GROSS CAPITAL FORMATION AND ECONOMIC GROWTH DURING EARLY 2000'S IN EU-MEMBER AND CANDIDATES STATES

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Abstract. *The purpose of this paper is to reveal the correlation between the gross capital formation and the gross domestic product in countries of the European Union in 2007, during the period 1999-2006. The evaluation is made both on demand side and on supply side. On the demand side we take into account the gross capital formation dynamics and structure and the gross domestic product dynamics. On the supply side calculate the capital accumulation efficiency, through modification of the formulae resulted from Domar's economic growth model in order to emphasise the impact of domestic demand and net export changes. In the end we present some conclusions and proposals for gross capital formation contribution to economic growth methodology improvement.*

Key words. *Economic growth, gross capital formation dynamics and structure, internal and external capital accumulation efficiency.*

JEL Classification: *B41; C19; E22; O47.*

UNESCO Classification: *5302.02; 5302.05; 5304.01; 5307.02; 5307.13; 5307.17*

Ensuring sustainable economic growth is strongly correlated with the actual ways of capital accumulation. The respective process creates not only the premises for a continuous renewing of the productive system and an increase in products and services supplied by economies of different countries, but also the scopes and means of action of actors at economic and social stage are modelled. The process of capital accumulation is the result of complex relationships established within different components of the economic mechanism (labour market, capital market, and raw material market), the features of the social model, the state of the productive system, the directions of technological change and the openness degree towards external flows of the national economies.

1. Dynamics and structure of gross capital formation during 1999-2006 in EU Member and Candidate States

The period we analyse, respectively 1999-2006, corresponds to a phase of Structural Funds Allocation for European Union Member States and the acceleration of the enlargement

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process, determining the accession of New Member States on May 1st 2004 and January 1st 2007. These conditions influenced the behaviour with respect to the features of the investments flows. Therefore, within older member states of the European Union (EU-15) yearly rate of the average gross capital formation was higher than 4% in Greece, Ireland, Denmark and Spain (Table 1).

Table 1

Average yearly rate (Rav) and representative yearly rate (Rr)
of gross capital formation in the European Union Member and Candidate States during
1999-2006

%

Country	Rav	Rr	/Rav/-/Rr/
UE-15			
Austria	0.60	0.23	0.36
Belgium	3.25	1.63	1.62
Denmark	5.18	3.87	1.31
France	3.09	2.95	0.14
Finland	4.75	4.64	0.11
Germany	-0.63	-1.98	1.36
Greece	6.44	7.28	-0.84
Ireland	6.00	5.18	0.82
Italy	2.07	2.79	-0.72
Luxembourg	1.28	2.31	-1.03
Netherlands	0.37	-0.49	-0,12
Portugal	-1.93	-1.44	0.49
Spain	5.39	5.12	0.27
Sweden	3.36	2.33	1.03
United Kingdom	3.88	3.25	0.63
NMS-12			
Bulgaria	16.92	15.11	1.81
Czech Republic	5.22	5.86	-0.64
Cyprus	5.57	6.29	-0.73
Estonia	15.85	16.51	-0.66
Hungary	0.31	0.94	-0.62
Latvia	15.97	13.86	2.11
Lithuania	9.24	9.37	-0.13
Malta	1.29	-2.42	-1,13
Poland	1.94	-0.96	0,98
Romania	11.69	12.17	-0.48
Slovakia	7.00	5.61	1.39
Slovenia	4.67	3.22	1.45

Source: Computation based on UNECE Statistical Division Database.

In Austria, Luxembourg and the Netherlands, the average yearly rate was positive but smaller than 1.3%. In Germany and Portugal the respective indicator had negative values, revealing the occurrence of some standstills in economic activity expansion. The comparison

of average and representative yearly rate[1] absolute values shows, for gross capital formation, a convex evolution trajectory for most states of this group.

