

Economic Growth in Romania through Innovative Based Economy: Contributions to a New Vision

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ABSTRACT: The article shows that after 1989 Romania had to face the multiplied challenges: the transition to a market economy, alignment and immersion in the New Economy. It states that, in fact, the convergence of Romanian economy in the short term towards international objectives alignments is still low speed, medium-term would be acceptable and long-term perspective, objectively, naturally, could be very good. It is estimated that the road to competitive performance measures aims to: increase fiscal discipline, broaden rapid and intensive use of knowledge, strengthening competition, equipping Romanian economic environment with highly qualified labor resources, flexibility and transparency of governmental framework. It presents a model for algorithm research of the New Economy in Romania and systematized the main strategic goals identified through competitive advantages in their priority innovative order.

Keywords: management, performance, growth, innovative economy, New Economy

I. INTRODUCTION

After 1989 the Romanian economy was characterized by specific changes in the transition from centralized to decentralized economy. Inflation, unemployment, negative economic growth, de-industrialisation, closure or liquidation of economic entities and infrastructure were heavily hit in the economic base, while the management had to be changed and institutional construction was carried out difficult. These endogenous transformations - in comparative terms - toward alignment with the capitalist economy, they have added new requirements and challenges of global nature, which were imposed on all economies in the international arena. It is the manifestation of incipient emergence of the information society and further knowledge, which in the rise of globalization was found through concrete, operational by the economy based on information / knowledge that the economy clustered based on networks.

In this context, Romania had to face the multiplied challenges: transition alignment and immersion in the New Economy after the 2008 financial and economic crisis. Misunderstanding by politicians and policy-strategy imperatives on actionable objectives that must engage the Romanian economy is likely to slow advance of country towards new horizons of international general development and thus the deepening non connection networks development from the general economic environment to attend major dysfunctions in the medium term. The convergence of Romanian economy in the short term toward international objectives alignments is still low speed, medium-term would be acceptable and long-term perspective, objectively, could be natural very good. (Gâf-Deac I.I., 2010)

In the present study, express potential several variants of advance of the Romanian economy: planning requirements or recommendations that can serve the adjustment of strategies, policies and development tactics, given the manifestation of emphatic increased speed on knowledge based economy and risk.

II. MEASURES FOR THE ROAD TO COMPETITIVE PERFORMANCE. LITERATURE REVIEW.

It is important, in principle, to identify how *real works* is in the Romanian economy and differ from the *formal regime* of performance for its operationalization. The new growth in developed countries focuses on: 1) public strategic investments in infrastructure and technology; 2) financial discipline; 3) fiscal discipline and 4) fundamental reformulation, radical operation of the executive (government). By extension, the above requirements may be items on the agenda of strategic and tactical Romanian Government, even in conditions of financial-economic crisis. Any unjustified and any hesitation corporate protection / avoidance attack disorders affect overall economic advance. It may consider the following:

- a) *Increasing fiscal discipline.* Fluctuations in tax disrupt incubated fiscal discipline. Avoiding tax adjustments (usually raising taxes or introducing new taxes) entails maintaining fiscal discipline. Disruptions affecting the investment tax which would have to occur from / through taxes and intergenerational fund accountability economy.

