total consumption (C):*

$$C=C_o+ cDY; \text{ where } C_o>0, \text{ and } 0<c<1 \quad (1.9)$$

and,

- *for import, (M):*

$$M = M_o + mDy \text{ where } M_o>0, \text{ and } 0<m<1 \quad (1.10)$$

In the equations (1.9) and (1.10) the significance of the terms is as follows:

$C_o \Rightarrow$ *autonomous consumption;*

c $\Rightarrow$ *the marginal propensity to consume*, which in fact represents the increase in consumption when the production of goods or services expands with one unit.

$M_o \Rightarrow$ *autonomous import*, which in fact represents the import to be made in any circumstances, in order to balance the demand for goods or services, since the local economy either does not possess sufficient resources, or they are not produced in competitive terms;

m $\Rightarrow$ *the marginal propensity to import goods or services*, which expresses the increase of imports, necessary for ensuring the expansion with one unit of the production of goods and services;

DY $\Rightarrow$ *available revenues,* determined by relation:

$$DY=Y-tY=Y(1-t) \quad (1.11)$$

where (**t**) represents the rate of the taxes and charges paid by local companies to state or territorial – administrative units.

Replacing the relations (1.8), (1.9), (1.10) and (1.11) in (1.4), we obtain the relation:

$$Y = C_o + c(1-t)Y + I_o + G_o + X_o - M_o - m(1-t)Y \quad (1.12)$$

or,

$$Y = C_o + Y_o + G_o + X_o - M_o + [c(1-t)-m(1-t)]Y \quad (1.13)$$

Separating the resources (**Y**) from destinations, from equation (1.13), we obtain the expression:

$$Y[1-(1-t)(c-m)]= C_o + Y_o + G_o + X_o - M_o \quad (1.14)$$

Or:

$$Y=\frac{1}{1-(1-t)(c-m)}\left(C_o+I_o+G_o+X-M_o\right) \quad (1.15)$$

Substituting the expression $\frac{1}{1-(1-t)(c-m)} = k$, in (1.13), we obtain:

$$Y=k(C_o + Y_o + G_o + X_o - M_o) \quad (1.16)$$

where k represents *the local multiplier of an injection of expenditures.*

The multiplier reflects and expresses the direct link between the inputs into the economic system – materialised in investments – and the outputs thereof, in the form of revenues of the participants to the economic activity (Ciucur, Gavrilă, Popescu, 2001, 540). This circulation at local level may be encountered within a local development process.

The local development process, accepted as a process of change, (Matei, 2005, 158) generates the multiplication effect of the expansion of revenues, consumptions and savings.

The essential variable in the Keynesian formula of the local multiplier, k=1/[1-(1-t)(c-m)] is represented by the marginal propensity to consume goods and services on a local level (c-m) (Constantin, 2004, 86). The value of the local multiplier rises as the marginal propensity to consume rises, and decreases in proportion with the increase of (t).

Within the local multiplier, the (c-m) variable has the decisive effect, for which reason it is necessary to study the factors affecting the marginal propensity to consume goods and services produced on a local level.

It has been demonstrated both by practice and by the specialised literature that the (c-m) variable depends on the size of the territorial-administrative unit, in the sense that, in small localities, the marginal propensity to import is higher, which leads to the decrease of (c-m) and implicitly of the value of k.

The same situation is encountered also in strongly industrialised localities, with a sufficiently diversified structure, since the goods produced by those industrial structures are based on their trade links with companies outside the territorial-administrative units in which they are running their operations. The marginal propensity to consume goods and services may also be affected by the position of the territorial-administrative unit. Thus, commuters from some areas neighbouring large cities generally tend to spend their salary revenues in the localities where they

reside, rather than in those where they work, a phenomenon which leads to the increase of the marginal propensity to import, to the decrease of the (c-m) variable, and eventually of k.

Consequently, the local multiplier is not a fixed coefficient, but it varies depending on the characteristic features of every locality.

Therefore, the local administration must know all those features, so as to be able to maximize the effects on the level of revenues and employment.

