

Joseph Schumpeter rethought: the classic ideas on the innovations in non-exchange economy¹ at light of some resent studies of the communist economy.

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Summary: The paper attempts to question some of the stereotypes in the perception of the economic system of socialism and subsequent period of transition to capitalism. The perspective chosen is that of economies' potential to incorporate (technological) innovations, and the theoretical positions from which this problem is approached are the ideas of great Austrian economist Joseph Schumpeter. The author summarizes the Schumpeter's model of economic development and elucidates its implicit theory of development in non-market economy. Then it is juxtaposed with findings on real functioning of socialist administrative economies (Janosh Kornai, Henry Revol). It also points to the possible links between Schumpeter ideas and recent analysis of innovation in late capitalism (actor-network theory in particular), which through light to the intimate mechanisms of (mal) functioning of administrative economies and some of the failures of post-socialist transition in (South) Eastern Europe.

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¹ I will use the original Shimpeter term "non-exchange economy" and more recent term "non-market economy" as synonymies

1. Introduction: Joseph Schumpeter on innovations in non-exchange economy.

The study of the "innovation regime", that took shape in the decades of socialist economy, is highly important in grasping the issue of economic development in the former socialist economies, including during the 1990s, in the conditions of a "transition towards market". If we accept this as true supposition, it would be natural enough to address the economic theories whose models put the production and technological innovations as their core. Because the key issue in the analysis of Bulgarian economy in the 1950-1980 period² can be thus formulated: if Bulgarian sociological and economic literature today regard as undisputable the fact that the decades in question had played the role of an "industrial transition"³, what are then its specific features compared to the industrialization made within the framework of the classical capitalism of late 19th and early 20th century?

I would like to begin here with the following hypothesis: Schumpeter's well-known theory of the role of entrepreneurial activity as the driving force of economic development in market economy contains major premises, notions and explanations that can serve as a key to understanding development in non-market economies, more particularly the economies with centralized planning and state ownership of East European countries. The first argument to support this is the fact that Schumpeter explicitly compares market economy with private property with non-market economies without private property, and he voices in passing some ideas about the mechanism of economic development in what he calls "communist" economy. Secondly, the Schumpeter's theory is relevant to the question of the specifics of Bulgaria's "industrialization transition" because of the fact that it is not a theory of equilibrium, but of development, and the "development", "progress", "leap", "catching up with", etc. were not only ideological slogans, but the core of the economic efforts of socialism. As Janosh Kornai points out in his "Political Economy of Communism", what he calls 'forceful growth' is "the type of growth typical of the system", one of the fundamental features of classical socialist economy. (Kornai 1992, p.193)

² The same is true, I believe, for most of the other former socialist economies in (South) Eastern Europe, maybe with the exception of Czechoslovakia and Eastern Germany.

³ Avramov, R. (1994) - "The Second Birth of Capitalism in Bulgaria" AEPD, Sofia; Georgi Petrov (1990) - "The Collapse of Totalitarian Economy", NI Publishers, Sofia; Minev, D. et al. (1996) - "Bulgarian Economy: Reforms, Changes and Perspectives", Institute of Sociology, Sofia.

Both the present article and Schumpeter's book clearly imply theoretical analysis. The restriction he introduces - that "isolated" economies are viewed – points to an "abstraction" aimed at analyzing matters in their "logical relation" given certain conditions accepted beforehand, while acknowledging that things are much more complex in fact. Yet like any good theory there is the hope that if the analysis has been properly made it can throw light on and help the understanding of real empirical phenomena that took place in the East-European socialist societies in past decades.

2. The problem of innovations in capitalist economy. Some basic components of Schumpeter's theory of economic development

2.1. Distinction between the "circular flow" of the economic system and its "development"

In his analysis of economic systems Schumpeter proceeds from the key distinction between two states or 'regimes of functioning': the 'stationary' regime or 'circular flow', and the 'development'. In his introduction to the 1934 edition he states that the original terms were 'statics' and 'dynamics' of the economic system, but later he gave them up and replaced them with others, though the latter seem "even more vague".

Schumpeter's theory correlates and even opposes the 'theories of equilibrium', which "were and still are in the core of traditional [economic] theory". Though Schumpeter said this in the 1930s, his words remained true for decades. In 1988 Christopher Freeman, one of the fathers of the economy of technical change pointed out:

"... In its anxiety to be a 'theoretical physics of social sciences' and to achieve logical elegance and mathematical formalization, neoclassical economics elaborated and refined quantitative equilibrium analysis and mathematical model, which, although useful as a modelling exercise on highly restrictive assumption, *neglects some of the crucial elements involved in long-term behavior of the system...* They appeared to be connected with endless elaboration and refinement of assumptions which lacked both realism in relation to certain fundamental features of system behavior and rigorous falsifiability of the predictions derived from the model." (Freeman, C. et al. 1988, p. 3)

Freeman believes that maybe solely the lack of a satisfying alternative to the neoclassical paradigm was the reason for its long-sustained dominating position in post-war economic theory. According to him, precisely the re-consideration and further development of Schumpeter's ideas could contribute to the formulation of such alternative. He emphasizes

several key virtues of Schumpeter's model that make it particularly adequate for this purpose: its sense of historical perspective, emphasis on innovation as the major source of dynamics in capitalist development, revealing the significance of conceptual distinction between invention, innovation and diffusion of innovation, and last but not least, the vital importance of the relation between organisational, managerial, social and technical innovations. The general theory of economic development devised by Schumpeter overcomes the boundaries of the division of individual social sciences and places him on a par with "other great economists as Smith, Mill and Marx". (op.cit., p.5)