- b) *Intensify efforts to fast and intensive use of knowledge.* Intense preoccupation is needed for new innovations, transforming the economy stepping into the digital economy, increased productivity using knowledge, creation of new advanced industries, physically visible, such as biotechnology, nanotechnology and Internet. Separate investments are needed in science and research that serve economic growth and relying on the national capacity for innovation. We agree the thesis that "*National innovative capacity is the ability of a country to produce and commercialize a flow of innovative technology over the long term. National innovative capacity depends on the strength of a nation's common innovation infrastructure (cross-cutting factors which contribute broadly to innovativeness throughout the economy), the environment for innovation in a nation's industrial clusters, and the strength of linkages between these two*" (Jeffrey L. Furman, Michael E. Porter, Scott Stern, 2002, pp. 899–933) It requires a program of reconstruction of human potential (job related knowledge resources). Separate investments are needed in science and research that serve economic growth. However, it is noted that "*National systems of innovation (NSIs) make many assumptions concerning the nature of the actors, their competence, habits and practices with regard to the linkages that lead to learning and innovation, all of which are common in advanced countries.*" (Lynn K. Mytelka, pp. 15-32) Expansion and modernization of tax credits be unwound and correlated with objective of high-speed connection to the internet at least 50-55% of the population.
- c) *Strengthening competition.* It is necessary to create real competition and innovation-oriented search markets, lax opportunities to increase productivity. It is recognized that "*a company needs some advantages over the competition to sustain itself in the marketplace*" (W. Chan Kim; Mauborgne Renee, 1999, pp.41-54)
- d) *Provide economic environment Romanian labor resources.* It will consider proposals for a more rational system of unemployment insurance, coupled with the promotion of "*Education for the New Economy*" for workforce adaptation to new trends of immersion in knowledge economy. Health insurance, universal pension system and eliminating inequalities in the sphere of taxes can help fund crystallization of adequate labor force in Romania.
- e) *Flexibility and transparency of governmental framework..* Public institutions must be linked to performance scheduled taxed, is conditional on their commitment to innovation and modernization. It is possible that government structures for trade matters to be replaced in their entirety (aggregate) by the Authority (corporation) for National Innovation. Regional and local development must be based on knowledge and innovation.

III. ROMANIA'S ECONOMIC GROWTH IN THE MEDIUM TERM

Romanian economy for average time horizon must be gradual concentration of attention on creative entrepreneurship. Paradoxically, the market economy in Romania established productive development vision prevails physical, mechanical. Production-based material must not be overlooked, however, is issuing the recommendation to capitalize concrete and aggressive potential Intellectual labor in Romania, given the fact objectively talent, disposition, mentality and domestic capability immersion processes advanced knowledge. Middle and high school education among the population must become strategic national indicator.

Among the key principles to ensure the new structure of Romania's economic growth over the medium term lists: increasing fiscal responsibility resolute, to be absolutely fully operationalized, to the lowest level contributor, to ensure increased investment income; knowledge and technology to become the "fuel" base of the economy; establishment of robust competition, consolidated and real, through the tools and levers that lead to innovation and productivity growth; measures to counter the risk among domestic labor force, in a dynamic economy gradually detached traditional industrial formula; creating and maintaining the operation of new public institutions, more dynamic and flexible, capable of inducing major public investments to support the formalization of the knowledge economy.

Ideological fixations of the left, center or right can coagulate the main strategic lines that slides (advances) sustainable, continuous Romanian economy. The role of government in the process of new growth is limited mainly to: creating conditions for investors and entrepreneurs to spend always more efficient than existing technologies; organizing framework for expressions of markets; development of macroeconomic regulation not to appeal, except in extremely rare and special monetary and fiscal adjustments; creating an institutional environment capable of supporting technology changes and changes caused by technology. The favorable macroeconomic policy is the result of microeconomic policy by companies engaged in research and innovation, which together generate market environment supporting competitiveness. It is true the idea that "*The theory of knowledge spillovers, based on the knowledge production function for innovative activity, suggests that geographic proximity matters the most where tacit knowledge plays an important role in the generation of innovative activity.*" (David B. Audretsch, Maryann P. Feldman, 1996, pp. 253–273)

Romanian economic growth targets can relate to: the manifestation of increasing productivity and income; creating safer jobs that can bring satisfaction to workers by their commitment more intellectual than

physical; determining opportunities for indigenous workers so they get past "the execution" and become owner of capital, including capital knowledge; reduced working time and increase the time available to workers. The new structure of economic growth in Romania can rely on immersion and exploitation of knowledge (*Table 1*).