Those features having been identified by the local authorities, the large urban settlements were able to apply to and benefit from PHARE and ISPA funds, a phenomenon which has positively influenced the economy of those localities, on the one hand through the salaries paid to the new employees, and on the other hand through the additional procurement of goods and services by the units involved in the creation of the additional production, in compliance with the approved programmes.

In that context, special emphasis should be laid on the reduction of imports, an aspect which directly contributes to the increase of the value of the local multiplier.

Following the effects of the multiplier, the local authorities are to take into account a number of factors, so that the direct beneficiaries of those effects should be the population of the area/locality. Here are some of those factors:

- the participation with financial or other type of capital to the setting up of new companies;
- the decrease of the royalty for the land / buildings granted in concession, a phenomenon conditioned by the involvement of the local labour force in the economic process within the new investment objectives;
- bearing the costs of the expansion of utilities in the areas where the new investment objectives are to be implemented;
- other forms of support granted to possible investors by the local authorities;

Finally, the main feature to be considered by the local authorities is *the co-ordination of local development policies*, in order to turn to account the benefits of that policy and to mitigate the phenomenon of the under-funding of the development of the respective locality or area.

2. THE USE OF THE KEYNESIAN MODEL IN THE LOCAL DEVELOPMENT

The Keynesian model applied to the local development of the Municipality of Braila is based on the provision of public utility services: water-waste water/sewerage, thermic energy, local public passengers transport and waste management.

The engine of the Keynesian model is the feedback represented by the input-output links between the companies providing public utility services, i.e. commercial companies, autonomous administrations and households. Thus, the firms providing public utility services are interconnected through the goods and services they are buying and selling to one another, and the households are supplying the labour force necessary to the providers of public utility services. The respective links are established both within the same locality and among different localities.

The connection of those relations is based on the consideration of the components of the demand for public utility services, i.e. the link between the revenues and expenditures generated by the provision of that type of services.

Knowing the structure of the entities providing public utility services, we proceeded to the collection of the data necessary for the implementation of the Keynesian model. The data was taken both from the Statistical Bulletins of the Braila Regional Directorate for Statistics, and from the annual financial statements of economic agents, submitted to the Braila General Directorate of Public Finance.

During the analysed period, the economic agents providing public utility services within the Braila Municipality scored a good economic performance.

R.A.APA-BRĂILA

Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000	10668338	8206046	6835652	3834849	118673
2001	10855321	8922683	4732098	591271	200592
2002	12540120	10077960	2830805	6185113	366848
2003	13821040	10753333	2574131	1541497	586159
2004	15733981	12844224	7804624	7116330	555493
2005	16933225	14285832	19911329	8403644	478874

S.C.CET-S.A.BRĂILA

Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000	6145601	6436001	150683	2339490	
2001	12469661	12003946	74556	4554892	
2002	23737373	24460762	1912477	1995327	
2003	38079317	37705905	556974		
2004	45253170	47859459	792671		
2005	47596140	54779342	3429658		

S.C.BRAICAR-S.A.BRĂILA

Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000	5264387	5593225	985171		160300
2001	7755044	10006052			190800
2002	9120840	10509797			202500
2003	11511636	12824840			240900
2004	13805306	15026970	5427444		286600
2005	17582372	17109890	449743		305500

S.C.ECO-S.A.BRĂILA

Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000	1922009	1796263			
2001	2596370	2625066			
2002	3784934	5620765			
2003	4771940	4122961			
2004	3314504	4678944			
2005	3206611	3860984,0			

S.C.RER ECOLOGIC S.R.L.BRĂILA					
Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000	1746496	1625526	13630		
2001	2442688	2436747	37482		
2002	689967	1073063	27871		
2003	880613	1012609			
2004	1459190	1304751	14620		
2005	2551606	2085986	462325		

S.C.BRAI CATA S.R.L.BRĂILA					
Period	Revenues (Y)	Expenditures (C)	Investments (I)	Imports (M)	Exports (X)
2000					
2001	554	35779			
2002	38656934	3537714	1209906		88900
2003	3278697	3440728			66200
2004	3167530	3188598			65614
2005	4909611	3940246			83500