Schumpeter himself in a footnote explicitly places his analysis in this context. In connection with J.B.Clark's discussion on Mill's concepts of 'statics' and 'dynamics' and the 'disturbances' of static economic equilibrium (such as population and capital growth, changes in consumers' taste and changes in technologies and production organization), Schumpeter separates the last two 'disturbances' as the basis of a new concept of the economic process. He states that their underestimation is the main reason for the unsatisfactory nature of the economic theory, claiming that his "new formulation of the issue of economic development" is "parallel to that of Marx". Like Marx he too accepts the existence of an *inner economic development* that is not simply an adaptation to changing conditions. In his later work "Capitalism, Socialism, Democracy (1942) he points out that "...When dealing with capitalism, *we must be aware that this is an evolutionary process*. It might seem strange that some could fail to see such an obvious truth that was long ago discovered by Karl Marx. And yet, it is generally overlooked in ... our current theses of the functioning of modern capitalism... Capitalism is a method of economic change and it can never stand still." (Schumpeter 1975, p. 121)

Marx regards development as intrinsic to capital as 'a self-increasing value' and states that for the capital every boundary is 'liable to overcoming'; hence as 'personified capital' every capitalist is forced to follow the 'logic' of capital. That is why the distinction between 'economic equilibrium' (statics) and 'development' in Marx's analysis is of peripheral importance. He regards capitalist economy as a *developing* economy, an economy in which development has become an aim in itself, while one of the tasks of communism is to master and "humanize" this development.

According to Schumpeter development also stems from processes inherent to the economic system, but it by no means is inevitably imposed as a 'law'. On the contrary, if

we exclude any external influences (military, political, demographic, natural calamities, etc.), the economic system can function in a 'static' state, as a 'routine', following the beaten track of 'past cycles'. Only under very specific conditions an economic change may occur, altering the usual course of economic processes owing to internal reasons. Schumpeter claims that these internal reasons can be sought most generally in the field of production: "...while it is permissible and even necessary to consider consumers' needs as an independent and indeed the fundamental force in a theory of circular flow, we must take a different attitude as soon as we analyze economic change". (Schumpeter 1934: 65) He believes that "as a rule *the producer initiates change*", hence the key importance of changes in technologies and production organization.

2.2. The source of economic development: "to produce by a different method",
the 'new combinations'

According to Schumpeter we may call 'development' a specific class of economic changes - the radical, abrupt changes in production: "To produce means to combine materials and forces within our reach. To produce other things, or the same things by a different method means to combine these materials and forces differently. In so far as the 'new combination' may in time grow out of the old by continuous adjustment in small steps, there is certainly change, possibly growth, but neither a new phenomenon nor development in our sense. In so far as this is not the case, and the new combinations appear discontinuously, then the phenomenon characterizing development emerges... Development in our sense is then defined by carrying out of new combinations". (Schumpeter 1936, p.66) He points out also that in the capitalist economy it is not because of the transformation of social and natural frameworks of the economy that we have 'development'; neither development is due to the almost automatic growth of population and capital. All these are conditions, but not the causes of the development. The fundamental impulse, which puts the capitalist machine in motion is printed onto the *level of consumer goods* (objects), the *new methods of production and transport, new markets, new forms of industrial organization*, i.e. all those components born by the capitalist initiative.

Besides their radical nature and 'discontinuity', another salient feature of new combinations is that their introduction presupposes *withdrawal of resources* (labor, raw materials, etc.) necessary for the implementation of old combinations in the existing circular flow. Hence follows *another definition of economic development: as a different*

utilization of the means of production inherent to the economic system: "...The slow and continuous increase in time of the national supply of productive means and of savings is obviously an important factor in explaining the course of economic history through the centuries, but it is completely overshadowed by the fact that *development consists primarily in employing existing resources in a different way* (italics mine – I.Tch.), in doing new things with them, irrespective of whether those resources increase or not." (op.cit., p.68)

Yet another feature of the concept of 'economic development' is the *competitive elimination* of the old forms of production due to the fact that as a rule the new combinations are represented by new companies, which perform their production alongside the old ones. This explains the process by which certain individuals and families prosper economically and socially as a specific feature of the developing market economy. Schumpeter repeatedly notes that what is implied is not competition in the prescribed static system of conditions (circular flow): "...what is valid in capitalist reality, unlike in textbooks, is not this artificial competition, but that which stems from the appearance of a given product, given technology, of a source of raw materials or a new type of organization of production - in other words, competition enjoying major superiority from the point of view of expenditures or quality and attacking not only the surplus value of existing companies, but also their foundations and even their very existence." (Schumpeter 1942: 124)

Why do the new combinations outweigh old ones? According to Schumpeter this is so because *they are always more profitable than the old ones*, while in the circular flow of economy the overall income from a business (monopoly excluded) in the long run cover expenses at the existing level of production and consumption. Producers, owners of capital, neither lose nor gain, but have an income level understood as 'management salary' (managerial rent). However, the introduction of a more profitable new combination radically changes the situation.

Based on an analysis of the introduction of a mechanized loom in British industry in the 18th and 19th century, Schumpeter formulates *three conditions* under which the new combination yields higher profit: 1) The product's price must not drop with the appearance of newly produced quantities, or at least must not drop to an extent that the bigger quantity of product per worker not yield more profit as compared with the smaller quantity of

manual labor; 2) Expenses for mechanized loom per day should either remain lower than the daily wages of the workers it has replaced, or be at least lower than the amount left after allowing for the possibly lower price of the product and a worker's wages; 3) If the entrepreneur expects a rise of the cost of labor and means of production as a result of introducing the new combination, he should calculate this rise in the evaluation of expected income and expenses. (Schumpeter 1934: 129)

Schumpeter notes that these three conditions have been fulfilled millions of times and have practically proven the possibility of income outweighing expenses. This additional income is in fact a net profit. However, it is also clear that historically, these three conditions were not always fulfilled and then the business simply did not start.⁴ Having once succeeded, an innovation richly rewards he who has introduced it. Here begins second act of the drama. Figuratively speaking, with the appearance of the successful new product (technology, organization of production and the like) the spell is broken and new businesses begin to mushroom lured by the possible profit. The concrete industry is totally reorganized, accompanied by a respective production growth, competition, suppression of obsolete productions, possible dismissal of workers, etc. Given the lack of any subsequent new innovations in the concrete industry, *the end result of this process should be a new equilibrium*, typical of circular flow, where at a new higher level the income is equal to expenses and there is no profit. Until this happens, however, there is profit and it is appropriated by those who have introduced the new combination into the previous circular flow of production and consumption - the entrepreneurs.