Table 1. Prerequisites for a new structure of economic growth in Romania

Specifications	The current economy (2016)	New Economy (2010-2030)
Endpoint (Final goal)	Welfare, Existence, Subsistence	Higher income, better jobs, more free time
Intermediate target	Profit	Productivity
Provide support	Investors /Banks	Employees / quasi totality of institutions
Other conditions	1	Favoritism
	2	Tax money
	...	Competition
		Money from knowledge

Welfare is not necessary to be redistributed, but rather to be built, produced, especially among the middle class. Other recommendations concern: avoiding tax adjustments (once funding is made available unprocessed potential in this measure must be accompanied by investment in knowledge requirement indicative of critical needs or national); to define a minimum level of spending of public budget for science and research in connection with the levels budding private sector generally; cofinancing 30-50 research university programs considered "high" purposes and concrete knowledge-based industries; organization and management of a national program of structured research on infrastructure issues; organization and management of a national program of structured research on the issue of productivity growth (automation, robotics, cibernetizare etc.); investment in workforce training (getting the "working smart"); extending learning and higher level.

Through the knowledge economy in Romania can demonstrate that, in fact, the human community is more than a simple collection of individuals subject to self-sufficiency, which interactivează market just for satisfying everyone. In essence, the human community as a whole becomes more dynamic, employee / employer in the evolutionary process of the country.

IV. MODEL FOR THE ALGORITHM RESEARCH OF NEW ECONOMY IN ROMANIA

The digital information is available through information technology and communications products. Therefore, it is considered that the New Economy in Romania is related to determining how the products are used information and communications technology.

For this paper, it proceeded to systematize a statistical database that would identify reflections about the operational effectiveness of the New Economy, found in conventional Romanian economy in the mid second century XXI. The research method addressed include the following algorithmic references (steps, distance) the indicators most commonly used to assess the degree of development of the information society at European and international level $\{I_{ei}\}$; choosing a finite number of indicators from the above set $\{I_{ei}^{ROU}\}$, specific and representative for Romania; systematization of the various existing database of the National Institute of Statistics, for the investigational area $\{\delta(INS)\}$; systematize the results of statistical surveys targeted at enterprises with economic activity, banking and insurance companies, central and local government institutions and higher education institutions accredited $\{\delta(I_{ae})\}$; election results from various surveys in connection with structural business survey, household survey on living conditions and statistical surveys on education endowment $\{\delta(A_s)\}$.

In this context, the original algorithm (Gâf-Deac I.I., 2010) formulated for research on the New Economy in Romania $M(NE^{ROU})$ is:

$$M(NE^{ROU}) = \left[\{I_{ei}\} - \{I_{ei}^{ROU}\} \right] + \{\delta(INS)\} + \{\delta(I_{ae})\} + \{\delta(A_s)\} \quad (1)$$

The above includes trends (I) to maximize density, configuration and content of the New Economy.

V. THE ISSUE OF ECONOMIC AND SOCIAL DEVELOPMENT IN ROMANIA

From preliminary research on developments in the new economy, (Gâf-Deac I.I., 2010), the main problems facing the Romanian economy refers to:

a) **In the macroeconomic domain:** 1. - inconsistent vision for a structure (configuration) economic future: the models is a procedure call eroded; the political class has not consolidated (enough) the guidelines in their conceptual developments for the future; strategies are not motivated developers simultaneously persistence of a research and design intellectual environment, it is currently being used inefficiently (low use); lack of a pole