Making the total of the respective indicators for the whole period 2001 – 2005, we obtain:

Period	**Revenues (Y)**	**Expenditures (C)**	**Investments (I)**	**Imports (M)**	**Exports (X)**
2000	25746831	23657061	7985136	6174339	278973
2001	36119638	36030273	4844136	5146163	391392
2002	53738928	55280061	5981059	8180440	658248
2003	72343243	69860376	3131105	1541497	893259
2004	82733682	84902946	4039359	7116330	907707
2005	92779565	96062280	4253055	8403644	867874

Table 1. Empirical data of the Keynesian model

The main local indicators, considered for analysis in this study, concern the revenues obtained from the provision of public utility services, the expenses incurred for that purpose, the investments made in the sphere of public utility services, the imports of public utility services which filled the demand gap, or in other words, the analysis regards the economy of public utility services in the Braila Municipality. The public utility services, imported at the level of Braila Municipality, were those for water and thermic energy, and the exports of such type of services are located in the sphere of local public passenger transport and the suppliers of drinking water in the localities and areas neighbouring the Braila Municipality.

In that sense, in order to be able to apply the equations (1.4) and (1.5) to the economy of public utility services at the level of Braila Municipality, and to determine the coefficients of the equations (1.6) and (1.7), it was necessary for all the data used to be homogeneously expressed, i.e. in the same measure unit (lei).

The computer functions programmes were used in determining the correlation equations, resulting, for the equation of the correlation between consumption and revenue during the 2001 – 2005 period, the following data:

- for ascertaining the marginal propensity to consume (c), the ratio between the variation of expenditures (C-Co) and the variation of revenues (Y-Yo) was calculated, where (C) and (Y) belong to the year of reference, and (Co) and (Yo) to the previous year.

$$c = \frac{C - Co}{Y - Yo} \tag{1.17}$$

where: $C = Co + cY,$ (1.18)

Taking into consideration the data for expenditures and revenues in Table 1 and the relations presented in (1.17), we obtain the values for „c" and „Co" (Table 2):

	c	**Co**
2001	1.192850884	-7055069.120
2002	1.092540505	-3431894.553
2003	0.783706092	13164535.757
2004	1.447731900	-34873244.673
2005	1.110836549	-7000651.771

Table 2 Values calculated for „c" and „Co"

The table reveals that „c" varies in the period analysed, between 0.783 and 1.447, and a favourable situation is encountered in 2003, when „c" complies with the conditions imposed by relation (1.9).

Replacing the values of „c" and „Co" from Table 2 in the relation (1.18), we obtain the functions of consumption for each period as follows:

C_{2001}=1.19Y-7055069.120

C_{2002}=1.09Y-3431894.553

C_{2003}=0.78Y+13164535.757

C_{2004}=1.44Y-34873244.673

C_{2005}=1.11Y-7000651.771

Considering the condition imposed by relation (1.9), we notice that a favourable situation is only found in the year 2003; as to the rest, the values of „c" are top-heavy, hence the result that the determined situation is expressing an obvious reality of all public utility services, in the sense that they consume more than they produce, even when some of them, such as the thermic energy

supplied to the population and the local public transport of persons, are benefiting from subsidies according to the law.

Figure 2 presents the variation of „c" in the period analysed.

In order to obtain the equation of the correlation between *the import of public utility services and the income made*, we proceeded to determine the ratio between the variation of imports (M-Mo) and the variation of revenues (Y-Yo), where (M) and (Y) belong to the reference year, and (Mo) and (Mo) to the previous year.