The only contribution of entrepreneurs according to Schumpeter, thanks to which they receive the profit from new combinations, is their 'will and action' in channeling the existing production resources along a new track. Entrepreneurs are people who have neither accumulated goods, nor created the new means of production, but have used the existing means of production in a different, profitable way. They have implemented the new combinations, wherefrom comes their profit - *the entrepreneurial profit*. In fact, Schumpeter maintains, entrepreneurial profit is the only source of profit in market economy: "...It is possible only when there is development and is an aftermath of this development. As a consequence the capitalist evolution appears as continuous process of

⁴ As indicated by current studies of the process of R&D of new industrial products, a mere 3 to 5 per cent of inventions prove to be economically viable and become real innovations. (Adam & Farber, 1994, ch.1)

industrial mutations that internally revolutionize the economic structure, continuously destroying its obsolete components and generating new ones. (Schumpeter 1942, p. 122) He calls this process '*creative destruction*' and determines it as a fundamental trait of capitalism. This is a historical process, and here he sharply criticizes his contemporary economists who in their analyses regard the given situation as if unrelated to either past or future. They believe themselves, he notes ironically, to have reached the essence of things when through observed data they interpret the companies' behavior applying only the principle of maximization of profit. The key problem they tackle is to establish how capitalism manages the existing structures, instead of considering the more important question: *how does capitalism create and then destroy these structures*. (Ibid.)

2.3. Economic development is impossible without the function of the entrepreneur

In the analysis of entrepreneurial function Schumpeter notes that "... it is no part of this function to 'find' or to 'create' new possibilities. They are always present, abundantly accumulated by all sorts of people. Often they are also generally known and being discussed by scientific or literary writers. In other cases, there is nothing to discover them, because they are quite obvious." (Schumpeter 1936: 87) Therefore, the entire problem facing economic development is how to introduce the new combinations into real economy, as a form of economic behavior different from what is well-known and routine.⁵

Thus posed, the problem quite naturally pushes to the forefront the contradiction between 'routine' and 'innovative' behavior, and not between 'labor' and 'capital', as it was in Marx. Capitalist development has its stake not so much in the possession of production factors, but in their new combination. If the 'new way of combining existing resources' is essential for the economic development, this is an essential function of the business *management, and not just of the possession* of resource for production. Entrepreneurial profit stems only from the 'will and action' for implementing the new combination. That is why in Schumpeter's model what is essential for economic success is not the possession of resources (capital), but their different utilization.

⁵ We must note that due to the specific purposes of Schumpeter's analysis the assumption that inventions and innovations are potentially "given" and "available" ignores major aspects of the relation between the very invention and/or innovation work and the work of the entrepreneur. This problem, however, gains particular significance in modern "science-based industries" – see section 5, the conclusion.

Why do these ‘will and action’ in introducing new combinations become so crucial? This is so, he claims, because it is extremely difficult to break through the iron framework of tradition, routine and the well known. In the circular flow of the economy "...since in every economic period essentially the same things occur, the mechanism of exchange economy operates with great precision. Past economic periods govern the activity of the individual... All the preceding periods have entangled him in a net of social and economic connections, which cannot easily shake off. They bequeathed him definite means and methods of production. All these hold him in iron fetters fast in his tracks." (Schumpeter 1943: 6)

Somewhere else Schumpeter points out that having originated in *past periods* of economic activity, "... all knowledge and habit once becomes as firmly rooted in ourselves as a railway embankment in the earth. It does not require to be continually renewed and consciously reproduced, but sinks into the strata of subconsciousness. It is normally transmitted almost without friction by inheritance, teaching, upbringing, and pressure of environment... The enormous economy of force, in the race and the individual, here involved is not great enough, however, to make daily life a light burden and to prevent its demands from exhausting the average energy all the same. But it is great enough to make it possible to meet the ordinary claims... And from this it follows also for economic life that every step outside the boundary of routine has difficulties and involves a new element. It is this element that constitutes the phenomenon of leadership." (Schumpeter 1936, p.84)

From this point of view in the period of a circular economic flow "... it is of no significance whether the individuals are directing or directed. The conduct of the former is subject to the same rules as that of the latter... [and] under our assumptions, therefore, the means of production and the productive process have in general no real leader, or rather the real leader is the consumer. The people who direct business firms only execute what is prescribed for them by wants or demands and by the given means and methods of production". (ibid., p. 21)

Why does Schumpeter highlight this distinction? As he himself notes, the difference in the rank, in hierarchy is not an essential economic characteristic by itself, though it means a lot from a sociological point of view. What is of economic significance, however, is *who decides on the direction, methods and quality of production*, pertaining to this difference. Herein lies the source of dynamics, of ‘creative destruction’ of the economic order: when

decisions are taken for change and introduction of a new direction, new methods and forms of production. What motivates, justifies and makes legitimate these decisions and the 'will and action' related to them, is the entrepreneurial profit.