In the case of New European Union Member States (NMS-12) the gross capital formation dynamics was sensibly differentiated in relation of the internal conditions and the necessary adjustments made in order to ensure the compatibility with developed Western European economies. Average yearly rates over 9% were registered in Bulgaria, Estonia, Latvia, Romania and Lithuania, while in Poland, Malta and Hungary the values were between 0.31% and 1.94%. The trajectory was concave in 6 countries, convex in 4 countries and unstable in 2 countries. On this basis, from the viewpoint of gross capital formation, the following classification can be made for NMS-12 countries: a) countries with high rate of gross capital formation on a convex trajectory (Bulgaria and Latvia); b) countries with high rate of gross capital formation on a concave trajectory (Estonia, Romania and Lithuania); c) countries with moderate rate of gross capital formation on a convex trajectory (Slovenia and Slovakia); d) one country with moderate rate of gross capital formation on a concave trajectory (Hungary).

The largest part of expenditures made for gross capital formation was allocated to fixed capital formation. Within EU-15, the gross fixed capital formation has represented between 93.7% in the United Kingdom and 101.6% in Germany from total gross capital formation. (Table 2). In most new member states the above-mentioned share has values of 97%-98%. So, it might be seen that gross domestic product growth took place under the conditions of a slow increase in stocks and, implicitly, improved correlation between supply and demand of goods and services. Also, it may be observed that in some years of the analyzed period not only in Germany, but also in Finland, Greece, Luxembourg, the Netherlands and Sweden the values of material stocks decreased, this fact being shown by the above-unit share of gross fixed capital formation in the total gross capital formation. These evolutions show that the working capital rationing process in a consolidated market economy takes place not only during recessions but also under favourable conditions for expansion of the firm activities.

Table 2

Ratio of gross fixed capital formation to gross capital formation expenditures in EU Member and Candidate States during 2000-2006

%

Country	2000	2001	2002	2003	2004	2005	2006	Average 2000-2006
UE-15								
Austria	94.4	97.4	98.2	98.6	97.7	96.7	98.6	97.4
Belgium	97.6	95.4	99.5	100.0	98.4	95.6	94.7	97.3
Denmark	100.0	95.3	97.1	96.1	98.5	97.5	98.1	97.5
France	97.4	95.1	97.0	98.9	100.0	98.5	98.0	97.9
Finland	100.5	96.5	99.0	97.8	97.8	96.8	91.7	97.2
Germany	99.1	98.6	102.6	105.8	102.3	101.8	101.2	101.6
Greece	100.9	98.7	100.0	99.6	100.0	100.0	99.6	99.8
Ireland	98.0	96.8	98.3	97.4	96.2	99.6	99.6	98.0
Italy	97.5	98.1	98.5	99.1	98.6	98.6	100.0	98.6
Luxembourg	98.3	89.7	92.6	101.8	98.2	97.6	92.5	95.8

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[1] *The representative rate (Rr) is defined by the formula: $(n+1)*ln(1+Rr) = 2*ln(Ir)$, where: n= number of years of the analyzed period; ln = natural logarithm; Ir= Representative index, the geometrical mean of yearly index with fixed base of the analysed process or phenomenon (see F. M. Pavelescu, 2002).*