$$m = \frac{M - Mo}{Y - Yo} \tag{1.19}$$

where:

$$M = Mo + mY, \tag{1.20}$$

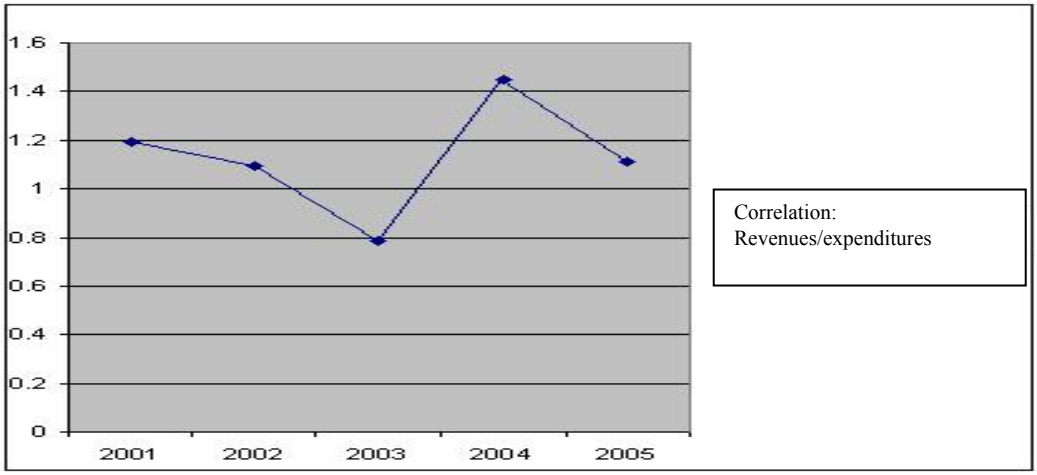

Figure 2 Variation of (c) during 2001 - 2005

The imports of public utility services during 2001 – 2005 were variable, and Table 3 presents the values of this phenomenon:

	m	**Mo**
2001	-0.099122253	8726422.897
2002	0.172213353	-1074120.952
2003	-0.356849634	27357156.792
2004	0.536534886	-37273176.606
2005	0.128143439	-3485448.570

Table 3 Imports of public utility services:

The marginal propensity to import „m" can be seen to differ during the period under analysis, however, a favourable situation is found in the year 2001, when m=0.12, a value showing that the indicator is placed close to zero, i.e. a reduced dependence of public utility services on imports.

Figure 3 presents the variation of „m" during the period under analysis.

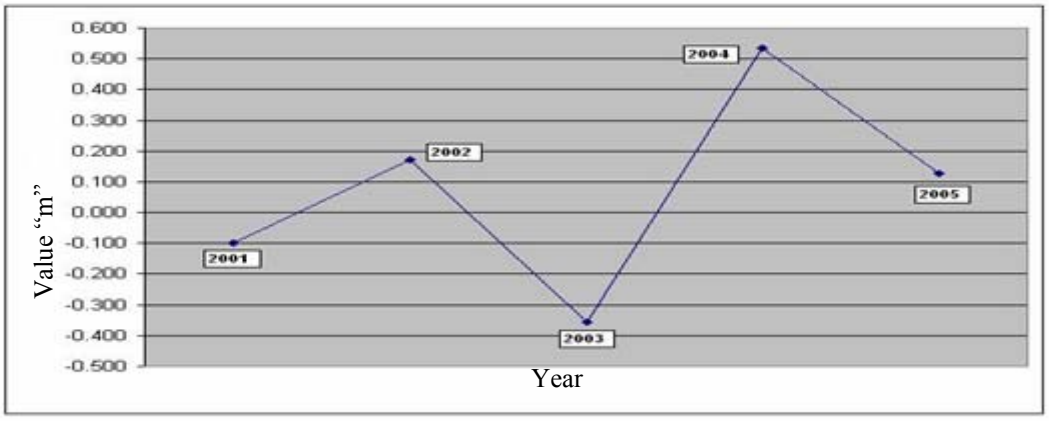

Figure 3 – Variation of „m" during 2001 – 2005

Analysing the components of „k", we find that besides „c" and „m", already known from the previous relations, it is necessary to determine the ratio of taxes, achieved by the operators of public utility services, which is varying in time between 0.35 and 0.16.

Replacing the values of „c", „m" and „t" in the expression of „k", the values of the local multiplier of expenditures result explicitly (Table 4):

Period	c-m	t	k
2001	1.291973137	0.35	6.241516963
2002	0.920327153	0.24	3.228361696
2003	1.140555726	0.24	6.916432625
2004	0.911197015	0.24	3.158537361
2005	0.982693109	0.16	3.802568107

Table 4 – Values of „k" during 2001-2005

The variation of the local multiplier of expenditures „k" in the period 2001 – 2005 is represented in Figure 4.