But the carrying out of new combinations is accompanied by enormous difficulties, and he draws the fundamental conclusion that "... the carrying out of new combinations is a special function, and the privilege of a type of people who are much less numerous than all those who have the 'objective' possibility of doing it. Therefore the entrepreneurs are a special type, and their behavior a special problem, the motive power of a great number of significant phenomena". (Schumpeter 1934: 82) Schumpeter compares in detail the function of the entrepreneur and entrepreneurial kind of leadership with that of the other economic agents: the inventor, capitalist, banker, etc. Besides his 'objective' economic functions he also analyses a number of personal or psychological features, inherent to the entrepreneur.

We should stress to the fact that his views on the entrepreneur's functions and features have definitely evolved. The most important aspect of this evolution is that while 'young Schumpeter' from the period of the "Theory of Economic Development" accentuates on the 'heroic' role of the individual entrepreneur and the small innovation enterprise for revolutionizing the economic activeness, 'mature Schumpeter' from the time of "Capitalism, Socialism, Democracy" speaks of the wane of entrepreneurial function and emphasizes the threats of the growing process of bureaucratization of innovation process. According to him, placing entrepreneurial activity under the control of large monopolistic corporations could paralyze development and make the best minds channel their efforts to spheres outside economy. Without going into details, I would quote two key texts of him.

In the beginning of the century in the book we analyzed so far, the "young" Schumpeter notes: "... The entrepreneurial kind of leadership, as distinguished from other kinds of economic leadership ... it consists of fulfilling a very special task which only in rare cases appeals to the imagination of the public. For its success, keenness and vigor are not more essential than a certain narrowness, which seizes the immediate chance and *nothing else*. 'Personal weight' is, to be sure, not without importance. Yet the personality of the capitalist entrepreneur needs not, and generally does not, answer to the idea most of us have of what a 'leader' looks like, so much so that there is some difficulty in realizing that he comes within the sociological category of leader at all. He 'leads' the means of

production into new channels... He also leads in the sense that he draws other producers in his branch after him. But as they are his competitors, who first reduce and then annihilate his profit, this is, as it were, leadership against one's own will." (Schumpeter 1943: 89)

More than 30 years later Schumpeter wrote thus in "Capitalism, Socialism, Democracy": "... This social function [of the entrepreneur] is now increasingly losing its significance and will do so even more in the future... Today it is much easier than before to fulfill strange tasks unusual for the existing routine, since the very making of innovations is about to become a routine. Technical progress is becoming an *occupation of specially trained teams of experts working by order* whose methods allow them to foresee the practical results of research. The romantics of commercial adventures is being quickly replaced by the prose of our time where things, which until recently could be grasped only by flash of intuition, can be exactly calculated... The economic progress is about to be depersonalized and automated. Individual action is being ousted by the work of bureaus and commissions." We will revisit these assessments later in the analysis when dwelling on the entrepreneur's functions in non-market economy.

2.4. The only man to be persuaded or impressed by the entrepreneur is the banker who will finance him...

Schumpeter's views on the importance of entrepreneurial function for the economic development and the nature of entrepreneurial profit substantiate the clear distinction between *possessing* (ownership) of the means of production and *control* over them with a view to channeling them into 'new combinations'. Not possessing property per se, not accumulating resources and thrift per se generate development: the only important thing is using the resources in a new way, no matter whether they increase or not. Thus *development under market economy ceases to be necessarily linked to accumulation*, to ownership. Moreover, owing to the fact that entrepreneurial behavior requires special qualities and is the privilege of a type of people much less numerous than all those who have the "objective" possibility of doing so, it follows that the transition of a economic system from a regime of circular flow to a development regime demands that *all individuals* capable of fulfilling the entrepreneurial function enjoy the economic conditions for this.

The separation of the function of management from the possession of property (or more generally, of capital) defines entrepreneurial function solely as a 'different use' or

‘managing differently’ available resources, their withdrawal from routine utilization and forming ‘new combinations’ ensuring their more effective use and thus yielding entrepreneurial profit. This poses the problem of *access to resources* in a new light. In market economy with private property, in cases when the entrepreneur has the necessary means of production, or can have them against *another* property possessed by him, this problem is non-existent. In all the remaining cases, however, he *must rely on loans* for the implementation of innovations, because unlike the already established business, he does not dispose with a previous production as a subsidizing source. Providing credits becomes a specific function of a category of individuals who deserve the label ‘capitalists’, i.e., ‘suppliers of capital’. This is the specific feature of the capitalist type of economy: *the free access to credits* by which the economic system is pushed along new roads, its means and services are placed in the service of new goals: “Without credits the structure of modern industry is impossible, since credits make the individual relatively independent from inherited ownership and the gift of modern economic life rides on the success of its debts.” (Schumpeter 1934: 70).

The thesis formulated and proven by Schumpeter is the following: In principle none but the entrepreneur needs credit! The weaker form of this thesis has it that credits serve industrial development. In order to implement innovations the entrepreneur needs a *temporary* transfer of purchasing power. Unlike the producer in the circular flow, this purchasing power has nowhere to come from. In the circular flow money come to the producer automatically against goods sold, or against a loan granted against produced but still unrealized goods. Therefore in circular flow money is really a commodity equivalent.