coordinator (vanguard) development; 2. - low speed to transform the economy; 3. - lack sufficient internal and external financial support underrepresented; 4. - low speed of the privatization process. Maintaining sectors "private state" no final definition limits are reached, induce moderation in the sphere of privatization. At the same time, two domains (public, private) have leaked material and financial ineffective (including resistance to new management); 5. - weak capacity (availability) to present the key macroeconomic considerations and motivations or lack of courage to pierce new situations with ideas and actions "hottest" 6. - there is an intention to move from a centralized to a decentralized one (market), but actually it "autoconstruiște" and the transition plan is headed oriented macroeconomic which allows for long periods of time (history, etc.) to achieve a configuration (structure). 7. - market relations between different sectors (subsystems) are "brutal" advanced offset (forward) while the market economy - the macroeconomic structure, physical - is not built (made full). Main dysfunction resulting in this case is incompatible macroeconomic structures and relationships. 8.- organizational actions splitting or concentrating (refocus) productive economic entities are only based on the concept of "decentralization relational" practical content that is perceived only as "change any price", but without the dominant logic optimal readjustment the substructures in the overall configuration - nine - at the macroeconomic level. 9. - lack of appropriate pace with new technologies to fuel the economy led to a state of "technological obsolescence" of the productive system (the almost 26 years after major system change is the "new technological gap" a real range of severity in contemporary history "determination" / widening technology gap. Moreover, we can estimate that reached the border from starting a new process of "de-industrialization"; 10. - lack of a new macroeconomic management, performance, content to have the dominant traits validated developed contemporary economic environment, as well as a quantity of specific features of their local nature Romanian economy; 11 - the internal competition is weak and the external competition is very strong. Between the two states established a considerable distance that does not allow significant applications the partnership could have benefits for the Romanian macroeconomic configuration 12. - distorted hierarchy of branches and sub-branches of the national economy, because it is not formulated a set of criteria for drawing up a "ranking" of their own. Consequently, because "aggregation strong" economy as a whole (as reminiscent or characteristic residual situation centralized inherited before 1989) any dysfunction in a sector (branch, sub-branch) have effect - horizontal or vertical - significant in other sectors. Propagation dysfunction is visible in different sectors have different amplitudes and have not yet identified an actor - parameter (possibly state) to act for adjustment. Dysfunction can be generically as "*lack of feed-backs*"; 13. - acceptance, in some cases, by the macroeconomic structure of a "negative growth" in the context of lack of vision - as the resultant vector - and significant financial support, leading - still - the erosion of the productive system - economically.

The resuscitation of the entire system is not operational because there is currently no ability sectoral resuscitation (subsystem). Resuscitation crowd punctual (at the company) is affected by the meaning of "negative growth / positive" that induced excessive taxation dimensional diverse and nationally.

VI. MAIN RESOURCES UPON WHICH IT COULD DEVELOP ROMANIAN ECONOMY DURING 2016-2030 (GÂF-DEAC I.I., 2010)

a) Natural resources. Among them the recall: 1 - potential energy (nuclear may increase from 8% currently to 24% in the next 6-8 years if it is to operate the 3rd group of CN Cernavoda fully ensured reserve CNC nuclear fuel, uranium mining domestic product, which in stock-backup hydroelectric potential is favorably by completing rehabilitation of the main hydro (particularly the Iron Gates). 2. - there is a readiness for providing materials construction (cement industry is privatized) and open over 2,000 non-metallic substances microcariere 3. - availability by balancing the volume of timber exploited furniture manufacturing destination 4. - ensures natural infrastructure of waterways and maritime transport. there are reserves of groundwater that can be put out for individual industrial consumption; 5. - Romania has its territory in the basement of a variety of useful minerals being extracted and offered the market a total of 130 mining products, of which 35 national interest. The share of mining products in both industrial and domestic consumption in Romania the main types is 98% coal, 79% for non-ferrous metals, non-ferrous 98% to 100% salt and mineral waters. Total geological reserves exploitable with current technologies for coal, ores and nonmetallic substances highlighted - with varying degrees of knowledge - totaling over 12 billion tonnes in the basement of the country. Value in mining products usable after extraction and processing in the current technology is about 120 billion Euro (for liquid and gaseous hydrocarbons is well-studied stage depth up to 4000 m, and in the range future to continue research at depths over 4000 m, both onshore and on the continental shelf from the Romanian Black Sea from coal - coal, lignite and brown coal reserves contoured ensure continuity of production for a period of 80-120 years. Prospects for finding new reserves are limited, the uranium reserves that can meet the fuel needs groups nuclear energy to be put into operation on energy program for the whole country; geological research and technology for geothermal - although it is poorly conducted, it has great potential, existence of mineral waters with special qualities as important resources in volume of over 33 billion liters / year; the copper ore and polymetallic (Pb and Zn) show significant potential to step up to 500 m depth; non-metallic substances represent a range of products in an