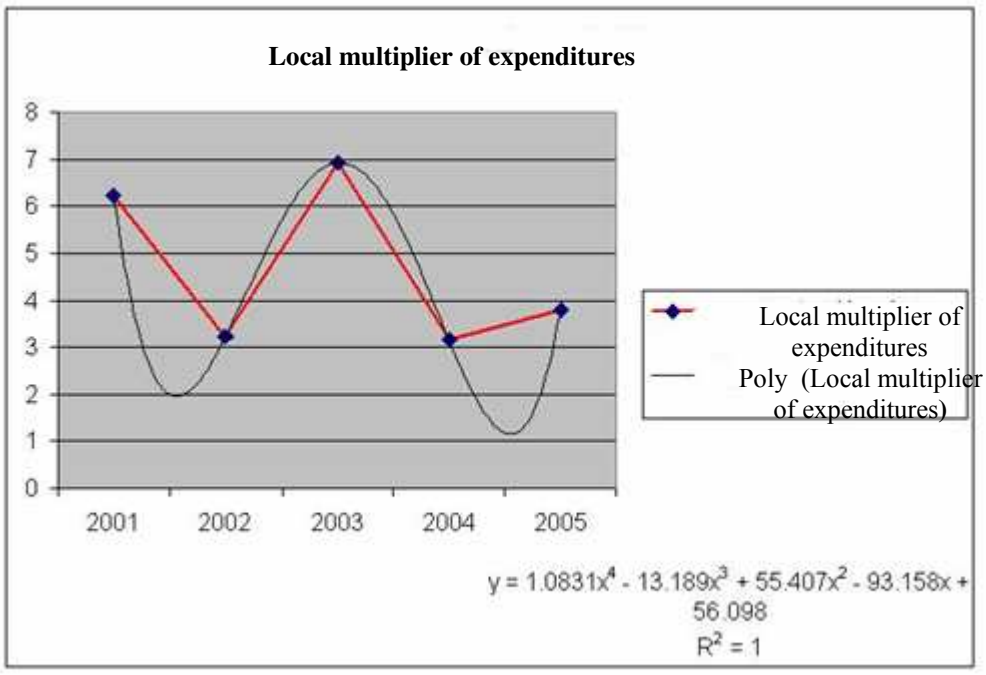

Figure 4 - Evolution of the local multiplier of expenditures „k" during 2001 – 2005

The study presented and Table 4 have confirmed the theory according to which the value of the multiplier is that much higher as the marginal propensity to consume is higher, or as the marginal propensity to save is lower, however, as it has already been mentioned, it is (c-m) that has the decisive effect on "k". Consequently, in that situation the coefficients of "c" and "m" must be analysed.

Thus, we find that all the coefficients of **c** are top-heavy, which proves the propensity to consume, with the exception of the year 2003, when the value of the coefficient was 0.78, therefore also with a tendency towards 1.

At the same time, the variation of "m" may be traced, and it registers values which, generally, tend more toward 0 than toward 1. Therefore, (c-m) tends toward the consumption of goods and services on a local level.

The high consumption coefficient is influenced by the thermic energy supply and distribution system, an influence generated by the location of the company, i.e. it is located about 10 km away from the Braila Municipality, and the losses resulting from the transportation of the thermic agent to the consumers exceeds by far the technically admitted norm, for which reason the situation of the operator was analysed at the level of the local authorities and proposed for technological upgrading under the 2006 – 2009 rehabilitation and modernisation programme.

Likewise, the APA Braila Autonomous Administration, the water-sewerage service provider, has also been introduced into a rehabilitation and modernisation programme, an action which has been on-going ever since the year 2003.

In order to highlight the effect of the capital injection, we consider it necessary to study the ratio between the increase in the income level and the increase in investments, ΔI.