Country	2000	2001	2002	2003	2004	2005	2006	Average 2000-2006
Netherlands	100.0	99.5	98.1	101.5	101.0	99.0	100.0	99.9
Portugal	96.4	97.8	97.8	99.2	100.0	97.8	97.3	98.1
Spain	98.0	98.1	98.5	98.9	99.3	99.3	99.3	98.8
Sweden	98.8	95.6	98.9	99.4	97.6	100.0	100.6	98.7
United Kingdom	92.9	93.3	92.7	94.3	94.1	93.7	95.4	93.8
NMS-12								
Bulgaria	84.7	86.2	87.8	91.9	88.9	88.7	86.4	87.8
Czech Republic	99.6	94.9	94.9	96.2	98.2	95.3	95.4	96.4
Cyprus	103.5	92.9	101.8	96.3	101.1	93.1	97.4	98.0
Estonia	97.7	90.6	95.0	92.0	88.8	87.0	88.4	91.3
Hungary	82.3	75.7	85.5	90.2	87.7	85.8	95.8	86.1
Latvia	99.6	102.1	93.6	89.1	84.7	82.8	89.0	91.6
Lithuania	97.8	94.9	97.6	91.9	91.4	92.9	89.2	93.7
Malta	122.0	87.4	117.0	114.0	118.8	118.1	94.3	110.2
Poland	96.4	95.6	99.5	100.5	97.3	90.0	94.3	96.2
Romania	111.8	98.4	92.6	100.0	98.2	91.6	101.8	99.2
Slovakia	106.2	99.2	96.3	94.1	101.6	92.7	91.8	97.4
Slovenia	96.0	95.5	100.0	96.6	94.3	91.4	93.8	95.4

Source: Computation based on the UNECE Statistical Division Database.

Within the NMS-12 countries the unstable evolution can be observed in Malta and decreases of material stocks for some years in Cyprus, Romania and Slovenia. In the case of Romania the material stocks decrease took place in 2000, when the economic growth was re-launched, and in 2006, when the gross domestic product growth rate was significantly higher in comparison with the one registered in the previous year.

In the other EU New Member States the real value of material stocks grew continuously. Therefore, for the whole analyzed period the average weight of gross fixed capital formation in the total gross capital formation is smaller than in EU-15 countries and 91.3%-96.4% in the Czech Republic, Estonia, Latvia, Lithuania and Slovenia, 87.8% in Bulgaria and 86.1% in Hungary. These trends indicate that for countries that joined the European Union in the last years, the intensified investment process triggered an increased demand for working capital, due to the undercapitalisation of companies during the transition period. At the same time, the greater demand for working capital could also be a result of a lower efficiency in using the production factors in comparison with West European countries.

2. Contribution of gross capital formation to economic growth on the demand-side in the enlarged EU

As a result of the above-mentioned dynamics, the gross capital formation contributed on the demand-side in different manners to the gross domestic product growth in the EU-15 and the NMS-12 countries. Thus, the average yearly relative growth of the gross domestic product triggered by gross capital formation during 2000-2006 was negative in Germany and Portugal and ranged between 1.46% and 1.53% in Spain, Ireland and Greece. For the other EU-15 countries the value of the indicator varied between 0.06% and 0.97% (Table 3).

In the NMS-12 the smallest average relative growths were registered in Hungary (0.13%), Malta (0.14%) and Poland (0.37%) whereas the highest were in Estonia (4.91%), Lithuania (4.50%) and Bulgaria (3.73%). In Romania the gross capital formation contributed on the average by 2.37% to the relative change in gross domestic product each year, which is comparable with that observed in Latvia (2.10%), but higher than that of the Czech Republic (1.47%), Cyprus (1.01%) and Slovenia (1.20%).

Table 3

Yearly relative changes of gross domestic product determined by gross capital formation in EU Member and Candidate States during 2000-2006