extremely broad potential for recovery; Romania is recognized worldwide as being among the few countries that has great potential reserves of salt, about 6 billion tonnes; territory are stationed in the basement rocks important resources for construction); 6. soil resources for agriculture are favorable (particularly in the southern part of the country).

b) Human Resources. Among them the recall: 1. - there are well-qualified workforce, flexible and adaptable; 2. - local management (specific) constitute a potential real advantage.

c) Financial resources. Concern: 1.- private capital contributing more significantly to the practical implementation of the strategic objectives; 2.- looming prospect of further development agreements (with the IMF and World Bank).

Romanian economy competition advantages in foreign markets refer to:

a) Benefits resulting from the profile, content material and relational internal Romanian economy: It lists the following: 1. - There is a relatively developed industrial infrastructure but require "updating" the rehabilitation, which gives a favorable start investment projects (production-economic); 2. - there is a relatively developed transport infrastructure (land, rail, road, air, sea) located in Rehabilitation, which provides travel facilities - distribution of materials and products; 3. - There are various basic material resources (minerals, energy, wood, plant, water) which provides opportunities for procurement and supply; 4. - industrial infrastructure, agriculture and transport are relatively balanced distribution throughout the country, which may lead to harmonious actions (cost-optimized) the aggregate productive projects; 5. - The workforce is well trained with good level of skill and intelligence; 6. - The price of labor is considerably reduced compared to the level registered outside Romania. 7. - costs (prices) some materials are lower than those from the outside; 8. - there is agricultural land fund and the relatively good quality agricultural and livestock projects; 9. - The Romanian economy is diversified (high degree of diversification) which gives greater degrees of action (integration) horizontal and vertical; 10. - there is a real absorption capacity for activities (projects) major (oil processing, agriculture, tourism, services, infrastructure rehabilitation); 11. - there is a real market 23 million, second only to Poland in Central and Eastern Europe.

b) Advantages resulting from the interface with the outside: 1. - Romania's geo-strategic position in South Eastern Europe with the opening of the Black Sea and Middle East areas and Middle Asia; 2. - shipping intra-European (Constanta - Rotterdam); 3. - sea shipping (Black Sea)

c) Advantages resulting from direct action outside: 1. - ability (potential) connection to productive economic activities of transnational; 2. - zonal distribution opportunities in the Balkans and Central and Eastern Europe (role of distributor); 3. - attractive area for large projects (the Caspian oil, telecommunications area, regional, processing terminals - Distribution free zones in the Black Sea coast, the route Constanta - Rotterdam, safe nuclear energy).

VII. THE MAIN STRATEGIC OBJECTIVES BASED ON IDENTIFYING PROBLEMS AND PRIORITIZING BENEFITS TO THEIR (GÂF-DEAC I.I., 2010)