In this context, for the increase in investments by ΔI, the income Y will increase by $k\Delta I$, respectively:

$$\Delta Y = k\Delta I \qquad (1.21)$$

knowing that k=1/s, and replacing it in the relation (1.21), we obtain:

$$\Delta Y = \frac{\Delta I}{s} \qquad (1.22)$$

The determination of the local multiplier of investments depends on the marginal quota toward consumption related to the marginal propensity toward consumption and the evolution of that variable can be traced in Table 5.

Period	s=1-c	k=1/s	ΔY=ΔI/s
2001	-0.192850884	-5.185353466	-41405752.63
2002	-0.092540505	-10.80607888	-52346115.62
2003	0.216293908	4.623338718	27652461.65
2004	-0.447731900	-2.233479453	-6993258.68
2005	-0.110836549	-9.02229465	-36444287.09

Table 5 Evolution of the local multiplier of investments

Figure 5 presents the evolution of the local multiplier of investments in the period under analysis.

By analysing the evolution of the local multiplier of investments within the 2001-2005 period, we find a favourable situation in the year 2003, as to the rest, consumption remains the economic phenomenon which dominates the economy of public utility services at the level of Braila Municipality.

The Keynesian model, as applied to the economy of public utility services, also contains in its structure, apart from the previously analysed variables, other variables such as the export of public utility services (X).

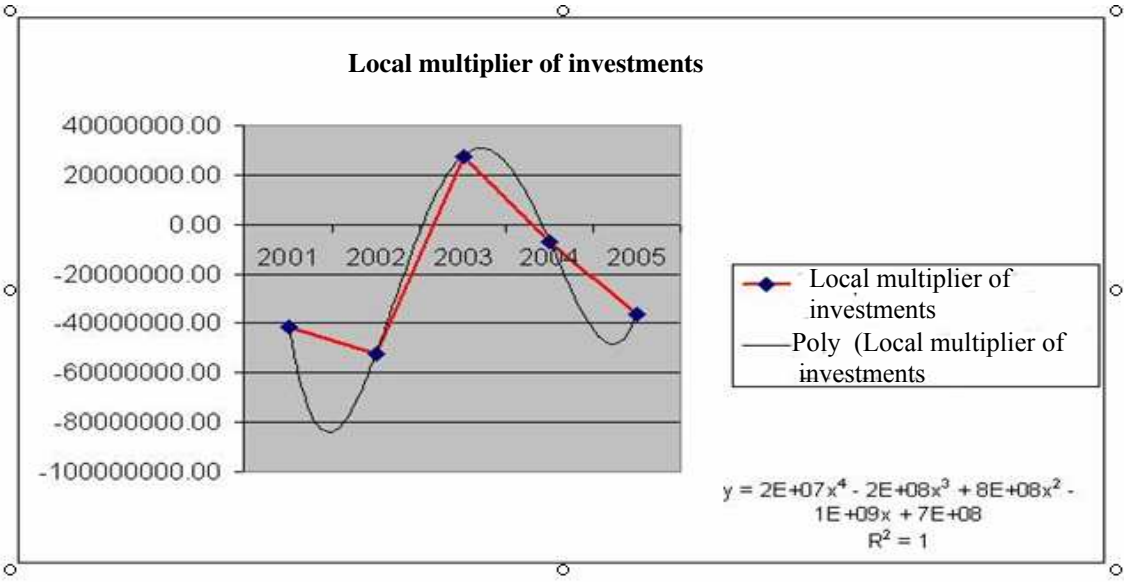

Figure 5 – Evolution of the local multiplier of investments during 2001-2005

In order to determine the consequences of an increase of the export of services on the level of incomes (Y), we shall proceed to the calculation of the local multiplier of exports (d).

In that situation, taking into account the values of the coefficients „c" and „m" as previously determined, and which, being substituted in the relation d=1/[1-(c-m)] are determining the local multiplier of the export of public utility services. (Table 6)

Period	c	m	c-m	d
2001	1.192850884	-0.099122253	1.291973137	-3.424972619
2002	1.092540505	0.172213353	0.920327153	12.55132752
2003	0.783706092	-0.356849634	1.140555726	-7.114615883
2004	1.447731900	0.536534886	0.911197015	11.26088271
2005	1.110836549	0.128143439	0.982693109	57.78045358

Table 6 – Variation of the local multiplier of exported services

Analysing the values from Table 6 we remark a stimulation of the economic activity, so the effect of the local development in the years 2002, 2004 and 2005. The evolution of the local multiplier of public utility services in 2001-2005 period is presented in Figure 6.