Country	2000	2001	2002	2003	2004	2005	2006	Average 2000-2006
UE-15								
Austria	1.4	-0.3	-1.3	1.2	0	0.1	0.8	0.27
Belgium	1	-0.8	-0.4	-0.1	1.7	1.2	2.1	0.67
Denmark	1.5	-0.3	0	0	1.1	1.9	2.6	0.97
France	1.8	0	-0.7	0.1	1.2	0.8	0.9	0.59
Finland	2.1	0.3	-0.4	0.7	0.9	1.8	1	0.91
Germany	0.5	-1.7	-1.8	0.6	0.2	0.3	0.9	-0.14
Greece	2.2	1.2	1.4	3.2	1.4	-0.3	1.6	1.53
Ireland	2.3	-0.5	0.9	1.8	1	3.1	1.9	1.50
Italy	0.9	0.5	0.8	-0.1	0.3	-0.3	0.8	0.41
Luxembourg	0.8	1.3	-1.2	1.4	0.2	1.6	-1.9	0.31
Netherlands	0.3	0.2	-1.6	-0.2	0.2	0.4	1.1	0.06
Portugal	0.6	0.3	-1.3	-2.1	0.5	-0.9	-0.3	-0.46
Spain	1.5	1.2	0.9	1.4	1.4	1.9	1.9	1.46
Sweden	1.5	-0.6	-0.6	0.5	0.7	1.3	1.4	0.60
United Kingdom	0.4	0.6	0.3	1	1	0.1	1.4	0.69
NMS-12								
Bulgaria	2.3	3.6	0.9	3.6	3.2	6.3	6.2	3.73
Czech Republic	2.9	2	1.4	-0.4	2.2	0.4	1.8	1.47
Cyprus	2.7	-1.1	2.4	-0.7	3.5	-0.5	0.8	1.01
Estonia	6	3	5.8	3.8	5.7	3.3	6.8	4.91
Hungary	1.7	-1.4	-0.3	0.7	2.3	-1.2	-0.9	0.13
Latvia	-1.7	3.2	2.8	5.4	4.3	2.2	-1.5	2.10
Lithuania	1.5	6.8	1.5	5.9	6.6	2.8	6.4	4.50
Malta	4.3	-8.9	-3.1	2.6	0.2	5.5	0.4	0.14
Poland	1	-3.3	-1.5	0.6	2.8	0.3	2.7	0.37
Romania	2.9	3.2	-0.1	1.8	4.2	0.6	4	2.37
Slovakia	..	..	..	..	..	..	..	….
Slovenia	0.6	-1.1	1	2.4	2.8	-0.3	3	1.20

Source: Computation based on the UNECE Statistical Division Database.

Related to the whole relative gross domestic product growth the contribution of gross capital formation was strongly differentiated among countries. Hence, in Germany and Portugal this contribution is negative. The highest contribution of gross capital formation to gross domestic product expansion on demand–side (over 40%) may be observed in Denmark and Spain. In 8 of the EU-15 countries the weights are between 20.69% and 34.63%. The lowest positive contributions are registered in the Netherlands, Luxembourg and Austria (Table 4).

Table 4

Weight of gross capital formation in yearly gross domestic product relative changes in EU Member and Candidate States during 2000-2006

%

Country	2000	2001	2002	2003	2004	2005	2006	Average 2000-2006
UE-15								
Austria	41.18	-37.50	-144.44	100.00	0.00	5.00	24.24	13.67
Belgium	27.03	-100.00	-26.67	-10.00	56.67	109.09	65.63	32.87
Denmark	42.86	-42.86	0.00	0.00	52.38	61.29	74.29	49.28
France	46.15	0.00	-70.00	9.09	48.00	47.06	45.00	29.08
Finland	42.00	11.54	-25.00	38.89	24.32	62.07	18.18	27.71
Germany	15.63	-141.67	Xxx	-300.00	16.67	33.33	32.14	-10.99
Greece	48.89	23.53	36.84	66.67	29.79	-8.11	37.21	34.63
Ireland	24.47	-8.62	15.00	41.86	23.26	56.36	35.85	25.86
Italy	25.00	27.78	266.67	xxx	25.00	-300.00	42.11	32.58
Luxembourg	9.52	52.00	-31.58	107.69	5.56	40.00	-30.65	7.38
Netherlands	7.69	10.53	-1600.00	-66.67	10.00	26.67	37.93	3.17
Portugal	15.38	15.00	-162.50	300.00	38.46	-180.00	-23.08	-35.16
Spain	30.00	33.33	33.33	46.67	43.75	54.29	48.72	40.96
Sweden	34.88	-54.55	-30.00	29.41	17.07	44.83	33.33	20.69
United Kingdom	10.53	25.00	14.29	35.71	30.30	5.56	50.00	25.26
NMS-12								
Bulgaria	42.59	87.80	20.00	72.00	48.48	101.61	101.64	68.87
Czech Republic	80.56	80.00	73.68	-11.11	47.83	6.15	34.62	36.92
Cyprus	54.00	-27.50	120.00	-38.89	83.33	-12.82	21.05	28.74
Estonia	75.95	38.96	72.50	53.52	70.37	31.43	59.65	56.67
Hungary	32.69	-34.15	-6.82	16.67	47.92	-29.27	-23.08	2.93
Latvia	-20.24	40.00	43.08	75.00	49.43	20.75	-12.61	23.98
Lithuania	36.59	103.03	21.74	57.28	90.41	36.84	85.33	62.62
Malta	68.25	556.25	-119.23	-866.67	200.00	166.67	12.12	7.30
Poland	23.26	-275.00	-107.14	15.38	52.83	8.33	44.26	10.08
Romania	131.82	55.17	-1.92	33.96	49.41	14.63	52.63	42.89
Slovakia	…	…	…	…	…	…	…	…
Slovenia	14.63	-40.74	28.57	92.31	63.64	-7.50	57.69	31.70