a) Based on hierarchical problems: 1. Formulating an overall project development concrete local strategic links at regional development, in which to transpose practically a number of industrial-productive work. This action may be involved: local developers strategy; Community institutions partnership and integration; local political class. 2. The emphasis on structural changes in the Romanian economy. These structural changes apply through community projects each branch and sub-branch regional or agricultural-industrial targets, with the final target configuration accurately determined and quasi-framed graphic planning. 3. Pass the urgent "zero growth" (a first stage) and the positive growth. 4. Accelerating privatization concrete quasi-general by making final solutions for "large privatization". Escorting the privatization of non-refundable financial support (for appeal) and facilities containing transparent, fair and efficient finally (aimed at establishing a real and strong private sector). 5. Adoption of regulations / laws that discipline financial, environmental, etc. to be rigorously applied, according to a new management standards, efficient, practiced in developed countries. 6. Eliminating the gap between the weak domestic competition and the very strong external competition, using TDI (customs, conventions, agreements, etc.). 7. Advancement plans refundable and non-refundable financial assistance (or preferential) to international financial institutions and the developed European countries. These tools must contain determinative elements of attractiveness and to prefigure advantages for donors. 8. Formulate the strategic Romanian developers of concrete projects of financial support transformations: building and adoption of National Public Budget with concrete content processing mainly investment; Financial advancing concrete projects for sustainable transformations. 9. Balancing economic situation between physical structures still centralized (residual) and decentralized relations (almost completely) that govern them. 10. Stimulating the transformation process by feeding new modern technology (performance) by revamping. Scientific research and design will be supported primarily from domestic financial terms. 11. Application in the coming years strategic framework of action reasons and motivations derived from "punching" a difficult economic reality recorded by

Romania, portraying the real constraints, consequences and sacrifices (effort). 12. Restoring hierarchy (importance) branches and sub-branches of the national economy based on milestones in structural transformations.

b) Based on hierarchical resources: 1. Reviving infrastructure investments (roads communications, building and civil engineering). 2. Support for particular sectors with very high probability to be performing market (competition) external (eg furniture industry, agricultural products, etc.). 3. Emphasizing restructuring of the mineral resources by protecting and rehabilitating exploitation and valorisation useful substances. 4. Increase the use of terminals in the Black Sea area, the establishment of free zones with real advantages, becoming Romania as "carrier No. 1" on continental fluvial system (Constanta-Rotterdam). 5. Advancing project requirements of internal and external financial support for the commissioning of group 2 of Cernavoda NPP.

c) Hierarchical based human resources: 1. Achieve unemployment max.6-8% between 2016-2020 and 3-4% when based on 2025 economic recovery. 2. Recovery Management regulatory elements with specific items, special transition period.

d) Based on hierarchical financial resources: 1. Supporting SMEs by launching practical measures and facilities for the private sector. 2. The formulation and negotiation points and financial programs consistent with the IMF and the World Bank.

Objective elements that relate to changes in industry structure aims branches: 1. - formulation of projects focused on sustainable infrastructure sub-sectors: drawing up a list of products and services good competitive level; formulating measures to protect and maintain growth momentum already competitive product quality; Since their launch in the competitive domestic and foreign; 2. - formulate projects for conversion or liquidation controlled sub-branches of the unviable substructures (sighted); 3. - crossing the border to help (partnership) Community computerize production processes and services, including electronic commerce; 4. - printing direction change towards increasing the share of services in GDP (compared with the current level attained by them). 5. - defining possible to ensure precise availability of financial resources (internal and external) to achieve specific objectives.

VIII. CONCLUSIONS

In Romania took place early signs of the emergence of the information society and further the knowledge economy is expected to cluster based on networks.

It advanced the thesis that, in fact, the convergence of Romanian economy to international standards development in the short term is still low speed, medium-term would be acceptable and long-term perspective could be very good. It turns out major works to identify how the Romanian economy in real and which differ from the formal arrangements for operationalization of performance and competitiveness through innovation.

Strategic public investments in infrastructure and technology, financial discipline and fiscal reformulate the functioning of government must expand measures associated with rapid and intensive use of knowledge.

Knowledge and technology must become the "fuel" of the economy and basic microeconomic policy is useful to materialize by companies engaged in research and innovation, which underpin competitiveness. New Economy is considered decisive in Romania is related to how products are used information and communications technology.

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