What is then source of credits for the implementation of innovations? In a critical analysis of the theories on the nature of money and means of disbursement from Adam Smith till the beginning of the century, Schumpeter made an outstanding discovery. If economic development is an accomplished fact, he says, then in order to solve the problem of the access of *every* potential entrepreneur to the available resources, we must assume that *money are not just a reflection of commodity process*, are not a simple component of exchange. According to him, "what we regard as the essential element in the credit phenomenon is not to be found in current credit within the circular flow" (Schumpeter 1934: 105). The essence of entrepreneurial act lies in creating a new demand of money not backed up by simultaneous manufacturing of goods. Herein lies the secret of

entrepreneurial credit: *since there is no commodity equivalent to the purchasing power lent, no transfer of already existing purchasing power is effected, but "...it can only consist of credit means of payment created ad hoc, which can be backed neither by money in the strict sense nor by products already in existence... Credit is essentially the creation of purchasing power for the purpose of transferring it to the entrepreneur, but not simply the transfer of existing purchasing power. The creation of purchasing power characterizes the method by which development is carried out in a system with private property and division of labor."* (op.cit., p.107)

The access to credit which the capitalist economy provides to entrepreneurs, in fact means for them access to the social flow of commodities *before* they are normally entitled to it (on the basis of an already manufactured product). At the same time this is also an "*order to the economic system to adapt itself to entrepreneurial goals*". (ibid.) Thus in Schumpeter's model the entrepreneur as the only real buyer of purchasing power in a developing market economy is faced by the banker at the side of the supply. The banker is "...not so much primarily a middleman in the commodity 'purchasing power' as a producer of this commodity. However, since all reserve funds and savings today usually flow to him, and the total demand for free purchasing power, whether existing or to be created, concentrates on him, he has either replaced private capitalists or become their agent; he has himself become the capitalist par excellence. He stands between those who wish to form new combinations and the possessors of productive means. He is essentially a phenomenon of development, though only when no central authority directs the social process." (Schumpeter 1934, p.74)

"[The banker] is the ephor of the exchange economy!" - Schumpeter exclaims and this is the only way to direct a socially acceptable economic development in the market economy "when no central authority directs the social process". Here he adds that precisely "... in the daily struggle between the two parties [bankers and entrepreneurs - I. Tch.] the fate of new combinations is decided. In this price struggle the system of future values first appears in practical, tangible form and in relation to the given conditions of the economic system." (op.cit., p.125)

The entrepreneur can pay the price of the credit taken because if successful the new combination means more effective utilization of existing resources and guarantees him entrepreneurial profit. Through credit interests part of entrepreneurial profit is in fact re-

distributed among the remaining economic agents, firstly to bankers as producers of purchasing power and indirectly to owners of capital (resources), whose middlemen they are. The successful implementation of new combinations not only guarantees the future commodity equivalent by which the credit will be paid, but also the profit of the banker as producer of means of disbursement! Creating "ex nihilo" means of disbursement (through a plethora of credit tools) and thus ensuring credit to entrepreneurs, the banker seems to 'suck value from the future', introducing it into the economic cycle and channel it into a new direction.

Let us summarize the logical scheme, which follows Schumpeter's analysis:

- The distinction between circular flow and development is fundamental for the capitalist economy. In the first the economic system function in a 'static' state, as a 'routine' following the beaten track of 'past cycles'. The 'development' signifies a specific class of economic changes - the radical, abrupt changes in production.
- The source of development is 'functioning in a different way', i.e. the introduction of innovations (new combinations). Because the new combinations are always more profitable, key aspect of 'economic development' is the competitive elimination of the old forms of production. This process of 'creative destruction' is fundamental trait of capitalism.
- The introduction of innovations is impossible without the function of the entrepreneur. The only contribution of entrepreneurs is their 'will and action' in channeling the existing production resources along new tracks. But the entrepreneurs could not implement new combinations without resources, i.e.
- Having no access to capital - already existing or created ad hoc, which explains
- The essentially different role of credits when the economy functions in a regime of development. Creating 'ex nihilo' means of disbursement (through a plethora of credit tools) and thus ensuring credit to entrepreneurs, the banker seems to 'suck value from the future' into the present economic cycles, hence dynamiting them.

If we accept this orderly theoretical scheme, where can we look for the difference between innovation processes in market economy with private property, and in non-market (communist) economy?

3. Schumpeter on innovations in non-market (communist) economy

Tracing the difference between the innovations in market economy with private property and non-market economy, it is relevant to begin with the entrepreneurial function. This specific combination of 'will and action' is a type of leadership and demands qualities possessed as rule *by a limited circle of individuals*. This leadership is needed not only to break routine and tradition, but also to overcome the adverse reactions of the social environment in which the new combination is carried out: the resistance of endangered producers ousted from the market by the new combination; winning over consumers; finding allies, etc. Precisely because these are rare qualities the next condition - providing the possibility for *every potential entrepreneur* to possess [though temporarily] the resources necessary for the implementation of new combinations, i.e. *access to credit*, was a key condition for economic development. Another conditions being the possibility to receive the anticipated entrepreneurial profit as compensation for his efforts.

How all this is arranged in the non-market economy? In "Theory of Economic Development" Schumpeter quotes two cases of non-market economy: 1) The isolated kingdom where all the means belong to the signor; 2) The isolated communist society in which the central authority possesses all commodities and labor resources and determines all commodity values. What is common between the two cases, according to Schumpeter, is that *some individuals enjoy absolute control* over the means of production. They expect no production cooperation, nor do they provide possibilities for making profit to other economic agents. So the problem of access to resources necessary for carrying out the new combinations "... does not exist in a non-exchange economy even if new combinations are carried out in it; for the directing organ, for example a socialist economic ministry, is in a position to direct the productive resources of the society to new uses exactly as it can direct them to their previous employments". (Schumpeter 1934: 68)

This distinction allows Schumpeter to define the difference between the two types of economies: From the point of view of innovations "capitalist" economy is the one in which resources necessary for new production are drawn from the circular flow by an ad hoc established purchasing power (bank loan), while '*communist*' economy is an economic form where the resources necessary for new production are drawn through some kind of power or command. Hence follows the assumption that 'communist leaders' or the 'central organ' can play the role of entrepreneurs *directly*, without using bankers as middlemen. In

the case when the banking system is formally preserved, but is controlled by the leaders, the latter combine both functions: of a motive power for the introduction of new combinations (entrepreneurs) and of creators of an ad hoc purchasing power by a decree for financing the new combinations (bankers). What are the effects of the behavior of the communist leaders as entrepreneurs for the functioning of non-market economy?