Source: Computation based on the UNECE Statistical Division Database.

In the NMS-12 the smallest average contributions of gross capital formation to gross domestic product recovery were registered in Hungary (2.93%), Malta (7.30%) and Poland (10.08%), while the highest contributions (over 40%) could be detected in Romania (42.89%), Estonia (56.67%), Lithuania (62.62%) and Bulgaria (68.87%). Reviewing the gross capital formation contribution to the increase in the gross domestic product allows for drawing the conclusion that for ensuring a higher economic growth rate in the NMS-12, which would significantly influence the achievement of economic convergence and social cohesion in the enlarged European Union, could be obtained only by creating favourable conditions for the development of the investment process and, especially, for the one related to the renewal of the productive system.

3. The enlargement process and the efficiency of gross capital formation

The gross capital formation contributes to sustainable economic growth not only on the demand-side but also on the supply-side, because an important part of these expenditures are dedicated to the renewal of the firms' fixed capital. Having in view that fixed capital is one of the main production factors it is important to quantify its efficiency. Under these conditions, we can use a formula derived from the one initially proposed in the economic growth model of Domar for the quantification of capital accumulation efficiency. We have to mention that capital accumulation is approximated by gross capital formation.

Therefore, the gross capital formation efficiency (Egcf) is defined as the ratio of the relative change of gross domestic product to the weight of gross capital formation in the gross domestic production in the previous year.

So it may be written: $Egcf = \dfrac{GDP_1 - GDP_0}{GDP_0} : \dfrac{GDP_0}{GCF_0}$,

where:

- GDP$_1$, GDP$_0$ = gross domestic product in current and reference year, respectively in real terms.
- GCF$_0$ = gross capital formation in the reference year.

But, since gross domestic product may be divided into domestic demand (DD) and net exports (NX), on one hand, and the relationship between capital accumulation and consumption is mainly a problem of domestic demand, on the other hand, under the conditions of a certain external equilibrium Egcf could be expressed:

$$Egcf = (\frac{DD_1 - DD_0}{DD_0}) : \frac{DD_0}{GCF_0} + (\frac{NX_1 - NX_0}{DD_0}) : \frac{DD_0}{GCF_0}$$

It results that Egcf could be divided into two components, an internal component (Egcfi) and an external component (Egcfe), where:

$$Egcfi = (\frac{DD_1 - DD_0}{DD_0}) : \frac{DD_0}{GCF_0}, \text{ and } Egcfe = (\frac{NX_1 - NX_0}{DD_0}) : \frac{DD_0}{GCF_0}$$

Therefore, the efficiency of gross capital formation is strongly influenced by the relative change of domestic demand. The method can be usually applied in the case of yearly estimation of efficiency of gross capital formation. If we intend to make estimates for periods over one year we consider that the arithmetic mean of yearly values may be used.