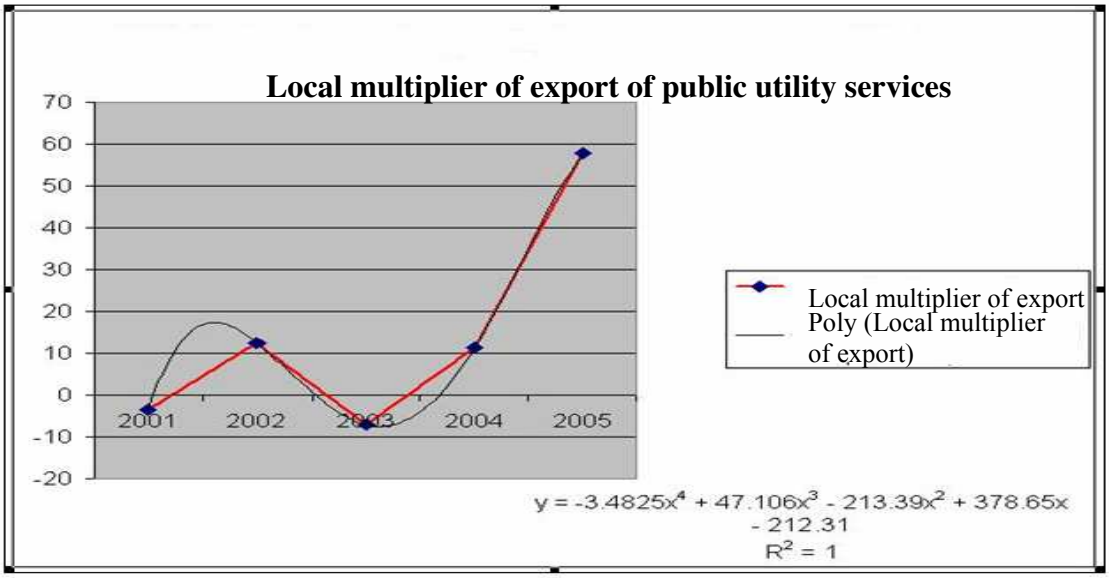

Figure 6–Evolution of the multiplier of export of public utility services in 2001-2005 period.

Therefore, the export of public utility services is a process which participates in the local development, being present in the field of the local public passenger transport, as well as in the field of drinking water supply. Exports in these fields were proved to have a beneficial effect, however they should not be too much expanded, since in certain situations that may lead to severe imbalances, and the local authority may have to increase subsidies to the respective services. At the same time, the effect in that situation would favour the population in other localities.

CONCLUSIONS

In conclusion, the analysis performed has proven the fact that the local authorities must set up and develop their own local units for monitoring the community services of public utilities.

The local units for monitoring the community services of public utilities have the following main responsibilities (G.D. 246/2006, Art. 6):

a. to prepare local strategies for accelerating the development of the community public utilities services, in collaboration with the existing operators, and the presentation thereof to the local, municipal or county public administration authorities, for approval;
b. to implement the local, municipal or county strategies for accelerating the development of the community public utilities services, and the monitoring of each operator's results;
c. to ensure the compliance of the clauses attached to the contracts for delegating the management of community public utilities services with the provisions of the national Strategy;
d. to prepare and submit the activity report to the monitoring offices at Prefecture level;
e. to provide assistance to the operators of local, municipal or county interest, and to the Local, Municipal or County Councils in the process of accessing funds for investments;
f. to present activity reports and submit them for approval to the Local, Municipal or County Council;
g. to prepare adjustments to the local strategy and submit them for approval;
h. to manage the relation with representatives of the EU, of International Financial Institutions, of banks and of the central public administration authorities.

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