First, the 'development' as a specific form of functioning of the economy - in the sense of channeling the economic process along new tracks, introducing product, technological, organizational, market, etc. innovations is also possible in non-market economy of a communist type: "The leader of such a community, whatever his position may be, withdraws a certain quantity of means of production from their previous uses and with them carries out a new combination..." (Schumpeter 1934: 141)

Moreover, according to Schumpeter, in the *developing* non-market economy "...the entrepreneurial activity of the leader, which is indeed a necessary condition of the realisation of the combination, may be conceived as means of production." (ibid. p. 143) It is the *third production factor*, alongside labor and natural resources (the land). Hence follows that part of the value of the new product should be ascribed to it. The amount of this part, as well as the part ascribed to labor and land, is determined by competition. But since in non-market economy there is no competition, and profit is much less significant than in market economy, the value of the leader's entrepreneurial activity is not clearly expressed. Schumpeter believes that the part of surplus value ascribed to the leader's entrepreneurial efforts is determined by subtracting the value of the losses incurred by not using means of production in former ways from the value of the new product.

Second, the direct control by communist nomenclature over the necessary resources creates an *essentially different situation as regards risks and the speed of introducing innovations*. In market economy the entrepreneur must first persuade the banker, gain his confidence so as to get the necessary credit. The conjuncture of the credit market has a strong impact on the rates and scope of entrepreneurial activity. In non-market economy all this is non-existent. If he deems so, the leader may always withdraw the necessary resources (the bigger the scope of the economy, the bigger the leader's possibilities are, e.g. the USSR), even risking holding back or worsening the living standards of the remaining social groups.

Third, given a direct control over production factors, the communist leaders, that have introduced the new combination in the economy, are rightfully entitled to the entire entrepreneurial profit. In a non-market economy the leaders need not share the entrepreneurial profit with bankers and other owners of capital (resources). Thus, at the start-up of development and the successful mass introduction of new combinations in the economy the ruling elite gets an additional, new source of resources for the purposes of its economic policy. They are entitled to it by rights and whether they will share it with the other economic agents depends solely on their good will. In a feudal society, Schumpeter wrote, the signor disposes of the whole profit, while in a communist society the profit belongs completely to the community. However, this does not mean that profit from innovations is transformed into wages, even if it is distributed in its entirety. On the contrary, if those working outside the sectors where new combinations have been introduced get additional payments, this can happen only if they exploit their leaders! (p. 148) This state of affairs can be put in other words: "The profit has no significance as a distributive category in a non-exchange economy" (ibid, p. 144).⁶

Fourth, *the phenomenon of creative destruction practically disappears*. In market economy with private property the profit reaches the entrepreneur only after it has made its way through competition. This means that it is not only competitively distributed among bankers and owners of capital, but also that its very existence stimulates the next waves of entrepreneurs who, attracted by the success and monopoly profit of the First Innovator, also introduce the new combination and depending on the speed of introduction 'steal' a bigger or smaller portion of the profit until fully exhausting it (the new combination has 'aged'). In market economy in the long run this is irreversibly linked to the relative drop of prices as regards wages as a result of the higher effectiveness of new combinations. The communist leaders' direct control over resources in non-market economy does away with competition and economic agents related to it: bankers and other autonomous entrepreneurs. On the one hand this abolishes barriers before the quick introduction of innovations, but on the other it also does away with pressure on sectors

⁶ The analysis of non-market, and especially the "communist" economy allows Schumpeter to make the major conclusion that the phenomenon of profit does not depend on the concrete form of economic organization. Being a particular and independent value phenomenon, the profit proves to be fundamentally related to the role of leadership in the economic system. Had not this system needed leadership and a directing force, profit as a phenomenon would not have existed separately, but would have been included in wages and rents. (Schumpeter 1934: 146)

working under old combinations. Schumpeter maintains that here new and old combinations can exist in parallel and profit be distributed among them. The complete restructuring of the sector on the basis of new more effective combinations is a matter of *authoritative, administrative decision*, rather than a competitive pressure. The new equilibrium is established not under the impact of competitive companies, but through the exercise of power.

At the end, the fifth and maybe the most important difference between market and non-market economy is the *narrowing of the social basis of entrepreneurship*. Control over necessary resources is a key condition for introducing the new combinations. Credit in the market economy with private property and the relevant re-distributive function of entrepreneurial profit aim precisely at providing every potential entrepreneur with such [temporary] control over the necessary resources, at the respective cost (credit interest). The direct and absolute control on behalf of the communist leaders over resources deprives the remaining economic agents of the possibility to carry out independent entrepreneurial activities. They are economically unable to become entrepreneurs. This has major long-term effects on the rates of innovations and hence on the rates of economic development in communist economy.

At first glance there is a solution suggested by the practice of market economy where certain groups of "dependent employees" - a term by which Schumpeter denotes technical directors, managers, board members in large companies and corporations - often can be regarded as entrepreneurs and can really fulfill entrepreneurial functions, receiving in return not profit, but a wage increase. He links this phenomenon, however, with the "disappearance of entrepreneurship" in late capitalism, with its bureaucratization.