In order to quantify the level of gross capital formation efficiency during 2000-2006 for countries of the European Union, in 2007, we appeal to average values of relative changes in domestic demand, gross domestic product and weight of gross capital formation in gross domestic product.

We notice that in all the 27 countries taken into account the average values of yearly relative changes in domestic demand are higher than zero, creating the premises for obtaining positive values of gross capital formation efficiency. Between older and new members of the European Union there are differences regarding the domestic demand growth. In EU-15 the average level of the respective indicator ranges between 0.37% in Germany and 5.64% in Ireland. In NMS-12 the average level of domestic demand relative changes varied between 2.44% in Malta and 10.14% in Latvia. Growths over 7.6% were registered also in Estonia, Romania, Lithuania and Bulgaria. Moderate relative increases in domestic demand in the Central-European context can be detected in the Czech Republic, Hungary, Poland and Slovenia (Table 5).

Table 5

**Average level of yearly domestic demand relative change in gross capital formation
efficiency and its components in EU Member
and Candidate States during 2000-2006**

%

Country	$\dfrac{DD_1 - DD_0}{DD_0}$	Egcf	Egcfi	Egcfe	$\dfrac{Egcfe}{Egcfi}$
UE-15					
Austria	1.33	9.08	5.93	3.16	53.28
Belgium	2.10	10.02	9.91	0.11	1.11
Denmark	2.74	9.79	12.91	-3.13	-24.22
France	2.44	10.30	12.40	-2.10	-16.95
Finland	3.09	17.07	14.72	2.35	15.96
Germany	0.37	6.82	1.98	4.84	244.45
Greece	4.26	18.58	19.69	-1.10	-5.61
Ireland	5.64	23.66	19.54	4.12	21.10
Italy	1.37	6.22	6.61	-0.39	-5.83
Luxembourg	3.34	18.85	11.84	7.01	59.22
Netherlands	1.34	8.69	6.06	2.63	43.37
Portugal	0.93	5.01	3.95	1.06	26.76
Spain	4.36	13.20	16.60	-3.40	-20.48
Sweden	1.97	17.13	10.88	6.25	57.45
United Kingdom	3.03	15.37	17.60	-2.23	-12.67
NMS-12					
Bulgaria	7.69	25.63	39.69	-14.06	-35.42
Czech Republic	3.51	14.47	12.76	1.71	13.40
Cyprus	4.16	19.44	23.33	-3.89	-16.68
Estonia	9.94	27.70	33.84	-6.14	-18.14
Hungary	3.53	16.56	13.51	3.05	22.60
Latvia	10.14	31.13	39.60	-8.47	-21.38
Lithuania	8.10	32.10	38.20	-6.11	-15.99
Malta	2.44	11.05	16.89	-5.83	-34.54
Poland	2.99	18.20	15.51	2.69	17.37
Romania	8.70	26.48	45.20	-18.72	-41.42
Slovakia	4.59	17.34	17.84	-0.50	-2.81
Slovenia	3.13	14.77	12.54	2.23	17.74

Source: Computation based on UNECE Statistical Division Database.

The efficiency of gross capital formation in the two groups of countries took on values distributed on a wide range. Therefore, in EU-15 the highest levels of the respective indicator are observed in Ireland, Luxembourg, Greece, Sweden, Finland and the United Kingdom. It should be noticed that these results are obtained in Ireland and Greece under the conditions of an average yearly relative increase in the domestic demand of over 4%. In the other four countries, domestic demand increased slowlier, but due to a more reduced propensity for investments, on short term, high levels of efficiency of gross capital formation according to the principle of Keynesian multiplier were made possible.

Splitting efficiency into two components (internal and external) reveals that in countries with external commercial deficits this fact led to a decrease in gross capital formation efficiency between 5.61% and 24.22% in Denmark, Spain, France, Italy and Greece. Due to

the external trade surplus, the external component contributed to the increase by more than 50% in the gross capital formation efficiency in Austria, Germany, Luxembourg and Sweden.

In the NMS-12 the dynamic domestic demand increase has triggered very high levels of gross capital formation efficiency, especially in Lithuania, Latvia, Estonia, Romania and Bulgaria. But these positive results were obtained, at first sight, under conditions of a much faster increase in the domestic demand compared to the gross domestic product, determining a sharp growth of external trading deficits. This fact is shown by the strongly negative values of the external component of gross capital formation efficiency. The respective component contributed to the decrease by more than 15% in gross capital formation efficiency in Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta and Romania.

4. Conclusions and proposals for improving the methodology of determining the contribution of gross capital formation to economic growth

From our analysis resulted that, during 2000-2006, within the EU-15 countries, Ireland, Finland, Greece and Spain experienced average yearly rates of the gross domestic product over 3%, while for Sweden and the United Kingdom the values varied between 2.5% and 3.0%, considered in the literature as being normal for economic growth in consolidated market economies. In the other older members of the European Union the indicator took on values smaller than 2.05%.

Within the NMS-12 the gross domestic product grew significantly faster than in the EU-15 countries. This was a positive evolution, considering that these countries have to diminish the gaps separating them from the developed Western European states. Within the NMS-12 countries, the gross capital formation contributed to a higher share to the economic growth than in the EU-15 countries. But it is important to bear in mind that these results are obtained under the conditions of worsening foreign trade balance. The future persistence of such a situation would create major problems to the sustained growth in the gross domestic product, and implicitly it would create impediments for closing the gaps between the economic and social level of Romania and the one of the developed European Union Member States. Therefore, one of the main aspects of macroeconomic policy has to be the sensible increase in goods and services competitiveness supplied by Romanian firms. Thereby the premises for a sensible decrease in foreign trade and current accounts deficits may be ensured.

In order to get a better picture of production factor contribution to economic growth and of the efficiency with which different types of capital are used, it is necessary to improve some statistical indicators linked with national accounts. A first indicator is the level from which a material expenditure is considered as pertaining to intermediate consumption or to investments. In Romania, like in other Central-European states, the level from which expenditure is seen as an investment is significantly smaller than in EU-15 countries. This fact determines an over-estimation of investment propensity and implicitly a higher weight of gross capital formation in gross domestic product. Therefore, it is necessary in the medium run to establish levels from which expenditures are considered investments comparable to the ones in most of European Union Member States.

Also, it is important to indicate the distribution by economic activities of the gross capital formation and of its components. A special attention has to be paid to the purchase of new buildings. This way, conditions can be ensured for a more accurate evaluation of the future possibilities for economic activity expansion. Also, it is important to improve the quantification methods for expressing the influence of land prices on the gross capital formation dynamics.

In order to reveal more accurately the correlation between capital accumulation and consumption, a major role is played by the distribution of governmental expenditures. Usually, this type of expenditure is included in those made on consumption. But it should not be ignored that the state budget includes expenditures that contribute to infrastructure development and, consequently, they also have to be included in gross capital formation. On this basis the relationships between the private sector and public authorities can be emphasised with respect to modelling the correlation between capital accumulation and consumption and its effects on the economic growth sustainability. The focus on state budget expenditures allotted for investments creates the premises of a more accurate quantification of the impact of infrastructural development on the economic growth rate. Thus, the use of the endogenous economic growth models could be expanded.

Under these conditions, the economic growth model in the long run would have in view three types of capital, respectively; a) **fixed capital**, its growth being ensured by the private sector; b) **infrastructure**, its development being generated especially by investments from governmental funds, and c) **human capital**, that is a result of the joint efforts of public authorities for a continuous rise in the qualitative level of the educational and training system and the most valuable part of labour supply for a continuous improvement of professional knowledge and of creativeness level.

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