4. Schumpeter's model of non-market economy in the light of real practice of communist economies.

In the previous section we found that the theoretical model, build by Schumpeter in 1912 admits, that non-market economies are also capable to development, i.e. to introduce new combinations (innovations). Today, after the collapse of that economic system, there are enough empirical data and their theoretical summaries which help specify the theoretical principles and characteristics, defined by Schumpeter more than 80 years ago. I take example two such analysis - Janos Kornai's fundamental book ob political economy of what he called "classical socialist system", and the report of French senator Henri Revol to

the “Office for evaluation of scientific and technological choices” at the French Parliament in the autumn of 1994 – to ascertain to what an extent the analyses of these authors coincide with the model of Schumpeter. Here are some of the main findings:

Schumpeter's prognosis that economic development in the sense of massive introduction of new combinations is possible under the non-market economy of the classical socialism, is a firmly established fact. The classical socialism proves to be viable in a medium-term perspective, capable of economic development. As Kornai points out, at least it during the first decades, it experienced not merely development, but a *"forced growth"* and a *continuous high level of investments*. The initially high rates of economic growth are completely in accordance with Schumpeter's analysis and could be considered as resulting from "the leveling up of the barriers" raised before the entrepreneurs.⁷ First of all this is the removing of the difficulties in obtaining a credit for the realization of the new combinations - the necessity of convincing the bankers no longer exists, the regulating functions of the interest concerning the credit disappears. The practice of classical socialism has proved the disappearance of the economic function of the banks for the development. As Schumpeter foresees it is in this type of economies that the banks turn simply into one of the branches of administrative co-ordination. They become an instrument providing the direct access of the communist leaders to the factors of production and an effective means for control of the economic agents (the firms) and limiting their autonomy. Secondly, the negative effects of competition have also been eliminated, i.e. 1) the danger of bankruptcy has been obviated (the whole economy can go bankrupt, but not the separate firms); 2) the danger of breaking the monopoly of entrepreneurial profit through ‘consuming’ parts of it by the competitors copying the innovations disappears too; 3) the ‘business secrecy’ is also obviated by practical ‘nationalization’ of the intellectual and industrial property, which enables the leaders to have free access not only to the natural resources and labor, but also to the sources of new

⁷ To take Bulgaria as an example, the data show that since the beginning of the 60ies there is a continuous decline in the rates of growth in Bulgaria. According to official sources the growth is 7.7% during 1961-1970, 7% for 1971-1980 and 3.7% for 1981-1985, reaching 2% in the end of the 80ies. According to the alternative estimations of Western sources this decline is considerably more unsteady - 5.8% for the period 1961-1969, 2.8% during 1971-1980 and 0.8% for 1981-1985. With the exception of China all remaining countries with socialist economy share the same tendency.

combinations (the discoveries and inventions). Suddenly entrepreneurs (communist leaders) appear, finding themselves in 'an ideal investment environment'.

The fact that the economies of the classical socialism with a few exceptions have been established in countries of relatively undeveloped industry, results in a specific form of innovations - *international transfer of technologies as a specific form of diffusion of new combinations from developed capitalist economies*.⁸ Here lies the reason for some of the new phenomena in the socialist non-market economy, pointed out by Kornai and Revol.

As Schumpeter presumed, the communist leaders prove to be motivated to behave like entrepreneurs, to implant new combinations and extend production. Kornai has shown that this applies to all levels of managerial hierarchy: "...The micro-motives of the administration and the macro-policy of the central authorities coincide: the decision of the central leadership in favor of a large investment share reflects the aspirations and the aims of the whole power elite." (Kornai 1992, p.168)

All these advantages, though fostering the economic development during the initial period of socialism, prove to be destructive in a long-term perspective. There are several additional aspects, confirmed by empirical analyses, which impeded the development in the long run. At first place, the interest of the leaders in introducing innovations and the resulted forced growth led to the specific phenomenon of "creating as many new enterprises as possible, neglecting at the same time the maintenance of the old ones." (Kornai 1992, p.173) As Schumpeter assumed, the strong negative effect resulted from the continuous breaking of the normal circular flow of economy, which "systematically does not lead to covering the expenses in the separate producers and even in whole branches" (ibid). Due to the system of specific priorities of the communist leaders a negative influence was exercised on branches as agriculture, light industry, public services, which suffered continuous under-investment. Having been the only entrepreneurs in this economy, the communist leaders follow their system of priorities, blocking at the same time the possibilities for entrepreneurial activity and for innovations in the "non-priority branches" due to the fact that they control all resources. Henri Revol's paper reveals very

⁸ Schumpeter himself classified the opening of a new market or the developing of a new source of raw materials as innovations, but as Christopher Freeman pointed out in his analysis of Schumpeter's heritage, he did not study well enough the problems of international diffusion of innovations. (Freeman, 1988, p.5)

well the consequences of the systematic "over-investment" in the military industrial complex, which like "an octopus" sucks out the resources of the remaining branches.

Secondly, the empirical analyses reveal *new aspects of the phenomenon of narrowing the social basis of entrepreneurship under a non-market economy*. The negative consequences of this are almost unnoticeable during the first one or two decades of socialism, when an intensive transfer of technologies has been carried out from the developed Western countries or from other more developed socialist economies. However, with the gradual advance of industrialization and the relative leveling in technologies with the developed capitalist countries, these consequences become even more evident.⁹ In a long-term perspective this prove to be far more destructive than the effects Schumpeter had foreseen. Kornai and Revol, in particular, show that the economies of classical socialism develop further the negative effects of 'the bureaucratization of the innovations' emerging with the establishment of the large corporations and the formation of monopoly markets in the first half of 20th century. The classical socialist economy created "the market of the producers" (Kornaj) and gave rise to peculiar effects of monopoly in the different branches, turning the majority of the population into "clerks of the administrative system".¹⁰

Thirdly, the empirical analysis confirmed another conjecture of Schumpeter, related to the difference in principle between the attitude of the leaders and the working people to the innovations. He indicated that the leaders, acting like entrepreneurs, 'sacrifice nothing' and they "may not compensate the temporary sacrifice of their subordinates in so far as the crown is firmly in their hands". *They are motivated namely by the expected future profit, while 'the immediate losses' motivate the working people.* (Schumpeter 1936: p.138) As Kornaj have shown, this fundamental difference in the interests of the ruling and the ruled could not be deleted but only be temporary managed by ideology and discipline. When, however, these mechanisms were exhausted, the tacit resistance to the forced growth, causing limitations in consumption and deficit, comes without delay.

⁹ In the case of Bulgaria in mid 1960s there was a "breakthrough" in the field of electronics by copying technologies from Japan and the USA. But then stable lagging behind of about eight years comes into being compared to the level of leading world producers like IBM, for example. This continued for almost two decades but irrespective of the efforts made, the difference cannot be decreased. Instead, with the aggravation of the crisis since the end of the 80ies the electronic industry had been destroyed in practice.

¹⁰ As it was shown above, Schumpeter predicts the dangers of this process speaking of a "decline of the entrepreneur's functions" in late (mid 20th century) capitalism.

Of course, the real socialist economies revealed number of other characteristics, which cannot be explained with the model of Schumpeter. Some of them resulted from the specific historical conditions and international environment, in which they have been established in which in turn influenced their functioning. To mention only few of them:

- 1) *The relative dominance of 'military-industrial complex'*, which turned into an octopus who sucks out the resources of the other sectors;
- 2) *The specific system of foreign trade*, which has deprived the local producers from close and current contacts with their international partners, thus became an obstacle for building clear criteria on the efficiency of production by comparing their prices to those of Western counterparts and made impossible the quick and adequate information on the efficiency of their own indigenous innovations;
- 3) *The economic functions of the secret intelligence services* as an alternative mechanism compensating the negative influence of the system of foreign trade - in contrast to the capitalist economies, where the scientific and technological secret service (industrial espionage) is a problem mainly of the relations between the corporations, in former socialist economies it was often managed by a special departments in the national security agencies.¹¹

5. Conclusion

In the last section we pointed out some characteristics of the real socialist economies, which Schumpeter did not foresee because of some specific historical and international circumstances. We would like to conclude, however, with some other aspects of these economies, which Schumpeter model of non-market economy simply fail to take into account, but which are of crucial importance to better understanding of these economies and some of the difficulties they experienced during the 1990s.

¹¹ In Bulgaria for example, in an interview with the author a former high-ranking advisor on the issues of science and technology at Central Committee of the Communist party said that : "...until the beginning of the 80ies the Western countries had very mild punishments for industrial espionage and the Bulgarian secret service worked without having serious problems. I remember the documentation concerning the computers of the fifth generation, which was provided by the Bulgarian Intelligence Service. Thanks to them we have built several computer complexes of this type. Having seen them, the Russians yelled... Later we sold to USSR several such complexes, which they used in their space shuttle program and other similar tasks". According to the reminiscences of another interviewee, a physicist from a research lab in the Bulgarian Academy of Sciences "... during the 70s and the 80s very often we were called in by the secret department of the Central Institute for Science and Technical Information to help the scientific and technical expertise of materials brought by our secret service." (In an interview with the author)

The first aspect is that Schumpeter takes for granted the source of innovation (invention, discovery). In the analysis of entrepreneurial function Schumpeter notes that "... it is no part of entrepreneurial function to 'find' or to 'create' new possibilities. They are always present, abundantly accumulated by all sorts of people. Often they are also generally known and being discussed by scientific or literary writers. In other cases, there is nothing to discover them, because they are quite obvious." (Schumpeter 1936, p.87). This assumption - that inventions and innovations are potentially 'given' and easily 'available' - ignores major aspects of the relation between the process of discovery and invention - on the one hand, and their implementation in the economy, i.e. innovation - on the other. This problem became especially acute since the early 20th century with the rise of first 'science-based industries' like electro-technical industry, organic chemical industry, aviation industry, etc. Recent studies have revealed close interdependence between public investment in science and education and the heavy 'infrastructure work' that mediate appropriation of relevant discoveries in the economy.

Hence one possible way to further elaborate Schumpeter's ideas on economic development of classical socialism and its potential for innovation is they to be juxtaposed with the vision of innovations as 'science and technology based', as developed by contemporary Science & Technology Studies (STS), and more precisely to be considered as specific socio-technical (or techno-economic) networks. The socio-technical networks approach and especially its notion of 'emerging' and 'stabilized' configuration might be a crucial for understanding the intimated interrelation between former socialist economies and capitalist economies. (Callon 1992, 1996, see also Tchalakov 2001)

The second aspect is related with his vision of "communist leaders" as homogeneous group. The nomenclature, however, although hierarchically organized, is split in different camps not only vertically, but also horizontally. The division lines and functions of the different groups vary during the different stages of evolution of socialism. Hence the entrepreneurial behavior of leaders varies - the internal straggle and constellation of forces between different camps of the communist nomenclature strongly influence the speed and direction of economic development. The recent ideas, developed in the framework of so-called 'historical sociology of socialism' (see Deyanov & Mineva, edc., 2003) may provide the clue for understanding the real dynamics of innovation process in socialist economy. It has develop an understanding of functioning socialist economy as performing

pendulum-like movement from total dominance of administrative (hierarchical) coordination (i.e. taking off the power of mediators -commodities, money) to the rise of 'second networks' (i.e. weakening the power of hierarchies and restoring the power of goods and money).

My concluding hypothesis is that critical analysis of three theoretical frameworks - Schumpeter ideas, techno-economic networks approach and historical sociology of socialism - make possible the outline of the specific innovation regime in socialist economies as dynamic interplay between a) the process of expansion of world-wide socio-technical networks of industrial production, which made former socialist economies compatible in principle with capitalist ones; and b) indigenous mechanism of straggles and negotiations between different "second networks" of socialism, hidden behind the all-encompassing administrative coordination (hierarchies). This interplay possess its internal dynamics, which at the 'surface' of socialist economic development appears as changes in the capacity of socialist economy to introduce indigenous technological innovations and to absorb those made elsewhere (described by Janosh Kornai' as "two phases" in socialist technological development). We hope to present soon some possible analysis in this direction.

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